In September 2008 Dr Sam Parnia and his colleagues at the Human Consciousness Project announced a 3-year exploration of the biology behind apparent out-of-body experiences at or near the time of death. Dr Parnia is a fellow at New York City’s Weill Cornell Medical Center and one of the world’s leading experts on the scientific study of death. The study, known as AWARE (AWAreness during RESuscitation), involves the collaboration of 25 major medical centers throughout Europe, Canada and the U.S. and will examine some 1,500 survivors of cardiac arrest.

What paved the way for a study of this kind and scope was a five-year clinical study of near-death experiences (NDEs) of patients in intensive care. This was conducted and is reported in this volume by Dr Penny Sartori, a Staff Nurse at the Intensive Therapy Unit (ITU), Morriston Hospital, Swansea. Her research into NDEs in a hospital setting was the UK’s first long-term prospective survey to date and also the largest prospective study undertaken in the UK so far. Dr Sartori worked under the supervision of philosopher and theologian Paul Badham, Director of the Alister Hardy Religious Experience Research Centre at the University of Wales, Lampeter, and under the guidance of Dr Peter Fenwick, a hospital consultant psychiatrist/neurophysiologist and one of the world’s leading authorities on NDEs.

That Dr Sartori has thoroughly mastered the literature on the subject is evident from Chapter 1, which deals with the history of NDEs. Did you know that one of the earliest accounts of a NDE was reported by Plato in his *Republic*?

Particular attention has been paid to the often-neglected frightening aspects of some NDEs, which mitigate the reductionist “explanation” of NDEs being wishful thinking. (Greyson and Bush suggested that individuals who fear the loss of their ego are more likely to report a frightening NDE. Such individuals are used to being in control. Instead of surrendering to the experience of dying,
it is resisted, the resulting fear permeating the experience. There is the possibility that if all frightening NDEs are to continue for long enough they would eventually convert to a pleasant NDE as the individual would eventually give in to the experience.)

During previous eras, most cultures had their Books of the Dead, such as the Tibetan and Egyptian, their European equivalent being the *Ars Moriendi*. This literature depicts worlds of both heaven and hell, which will eventually be encountered by everyone at some point. It was customary for the dying to be guided by the narration from such books to prepare for what lies ahead. The narrations familiarised both the dying person and those caring for him or her and allowed them to surrender to the dark side of spirituality through their spiritual practice. Dr Sartori deems it unfortunate that current society lacks such spiritual guidance. I cannot but agree.

In the opening chapter, she also surveys the cultural differences between reports of NDEs. Although the NDEs follow a common theme, they do not all contain the same elements. The fact that NDEs vary according to culture gives less credence to some reductionist theories. The physiological explanations previously proposed for some aspects of the NDE, such as the tunnel, are not relevant to some cultures, where these elements are not reported. A recent study of NDEs in Germany revealed cultural differences between post-communist East Germany and West Germany. It was found that while the incidence of NDEs amongst East and West Germans was roughly the same, the content varied; the NDEs of West Germans were more positively received than those of East Germans. In West Germany 60% were pleasant and 29% frightening whereas in East Germany 40% were pleasant and 60% frightening. The phenomena of travelling through tunnels were common in the East, while the experience of light was found to be more common in the West of Germany.

The chapter’s last section of draws parallels between NDEs and anomalous phenomena with similar characteristics such as mystical or spiritual experiences, altered states of consciousness, yogic experiences, pre-birth experiences, effects of brain injuries, and death-bed visions.

Chapter 2 focuses on the limitations of reductionist arguments. Since the author was often in a position to monitor medical conditions before, during, and after an NDE, she was able to demonstrate that reductionistic explanations “can’t always provide an adequate explanation of the NDE.” One of the many theories she discusses is D’Aquili and Newberg’s neurophysiological theory of mystical experience.

This is an interesting theory but there are two very important points to consider. First, it must be emphasised that d’Aquili and Newberg’s theory was based on a very small sample of eight meditating monks, followed by a further sample of fifteen praying nuns. Second, the brains of the subjects were scanned by a Single Photon Emission Computed Tomography (SPECT) scanner. It was arranged that the monks would pull a cord attached to their hand when they underwent a peak experience. However; quite how the meditating monks were able to pull the cord defies comprehension as a characteristic of a peak experience is loss of the sense of self and dissolution of boundaries. If a peak experience was attained then it is unlikely that they would be aware enough to pull the cord. Third, even if indicative of a peak
experience, the scans can only provide evidence for the neurological correlates which occur when this experience is happening. It must be remembered that correlates are not the same as causations. (84–85)

Having highlighted the reasons why the NDE and mystical/religious experience cannot be reduced to physiological factors, Dr Sartori goes on to consider psychopathological conditions that have been speculatively linked to the NDE.

How, for example, would one account for the life review in this particular manner? Take the study of approximately thirty mountain climbers who had survived near fatal falls. They revealed feelings of calm, peacefulness and great lucidity of thought followed by a review of their life in chronological order as they fell towards death.

For those faced with an unexpected near-death situation, the accelerated life review replaces the slower process of reminiscence. This process completes one’s life story, gives meaning to [one’s] existence and offers reassurance of the worth of one’s life. However, if death signifies the end of consciousness, it is unclear exactly why one would want to learn from one’s past actions and make the necessary changes to improve in character. The very existence of this element of the NDE would be more indicative of a continuation of consciousness as opposed to annihilation. (111–112)

The very existence of this element of the NDE would be more indicative of a continuation of consciousness as opposed to annihilation.

The contrast between mystical experiences and psychotic experiences also couldn’t be starker:

Mystical experiences are felt as divine and positive in nature, psychotic experiences are indicative of conspiracies involving the FBI and CIA.

Mystics are prone to sharing their experiences and seek others of similar experience and are socially accepted. Psychotics usually withdraw and become reclusive and their experiences are deemed by the social community as being invalid and insane. Psychotics have hallucinations, mystics have visions. A mystical state is acknowledged as valid by others in the individual’s subculture whereas the psychotic’s experience is rejected by members of their subculture. Also, historical figures who had a mystical experience were very well recognised leaders and went on to create laws and moral codes of conduct that were very insightful and wise.

Following a religious experience, many report an increased sense of security and protection, a sense of joy and well-being, a sense of guidance or vocation, renewed inner strength, awe, reverence and wonder, increase in affection for others, increased sense of forgiveness, hope and optimism (Hardy 1979); characteristics rarely described by epileptics or psychotics. Maslow (1964) investigated peak experiences and considered religious experiences to be a major component. He discovered that a high percentage of the people he interviewed reported religious experiences so he began to investigate the personalities of those who did not report a religious experience. He concluded that personality traits such as being materialistic, rational, afraid of becoming insane and fear of loss of control were indicative of a defence against peak experiences. Those who reported a religious experience were less likely to be defensive psychologically than others. (114–115)

Dr Sartori concludes this chapter by observing that

Despite the many reductionist arguments, the NDE remains unexplained in such terms. Although these current theories discussed appear to contribute to the understanding of the NDE, when they are scrutinised and applied to many documented cases of NDEs, they fail to adequately explain many aspects of this pheno-
menon. Even though there are similarities, this chapter has sought to highlight the differences, which are seldom referred to when trying to explain away the NDE. There are some similarities between NDEs and pathological diseases but their phenomenology, antecedents and aftereffects make them readily distinguishable. (119)

The brief third chapter (pp. 121–137) outlines the purpose of this clinical pilot study and formulates the research questions addressed and the hypotheses tested. It also describes the patient sample, the selection criteria, and the tools employed.

The principal research tool was the interview. Interviewing patients is a sensitive issue as patients often share very intimate details of their life that they would not normally disclose. Since interviews are designed to gather information rather than exchange views through mere conversation, the ability to listen is a key characteristic of the interviewer. For this the author was eminently qualified, not only because of her many years of experience — it is common for nurses to interview patients as part of everyday practice — but also because she held a qualification in basic counselling, where the emphasis is placed on listening skills.

An important factor in reducing the bias of the patient’s answers, any questions regarding exactly what it was that was being researched (i.e., the NDE) was delayed until the interview was completed.

Chapter 4 (pp. 139–244) analyses the data collected and presents results. Ten questions are addressed and ten hypotheses tested. What, for example, is the frequency of NDEs or OBEs (out-of-body-experiences) in an ITU? Within the total sample, 0.8% (two out of 243 patients) reported a NDE. When the sample of survivors of cardiac arrest was examined, the frequency of NDEs increased to 17.9% (seven out of thirty-nine patients).

Again, are the NDEs reported in this study the same as those in the literature? On interviewing the patients about their NDEs, it was apparent that what they were reporting were slightly different experiences to those in the literature. Except for the deepest NDEs in the study (Patients 10 and 11), the reports were fragmentary and many patients did not appear to understand them or did not attach any significance to them at the time of the interview. (161)

Nevertheless, most elements found in the elaborate testimonies that are reported in the literature were also found in this study, just not all of them in one and the same case (excerpt for the two patients mentioned). These elements include: meeting deceased relatives, encounters with religious figures or angels, feelings of calm or joy, bright light, ineffability, more vivid senses, very vivid colors, entering strange realms or unfamiliar places, scenes from the past, extrasensory perception, telepathy, being sent back to life, a barrier or point of no return, time distortion, accelerated thinking, the tunnel experience, and fear. For all these elements excerpts from patient interviews are provided.

Another obviously important question concerns the veracity of OBEs: could information obtained during the OBE have been gained through other means? There was at least one case in which a positive answer can be ruled out. When the patient regained consciousness, the ward round, comprising several
Neither of these unexpected, unpleasant, or frightening cases can be considered wishful thinking. Dr Sartori demonstrates this by documenting twelve cases of hallucinations, whose bizarre nature contrasts starkly with the reports of NDEs.

Clearly, neither of these unexpected, unpleasant, or frightening cases can be considered wishful thinking.

Are NDEs the same as hallucinations? Some patients admitted to the ITU hallucinated due to a variety of factors. However, their hallucinations were different from NDEs. Dr Sartori demonstrates this by documenting twelve cases of hallucinations, whose bizarre nature contrasts starkly with the reports of NDEs.

Testing the hypothesis initially formulated proved difficult for a variety of reasons, primarily due to the smallness of the samples available in this pilot study. One of the hypotheses was that NDErs will exhibit a greater reduction in the fear of death than those who come close to death but do not report a NDE. Only six of the NDErs and only two patients in the control group were followed up with regards to this hypothesis.
Out of the NDErs, Patients 10 and 11 had absolutely no fear of death following their NDE. Both were adamant of the reality of their experiences and constantly reiterated to me on follow up that death is nothing to be afraid of. These patients had the deepest NDEs in this study. Patients 6, 12 and 16 expressed a reduced fear of death; however, they were not as adamant as patients 10 and 11 that death is nothing to fear. These experiences were quite deep experiences but not as deep as patients 10 and 11. This study suggests that the deepest NDErs exhibited the least fear of death. (243)

Incidentally, neither of the two patients (10 and 11) with the deepest NDEs had heard of, or read about, NDEs before. This supports Ring who reported that prior knowledge of NDEs did not increase the likelihood of having a NDE but, if anything, decreased it.

Chapter 5 (pp. 245–326) begins with some general points about this pilot study. They are followed by a more detailed discussion of issues associated with the research questions and hypotheses. Rather unsurprisingly, the greatest opposition to the study came from the neurosurgeons.

In response to my letter to the consultants there were many positive replies, some even wishing me success with the research. However, three consultants from the same speciality — neurosurgery — specified that they did not want to be associated with such research and would not allow any patients in their care to participate in the study. All neurosurgical patients were therefore excluded due to the lack of permission from the neurosurgical consultants. (246)

The study lends support to conclusions in the literature to the effect that anaesthetics, far from being a sufficient explanation for the NDE, actually inhibit NDEs. This has important implications for current practices of palliative care of the dying.

Is it really necessary to administer high levels of strong painkilling and sedative infusions to all dying patients if they do not appear distressed or agitated? By administering such drugs there is a possibility that very valid spiritual experiences, which ease the individual’s transition into death, are removed. It is a challenge for some critical care nurses and doctors to distinguish between spiritual expressions and hallucinations. A recent study recommended that pharmacological intervention to suppress spiritual expression of the patients must be considered only if patient safety is at risk or if they request it (Arslanian-Engoren and Scott, 2003). I have found when nursing the dying and when trying to alleviate their distress that listening to the patient’s wishes or the simple act of holding their hand is usually far more beneficial than rendering them unconscious through the administration of drugs. (285)

The study also supports the hypothesis that NDErs are more likely to report spontaneous healings than those who did not report a NDE. Two NDErs reported spontaneous healings following their NDE. None of the other patients in the study, who did not report a NDE, reported any healing.

Patient 10 has mild cerebral palsy, which left him with a spastic hemiparesis of his right hand (from birth), for which he previously wore a brace. Following his admission to ITU he was able to straighten his hand. This was only disclosed to me during a follow-up interview when the patient misunderstood one of the questions I had asked as follows:

Penny: Was there anything you could do while in the ‘not solid body’ that you can’t
do in your physical body?

Patient 10: I can move my hand. [He demonstrated flexing his hand to an outstretched, open position.]

He was clearly able to open out his hand, which his wife and sister confirmed, is something he had never been able to do during the sixty years of his life. On investigation of the possible reasons for this, it was established that such a contracture would be highly unlikely to resolve without some form of operation to the ligaments and tendons. Even with intensive physiotherapy, it would be highly unlikely that such a contracture would improve to such a degree. During the patient’s stay in ITU daily physiotherapy was performed on his chest. It did not in any way involve his hand as verified by the physiotherapist. Even on discharge to the ward physiotherapy was not performed specifically on the patient’s hand, as was confirmed by his physiotherapy notes. Prior to discharge to a rehabilitation hospital the physiotherapy notes even mentioned that the weakness to his right hand now had increased muscle tone.

Patient 12 sustained severe chest trauma, a liver tear and a fractured right humerus following a road traffic accident. The orthopaedic surgeon had to delay operating on his fractured right humerus, as his condition was too life-threatening to undergo surgery. [...] When the orthopaedic surgeon went to repair the patient’s fractured arm, following his discharge from ITU, the fracture had already healed. Patient 12 reported that the surgeon was surprised of this as it was a severe break. The only explanation the surgeon could offer the patient was that head-injured patients usually heal quickly, but Patient 12 did not sustain a head injury. This case was discussed with a physiotherapist who specialises in sports injuries and it was conveyed that sufficient healing in someone so sick is unusual. (287–288)

Another interesting factor discovered during the course of this study was that the NDE is an under-reported phenomenon. Only two out of the fifteen experiences were reported spontaneously and both of these experiences were the deepest experiences in the research. The other experiences (86.6%) would not have been disclosed had the patients not been asked. In addition, several patients and relatives reported previous NDEs. They had never spoken about their experiences until they had learned about Dr Sartori’s research and were confident that they would be taken seriously. In response to articles on this research, in a women’s magazine and national newspaper, she received over 400 replies from people who had experienced a NDE in the past. Many of these NDErs had never told anyone or, in some cases, only very close members of family about the experience.

When these findings are put into the context of the thousands of documented anecdotal cases, it suggests that there are thousands more NDEs that have never been disclosed for fear of ridicule or disbelief, or, more surprisingly, because they were of little significance or deeply personal to the experiencer. (295)

Nevertheless, NDEs appear to be quite rare in consideration of how many patients are admitted to ITU with a critical illness. In the five years of data collection only fifteen NDEs were discovered. During those five years, it is estimated that 3,000 patients were admitted to ITU. Of these fifteen NDEs only two were deep experiences and of similar nature to those reported in the literature.

The discussion of “interesting cases that cannot easily be dismissed” is particu-
lar intriguing. Take patient 11, who gained information during his NDE that he was previously unaware of.

He had conversed with his deceased granddaughter who gave him a message for her mother. She said ‘...Tell Mum not to believe everything that the mediums are telling her, some are true but some are lies’. Patient 11 was not aware that his daughter had been regularly visiting mediums. . . His daughter had deliberately not told him that she had regularly been to see different mediums, as she did not want to upset him any more over the loss of his granddaughter. When the patient recovered from his period of unconsciousness, he immediately told his wife of his experience and gave her the message. She was very surprised that he should know about the visits to the mediums as she and her daughter had been very careful to keep it a secret from him. (297)

The author concludes:

These cases demonstrate that knowledge can be gained during a NDE in ways other than through the senses, while the cases of Patients 10 and 12 highlight that physical ailments appear to have been healed without medical or surgical intervention. . . . Along with the cases of spontaneous healings, they strengthen the argument that anomalous experiences occur but can’t be explained. More importantly, although anecdotal cases may be dismissed or not be taken seriously, this research emphasises that these cases cannot be explained away and can no longer be ignored. There is documented evidence which supports the patients’ testimonies. Patients 4 and 7 reported having a NDE during the time they were unconscious, due to a cardiac arrest, and should have had no brain function. This totally contradicts the current scientific world view. If these experiences can’t be explained away then we have no option but to seek alternatives to our current scientific theories. (301)

The specific area that facilitates anomalous experience appears to be the limbic system in the right temporal lobe. It has been suggested that it is the underlying factor in NDEs, OBEs, psychic powers, and religious and mystical experiences. Considering the inadequacies of reductionistic explanations, it is reasonable to suggest, as Dr Sartori does, that the brain may act as a filter and that its filter action may be correlated with the right temporal lobe and limbic system.

In any case, it is apparent that religious experiences and NDEs are now undergoing a revival. They are becoming increasingly popular with the media, are the subject of many University courses, and are being explored within the context of a new era different to that of early Christianity. The author of this path-breaking study believes that this era will gradually replace the scientific revolution that replaced religion, so that insights from both science and religion can be incorporated to enhance the evolution of the human race.

It is time to once again acknowledge these experiences and learn from the spiritual insights. Advances in consciousness studies, which are currently in their infancy, will develop rapidly and rejuvenate a spiritually depleted society. According to the materialistic view of the world, life after death cannot be possible. This research suggests that the materialistic beliefs are no longer valid and require revision and expansion. If it is confirmed with future research that NDEs and OBEs are evidence of a future life then it appears that the religious perspective of life has been correct. This research appears to corroborate what Christianity and other religions of the world have promoted with regard to life after death. However, in view of the theory advanced by this book, the belief of life after death is far too simplistic a notion. The
religious perspective suggests that a soul leaves the physical body and continues its existence independently in another realm experienced in accordance with one’s culture. This viewpoint is dependent on the soul leaving the body. This research suggests that the soul does not leave the body because it has always existed, and it existed before the body came into being. It is the body which leaves the soul and the soul then returns to its source of consciousness, what the religious-minded may refer to as God. (313–314)

NDEs can be very effective in the spiritual counselling of dying patients and in supporting their relatives. From a nursing perspective, the author observes, it is helpful for the NDEr to be given the opportunity to discuss their experience, thus helping them to integrate it into their life, giving them a greater understanding of their NDE. Hearing about the NDEs of other patients and talking to other patients is also beneficial for patients who survive the ITU and are having difficulty re-integrating into their previous lifestyle.

This was highlighted by Patient 10 in this research. He reported a deep NDE and following it underwent profound changes in his lifestyle. The fruits of his experience became apparent when he was discharged to the rehabilitation hospital where he met other patients, who had been hospitalised for various different ailments. Some of these patients were not in such good health as Patient 10, while some were physically more debilitated, being unable to even get out of bed. Patient 10 spent most of his time talking with these patients and telling them of his experience reiterating that death was nothing to fear. He reported to me that there was gradually a noticeable change in the mood and physical ability of the other patients; they appeared happier and some were even able to sit in a chair. When Patient 10 was discharged home he received many thank you cards and letters from the patients and their families (which I have seen), thanking him for all that he had done for them through sharing his experience. (317)

The brief concluding chapter (pp. 327–333) is followed by eleven appendices (pp. 335–519), an extensive bibliography (pp. 521–553) and, of course, an index. The longest appendix (107 pages) containing transcripts of patient interviews is perhaps the most fascinating part of the book. It can only be hoped that a more affordable edition of this exceptional report will soon be available.