

BOOK REVIEW

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Evidence of the Afterlife: The Science of Near-Death Experiences, by Jeffrey Long, M.D., with Paul Perry. New York, HarperOne, 2010, 215 pp., \$25.99 pb (ISBN 978-0-06-145255-0)

This book is a description and interpretation of an Internet-based study of people who have had near-death experiences—near-death experiencers (NDErs, a term Kenneth Ring coined in 1980 in his first book, *Life at Death: A Scientific Investigation of the Near-Death Experience*). At the time of this review, this book is the latest in what is becoming a long line of books on medical and psychological investigations of near-death experiences (NDEs). The list includes, but is not limited to, books by Raymond Moody (*Life After Life*, 1975), Ring, Michael Sabom (*Recollections of Death: A Medical Investigation*, 1982), editors Bruce Greyson and Charles P. Flynn (*The Near-Death Experience: Problems, Prospects, Perspectives*, 1984), Melvin Morse and Paul Perry (*Closer to the Light: Learning from the Near-Death Experiences of Children*, 1990), Peter and Elizabeth Fenwick (*The Truth in the Light: An Investigation of Over 300 Near-Death Experiences*, 1995), Sam Parnia (*What Happens When We Die?: A Groundbreaking Study into the Nature of Life and Death*, 2006), editors Janice Miner Holden, Greyson, and Debbie James (*Handbook of Near-Death Experiences: Thirty Years of Investigation*, 2009), and Pim van Lommel (*Consciousness Beyond Life: The Science of the Near-Death Experience*, 2010). Long's book consists of an Introduction, 11 chapters—the

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final nine of which he called “proofs,” and a conclusion. In this review, I will discuss each of these 13 units, then make some general and specific comments about the contents and conclusions the authors reached.

As the title of the book indicates, it is the authors’ opinion and conclusion that NDEs constitute proof that individual consciousness survives the physical death of the body. The nine proofs, Long contended, are separate lines of evidence gleaned from the NDE, each of which is sufficient to prove the thesis of the book; the nine proofs together put the truth of this hypothesis beyond doubt, according to Long.

The Introduction briefly describes Long’s background as a radiation oncologist, his family background—“I was born into a scientific family” (p. 4), and the genesis of his research project conducted under the auspices of his organization, the Near-Death Experience Research Foundation (NDERF). The introduction partly functions as an overview of the study’s research methodology. Long stated that he collected the accounts of over 1300 NDErs via his website, NDERF.org, which included his own survey and the NDE Scale that Greyson (1983) created. Long explained that his book describes the experiences of 613 consecutive responders to his website survey that included both of these components. He also gave some of the criteria he used to determine whether an individual case met his definition of an NDE. Central to these criteria was the requirement that he “considered individuals to be ‘near death’ if they were so physically compromised that they would die if their condition did not improve” (p. 5).

Long then went on to define NDE in terms of 12 elements that have by now become very well known, having been first identified by Moody (1975). They include such phenomena as: an out-of-body experience, entering a tunnel, seeing a brilliant light, and a life review. Long gave case examples from his study for each of the elements, including the relevant item from his questionnaire and the percentage of respondents who answered “yes” to the question. For example, 33.8% answered yes to the question, “Did you pass through or into a tunnel or enclosure?” And 64.6% answered yes to the question, “Did you see a light?”

At the close of the Introduction, Long gave a couple of the basic principles from which he worked: (1) “The best evidence for understanding what happens when we die would come from those who actually *did* nearly die or even experienced clinical death” (p. 18)—a statement of the crucial value of subjective experience—and (2) “It is vitally important to note that the NDERF study findings are cor-

roborated by hundreds of prior NDE studies conducted by scores of NDE researchers. . . . These other studies almost always make the same observations and come to the same conclusions as the NDERF study” (p. 18)—a statement of the necessity of the replication of study results; he also stated earlier in the introduction (3) “What is real is consistently seen among many different observations” (p. 3)—a statement of the vital necessity of intersubjective agreement among first-person accounts.

Chapter One, “First Encounters,” is a brief, semi-autobiographical account of how Long became interested in NDEs and eventually decided to embark on his research project. Long recounted that he was intrigued by an exchange in the medical literature between Dr. Richard Blacher, a skeptic, and Sabom, who had just completed his groundbreaking study of NDEs in the operating room and concluded that they were not hallucinations but, instead, were indicative of the survival of death. Long pointed out that NDEs had never been mentioned during his medical training, and this literature discussion stimulated him to study NDEs further, beginning with Moody’s *Life After Life*. Long then reported his first meeting with an NDEr and gave a brief account of her story, after which meeting he resolved to conduct his own NDE study, one that would not begin until a full 10 years after this initial encounter.

The second chapter, “Journey Toward Understanding,” continues in an autobiographical vein, picking up 10 years after the first chapter concluded. Long stated that the emergence of the Internet was critical to his idea for an NDE study, because it enabled him to survey large numbers of people from places all over the world. He pointed out that the larger the sample of participants, the more reliable a study’s conclusions. He reported reading the work of a number of people mentioned earlier in this review, as well as others, and implied later that he felt the major flaw in these studies was their relatively small sample sizes. Long then identified several strengths of a study conducted via the Internet: (1) a much larger sample size than in any previous study; (2) the possibility of obtaining a global sample; (3) the absence of an interviewer, who could possibly ask leading questions or encourage embellishment of NDEr’s stories; (4) lack of time constraints for the respondent; and (5) less reluctance on the part of NDEr’s to share their stories, due to the anonymity of the Internet.

Long also discussed two fears he had regarding his research design: fraudulent and copycat accounts. He stated that these fears turned out to be baseless: Fewer than 10 fraudulent accounts were

discovered (via inconsistencies in their stories), and a small, but unspecified, number of copycat accounts were identified by readers of the website. Long also addressed the validity of his survey by reporting the responses to a question asking whether the respondent felt that the survey adequately captured their experiences. The results were that 84.5% said “yes,” 8.8% responded with “uncertain,” and only 6.7% said “no.” Long cited these results as further evidence of the validity of his methodology.

Returning to the timeline of the project’s development, Long described the initial difficulty of obtaining participants. But after some effort, he was able to gather a sample of 22 accounts, and he found them inspiring. He quoted briefly from two of these accounts for illustration. Eventually, he had responses in over 20 languages and was able to locate volunteers to translate them. The chapter closes with brief descriptions of Long’s nine proofs of the existence of the afterlife, each of which is discussed in detail in the following nine chapters.

The first of these is Chapter Three, “Proof #1: Lucid Death.” By lucidity, Long meant clarity of consciousness and awareness, reflected in the clarity, reasonableness, and logic of NDErs’ reported memories of their experiences during their NDEs. He asserted that it is not possible for a person to have a lucid experience while unconscious or clinically dead. He then summarized NDEs from three respondents, coming close to death via three different causes, with each account reflecting a highly lucid experience. In most cases, Long reported, NDErs experience clarity of consciousness that is greater than that of everyday, physical life. From a medical perspective, this is apparently impossible, because electrical activity in the cortex of the brain is nonexistent after about 20 seconds following cessation of heartbeat.

From a psychological perspective, clarity of consciousness includes not only clarity of cognitive processes—such as thought, logic, and memory—but also clarity of sensory perceptions—including vision and audition. Long addressed this point, beginning with vision. In his sample, most NDErs reported enhanced vision compared to that during physical life, including such factors as field of vision, color perception, and brightness. In fact, many in his sample reported *spherical* vision: visual perception in all directions from their point of view in three-dimensional space. Regarding audition (hearing), Long stated that this sense is different during NDEs, but not as different as is vision. He reported that many NDErs had greater clarity of hearing, yet less localization of sound, and sometimes no localization at all. In-

terestingly, however, some respondents stated that they experienced total silence of a kind that they found very peaceful and even meditative. Clearly, Long stated, these enhanced sensory experiences are completely in opposition to the notion that consciousness ends with physical death.

One of the main strengths of this book is that Long took on the skeptics directly. Here, he addressed the argument that prior definitions of “near death” were insufficiently restrictive, thus allowing some people who were not actually near death to have their reports counted, and that these people were the ones reporting lucid experiences—presumably due to their being “normally” conscious. Long replied that his major criterion for “near death” (given above) rigorously excluded such conditions, yet his results nonetheless upheld the findings of previous, less rigorous studies. He also addressed the skeptical explanation of hypoxia—decreased oxygen to the brain—stating that hypoxia inevitably leads to memory loss, confusion, and disorientation, all quite to the contrary of reported NDEs. Finally, he discussed the so-called “Oprah factor,” the notoriety that NDEs have gained by being publicized in the media through such venues as the Oprah Winfrey Show. Long argued that there are no significant differences in his sample between NDEs experienced before and after 1975, the publication year of Moody’s first book. He cited his own research as well as that of Geena Athappily, Greyson, and Ian Stevenson (2006) in this regard.

What is typically the first phenomenon of the NDE, the out-of-body experience (OBE), is discussed in Chapter Four, “Proof #2: Out of Body,” which Long defined as “separation of consciousness from the physical body” (p. 69). Here, Long began with a brief review of Sabom’s operating room NDE work, in which Sabom verified that the NDErs’ reports of what was occurring in the vicinity of their bodies while they were clinically dead were highly accurate. Additionally, Sabom’s interviews with a control group of non-experiencers revealed that each individual made multiple major descriptive errors. Long also mentioned research by Penny Sartori, Holden, and van Lommel—whose studies replicated or otherwise substantiated Sabom’s findings. Regarding his own results, Long stated that he reviewed cases of OBEs in his data, searching for any reports that were unrealistic. Of the OBEs reported in his sample, Long reported that the overwhelming majority (97.6%) were completely realistic. In view of these results, Long asserted that “there is absolutely no scientific or medical explanation for consciousness existing apart from the body” (p. 76).

Again, Long closed the chapter by addressing the skeptical explanation for the OBE phenomenon, which is that OBEs are memory fragments produced by hearing or feeling things as the person is dying, then synthesized into a coherent story afterward. To refute this hypothesis, Long cited the complete realism of the reports and the nearly complete absence of errors in them. To further bolster his point, Long discussed highly accurate perceptions by NDErs that occur long distances from their bodies during OBEs. Such events, Long maintained, cannot occur if the skeptical explanation is correct.

The fifth chapter, “Proof #3: Blind Sight,” is a brief discussion of visual NDEs and OBEs in the blind. Long relied very little on his own study in this chapter; rather, he mainly discussed the work that Ring and Sharon Cooper had presented in their book, *Mindsight* (1999). At the outset, Long noted that “it is medically inexplicable that a person blind either at birth or shortly after birth would have an organized visual NDE” (p. 83). He then discussed the work of Ring and Cooper, giving case examples, and pointed out that blind NDErs usually are able to make at least some sense of their sudden, new visual experiences whereas previously blind people who acquire sight often require a significant amount of time to adjust to this new sensory modality. Long concluded from this difference that NDErs’ vision, whether previously blind or not, is unlike ordinary physical vision. He did report that his own study collected cases from several—he did not specify a number—people with visual impairment or legal blindness, but he gave only one brief example from his sample. Long closed the chapter by speculating on why and how a blind person can have a visual NDE and on the meaning of this phenomenon. However, he provided no firm answers to these questions. He did not, in this chapter, address any skeptical explanations of the phenomenon.

Next, in Chapter Six, “Proof #4: Impossibly Conscious,” Long addressed NDEs that NDErs had experienced while under general anesthesia. He began by stating that unconsciousness caused by general anesthesia is substantially different in many ways from unconsciousness caused by physical trauma or illness. He then reviewed the main purposes of anesthesia, including loss of memory of the procedure (amnesia) and loss of consciousness during the procedure. Despite these intentions on the part of anesthesiologists, many NDEs occur during anesthesia, and sometimes patients under anesthesia have heart attacks. This last subset of patients, who have two good reasons to have no memory of any kind of experience, nonetheless sometimes report vivid, detailed NDEs. Long gave five examples of such NDEs with a fair amount of detail for each one.

Long compared the descriptions of the anesthesia-associated NDEs with the others in his sample, using a statistical technique to look for statistically significant differences. He found only one significant difference: NDEs associated with anesthetics more often involve the tunnel phenomenon. Thus, he concluded, if the NDE were the product of brain functioning, anesthesia-related NDEs would reflect less clarity of consciousness and awareness—but this was not the case. He cited this finding as strong evidence that the brain does not produce consciousness. Long concluded this chapter by addressing the skeptical explanation that such patients have received too little anesthesia and, thus, have some level of consciousness during their procedures. He first responded that this speculation ignores NDEs associated with *overdoses* of anesthesia. Secondly, Long pointed out that anesthetic awareness has a totally different character than an NDE and involves pain, fear, unpleasantness, and no vision. Finally, Long made what I consider an interesting and important point regarding skeptical explanations in general. He stated that skeptics have offered more than 20 such explanations, all very different from each other, suggesting that skeptics cannot agree on a materialist interpretation of NDEs.

In Chapter Seven, “Proof #5: Perfect Playback,” Long took up the subject of life reviews. The chapter starts with an account of a life review from Long’s sample. Like practically all life reviews, this example contained scenes from the NDEr’s own life, seen as a kind of three-dimensional movie and presented very rapidly. Other common life review features were present, including: feeling emotions others had experienced in response to the NDEr’s actions, understanding the ramifications of one’s actions in life, and learning about the purpose of one’s life. Long noted that the life review is typically powerful and transformative for the NDEr and is often accompanied by a spiritual being who comments on the NDEr’s life but does not judge it or the NDEr; rather, it is the NDEr who judges one’s own life and actions. Long stated that many NDE researchers have reported that the primary lesson is that love and knowledge are what we humans take with us when we die. Long gave two more descriptions of life reviews from his study to illustrate this last point.

If NDEs are real, Long proposed, then they should be accurate portrayals of events in the life of the NDEr; if they are not real, the life review should contain errors in content, realism, and perhaps even hallucinatory material. Therefore, Long examined the 88 life reviews reported in his sample, looking for any content that would render the report unrealistic. He found *no* examples of unrealistic content. Also,

many respondents reported events in their life reviews that they had experienced but forgotten. Long concluded that the life reviews are real. He then addressed two skeptical explanations of this phenomenon: that it is a psychological defense mechanism—a retreat into pleasant memories as an escape—and that it is the result of electrical discharges in the memory centers of the brain—that would presumably trigger the retrieval of stored memories. As to the first explanation, Long pointed out that life reviews include all events important to an NDEr's life, not just the pleasant ones, and that in cases of sudden unconsciousness, there would be no time to develop any defense mechanism. Regarding the second explanation, Long reported the conclusions of other researchers who have determined that people with seizures, for example, do not report anything resembling any facet of NDEs, much less a life review.

In Chapter Eight, "Proof #6: Family Reunion," Long discussed the nature and identity of beings NDErs typically meet during their NDEs. These beings are usually people known to the NDEr but who had died many years before the NDE. Long began with an example from his sample, in which the NDEr meets her father, who was deceased. Long noted that if NDEs were the product of brain functioning, the most likely people to be seen would be those most recently seen rather than people who had died years ago. He cited a study by Emily Williams Kelly (2001) who analyzed 74 cases of meeting beings during NDEs. She found that 95% of these beings were relatives, whereas 5% were friends or acquaintances. Interestingly, 4% were people who were still alive at the time of the NDE. He also stated that other studies have shown that beings in dreams or hallucinations are usually people who are living. In Long's sample, 84 NDEs included beings who were described as being either dead or alive. He found that 4% of these were alive, consistent with Kelly's results.

Long took this opportunity to address a marginally related topic, that of the form of communication between NDErs and the beings they meet. He reported that in the vast majority of cases, NDErs described this communication as telepathic. He provided the case of a person who was deaf from birth but who was nonetheless able to communicate in this manner and who described it as telepathy. This is the only such case with which Long—and I—are familiar. He went on to give a few more examples of such communication, including an NDEr who met her grandmother—who had died when the NDEr was nine months old—and another who met grandparents, uncles, and aunts who had died before he knew them. A very interesting aspect

that Long brought up is that of NDErs meeting people whom they thought were alive, only to discover following the NDE that these people had died. He gave two examples of this phenomenon. Responding to the skeptical explanation that the NDEr expects to see dead relatives, Long replied that this would not explain cases such as the ones described in this paragraph.

In a change of pace, the following chapter *begins* with a skeptical explanation. In Chapter Nine, “Proof #7: From the Mouths of Babies,” Long discussed the phenomenon of childhood NDEs and their implications. He started by stating the skeptical viewpoint that media publicizing of the NDE has led to the embellishment or even fabrication of NDEs, because to have such an experience is “hip.” He repeated his earlier finding that in his research sample, he found fewer than 10 such fabrications, but he seemed to feel that this is an incomplete response to the skeptics. Long therefore turned his attention to a population that has little chance of experiencing cultural influence in this regard: very young children, whom he defined as being five years old or younger at the time of their NDEs. He stated that such NDErs have a less-developed understanding of death than older people and that they constitute a “blank slate” in terms of knowledge of death. They are, therefore, in a cultural sense, more objective witnesses. He compared, from his sample, the subpopulation of very young children to those older than five years at the time of their NDEs to see whether the elements of the experience were statistically significantly different between the two groups. He found that the two groups had the same elements in their NDEs, regardless of age, and that only two relatively minor questions showed even a trend towards significant differences. Long concluded that age is irrelevant in NDEs, a finding supporting their reality, and he cited the findings of researcher Cherie Sutherland that are in agreement with this conclusion.

In a second analysis, Long discussed his search for differences between the NDEs of older children—younger than 16 years—and adults. The only question showing a significant difference was “Did you see a light?”, wherein children were more likely to answer in the affirmative. Long’s overall conclusion was that cultural influences have no effect on the elements NDErs experience, thus disproving the skeptical explanation. He then gave a couple of examples from his sample for illustration. Finally, Long volunteered that because the accounts in his sample were retrospective, the possibility exists that there are errors in memory associated with the childhood NDE accounts. He cited the research studies of William Serdahely, Greyson,

and van Lommel that refute this objection. To conclude the chapter, Long mentioned the work of Morse in assessing the aftereffects of NDEs in children and pointed out that such children show significant differences from those who had no NDEs. These are, as Long stated, “changes in an individual that can’t be faked” (p. 145).

Long provided the penultimate proof in Chapter Ten, “Proof #8: World-Wide Consistency.” Here, he summarized the global nature and results of his research study, which he contended is the largest cross-cultural NDE study ever conducted. As the chapter title suggests, Long stated that because of this unprecedented sampling, and because his results show consistency across cultures, languages, and religions, it is fair to conclude that cultural influences play almost no role in the basic core elements of the NDE, adding great strength to his conclusion that NDEs are proof of the afterlife. He stated that his results regarding NDEs under anesthesia and those involving very young children buttress his argument. He suggested that this consistency could act to open the door to greater intercultural dialogue and understanding—and perhaps aid in the achievement of worldwide peace.

Long reviewed the composition of his sample in terms of culture, nationality, and languages. He included comparisons among accounts given in English by (a) native English speakers and (b) non-native English speakers, and includes accounts that were (c) given in other languages and translated into English. The details of his multiple analyses are beyond the scope of this review, but the outcome is fairly clear: After accounting for translation errors and interpretive difficulties, Long and his research team found no major differences in the core elements of the NDE regardless of the demographic factors listed above. Long then made the point that a full understanding of these similarities requires actually reading some of the cases, and he provided a few examples from his sample. Indeed, I was struck by the similarities between Western and non-Western NDEs, although those similarities were not always complete. In this regard, Long argued that in doing such a comparison, he encountered not only linguistic and interpretive challenges but also the challenge of the ineffability of the NDE itself that NDErs from any culture frequently mention. He noted that past studies of NDEs from non-Western cultures—which he defined as being not of Jewish or Christian heritage—have suffered from very small sample sizes and have shown major differences from Western NDEs. In Long’s sample, these differences practically disappeared. Long proposed that one factor that may account for the

differences that remained is the fact that in many non-Western cultures, the topic of death is taboo. He specifically mentioned the work of Allan Kellehear (2009) who found that the elements of the tunnel and life review appear to be specific to Western cultures. Long's study, with a much larger sample size, did not support that conclusion.

Finally, Chapter Eleven, "Proof #9: Changed Lives," focused on the aftereffects of the NDE, defined by Long as "transformations in the near-death experiencer's values, beliefs, and relations with others" (p. 174). He discussed many of the challenges facing NDErs after returning to life, including the shock of having been through a life-threatening experience; accommodating their memories of their NDEs; being met with indifference, disbelief, or other negative reactions when they try to tell their stories to others; the difficulty of expressing their experiences in words; being labeled as pathological by the medical community; and having the NDE violate their previously held beliefs. Yet, when asked in Long's survey whether their lives had been changed by the experience, 73% answered yes and only 14% said no. Some of the changes they reported include increased self-confidence, intuitive abilities, spirituality, belief in the afterlife, and appreciation of life; decreased interest in material gain and fear of death; greater interest in the welfare of others and increased compassion for others *and* the NDErs themselves; and seeking greater meaning in their occupations and personal relationships.

The skeptical explanation of this pattern of transformation is that the aftereffects are the result of coming close to death rather than having an NDE. Long argued against this explanation by saying that (a) two studies of cardiac arrest survivors found that those who had NDEs displayed many more aftereffects than those who did not; (b) three other studies that examined the "depth"—degree of detail in content—of the NDEs found that depth and degree of aftereffects were positively correlated; and (c) van Lommel's study was in agreement with (a) and (b) above. Long, van Lommel, and other researchers also noted that aftereffects can take a long time—as many as seven years—to consolidate and be recognized by the NDEr. Long then used examples to illustrate more closely some of the aftereffects, including: increased valuing of loving interactions with others; the possibility that having an NDE can physically heal a very sick person; an increase in or emergence of psychic powers in some NDErs; decreased fear of death; and increased belief in the afterlife.

Having finished his nine proofs, Long gave a very brief concluding unit, wherein he summarized his proofs and offered a bit of specula-

tion and a few ideas for future research. His major conclusion, that the afterlife exists, is no surprise, in that it appears in the title and throughout the book. He stated that his research “has profound implications for science” (p. 201), including the study of consciousness and memory, and “important implications for religion” (p. 202). Unfortunately, Long ended there without exploring any of these implications. Readers are left to ponder these questions for themselves.

For me, Long’s book was “preaching to the choir.” Ever since I read the first books by Moody (1975), Ring (1980), and Sabom (1982) in the early 1990s, I have been convinced of the reality, meaning, and implications of NDEs. It should therefore be no surprise that I agree with the overwhelming majority of Long’s observations and conclusions. My summary statement, however, would be that this book brings both good and bad news, and both are the same news: There is very little *new* here. For those who have a strong background in near-death studies, and especially for those who agree with the book’s premise, this book, although important, is not much more than a replication of prior studies and a summary of decades of research by dozens of investigators. For those who are new to the field, and for those who are skeptical but open-minded and capable of being convinced, this book may well be persuasive. For skeptics who will disagree despite the evidence, Long’s book will probably not dent their disbelief any more than all the preceding studies and books did.

I find that the book, and the research study that it describes and summarizes, has both positive and negative attributes. The positive aspects center on the features Long has himself identified, such as the large sample size and strong cross-cultural component of his sample. The negative aspects mainly concern four general areas: the style and structure of the writing along with the context in which the material is presented, several problematic features of Long’s research methodology, some language used that is not clearly warranted, and two noteworthy omissions. Although these negatives do not invalidate the study or Long’s conclusions, they nevertheless are important to identify and understand. I will begin with these, then address the positive features.

Although Long repeatedly described himself as a scientist, his writing style violated many of the rules of scientific writing. Admittedly, this book is for a lay readership and is not intended to be a scientific treatise—yet he repeatedly referred to science so deserves to be held to scientific standards. A more scientific style would have done more justice to the reader, the material, and the researchers who preceded

Long. In particular, scientific writings begin with a strong introduction, wherein a rigorous review of the literature is laid out and summarized. This background serves several purposes: It demonstrates that the author has done his or her homework; it gives the reader an introduction to what has been learned in the field so far; it gives due credit—or blame—to prior researchers in the field; it allows the reader to identify what is and is not new in the present study; and it provides a context for the present work, showing how previous studies have been flawed or incomplete and providing a rationale for the purpose and goals of the present study. Although Long did get around to citing much of the relevant work previously accomplished in NDE research, this material unfolded slowly and was intermingled with his results and discussion of them; thus, readers are robbed of a robust foundation on which to consider Long's findings.

As a somewhat minor example, Long used the term "NDEr" in the introduction but neglected to mention that Ring (1980) coined the term. There are more serious examples. In his discussion of OBEs, Long gave relatively short shrift to the pioneering work of Sabom (1982), whose examination of operating room NDEs was foundational to the concept of veridical NDEs and provided a strong basis to believe that consciousness survives death. When Long addressed childhood NDEs, he neglected to discuss the work of Morse and Perry (1990), who pioneered this line of research, except to mention the work of Morse in aftereffects in children. In the chapter regarding aftereffects, P. M. H. Atwater is barely mentioned, even though she was the originator of this aspect of near-death studies. And when Long mentioned the concept of the depth of an NDE, he again ignored Ring (1980), who established this feature as a critical aspect of the experience. Finally, Long made the statement, quoted earlier in this review, that science has yet to explain NDEs. If by this statement Long meant the reductionist, materialistic science of the status quo paradigm, then he is correct. His statement was, however, silent on this point. Personally, I found his statement problematic, in that I wrote a series of three articles in the *Journal of Near-Death Studies* during the 1990s (Arnette, 1992, 1995, 1999) doing exactly what Long stated has not been done. My scientific explanation of NDEs is non-reductionist and matches many of the features of the NDE to known physics, although in a unique—and sometimes unpopular—way; but it is nonetheless true that I have provided a scientific explanation.

Another hallmark of scientific writing is to present one's research methodology following the introduction, so that the reader is aware

of how the study was conducted. Long did provide some information on his methodology early in the book, but the largest missing piece is the survey itself, core to the study, which is presented in a fragmentary way throughout the book. A complete copy of the survey is unavailable in the book; the reader is instead referred to the NDERF website to view the actual questions that the respondents answered. It would have been easy enough, as well as very helpful and informative, for Long to have provided the survey in an appendix—and to refer to the appendix early in the book—so as not to disturb the flow of the book. Instead, readers are forced to wonder what the survey looked like, even as the results are being discussed. Many similar references to the website are scattered throughout the book, and I got the sense that Long meant for the book not to stand alone but instead to function as a kind of adjunct to the website. Not only is repeatedly directing readers to the website inconvenient for them, but it ignores the fact that not everyone has Internet access and that those who do may not want to be frequently interrupting their reading process in this way.

The methodology itself was problematic as well. The survey appears to rely heavily on yes/no questions. Therapists and qualitative researchers know to avoid this dichotomous approach whenever possible, because it reduces the flexibility and range of responses and constitutes a suggestive technique of questioning. Although it appeared that Long often followed up with more broadly worded questions, potential bias had already been partially set by his opening yes/no question. Also, Long went to great lengths to point out the advantages of his Web-based approach to the study, citing many relevant strengths of this method. However, he mentioned only two possible pitfalls when, in fact, several other problems exist. By collecting accounts without a personal interview: (a) the researcher has no opportunity to verify observations the NDEr made during the NDE, as Sabom did; (b) one cannot clarify the question for the respondent, should the respondent find the question unclear or ambiguous; (c) similarly, one cannot clarify the responses one finds confusing or incomplete; and (d) one has no chance to ask follow-up questions to the initial responses, which can often produce very interesting and valuable information. All of these opportunities were sacrificed in the effort to obtain a large sample size. Finally, regarding that sample size, Long repeatedly mentioned that he collected over 1300 accounts. However, as he himself explained early in the book, he limited most of his analyses to about 600 accounts that met certain criteria. Thus, he

has somewhat misrepresented the size of his working sample. In fact, the actual sample size, although still large by NDE research standards, does not dwarf all previous studies. For example, Long himself (p. 59) cited another research team's analysis of 520 cases (Greyson, Kelly, & Kelly, 2009).

Another detractor, as I see it, is that Long made several choices of language that are problematic and probably unwarranted. First, Long repeatedly used the term "proof" in describing his findings. But science does not, generally speaking, provide "proof" of anything; theories can be *supported* by empirical findings, but rarely *proven*. The few exceptions to this rule include, for example, the heliocentric theory of the solar system, the germ theory of disease, and the theory of the atomic nature of matter. At this point, the survival of consciousness cannot, through science, be established as a *fact*. The most science can do is narrow the gap in the leap of faith regarding survival of consciousness. Until we can study permanently dead people, we cannot know whether consciousness continues beyond the point that a body can be resuscitated. Of course the evidence indicates that it is highly likely that it does—but that is a different claim than the claim of a concluded "fact." Second, Long repeatedly used the definitive "the" with reference to afterlife. No two NDEs are alike, and taken as a whole, NDEs provide highly diverse pictures of what afterlife might be like. It is highly likely that consciousness continues in "an" afterlife—the nature of which we have only glimpsed in a most limited way through NDEs. What is the nature of experience throughout eternity during afterlife? We do not and presently cannot know. The point is that NDEs actually provide very little information about the nature of "the" afterlife, except perhaps for its initial appearance. Third, in a related vein, even the term "afterlife" should perhaps have been avoided. It is a loaded term, with much attached baggage and potentially a variety of interpretations. Long would have been on more solid ground if he had instead entitled his book "Evidence of the Survival of Death."

The point about incomplete knowledge of the exact nature of purported post-mortem consciousness is further exacerbated by what I consider to be two important omissions. First, by focusing exclusively on the contents of NDEs themselves, Long omitted attention to the fact that only a minority of survivors of close brushes with death report NDEs. Incidence of reported NDEs among all survivors has been about 35% in retrospective research and 17% in prospective research (Zingrone & Alvarado, 2009, p. 36)—meaning that about 75%

of close-brush survivors report no memory of any experience during the close brush. Long himself contributed to a recent chapter on research about the difference between the 25% who do and the 75% who don't report an NDE; he and his co-authors concluded that research as yet has indicated no clear predictors of who will or won't report an NDE (Holden, Long, & MacLurg, 2009). Whether experiences of 25% of people apply to 100% of humanity is a matter of speculation rather than science.

A further omission was attention to distressing NDEs—those dominated by painful emotions such as horror, terror, and/or guilt. Their contents range from being identical to pleasurable NDEs but somehow experienced by the NDER as upsetting, to hyperawareness of complete and eternal isolation in an endless void, to encounters in hellish environments and/or with demonic forces or entities (Bush, 2009). In her recent comprehensive review of research on NDEs through 2005, Nancy Evans Bush (2009) found that “. . . although 9 studies with 459 experiencers found no accounts of distressing NDEs (0%), 12 other studies involving 1,369 experiencers produced the accounts of 315 people (23%) who reported NDEs ranging from disturbing to terrifying or despairing” (p. 70). She concluded that the incidence of distressing NDEs is probably a percentage “. . . in the mid- to high teens . . .” of all NDEs (p. 81). Distressing NDEs' experiences appear to be equally real or hyperreal to them as pleasurable NDEs' experiences are to them. Nevertheless, Long's attention to this topic consisted of two sentences—“. . . A small percentage of NDEs are frightening to the NDER. This topic is addressed in detail on the NDERF website” (p. 9)—with a footnote that “a discussion of frightening NDEs is beyond the scope of this book” and a reiterated referral to the NDERF website (p. 204).

Admittedly, distressing NDEs complicate speculation about the nature of “the” afterlife. However, without attention to this substantial minority of NDEs' experiences, I consider such speculation to be incomplete. Long's book seems to fall into a group Bush (2009) noted, reflecting a tendency to omit attention to, downplay, or discount the validity of distressing NDEs. What limited research exists on distressing NDEs indicates no clear predictors; the most scientifically sound conclusion as of now is that anyone can have a distressing NDE. Thus, the likely result of Long's detailed attention to pleasurable NDEs and virtual omission of attention to distressing ones is that readers come away with a simplistic impression of the range of possible experiences that might await them at death. Taken together,

the finding that only about one in four people who survive a close brush with death reports an NDE, and the finding that about one-sixth of those reporting NDEs describe predominantly distressing experiences, probably leaves people with a different overall impression than the one with which they leave Long's book. Specifically, Long's omissions likely leave readers with an exaggerated sense of both the certainty and the nature of "the afterlife."

In spite of the criticisms above, this book does have several important strengths related primarily to the knowledge base regarding pleasurable NDEs. Many of these strengths are made possible by the sample size and global access to the Internet, which Long correctly identified as major positive aspects of his method. With a working sample of over 600 cases, Long can silence any skeptic who claims that the results of prior studies represented statistical anomalies rather than reproducible phenomena. With this many cases, several analyses, comparing different demographic or other groups, are possible where they had not previously been so.

This last point is evident in at least a couple of areas. First, this book is the first analysis of which I am aware in which respondents who had been under anesthesia during their NDEs were compared statistically with those who had not been. The finding of no difference in the experience goes a long way towards dispelling the skeptical explanation of the effects of ketamine or other such chemicals. Second, because the sample is cross-cultural to a greater degree than any previous sample, Long was able to put to rest the objection that NDEs are phenomena of Western cultures or that they differ significantly between Western and non-Western cultures. This information is extremely valuable. These two examples represent parts of Long's study that do indeed make unique and novel contributions to the information base on NDEs.

But even in the majority of analyses Long conducted in which information already known was confirmed or upheld, there is great value. A basic and irreplaceable aspect of science is that results found by one investigator must be reproducible by other, independent investigators. Although, as I mentioned at the outset of this review, many studies have replicated the early results of pioneers such as Moody, Ring, Sabom, and Morse, a replication such as Long's is still invaluable, again especially given the large, global sample. If anyone has doubted the robustness of NDE data, they now have little justification for such doubts. I should point out that each time Long's results

replicated previous studies, he stated this fact overtly, even if often-times he did not cite the previous researcher(s) or give references.

Another strength of the book is that it collected in one place, and in a very readable form, the major important advances in NDE research investigators have made since Moody's first study. Scholars have generated a wealth of NDE literature since that time, and it is quite easy to get lost in it and miss the big picture. Long's book solves this problem by succinctly stating the major features of pleasurable NDEs, with examples, and overtly stating the obvious—at least to me—conclusion from it all. Long did not, of course, delve into the implications of his work beyond his goal of demonstrating that human consciousness survives physical death, but to be fair, discussion of further implications was not his goal. Long is bold, clear, and straightforward in stating his basic conclusion, and I congratulate him on his courage and conviction.

Finally, as mentioned earlier in this review, a very important strength of the book is its head-on confrontation of skeptics, who have used a variety of imaginative and sometimes disingenuous arguments to try and avoid what I and many other scholars consider the obvious meaning of NDEs. Long rarely identified these skeptics by name, which is perhaps a good approach, but rather took on their ideas in a general way. He thereby avoided the appearance of ad hominem attacks, thus increasing his credibility. This response to skeptical explanations of NDEs comes at the right time in the history of near-death research, because there are now sufficient replications to lend great credibility to the body of NDE data, and the skeptics have had plenty of time to exhaust their arsenal of faulty objections. In my opinion, the battle is nearly won, and we can begin to focus on the relevance of NDEs for better understanding consciousness, human nature, and the purpose of physical life rather than arguing further over the reality of these experiences.

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