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Journal of Near-Death Studies

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Editor's Foreword

Some of my friends and colleagues who are familiar with the literature on near-death experiences (NDEs), including some prominent professors in the "hard" sciences at prestigious universities, are thoroughly convinced that NDEs are hallucinations induced by metabolic derangements and/or by psychological defenses as we approach death. They believe the evidence for that interpretation is overwhelming, and they cannot understand why I hesitate to agree with them. Other friends and colleagues familiar with the literature on near-death experiences (NDEs), again including some prominent professors in the "hard" sciences at prestigious universities, are thoroughly convinced that NDEs are glimpses of the afterlife and/or actual encounters with a spiritual or nonphysical realm. They believe the evidence for that interpretation is overwhelming, and they cannot understand why I hesitate to agree with them. Still other friends in clinical health care or in socioanthropological sciences, who value NDEs for their impact on individual experiencers or their role in cultures, find this debate uninteresting and see the origins of NDEs as irrelevant to their importance. I take this diversity of opinion among intelligent people whom I respect as evidence that no one interpretation of NDEs has yet been established beyond reasonable doubt.

This Journal has published many articles on the implications of NDEs, a few articles promoting a survival-of-death interpretation of NDEs, and still fewer articles focused on hallucinatory aspects of NDEs. Philosopher Keith Augustine has marshaled an impressive collection of arguments for the latter viewpoint, and we start this issue of the Journal with his critique of the purported evidence of paranormal perception in NDEs. We accompany this lead article with commentaries from myself, from clinical social worker Kimberly Clark Sharp, from psychologist Charles Tart, and from cardiologist Michael Sabom, all challenging Augustine's reading of the evidence; and by a response from Augustine to those commentaries. Future issues of the Journal will include Augustine's recounting of specific features of NDEs that may suggest a hallucinatory origin, and the roles of cultural differences and temporal lobe phenomenology in the interpretation of NDEs, again accompanied by commentaries by selected scholars and Augustine's response.
The purpose of this lengthy series of exchanges is to further a healthy consideration of various interpretations of NDEs in the light of all the evidence. In the interest of efficiency, we all let our preconceptions influence our interpretations of data, and at times neglect those data that do not fit our privileged notions. Preconceptions are not necessarily wrong just because they are preconceptions; they are, after all, based on something. But they should be questioned and tested before they are accepted as truth. We do not expect these dialogues in the Journal to establish or to demolish one or the other view of NDEs, but we do hope they will promote this questioning of our ideas and suggest new strategies for testing them. Questioning our assumptions, which includes welcoming data that conflict with our hypotheses, is the surest way to improve them.

The fact that we have such divergent opinions suggests to me that neither the hallucination hypothesis nor the afterlife interpretation accommodates all the data, and that a more comprehensive and productive way of thinking about NDEs may involve some combinations of these two perspectives, or perhaps some third view not yet articulated. I encourage readers to consider these arguments carefully and to share their responses for publication as Letters in the Journal.

Bruce Greyson, M.D.
Does Paranormal Perception Occur in Near-Death Experiences?

Keith Augustine, M.A.
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ABSTRACT: While most near-death researchers have disregarded reports of near-death experiences (NDEs) with hallucinatory features, many have sought cases of veridical paranormal perception during NDEs. But despite more than a quarter century of near-death studies, no compelling evidence that NDErs can obtain information from remote locations during their NDEs has been forthcoming. This paper, Part I of a critique of survivalist interpretations of NDEs, reviews the quality of the evidence for veridical observations during NDEs, and finds the case for veridical paranormal perception during NDEs wanting.

KEY WORDS: out-of-body experiences; near-death experiences; altered states of consciousness; embellishment; anesthesia awareness.

One of the major reasons that near-death experiences (NDEs) have captured the interest of Americans in recent decades has been the assumption that they provide glimpses of an afterlife (Basil, 1991; Serdahely, 1989). And by all indications, the majority of near-death researchers have taken up near-death studies precisely because they believe that NDEs provide evidence for life after death. Consequently, the hallucinatory nature of these experiences has been largely
neglected, with many near-death researchers seeking out reports implying ostensibly veridical paranormal perception during NDEs. Despite these efforts, to date no researcher has provided compelling evidence for veridical perceptions during NDEs that could have originated only from a paranormal source. In this paper, Part I of a critique of survivalist interpretations of NDEs, I review the quality of the evidence for veridical paranormal perception during NDEs.

**Veridical Paranormal Perception During Out-of-Body Experiences?**

The majority of near-death researchers are interested in the subject because they believe that NDEs provide evidence for life after death. Thus near-death researchers generally disregard hallucinatory NDEs while searching for cases of veridical paranormal perception. But at the end of the day, we are left with no compelling evidence that NDErs have actually been able to obtain information from remote locations, and we have clear evidence that NDErs sometimes have false perceptions of the physical world during their experiences.

Mark Fox (2003) provided a very balanced assessment of the evidential value of near-death experiences. As a research committee member of the Religious Experience Research Centre at the University of Wales, Lampeter, Fox is certainly no enemy of dualism. Yet he concluded that NDE research to date largely presupposes some sort of dualism rather than providing evidence for it:

This needs to be spelled out loudly and clearly: twenty-five years after the coining of the actual phrase 'near-death experience', it remains to be established beyond doubt that during such an experience anything actually leaves the body. To date, and claims to the contrary notwithstanding, no researcher has provided evidence for such an assertion of an acceptable standard which would put the matter beyond doubt. (Fox, 2003, p. 340)

In fact, very few cases of “veridical perception” during NDEs have been corroborated. In many cases, details which are said to have been accurate “are not the kind that can easily be checked later” (Blackmore, 1993, p. 114). Even the “founding father” of near-death studies, Raymond Moody, conceded that most cases of alleged veridical perception during NDEs were found well after the fact and were usually attested to only by the NDER and perhaps a few friends
And in one study Carlos Alvarado found that although nearly one-fifth of participants claimed to have made "verifiable observations" during their out-of-body experiences (OBEs), only 3 of the 61 cases even "qualified as potentially veridical when experiencers were asked to provide fuller descriptions" (Alvarado, 2000, p. 187).

Susan Blackmore (1993) and Tillman Rodabough (1985) considered at length how accurate information can be incorporated into realistic out-of-body imagery during NDEs. Both concluded that the primary source of information in the construction of out-of-body imagery was probably hearing. Rodabough noted that patients who appear to be unconscious often repeat earlier comments made by doctors and nurses even without an OBE, and "have even been able to recall operating room conversations under hypnosis" (1985, p. 108). But Blackmore pointed out that other sensory sources of information are also available to patients. She noted that a residual sense of touch during NDEs could explain accurate details about where defibrillator pads were placed or where chest injections were administered (Blackmore, 1993).

Remaining out-of-body imagery is probably derived from imagination and general background knowledge. For example, Rodabough pointed out that childhood socialization trains us to imagine how we appear to others "from the outside"; thus visualizing oneself from a third-person perspective comes naturally (Rodabough, 1985). Blackmore noted that when people were asked to imagine walking down a beach, they usually pictured themselves from above, from a bird's-eye perspective (Blackmore, 1993). Carol Zaleski suggested that we should expect some NDEs to include OBEs because the most natural way to imagine experiencing one's death is to imagine looking down on one's body from above, as people typically do when asked to imagine viewing their own burials:

The people who testify to near-death experience are neither Platonists nor Cartesians, yet they find it natural to speak of leaving their bodies in this way. There simply is no other way for the imagination to dramatize the experience of death: the soul quits the body and yet continues to have a form. (Zaleski, 1996, pp. 62–63)

Background knowledge also surely plays a role. Personal experience and media portrayals make it easy for us to imagine what a hospital scene should look like (Rodabough, 1985). Even specific details about people are fairly predictable in a hospital setting:

When either a person or their roles [sic] is well known, it is not difficult to predict dress or behavior. For example, isn't it easy to
guess that a physician will wear his greens in surgery?... Behavior, particularly where strong emotions are concerned, may be even easier to predict. Mother falls apart and begins to sob hysterically while Dad puts his arms around her in consolation and stoically keeps his anxiety inside.... [Thus] the probability of an accurate description can be high even without an out-of-body experience. (Rodabough, 1985, p. 109; emphasis added)

Blackmore ultimately concluded that “prior knowledge, fantasy and lucky guesses and the remaining operating senses of hearing and touch,” plus “the way memory works to recall accurate items and forget the wrong ones” are sufficient to explain out-of-body imagery in NDEs (Blackmore, 1993, p. 115). Cases incorporating out-of-body discrepancies, including those based on misinterpretations of scraps of conversation (Lindley, Bryan, and Conley, 1981), appear to confirm this suggestion.

Our memories are constantly reconstructed as we retell stories about our pasts. When we have an extraordinary story to tell, such as how we found ourselves out of our body, with all that that suggests about the possibility of life after death, the likelihood of exaggeration – even unintentional exaggeration – is obvious. In such cases, ultimately “the version we tell is likely to be just that little bit more interesting or poignant than it might have been” (Blackmore, 1993, p. 115).

In fact, most NDE reports were provided to researchers years after the experience itself. Ultimately, all we have to go on are after-the-fact reports of private experiences. The constant reconstruction of memory makes it difficult to know just what NDErs have actually experienced. This problem was clearly recognized by Fox:

[T]he fact that NDErs’ testimonies are indeed retrospectively composed ... arouses a suspicion that what NDErs recall – and hence narrate – about their experiences may in fact be different to what they actually experienced during their near-death crises. ... [A]ttempting to ascertain what really happens to NDErs – what the core elements of their experiences actually are in and of themselves – may be nigh on impossible to determine. ... [W]hat is remembered about an experience or situation may not actually accurately correspond to what was experienced at the time. (Fox, 2003, p. 197)

Following Zaleski, Fox also wondered to what extent people other than the NDEr play a part in composing an NDE report. Both noted, for example, Moody’s concession that he sometimes used leading questions when interviewing respondents for his 1975 Life After Life (Fox, 2003; Zaleski, 1987). Zaleski also pointed out that after urging
his respondents to speak freely, Kenneth Ring would ask specific
questions about whether his subjects encountered features of Moody's
model of the NDE, such as: "[W]ere you ever aware of seeing your
physical body?" or "Did you at any time experience a light, glow, or
patients to speak freely, he would also "delve for the elements
described in Life After Life" (Zaleski, 1987, p. 109). One wonders how
much similarity would have been found between individual NDE
accounts in the West had these early researchers simply asked their
respondents to speak freely about their experiences without steering
them in a particular direction by probing for Moody's elements.

This raises further questions about the extent to which other near-
death researchers have also used leading interviewing techniques
(Fox, 2003). As Bruce Greyson pointed out, how a counselor responds
to an NDEr "can have a tremendous influence on whether the NDE is
accepted and becomes a stimulus for psychospiritual growth or
whether it is regarded as a bizarre experience that must not be
shared" (Greyson, 2000, p. 328; emphasis added). While some
counselors might take a dismissive attitude to such experiences,
many are likely to influence NDErs in the opposite direction, and
near-death researchers seem particularly likely to reinforce an
afterlife interpretation of NDEs. This may be one reason why so
many NDErs accept that interpretation. Another may be that
widespread belief in an afterlife among the general population has
already primed NDErs to interpret unusual experiences on the brink
of death in terms of an afterlife. And on top of such outside influences,
Fox noted:

[Simply] having an experience which may appear to the subject to
point to the possibility of immortality – such as an OBE whilst resting
or sleeping, leading to the conviction that the soul can function
independently of the body – may suffice to instil in him or her an often
strong and permanent belief that personal death is not the end. ... And often their experiences are so vivid as to provide, for them, a solid
basis for drawing conclusions across a wide range of important,
existential issues: including the question of their own immortality and
its relationship to the way they live and understand their lives before
their deaths. (Fox, 2003, p. 287)

Taking an afterlife interpretation largely explains the transforma-
tive effects of NDEs on those who have them as well, though to gauge
the extent of this, it would be interesting to see if "nonbelievers" had
the same transformations as "survivalists" among NDErs.
Rodabough explained how unintentional interviewer feedback can contaminate NDE reports:

[I]f the resuscitated person gives a partially accurate account of some event taking place while he was “out,” the questioner may unintentionally give information which the resuscitated person unknowingly fits into his story. To some degree, we can visualize what we are told and not be sure which occurred first. ... This is likely to occur if the questioner wants to hear things a particular way and nonverbally reinforces the respondent when he hears what he wants. The high enthusiasm of the interviewer may unwittingly entice the respondents to embellish their experiences, and low enthusiasm may influence respondents to remain silent about puzzling or unusual experiences. (Rodabough, 1985, pp. 109–110)

In fact, in recent years a large number of NDE reports have been garnered from NDE support groups. Support group members have almost certainly shaped the content of individual NDE accounts through “biographical reshaping, deepening of commitment, and reinforcement of group belief” (Fox, 2003, p. 201).

British neuropsychiatrist Peter Fenwick asked how an experience as coherent as an NDE could be generated in a disorganized dying brain, and how it could be encoded for vivid recall later:

How is it that this coherent, highly structured experience sometimes occurs during unconsciousness, when it is impossible to postulate an organised sequence of events in a disordered brain? One is forced to the conclusion that either science is missing a fundamental link which would explain how organised experiences can arise in a disorganised brain, or that some forms of experience are transpersonal – that is, they depend on a mind which is not inextricably bound up with the brain. (Fenwick and Fenwick, 1995, pp. 235–236)

But as Gerald Woerlee pointed out, lack of oxygen to the brain blunts a subject’s judgment, creating a false confidence in one’s abilities and a false sense that one’s thinking is particularly keen – a well-known fact exhibited in the statements of clearly impaired drunk drivers. “This,” he argued, “is why people recovering from cardiac resuscitation never say their mental state during a period of consciousness such as an NDE was confused or befuddled” (Woerlee, 2004, p. 246).

Greyson offered a related argument:

[O]rganic brain malfunctions generally produce clouded thinking, irritability, fear, belligerence, and idiosyncratic visions, quite unlike the exceptionally clear thinking, peacefulness, calmness, and pre-
dictable content that typifies the NDE. Visions in patients with delirium are generally of living persons, whereas those of patients with a clear sensorium as they approached death are almost invariably of deceased persons. (Greyson, 2000, p. 334; emphasis added)

But in the case of "dreamlets" that occur during acceleration-induced loss of consciousness (G-LOC), pleasurable experiences caused by lack of oxygen to the brain during pilot blackouts, some "organic brain malfunctions" clearly produce hallucinatory experiences characterized by clarity of thought, euphoria, and the "realness" feel of the experience. As James Whinnery has reported, hypoxic G-LOC episodes have some similarities to NDEs, such as floating sensations, OBEs, visions of lights, and "vivid dreamlets of beautiful places that frequently include family members and close friends, pleasurable sensations, euphoria, and some pleasurable memories" (Greyson, 2000, p. 334). The ability to induce these dreamlets consistently in pilot centrifuges should have dispelled the myth that hypoxic hallucinations are nearly always frightening, confused, or disoriented. And the prevalence of visions of the deceased in NDEs is not surprising: patients who merely have delirium are not dying and have no particular expectation of dying. For the same reason, it should not be surprising that G-LOC dreamlets do not share other NDE features. The context of NDEs is much different, as the sensation or expectation of dying is much more likely in near-death contexts. And while Greyson pointed out that NDErs who had hallucinations prior to their NDEs describe their NDE worlds as "more real" than the world of waking hallucinations" (2000, p. 334), the proper comparison is between NDEs and very vivid and realistic hallucinations that follow a loss of consciousness, such as dreams, not waking hallucinations.

In their prospective study of NDEs, Pim van Lommel and colleagues argued that NDE-like hallucinations induced in the laboratory are simply too fragmented to be comparable to NDEs (van Lommel, van Wees, Meyers, and Elfferich, 2001). So why do NDErs recall such vivid experiences, rather than fragments of memories, if NDEs are hallucinations? Fox suggested that the answer does not lie in what is happening to the brain during the NDE, but in how NDE reports are reshaped afterward:

[It is clearly probable that both the structured story which at least some NDErs tell and its vividness and clarity may both stem from a variety of sources other than the purely private experiences of the NDErs themselves. ... [P]lot and detail may potentially hail from
a wide range of sources, including ... the behaviour of near-death researchers themselves as they attempt to draw out a story along already existing and fixed lines, and the processes which have been seen to exist when the NDEr's story is told and retold before groups (which may themselves interact in the process of composition and reshaping of the original traveller's tale). (Fox, 2003, p. 203)

In fact, the comments of NDErs themselves provide evidence that NDE accounts become more elaborate over time while NDErs' commitment to the reality of their experiences deepens. After 23 years of trying to determine the significance of her NDE, one woman commented: "It was real then. It is more real now" (Zaleski, 1987, p. 150). Another NDEr noted that what he understood and remembered about his NDE had “grown ... through the years of communicating it to others” (Zaleski, 1987, p. 150). In one of the more reliable studies of NDE incidence and transformation, van Lommel and colleagues found that the transformations widely believed to occur after NDEs actually do occur, but that “this process of change after NDE tends to take several years to consolidate” (van Lommel, van Wees, Meyers, and Elfferich, 2001, p. 2043). In other words, the transformative effect of NDEs on NDErs is not immediate, but gradual. This suggests that NDE transformations do not result from the NDE itself, but from reflecting on the meaning of the experience – that is, from the added layers of meaning and interpretation NDErs' place on their NDEs.

Rense Lange, Greyson, and James Houran have even found suggestive statistical evidence for embellishment. In the process of establishing that the NDE Scale can reliably diagnose and measure the depth of NDEs, these researchers made a curious discovery about their sample of NDErs. Plotting data on when an NDE occurred against when it was reported, they found that “when reported at a later age (50 years or older) NDE[s] appear more intense then when reported earlier (49 or younger), and the intensity of the reported NDE[s] increased with their latency (shorter vs. longer than 15 years)” (Lange, Greyson, and Houran, 2004, p. 168; emphasis added). In other words, the longer the delay between having the experience and reporting it, the more intense the NDE that was reported. As the authors noted, however, these findings conflict with those of a similar study by Alvarado and Nancy Zingrone, and David Lester found no correlation between NDE depth – as measured by Ring's Weighted Core Experience Index – and length of delay between the NDE and when it was reported (Lange, Greyson, and Houran, 2004). Conse-
quently, the discovery of embellishment in the Lange-Greyson-Houran study may have been peculiar to that particular sample of NDErs, rather than a finding that should be generalized to all NDErs. The authors suggested longitudinal studies to definitively determine the extent of embellishment in NDEs (2004, p. 173).

Further evidence that NDE accounts are continually reshaped over time to make them more coherent and interesting comes from comparisons between the NDEs reported by adults and those reported by children. Childhood NDE reports almost always consist only of memory fragments. Both Fenwick and Melvin Morse found that childhood NDEs tend to be much more fragmentary than those of adults (Fenwick and Fenwick, 1995; Morse, 1994). This makes sense, for children have fewer conceptual resources to draw on and so are much less likely to incorporate unconscious embellishments in their accounts when recalling their NDEs.

Given fragmentary experiences of any sort, the brain will often fill in the gaps with plausible guesses about what happened in the missing intervals in order for an experience to make sense. Human memory relies on plausible after-the-fact reconstructions of events that often incorporate details invented by the subject, details that were never actually experienced. For example, a witness may provide a description of a robber wearing the wrong color of clothing. Since adults have already developed complex ways of making sense of their experiences, while children have comparatively simple thought processes, it would not be surprising for adult NDErs to embellish reports of their experiences unconsciously with after-the-fact interpretations of them. This seems to be the most likely explanation for why adult NDE reports are so vivid and structured, flowing seamlessly from one NDE element to another, while childhood NDEs tend to be fragmentary.

Van Lommel and colleagues opened their discussion of the results of their landmark longitudinal study with an argument against physiological explanations for NDEs:

Our results show that medical factors cannot account for [the] occurrence of [the] NDE; although all [of our] patients had been clinically dead, most did not have [an] NDE. Furthermore, seriousness of the crisis was not related to occurrence or depth of the experience. If purely physiological factors resulting from cerebral anoxia caused [the] NDE, most of our patients should have had this experience. (van Lommel, van Wees, Meyers, and Elfferich, 2001, p. 2043)
One possible answer to this argument was anticipated in Blackmore's model of the NDE: There are different kinds of anoxia, and rate of onset, amount of time before oxygen restoration, and similar factors have to fall within the right ranges before an NDE can take place. Apparently, for the vast majority of cardiac arrest survivors, this does not happen, and so NDEs are rare among them, no matter how close they come to death as measured by some objective criterion. Another possible answer, perhaps complementary to Blackmore's, is suggested by Willoughby Britton and Richard Bootzin's (2004) research: If only a small minority of those who come close to death are physiologically predisposed to have NDEs, the vast majority will experience nothing – and this is exactly what we find.

On the other hand, what of the alternative explanation? If NDEs were really glimpses of an afterlife, why is it that only a fraction, about 10 to 20 percent of those who come close to death (van Lommel, van Wees, Meyers, and Elfferich, 2004), report them? Physiology provides a ready answer: Woerlee has calculated that around 20 to 24 percent of those undergoing cardiopulmonary resuscitation (CPR) have some degree of consciousness restored during CPR, a fraction of whom could be having NDEs precisely because the conditions are ripe for an altered state of consciousness (Woerlee, 2004). And why are NDEs not reported nearly 100 percent of the time after the controlled induction of hypothermic cardiac arrest or "standstill," where patients are clinically dead for up to an hour? The vast majority of those who come as close to death as possible without actually dying experience nothing at all (van Lommel, van Wees, Meyers, and Elfferich, 2004). If NDEs are to be understood as glimpses of an afterlife, are we to conclude that 80 percent of individuals cease to exist when they die, while the remaining 20 percent survive bodily death?

While some NDErs claim to see things accurately that they could not possibly see from their bodies, such anecdotes are difficult to corroborate, and it would not be surprising if NDErs consciously or unconsciously exaggerated the accuracy of their descriptions in order to validate their experiences. As we shall see later, many NDErs are already known to exaggerate claims about their psychic abilities after their NDEs; so it would not be surprising for them to exaggerate claims about what they saw during their out-of-body experiences as well.

The near-death literature is filled with anecdotes of NDErs providing accurate details about events that they could not have possibly learned about through normal means. But as I hope to make
clear, claims of unequivocal paranormal perception during NDEs are greatly exaggerated. Let us take a closer look at a few well-known cases widely held to provide such evidence.

Maria's Shoe

In 1984 Kimberly Clark reported a sensational case of apparent veridical paranormal perception during an NDE. Seven years earlier, in April 1977, an out-of-town migrant worker known only as “Maria” was admitted to the coronary care unit of Seattle's Harborview Medical Center after a heart attack. Three days later, Maria had a second heart attack while still hospitalized and was quickly resuscitated. When Clark came to check on Maria's condition later that day, Maria reported an OBE in which she witnessed her resuscitation from above, noting printouts flowing from the machines monitoring her vital signs. Next she reported becoming distracted by something over the area surrounding the emergency room entrance and “willing herself” outside of the hospital. She accurately described the area surrounding the emergency room entrance, which Clark found curious since a canopy over the entrance would have obstructed Maria's view if she had simply looked out of her hospital room window. Maria then became distracted by something on a third-floor window ledge on the far side of the hospital, “willing herself” to this location as well. From this apparent vantage point, she noted a left-foot man's tennis shoe on a third-floor window ledge. She described the shoe as dark blue with a worn-out patch over the little toe and a single shoelace tucked under its heel. To corroborate her story, Maria asked Clark to go look for the shoe (Clark, 1984, pp. 242-243).

Unable to see anything from outside the hospital at ground level, Clark reported, she proceeded to search room-to-room on the floor above Maria's room, pressing her face hard against the windows to see their ledges. Eventually she came across the reported shoe on the ledge outside one of the rooms, but insisted that she could not see the worn-out toe facing outward or the tucked-in shoelace from inside the room. Clark then removed the shoe from the ledge. Ring and Madelaine Lawrence hailed this report as one of most convincing cases of veridical paranormal perception during NDEs on record:

[The facts of the case seem incontestable. Maria's inexplicable detection of that inexplicable shoe is a strange and strangely beguiling sighting of the sort that has the power to arrest the
skeptic's argument in mid-sentence, if only by virtue of its indisputable improbability. (Ring and Lawrence, 1993, p. 226)

This case has taken on the status of something of an urban legend, allegedly demonstrating that Maria learned things during her OBE that she could not have possibly known about other than by actually leaving her body. But as Hayden Ebbern, Sean Mulligan, and Barry Beyerstein made clear, the details Maria reported were in fact quite accessible to her through ordinary sense perception and inference.

In 1994 Ebbern and Mulligan visited Harborview to survey the sites where the NDE took place and to interview Clark. They were unable to locate “Maria” or anyone who knew her personally and suspected that she was then deceased (Ebbern, Mulligan, and Beyerstein, 1996). They examined each of the details of Clark’s report and found the case much less impressive than it had been made out to be. First, after being hospitalized for three days, Maria would have been quite familiar with the equipment monitoring her; so her perception of the printouts during her OBE may have been nothing more than “a visual memory incorporated into the hallucinatory world that is often formed by a sensory-deprived and oxygen-starved brain” (Ebbern, Mulligan, and Beyerstein, 1996, p. 31). Second, her perception of details concerning the area surrounding the emergency room entrance were of details that “common sense would dictate” – such as the fact that the doors opened inward, accommodating paramedics rushing in patients who need immediate attention (Ebbern, Mulligan, and Beyerstein, 1996, p. 31). Moreover, she was brought into the hospital through this very entrance – albeit at night, but the area was well-lit – and could have picked up details about it from normal sensory channels then (Ebbern, Mulligan, and Beyerstein, 1996). The fact that rushing ambulances would traverse a one-way driveway, too, is something anyone could infer from common sense. Finally, Maria’s hospital room was just above the emergency room entrance for a full three days before she had her OBE, and “she could have gained some sense of the traffic flow from the sounds of the ambulances coming and going” and from nighttime “reflections of vehicle lights” even if she never left her bed (Ebbern, Mulligan, and Beyerstein, 1996, p. 32).

But what of the most persuasive aspect of her report, her description of the infamous shoe? How difficult would it have been for her to learn these details without having left her body? Ebbern and Mulligan set out to determine exactly that:
As part of our investigation, Ebbern and Mulligan visited Harborview Medical Center to determine for themselves just how difficult it would be to see, from outside the hospital, a shoe on one of its third-floor window ledges. They placed a running shoe of their own at the place Clark described and then went outside to observe what was visible from ground level. They were astonished at the ease with which they could see and identify the shoe.

Clark's claim that the shoe would have been invisible from ground level outside the hospital is all the more incredible because the investigators' viewpoint was considerably inferior to what Clark's would have been seventeen years earlier. That is because, in 1994, there was new construction under way beneath the window in question and this forced Ebbern and Mulligan to view the shoe from a much greater distance than would have been necessary for Clark. (Ebbern, Mulligan, and Beyerstein, 1996, p. 32).

As the authors noted, what was a construction area for them in 1994 was a high-traffic parking lot and recreation area back in 1977, providing an even better view of Maria's shoe than the one they saw so easily. Their 1994 "test shoe" was so conspicuous, in fact, that by the time they returned to the hospital one week later, "someone not specifically looking for it" had noticed it and removed it (Ebbern, Mulligan, and Beyerstein, 1996, p. 32). It is quite likely, then, "that anyone who might have noticed the shoe back in 1977 would have commented on it because of the novelty of its location" and Maria could have heard such a conversation and consciously forgotten about it, incorporating it into her out-of-body imagery (Ebbern, Mulligan, and Beyerstein, 1996, p. 32). Moreover, even if no one had seen it from the ground level, Ebbern and Mulligan tested Clark's claim that Maria's shoe was impossible to see from inside the room unless she pressed her face hard against the glass looking for it. This claim was found to be wanting:

They easily placed their running shoe on the ledge from inside one of the rooms and it was clearly visible from various points within the room. There was no need whatsoever for anyone to press his or her face against the glass to see the shoe. In fact, one needed only to take a few steps into the room to be able to see it clearly. To make matters worse for Clark's account, a patient would not even need to strain to see it from his or her bed in the room. So it is apparent that many people inside as well as outside the hospital would have had the opportunity to notice the now-famous shoe, making it even more likely that Maria could have overheard some mention of it. (Ebbern, Mulligan, and Beyerstein, 1996, p. 32)
The authors added that anyone who did press his or her face against the glass to get a closer look at the conspicuous shoe from inside the room could easily have seen the worn-out little toe and tucked shoelace: “we had no difficulty seeing the shoe’s allegedly hidden outer side” (1996, p. 32). They concluded:

[María’s shoe] would have been visible, both inside and outside the hospital, to numerous people who could have come into contact with her. It also seems likely that some of them might have mentioned it within earshot. ...

... [And Clark] did not publicly report the details of María’s NDE until seven years after it occurred. It is quite possible that during this interval some parts of the story were forgotten and some details may have been interpolated. ... [Moreover], we have no way of knowing what leading questions María may have been asked, or what María might have “recalled” that did not fit and was dropped from the record. (Ebbern, Mulligan, and Beyerstein, 1996, pp. 32–33)

Furthermore, Clark’s inaccurate account of how difficult the shoe was to see from both inside and out provides evidence that she subconsciously embellished significant details to bolster the apparently veridical nature of the case (Ebbern, Mulligan, and Beyerstein, 1996).

**Pam Reynolds**

As Michael Sabom recounted in *Light & Death* (Sabom, 1998), in August 1991 a then 35-year-old woman he called “Pam Reynolds” (a pseudonym) underwent an innovative procedure to remove a brain aneurysm. The procedure, inducing hypothermic cardiac arrest or “standstill,” involved lowering Reynolds’s body temperature to 60°F, stopping her heart and breathing, and draining the blood from her brain to cool it and then reintroduce it. When her body temperature had reached 60°F and she had no electrical activity in her brain, her aneurysm was removed. About 2 hours after awaking from general anesthesia, Reynolds was moved into the recovery room still intubated (Sabom, 1998). At some point after that, the tube was removed from her trachea and she was able to speak. She reported a classic NDE with a vivid OBE, moving through a “tunnel vortex” toward a “pinpoint of light” that continually grew larger, hearing her deceased grandmother’s voice, encountering figures in a bright light, encountering deceased relatives who gave her “something sparkly” to eat, and being “returned” to her body by her deceased uncle (Sabom, 1998, pp. 42–46).
The case soon became infamous because of the lack of synaptic activity within the procedure and Reynolds's report of an apparently veridical OBE at some point during the operation. But it has been sensationalized at the expense of the facts, facts that have been continually misrepresented by some parapsychologists and near-death researchers. Although hailed by some as "the most compelling case to date of veridical perception during an NDE" (Corcoran, Holden, and James, 2005), and "the single best instance we now have in the literature on NDEs to confound the skeptics" (Ring, 2000, p. 218), it is in fact best understood in terms of normal perception operating during an entirely nonthreatening physiological state.

Two mischaracterizations of this case are particularly noteworthy, as their errors of fact greatly exaggerate the force of this NDE as evidence for survival after death. First, in their write-up of their prospective study of NDEs, van Lommel and colleagues wrote:

Sabom mentions a young American woman who had complications during brain surgery for a cerebral aneurysm. The EEG of her cortex and brainstem had become totally flat. After the operation, which was eventually successful, this patient proved to have had a very deep NDE, including an out-of-body experience, with subsequently verified observations during the period of the flat EEG. (van Lommel, van Wees, Meyers, and Elfferich, 2001, p. 2044; emphasis added)

Second, in his Immortal Remains, an assessment of the evidence for survival of bodily death, Stephen Braude erroneously described the case as follows:

Sabom reports the case of a woman who, for about an hour, had all the blood drained from her head and her body temperature lowered to 60 degrees. During that time her heartbeat and breathing stopped, and she had both a flat EEG and absence of auditory evoked potentials from her brainstem. Apparently during this period she had a detailed veridical near-death OBE. (Braude, 2003, p. 274; emphasis added)

But anyone who gives Sabom's chapters on the case more than a cursory look will see two glaring errors in the descriptions above. First, it is quite clear that Reynolds did not have her NDE during any period of flat EEG. Indeed, she was as far as a patient undergoing her operation could possibly be from clinical death when her OBE began. Second, she had no cerebral cortical activity for no longer than roughly half an hour. Both of these facts are illustrated in Figure 1, which I constructed from Sabom's account.
Figure 1
Timeline of Pam Reynolds's general anesthesia. The shaded area represents the period during the procedure when Reynolds's body temperature was regulated mechanically. Most times marking events or temperatures are derived from Michael Sabom's account of Reynolds's procedure provided in Chapters 3 and 10 of Light & Death (Sabom, 1998).
Despite accurately reporting the facts, Sabom himself encouraged these misrepresentations. Though he informed the reader that Reynolds's experience began well before standstill, he revealed this incidentally, so that a careful reading of the text is required to discern the point. For instance, just after describing Reynolds's recollections of an operating room conversation, he noted, almost as an afterthought, that “[h]ypothermic cardiac arrest would definitely be needed” [emphasis mine] (Sabom, 1998, p. 42). He then went on to assert that the very features of her experience that cannot be timed happened during standstill. At first, Sabom only implied this by describing the cooling of blood leading to standstill prior to describing the remainder of Reynolds's near-death experience. Then Sabom turned to a discussion of whether Reynolds was “really” dead during her standstill state:

But during “standstill,” Pam's brain was found “dead” by all three clinical tests – her electroencephalogram was silent, her brain-stem response was absent, and no blood flowed through her brain. Interestingly, while in this state, she encountered the “deepest” near-death experience of all Atlanta Study participants.... With this information, can we now scientifically assert that Pam was either dead or alive during her near-death experience? Unfortunately, no. Even if all medical tests certify her death, we would still have to wait to see if life was restored. (Sabom, 1998, p. 49; emphasis added)

The issue of whether Reynolds was “really” dead during standstill was an extraordinarily misleading red herring in this context. And it was inaccurate for Sabom to write explicitly that her NDE occurred “while in this state.” As Sabom's own account revealed, her standstill condition had absolutely nothing to do with the time when we know that her near-death OBE began: a full two hours and five minutes before the medical staff even began to cool her blood, during perfectly normal body temperature (see Figure 1)!

Unlike the other elements of her NDE, we can precisely time when Reynolds’s OBE began because she did accurately describe an operating room conversation. Namely, she accurately recalled comments made by her cardiothoracic surgeon, “Dr. Murray,” about her “veins and arteries being very small” (Reynolds's words) (Sabom, 1998, p. 42). Two operative reports allow us to time this observation. First, in the head surgeon's report, Robert Spetzler noted that when he was cutting open Reynolds's skull, "Dr. Murray performed bilateral femoral cut-downs for cannulation for cardiac bypass" (Sabom, 1998, p. 185). So at about the same time that Spetzler was opening
Reynolds's skull, Murray began accessing Reynolds's blood vessels so that they could be hooked up to the bypass machine that would cool her blood and ultimately bring her to standstill. Second, Murray's operative report noted that "the right common femoral artery was quite small" and thus could not be hooked up to the bypass machine. Consequently, Murray's report continued, "bilateral groin cannulation would be necessary. This was discussed with Neurosurgery, as it would affect angio access postoperatively for arteriography" (Sabom, 1998, p. 185). And although Reynolds's mother was given a copy of the head surgeon's operative report (which she said Reynolds did not read), the report did not say anything about any of Reynolds's arteries being too small (Sabom, 2003).

Many have argued that Reynolds's accurate recall of an operating room conversation was strong evidence that she really did leave her body during the procedure. But there is at least one peculiar fact about Reynolds's recollections, in addition to the timing of her experience, that makes a physiological explanation of her OBE much more likely.

General anesthesia is the result of administering three types of drugs: sedatives to induce sleep or prevent memory formation, muscle relaxants to ensure full-body paralysis, and painkillers. Inadequate sedation alone results in anesthesia awareness. Additionally, if insufficient concentrations of muscle relaxants are administered, a patient will be able to move; and if an inadequate amount of painkillers is administered, a patient will be able to feel pain (Woerlee, 2005, p. 16). During a typical surgical procedure, an anesthesiologist must regularly administer this combination of drugs throughout the operation. But just prior to standstill, anesthetic drugs are no longer administered, as deep hypothermia is sufficient to maintain unconsciousness. The effects of any remaining anesthetics wear off during the warming of blood following standstill (G. Woerlee, personal communication, November 8, 2005).

About one or two in a thousand patients undergoing general anesthesia report some form of anesthesia awareness. That represents between 20,000 and 40,000 patients a year within the United States alone. A full 48 percent of these patients report auditory recollections postoperatively, while only 28 percent report feeling pain during the experience (Joint Commission on Accreditation of Healthcare Organizations, 2004). Moreover, "higher incidences of awareness have been reported for caesarean section (0.4%), cardiac surgery (1.5%), and surgical treatment for trauma (11–43%)" (Bünning and Blanke, 2005,
Such instances must at least give us pause about attributing Reynolds’s intraoperative recollections to some form of out-of-body paranormal perception. Moreover, sedative anesthetics such as nitrous oxide have been known for decades to trigger OBEs.

Sometime after 7:15 AM that morning, general anesthesia was administered to Reynolds. Subsequently, her arms and legs were tied down to the operating table, her eyes were lubricated and taped shut, and she was instrumented in various other ways. A standard electroencephalogram (EEG) was used to record activity in her cerebral cortex, while small earphones continuously played clicks into her ears to elicit auditory evoked potentials (AEPs), a measure of activity in the brain stem (Sabom, 1998).

Sabom considered whether conscious or semiconscious auditory perceptions were incorporated into Reynolds’s OBE imagery during a period of anesthesia awareness, but dismissed the possibility all too hastily:

Could Pam have heard the intraoperative conversation and then used this to reconstruct an out-of-body experience? At the beginning of the procedure, molded ear speakers were placed in each ear as a test for auditory and brain-stem reflexes. These speakers occlude the ear canals and altogether eliminate the possibility of physical hearing. (Sabom, 1998, p. 184)

But is this last claim really true? Since Sabom merely asserted this, and had an obvious stake in it being true, we are justified in questioning the basis for his assertion on such a crucial point. Did he have any objective evidence that the earphones used to measure AEPs completely cut off sounds from the external environment?

Since Sabom did not back up this claim, I did a little research on the matter. According to the National Institute of Neurological Disorders and Stroke, as a matter of procedure, a patient who is monitored by the very same equipment to detect acoustic neuromas (benign brain tumors) “sits in a soundproof room and wears headphones” (National Institute of Neurological Disorders and Stroke, 2005). But a soundproof room would be unnecessary if the earphones used to measure AEPs “occlude the ear canals and altogether eliminate the possibility of physical hearing.” It is theoretically possible that the earphones used in 1991 made physical hearing impossible, whereas the earphones used today do not. However, that would be highly unlikely because it would be far cheaper for medical institutions to continue to invest in the imagined sound-eliminating earphones, rather than
soundproofing entire rooms to eliminate external sounds. As Gerald Woerlee pointed out, “earplugs do not totally exclude all external sounds, they only considerably reduce the intensity of external sounds,” as demonstrated by “enormous numbers of people ... listening to loud music played through earplugs, while at the same time able to hear and understand all that happens in their surroundings” (www.mortalminds.org).

After being prepped for surgery, Reynolds’s head was secured by a clamp. By 8:40 AM, her entire body was draped except for her head (the site of the main procedure) and her groin (where blood vessels would be hooked up to the bypass machine to cool her blood). In the five minutes or so to follow, Spetzler opened her scalp with a curved blade, folded back her scalp, then began cutting into her skull with a Midas Rex bone saw. At this point, about an hour and a half after being anesthetized, Reynolds’s OBE began. She reported being awoken by the sound of a natural D, then being “pulled” out of the top of her head by the sound (Sabom, 1998).

“But,” Sabom asked, “was Pam’s visual recollection from her out-of-body experience accurate?” (1998, p. 186). That is indeed the question to ask regarding the veridicality of her report.

Reynolds reported that during her OBE she was able to view the operating room from above the head surgeon’s shoulder, describing her out-of-body vision as “brighter and more focused and clearer than normal vision” (Sabom, 1998, p. 41). In her report of the experience, she offered three verifiable visual observations. First, she said that “the way they had my head shaved was very peculiar. I expected them to take all of the hair, but they did not.” Second, she reported that the bone saw “looked like an electric toothbrush and it had a dent in it, a groove at the top where the saw appeared to go into the handle, but it didn’t.” Finally, she noted that “the saw had interchangeable blades ... in what looked like a socket wrench case” (Sabom, 1998, p. 41). Subsequently, she reported only auditory observations: hearing the bone saw “crank up” and “being used on something” (Sabom, 1998, p. 41), and most notably the operating room conversation initiated by Murray.

Given such vivid “perceptual capabilities” during her OBE, we would expect there to be no confusion about what Reynolds saw during the experience. So her visual observations provide an interesting test of the notion that she left her body while under general anesthesia during normal body temperature. Let us look at each of these in turn.
First, there was the observation that only part of her head was shaved. Perhaps she could have guessed this at the time of her experience, but there is no need even for that assumption in order to account for the reported observation. Surely Reynolds would have noticed this soon after awaking from general anesthesia, by seeing her reflection, feeling her hair, or being asked about it by visitors. And she certainly would have known about it, one way or the other, by the time she was released from the hospital. Indeed, if her hair had been shaved before surgery, or at any time prior to her general anesthesia, she would have known about it well before her OBE. And patients undergoing such a risky procedure are standardly given a consent briefing in which even the cosmetic effects of surgery are outlined, if not explicitly in a doctor's explanation, then at least incidentally in any photographs, diagrams, or other sources illustrating what the procedure entails. So Reynolds may have learned (to her surprise) that her head would be only partially shaved in a consent briefing prior to her experience, but “filed away” and consciously forgot about that information, given so many other more pressing concerns on her mind at the time. That would be exactly the sort of mundane, subconscious fact that we would expect a person to recall later during an altered state of consciousness. And although he did not give the exact date of the operation, Sabom reported that the procedure took place in August 1991. He later told us that he interviewed Reynolds for the first time on November 11, 1994 (Sabom, 1998). That left more than three years between the dates of Reynolds's NDE and Sabom's interview, plenty of time for memory distortions to have played a role in her report of the experience. So there is nothing remarkable about this particular observation.

Second, there was her description of the bone saw. But the very observation that provided the greatest potential for supporting the notion that she actually left her body during her OBE actually tended to count against that hypothesis. As Sabom recounted,

Pam's description of the bone saw having a “groove at the top where the saw appeared to go into the handle” was a bit puzzling. ... [T]he end of the bone saw has an overhanging edge that [viewed sideways] looks somewhat like a groove. However, it was not located “where the saw appeared to go into the handle” but at the other end.

Why had this apparent discrepancy arisen in Pam's description? Of course, the first explanation is that she did not “see” the saw at all, but was describing it from her own best guess of what it would look and sound like. (1998, p. 187)
This is precisely my point, except that, of course, Reynolds did not need to guess what the bone saw sounded like, because she probably heard it as anesthesia failed. An out-of-body discrepancy within Reynolds's NDE on the face of it implies the operation of normal perception and imagination within an altered state of consciousness. Indeed, this explanation is so straightforward that Sabom considered it before all others. And it is telling that the one visual observation that Reynolds (almost) could not have known about other than by leaving her body was the very detail that was not accurate.

Let us turn to the report of Reynolds's final visual observation during her OBE, her comment that the bone saw used "interchangeable blades" placed inside something "like a socket wrench case." This detail was also accurate; however, one need not invoke paranormal perceptual capabilities to explain it. As Woerlee noted,

[S]he knew no-one would use a large chain saw or industrial angle cutter to cut the bones of her skull open. ... Pneumatic dental drills with the same shapes, and making similar sounds as the pneumatic saw used to cut her skull open, were in common use during the late 1970s and 1980s. Because she was born in 1956, a generation whose members almost invariably have many fillings, Pam Reynolds almost certainly had fillings or other dental work, and would have been very familiar with the dental drills. So the high frequency sound of the idling, air-driven motor of the pneumatic saw, together with the subsequent sensations of her skull being sawn open, would certainly have aroused imagery of apparatus similar to dental-drills in her mind when she finally recounted her remembered sensations. There is another aspect to her remembered sensations - Pam Reynolds may have seen, or heard of, these things before her operation. All these things indicate how she could give a reasonable description of the pneumatic saw after awakening and recovering the ability to speak. (Woerlee, 2005, p. 18)

And, predictably enough, the dental drills in question also used interchangeable burs stored in their own socket-wrench-like cases.

During anesthesia awareness, and as far from standstill as a person under general anesthesia can be, Reynolds could have heard her surroundings but not seen them, since her eyes were taped shut. And the facts of her case strongly suggest that this was exactly what happened. Information that she could have obtained by hearing was highly accurate; at the same time, information that was unavailable to her through normal vision was the very information which was inaccurate. More precisely, her visual descriptions were only partially accurate: accurate on details she could have plausibly guessed or
easily learned about subsequent to her experience, and inaccurate on
details that it would be difficult to guess correctly.

In other words, OBE imagery derived from hearing and background
knowledge, perhaps coupled with the reconstruction of memory, fully
accounts for the most interesting details of Reynolds's NDE report.
After being awakened from inadequate anesthesia by the sound of the
bone saw revving up, her mind generated a plausible image of what
the bone saw used during her operation looked like, rendered from her
prior knowledge of similar-sounding dental drills. But her best guess
about the appearance of the bone saw was inaccurate regarding the
features of the bone saw that only true vision could discern: whether
there was a true groove in the instrument, and where it was located.

Moreover, the fact that Reynolds's NDE began during an entirely
nonthreatening physiological condition, under general anesthesia at
normal body temperature, implies that there was no particular
physiological trigger for the experience such as anoxia or hypoxia.
Rather, it appears that her NDE was entirely expectation-driven.
Before going into surgery, Reynolds was fully aware that she would be
taken to the brink of death while in the standstill state. Being
awakened from general anesthesia by the sound of the bone saw
appears to have induced a fear response, which in turn caused
Reynolds to dissociate and have a classic NDE. Indeed, this makes
sense of her otherwise odd report of being pulled out of the top of her
head by the sound of the saw itself.

At least five separate studies (Floyd, 1996; Gabbard and Twemlow,
1991; Gabbard, Twemlow, and Jones, 1981; Serdahely, 1995; Steven-
son, Cook, and McClean-Rice, 1989–1990) have documented cases in
which fear alone triggered an NDE. As Ian Stevenson, Emily Cook,
and Nicholas McClean-Rice concluded, “an important precipitator of
the ‘near-death experience’ is the belief that one is dying – whether or
not one is in fact close to death” (1989–1990, p. 45). They went on to
label those (otherwise indistinguishable) NDEs precipitated by fear of
death alone “fear-death experiences.” Physiologically, such NDEs
might be mediated by a fight-or-flight response in the absence of an
actual medical crisis. In a case reported by Glen Gabbard and Stuart
Twemlow, an NDER dislodged the pin of a dummy grenade that he
thought was a live one, producing a classic NDE similar to the one
Reynolds experienced:

A marine sergeant was instructing a class of young recruits at boot
camp. He stood in front of a classroom holding a hand grenade as he
explained the mechanism of pulling the pin to detonate the weapon. After commenting on the considerable weight of the grenade, he thought it would be useful for each of the recruits to get a "hands-on" feeling for its actual mass. As the grenade was passed from private to private, one 18-year-old recruit nervously dropped the grenade as it was handed him. Much to his horror, he watched the pin become dislodged as the grenade hit the ground. He knew he only had seconds to act, but he stood frozen, paralyzed with fear. The next thing he knew, he found himself traveling up through the top of his head toward the ceiling as the ground beneath him grew farther and farther away. He effortlessly passed through the ceiling and found himself entering a tunnel with the sound of wind whistling through it. As he approached the end of this lengthy tunnel, he encountered a light that shone with a special brilliance, the likes of which he had never seen before. A figure beckoned to him from the light, and he felt a profound sense of love emanating from the figure. His life flashed before his eyes in what seemed like a split-second. In midst of this transcendent experience, he suddenly realized that grenade had not exploded. He felt immediately "sucked" back into his body. (Gabbard and Twemlow, 1991, p. 42)

Gabbard and Twemlow concluded that "thinking one is about to die is sufficient to trigger the classical NDE" (Gabbard and Twemlow, 1991, p. 42). After comparing experiences that occurred in non-threatening conditions with those where subjects were actually close to death, they also concluded that no particular elements were "exclusive to near-death situations," but "several features of the experiences were significantly more likely to occur when the individual felt that death was close at hand" (Gabbard and Twemlow, 1991, p. 42; emphasis added). That expectation alone can trigger NDEs in certain individuals, then, is well-documented.

If Reynolds had truly been out of her body and perceiving, both her auditory and visual sensations should have been accurate; but when it came to details that could not have been guessed or plausibly learned after the fact, only her auditory information was accurate. Moreover, it is significant that as her narrative continued beyond the three visual observations outlined above, the remainder of her reported out-of-body perceptions were exclusively auditory. Finally, it is interesting that Reynolds reported uncertainly about the identity of the voice she heard when her OBE began: "I believe it was a female voice and that it was Dr. Murray, but I'm not sure" (Sabom, 1998, p. 42).

These facts strongly imply anesthesia awareness, and tend to count against the idea that Reynolds left her body during the operation. If
she had left her body, the fact that her account contained out-of-body discrepancies does not make much sense. But it makes perfect sense if she experienced anesthesia awareness, particularly when one looks at which sorts of information that she provided were accurate and which were not. Reynolds did not report anything that she could not have learned about through normal perception, and that is exactly what we would expect if normal perception alone was operating during her OBE. It is little wonder that Fox concluded that “the jury is still very much out over this case” (Fox, 2003, p. 210).

NDEs in the Blind?

As Blackmore reported in Dying to Live, as of 1993, even Ring conceded (in his own words) that there had not been a single “case of a blind NDEr reported in the literature where there was clear-cut or documented evidence of accurate visual perception during an alleged OBE” (Blackmore, 1993, p. 133). But Blackmore’s unsuccessful search for such cases prompted Ring and a doctoral student, Sharon Cooper, to endeavor upon a search of their own.

The results of their search were published first in their article in this Journal (1998) and in greater detail in their 1999 book Mindsight: Near-Death and Out-of-Body Experiences in the Blind. There they documented 31 cases of blind persons who had NDEs or OBEs, 10 of whom were not medically close to death at the time of their experiences. These cases were garnered from responses to an advertisement in the International Association for Near-Death Studies (IANDS) Newsletter Vital Signs, as well as from contacts in 11 different organizations for the blind. Of the 31 persons in the sample, 14 were born blind, 11 lost their sight after they were five years old, and six were highly visually impaired. Of these 31 persons, 25 reported visual sensations during their experiences, as did nine of the 14 persons blind from birth. The most startling claim made in Mindsight was not simply that some blind NDErs testified to gaining knowledge of facts that they could only have learned through a faculty like vision, but that relevant eyewitnesses could corroborate their testimony.

But was there actually strong evidence of veridical paranormal perception in Ring and Cooper’s sample of blind NDErs? One reason Fox questioned the significance of this study is that those known to acquire sight for the first time, or reacquire it after a very long time,
have difficulty making sense of their visual sensations. He noted the case of a 52-year-man who, after receiving corneal grafts, could not identify by sight a lathe that he was otherwise well-acquainted with by touch unless he was given the opportunity to touch it. Continually frustrated at his inability to interpret his visual sensations, he eventually took his own life a full two years after the operation (Fox, 2003, pp. 225–226). By contrast, Ring and Cooper's blind NDErs "appeared virtually immediately to gain the ability to perceive accurately just such things as hospitals and streetlights with virtually no difficulty whatsoever" (Fox, 2003, p. 226). While Ring and Cooper interpreted this as evidence of a previously unknown sort of synesthetic perception "transcending" normal human vision, Fox pointed out that more mundane sources, such as learning from mass media or NDE researchers that OBEs, tunnels, and lights are to be expected during near-death crises, might more satisfactorily explain the blind NDErs' testimonies (Fox, 2003). Harvey Irwin noted similar possibilities:

[These cases] may be inspired by accounts of other people's NDEs that have been widely disseminated in various forms of the media. That is, might a blind person have heard that people see certain things in a near-death encounter and unconsciously generated a fantasy that conformed to this belief? ... [Blind NDErs might also] learn about what to expect in an afterlife from diverse sociocultural sources, and they may rely extensively on these expectations in generating a near-death fantasy. ... Thus, the blind may commonly have a belief that they will suffer no visual affliction in an afterlife, and this belief may influence the content of NDEs in the blind. (Irwin, 2000, p. 111)

Fox added that Ring and Cooper's two most impressive cases were suspect as evidence for paranormal perception in the blind. In one of these cases, for instance, though an NDEr was said to have superior perceptual capabilities, such as "omnidirectional awareness" of the environment, her out-of-body "perceptions" were colorblind. But surely, Fox interjected, "we should expect in such a situation to see in colour. Indeed, we might reasonably expect to appreciate more, deeper and greater colour in such a condition, not less colour or none at all" (Fox, 2003, p. 232).

In the other case, a 33-year-old man reported an NDE when he was 8 years old. But, Fox added, one "might seriously question whether the testimony, twenty-five years after the event, of an episode that occurred to an 8-year-old boy, should qualify as one of their two most impressive cases" (Fox, 2003, p. 231). Most significantly, though, Fox
noted the statistical improbability of NDE researchers finding *any* genuine cases of NDEs in the blind:

Further, the reader may wonder at the statistical improbability of some of the events that Ring and Cooper present. NDEs seem quite rare, despite the recent publicity that has surrounded them. In this context, for example, it is worth noting that a recent study organized by British theologian Paul Badham and neuroscientist Peter Fenwick, which attempted to gain empirical support for the hypothesis that something leaves the body during an NDE, foundered because of a paucity of cases in the hospital chosen for the study. To find NDEs in the blind, therefore, would seem to be an incredibly difficult task. That Ring and Cooper found twenty-one [sic] such cases is an extraordinary achievement. That one of their two best cases [the colorblind one] was referred by the same social worker [Clark] as was involved in the celebrated 'tennis shoe' case, and indeed came from the *same hospital*, seems most striking — and incredibly statistically improbable. (Fox, 2003, p. 232)

But Fox's analysis did not end there. What of the alleged cases of veridical paranormal perceptions in these blind NDErs? While Ring and Cooper recognized the need for corroboration from others of the events NDErs report, and indeed presented cases claiming exactly that, Fox noted that “a critical reading of the quality of the data presented reveals the need for caution in accepting them unreservedly” (Fox, 2003, p. 232). He pointed out, for instance, that in one case passed on to Ring and Cooper by another NDE researcher, no one appeared to have ever followed up with potential witnesses. In another seemingly impressive case, a man who had been blind for 10 years reported an OBE after lying down on a couch, in which he could see a tie that he was wearing purchased for him by a friend who had never described it to him. The NDEr reported how amazed his friend was when he accurately described the patterns on the tie to her. But upon interviewing the friend, Ring and Cooper found that she could not really corroborate his recollection:

Although Ring and Cooper present this as a 'corroborative' case of sight during a blind respondent's out-of-body experience, it is clear that it is not. The witness does not remember clearly the events or the tie. She thus cannot corroborate the detail of the episode in question, but merely presents a testimony to Frank's apparent truthfulness and simply thinks that he was 'probably accurate' in the details he gives. ... Once again, therefore, we must exercise care with the quality of the data presented. ... More cautious commentators may be forgiven for suggesting that much stronger data are needed before
they agree that existing scientific paradigms need to be hauled down and news ones erected. (Fox, 2003, p. 234)

Thus Blackmore's conclusion about paranormal perception during NDEs prior to Ring and Cooper's study is just as poignant today as it was more than a decade ago:

I think it would not be surprising if there were many claims of paranormal perception in NDEs even if it never happened. It is my impression that it probably never does happen. ... [For the moment at least, these claims present no real challenge to a scientific account of the NDE. (Blackmore, 1993, pp. 134–135)

NDE Target Identification Experiments

The cutting edge of near-death research lies in controlled tests of veridical paranormal perception during the out-of-body phase of those NDEs that include OBEs. The detection of remote visual targets during out-of-body NDEs has the potential to provide decisive evidence of consciousness functioning independently of the body, conceivably answering the survival question once and for all. Alternatively, if NDErs are given ample opportunities to identify remote visual targets during their experiences yet fail to do so, veridicality studies offer the prospect of confirming the hallucinatory nature of these experiences. Given the importance of such experiments in either establishing or falsifying veridical paranormal perception during NDEs, it would seem remiss to conclude this paper without a survey of the results of NDE veridicality research conducted to date.

Thus far there have been five separate studies in which remote visual targets were placed in presumably NDE-conducive hospital environments. Although earlier experiments with OBEs induced at will have failed to provide compelling evidence of any paranormal processes operating during induced OBEs (Alvarado, 2000; Blackmore, 1982), one might anticipate a greater likelihood of paranormal activity during spontaneous out-of-body NDEs. The first NDE target identification experiment was carried out in the mid-1980s by Janice Minor Holden in the emergency room (ER), each room of the coronary care unit (CCU), and each room of the intensive care unit (ICU) at Lutheran General Hospital in Park Ridge, IL (Holden and Joesten, 1990). As Holden and Leroy Joesten reported, visual targets were placed
in the corners of hospital rooms in which near-death episodes were most likely to occur. ... in such a way as to be visible only from a vantage point of looking down from the ceiling. No living person was to know the exact content of the stimuli, thus rendering the design double-blind. Once the patient was resuscitated from a near-death episode in one of the “marked” rooms, knowledge of the content of the visual stimulus would be assessed. (Holden and Joesten, 1990, p. 46)

The authors went on to explain what would constitute a positive result in their study: “If [out-of-body NDErs] accurately identified card content with significantly greater frequency than other NDErs and non NDErs ... the hypothesis that [out-of-body NDErs] have veridical perception ... would be supported” (Holden and Joesten, 1990, p. 48). Unfortunately, however, in the entire year of the study, only one cardiac resuscitation occurred in the hospital areas covered by the study, to an Armenian immigrant with poor English who declined to give an interview about his resuscitation. At the same time, at least one NDE occurred in a hospital area not covered by the study (Holden and Joesten, 1990, p. 51). With no experiences to test, inevitably no positive results were reported.

A second experiment was conducted by Lawrence at Hartford Hospital in Hartford, CT, in 1994, when she was Director of Nursing Education and Research there. A scrolling light emitting diode (LED) display placed in the cardiac electrophysiology lab—though occasionally turned off—was up and running for a total of about six months (M. Lawrence, personal communication, August 7, 2006). Lawrence reported:

I placed an electronic sign high on a cabinet in the room [of the electrophysiology lab], not visible to anyone standing on the floor. In order to read the sign a person needed to use a ladder or be out of his body. It contained a nonsense statement like, “The popsicles are in bloom,” and I changed it randomly. It was nonsense so that no one could say he overheard a conversation about the words on the sign. All subjects who became unconscious during the EP [electrophysiology] studies were interviewed and asked to describe their experiences. We were hoping they had had an NDE and had read the sign. (Lawrence, 1997, pp. 158–159)

Unfortunately, although “three patients reported the early stages of an out-of-body experience,” no one had an OBE extensive enough to see the sign (Lawrence, 1997, p. 159). So the results of this study, too, can only be considered negative.

A third experiment was set up in “the medical, emergency, and coronary care units of Southampton General Hospital” in the United
Kingdom by Sam Parnia from August 1997 to August 1998 (Parnia, Waller, Yeates, and Fenwick, 2001, p. 150; S. Parnia, personal communication, August 3, 2006). For one year “boards were suspended from the ceiling of the wards. ... [with] various figures on the surface facing the ceiling which were not visible from the floor” (Parnia, Waller, Yeates, and Fenwick, 2001, p. 151). Of the 63 cardiac arrest survivors interviewed during that time, seven had some recall of the period after they lost consciousness. Of these seven, four had NDEs as defined by Greyson’s NDE Scale, two others had some NDE-like memories such as feelings of peace or seeing deceased relatives, and one other had memories unlike NDEs, such as seeing “some unknown people jumping off a mountain” (Parnia, Waller, Yeates, and Fenwick, 2001, p. 153). Though two of the four NDErs “lost awareness of their bodies,” none of them had full-blown OBEs (Parnia, Waller, Yeates, and Fenwick, 2001, p. 152).

Under the supervision of Fenwick and Paul Badham, Director of the Religious Experience Research Centre (RERC), Penny Sartori conducted a fourth target identification experiment, also in the United Kingdom, at Morriston Hospital, Swansea, from January 1998 to January 2003 (Sartori, 2004, p. 34). As Sartori explained:

At each patient’s bedside in ITU [the intensive therapy unit], mounted on the wall, is a cardiac monitor. Symbols which were mounted on brightly coloured day glow paper to attract attention were placed on the top of each monitor. These symbols were above head height and concealed behind ridges to prevent them being viewed from a standing position, thus ensuring they could only be viewed from an out-of-body perspective. (Sartori, 2004, p. 35)

Sartori added that the symbols were inconspicuously changed every two months and, being covered by a card that was removed away from her sight, ensured “that not even the author knew which symbol was on which monitor” (2004, p. 35). Though all ITU patients were interviewed in the first year of the study, for logistical reasons interviews in the remaining four years were limited to cardiac arrest survivors, those who came so close to death that their survival was unexpected, and spontaneous OBErs and NDErs (Sartori, 2004). Consistent with the findings of van Lommel, van Wees, Meyers, and Elfferich (2001), about 18 percent of the cardiac arrest survivors reported NDEs; about 5 percent of the cardiac arrest survivors reported OBEs (Sartori, 2004). In the entirety of Sartori’s five-year study, 15 patients reported NDEs or NDE-like experiences, and eight reported OBEs (Sartori, 2004, pp. 37–
Nevertheless, Sartori reported, this study also yielded negative results, as “not all of the patients rose high enough out of their bodies and some reported viewing the situation from a position opposite to where the symbols were situated” (Sartori, 2004, p. 38).

The fifth and most recent veridicality study was conducted by Greyson, Holden, and Paul Mounsey at the University of Virginia Health System Cardiac Electrophysiology Clinic from January 2004 to July 2006 in order to demonstrate whether “patients during cardiac arrest have perceptions that they could not have had normally from the position of their bodies,” as this would provide profound “evidence for the independent functioning of the mind while the brain was physiologically impaired” (Greyson, Holden, and Mounsey, 2006, pp. 94–95). Following Lawrence’s precedent, the University of Virginia study was premised on cardioversion, the controlled administration of an electric shock to the heart to restore normal heart rhythm. But whereas only about 30 percent of Lawrence’s electrophysiology patients required cardioversion in order to restore a normal heart rhythm (of which 9 percent reported NDEs) (Lawrence 1997), all 25 of the University of Virginia patients experienced at least two episodes of induced cardiac arrest in order to test implantable cardioverters/defibrillators (ICDs) (Greyson, Holden, and Mounsey, 2006).

During the two-and-a-half-year period of the study, a ceiling-facing laptop computer visible only from a perspective far above eye level was opened and laid flat on top of a cabinet or video monitor before patients entered the procedure room for ICD implantation and testing. The laptop generated clear and simple but unpredictable cartoon animations, such as a jumping frog, of varying colors quasi-randomly selected by the computer based on when it was turned on and unknown to any living person prior to the completion of the study. Although 5 patients (20 percent of the sample) acknowledged some recall of events while unconscious — such as a sense of timelessness, feelings of peace, vaguely being somewhere unfamiliar, and possibly sensing the presence of a deceased relative — no NDEs were reported, and thus no out-of-body NDEs were available to test (Greyson, Holden, and Mounsey, 2006).

Given that controlled studies of veridical paranormal perception during NDEs have been attempted only intermittently and on a small scale, it is imperative that further target identification experiments be simultaneously carried out at multiple hospitals over a period of several years. For, as Sartori noted,
If hundreds of patients report an OBE there is a greater potential for the symbols being viewed. Equally, if hundreds of patients report an OBE but none correctly identify the symbols then it could lead to the conclusion that the OBE is a mind model. (Sartori, 2004, p. 39)

In a related but hardly surprising development, similar long-term, multicenter research has already established that distant prayer, unknown to the patients being prayed for, has absolutely no effect on the health of hospitalized patients (Benson, Dusek, Sherwood, Lam, Bethea, Carpenter, Levitsky, Hill, Clem, Jain, Drumel, Kopecky, Mueller, Marek, Rollins, and Hibberd, 2006, p. 934). If past experience is any guide at all, NDE veridicality research is no more likely to overthrow our current scientific understanding of humanity's place in the universe. In the meantime, at any rate, existing veridicality research presents no challenge to the current scientific understanding of near-death experiences as hallucinations.

References


Comments on “Does Paranormal Perception Occur in Near-Death Experiences?”

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ABSTRACT: Keith Augustine's critique of studies of veridical perception in near-death experiences is based on unsubstantiated speculation from the popular media, rather than on supportive data or peer-reviewed literature. Nevertheless, addressing the issues he raises would improve the methodology of near-death research and strengthen the evidential database for veridical perception.

KEY WORDS: near-death experience; criticism; researcher bias; reliability; embellishment; veridical out-of-body perception.

Keith Augustine has done the field of near-death studies an invaluable service in raising questions about the quality and interpretation of evidence collected so far by near-death researchers. He points out weakness and ambiguities in the data and provides alternative explanations for findings that may have been overlooked by researchers. However, I believe that some of his assumptions are mistaken and that he has misconstrued the literature in some instances.

Augustine's assumption in his opening paragraph that "by all indications, the majority of near-death researchers have taken up
near-death studies precisely because they believe that NDEs provide evidence for life after death” and later that “the majority of near-death researchers are interested in the subject because they believe that NDEs provide evidence for life after death” appears to be a confounding of scholarly near-death research with popular or New Age writings on the topic. The vast majority of near-death researchers are nurses, physicians, and other clinicians who focus on the impact of NDEs on their patients, but show little if any interest in the question of survival of death. Another significant group of near-death researchers are sociologists and anthropologists who focus on the role of NDE narratives in the collective mental life of human society, most of whom specifically disavow any interest in the survival question. Only a small minority of near-death researchers even address the possibility of postmortem survival, and few of those could be said to regard NDEs as proof of survival of bodily death. The vast literature on NDEs over the past three decades has focused on transformations in attitudes and values that are reported by NDErs and on speculations about physiological mechanisms possibly underlying the phenomenon. Much of what has been written about NDEs as evidence of an afterlife has in fact been written by critics of that position. This is not just my opinion: leading near-death researchers have almost unanimously noted the lack of interest in the survival question among their fellow researchers.

Raymond Moody, whom Augustine labeled “the ‘founding father’ of near-death studies,” insisted that NDEs cannot provide evidence of survival. He wrote, “I have never equated – and I never meant to equate – my reporting of so-called ‘near-death experiences’ with a declaration on my part of the unquestioned existence of ‘life after death’” (1999, p. 8). Kenneth Ring, the most prolific scholarly near-death researcher, wrote that “we NDE researchers have been virtually unanimous in insisting that these experiences do not and cannot suggest the existence of an afterlife” (1990, p. 204).

Michael Grosso complained that “near-death research has not addressed the survival question. Near-death data have been treated phenomenologically or statistically analyzed for their relation to different variables. But researchers have not looked at data specifically with the survival hypothesis in mind” (1983, pp. 34–35). Emily Cook, Bruce Greyson, and Ian Stevenson wrote that “although reports of NDEs have proliferated during the past two decades, investigators of NDEs have with rare exceptions completely ignored the question of
the survival of consciousness after the death of the body” (1998, p. 378).

Is this near-unanimous opinion based on objective data or is it commonly shared fallacy? In preparing this commentary, I reviewed all the articles and editorials that have been published in the Journal of Near-Death Studies and its predecessor Anabiosis, as exemplars of scholarly near-death research. I counted the number of articles that claimed or assumed NDEs provide evidence for survival, those that argued against that interpretation, and those that did not concern themselves with the survival question at all. To avoid inflating the number of articles against the survival interpretation, I did not count articles promoting purely physiological or psychological interpretations as being “against” the survival interpretation unless they specifically stated that NDEs do not provide evidence for survival. Of the 326 articles published in the quarter century of the Journal’s history (Volumes 1–24), 25 (8 percent of the total) argued that NDEs provide evidence for survival, 15 (5 percent) argued that they do not, and 286 (88 percent) never addressed the question of postmortem survival. Thus more than 90 percent of the Journal’s contributors found the question of survival either inconsistent with the evidence from NDEs or irrelevant to their interest in NDEs.

On what basis then did Augustine find that the majority of near-death researchers had a vested interest in proving we survive death? Clearly Augustine is tilting at windmills here, windmills constructed by some New Age writers and their debunkers, but certainly not by scholarly near-death researchers.

Nevertheless, let me acknowledge that, even if there are only a few near-death researchers who believe that NDEs provide evidence for survival, Augustine may still be correct in his suspicion that “near-death researchers generally disregard hallucinatory NDEs while searching for cases of veridical paranormal perception.” Regardless of their assessment of the evidence to date, it may be true that near-death researchers have neglected hallucinatory features of NDEs and focused instead on the more problematic features that suggest a disconnect between mind and body. Researchers would do well to heed Augustine’s warning and examine whether their interests bias the types of data they collect.

Augustine suggests that personal experience with hospitals and media portrayals make it easier for people to imagine what went on around them when they were ostensibly unconscious. He quotes
Tillman Rodabaugh that accurate descriptions would be likely: "For example, isn't it easy to guess that a physician will wear his greens in surgery?" (Rodabaugh, 1985, p. 109). But this yet another windmill: no near-death researcher has cited such "high-probability" guesses as evidence of veridical perception. Indeed, it is only descriptions of extremely low antecedent probability that have been cited, such as one woman's accurate description of the plaid shoelaces on a nurse participating in her resuscitation (Ring and Lawrence, 1993), or one man's accurate description of his cardiac surgeon during his open-heart surgery "flapping his arms as if trying to fly" (Cook, Greyson, and Stevenson, 1998, p. 399), hardly the type of behavior typically shown in media portrayals of open-heart surgery. Both of these examples, incidentally, were corroborated by independent interviews with the doctors and nurses involved. In a specific test of ability of patients to imagine accurate resuscitation scenarios, Michael Sabom (1981, 1982) found NDErs' descriptions of their resuscitations to be highly accurate with specific veridical details, whereas those of resuscitated patients who did not report NDEs but were asked to imagine what their resuscitations must have looked like were vague and contained erroneous specifics. So the data contradict Augustine's assertion that personal experience with hospitals and media portrayals make it easy for people to imagine what went on around them when they were ostensibly unconscious.

Augustine appropriately raises the question of whether NDErs' accounts accurately reflect what they experienced. Their fidelity to the original experience is certainly not a given. But his leap from that reasonable question to his claim that these accounts were embellished or otherwise distorted is precisely the kind of untested assumption of which he accuses near-death researchers. Augustine counters what he regards as near-death researchers' blind trust in NDErs' veracity with his own blind trust in their mendacity, an equally unscientific position.

I agree with Augustine that the NDE research done so far on the question of survival is not compelling. However, mere speculation about alternative explanations of these data is even less compelling. David Lester, himself a disbeliever in survival, chided his fellow skeptics: "Although the research conducted by those who argue that NDEs are evidence for life after death is often methodologically poor, the critics of this position have published no research." (Lester, 2003, p. 255). Simply pointing out that investigators could have asked
experiencers leading questions or that corroborating witnesses could have lied or that NDErs could have remembered incorrectly is not presenting evidence that any of those things actually did happen. Any investigator in any field can always be accused of fraud, but such an accusation without supporting evidence is the weakest of arguments. As Henry Sidgwick said 125 years ago in his President’s Address at the first meeting of the Society for Psychical Research, “We have done all we can when the critic has nothing left to allege except that the investigator is in [on] the trick. But when he has nothing else left to allege he will allege that” (1882, p. 12).

Augustine raised the specific question of embellishment of NDE accounts over years: “Rense Lange, Greyson, and James Houran have even found suggestive statistical evidence for embellishment. . . . [T]he longer the delay between having the experience and reporting it, the more intense the NDE that was reported. . . . The authors suggested longitudinal studies to definitively determine the extent of embellishment in NDEs.”

This is a valid question to raise, but it has now been answered, although, in fairness to Augustine, he would have no way of knowing this. Greyson (2007) recently tracked down 72 NDErs who had completed the NDE Scale in the 1980s and had them complete the scale again, without referring to the original scale administration. Scores did not change significantly on the total NDE Scale, on any of its 4 factors, or on any of its 16 items. Correlation coefficients between scores on the two administrations were significant at $p < .001$ for the total NDE Scale, for its 4 factors, and for its 16 items. Correlation coefficients between score changes and time elapsed between the two administrations were not significant for the total NDE Scale, for its 4 factors, or for its 16 items. Thus NDE accounts in this group were not embellished over a period of two decades, and the consistency of the accounts did not diminish with increased time.

Augustine also suggests that researchers’ questions played a role in shaping NDE reports: “One wonders how much similarity would have been found between individual NDE accounts in the West had these early researchers simply asked their respondents to speak freely about their experiences without steering them in a particular direction by probing for Moody’s elements.” Again, this is a reasonable question to ask, but it too has now been answered. Geena Athappilly, Greyson, and Stevenson (2006) compared NDE accounts collected in recent years by investigators familiar with Moody’s model and narrative
accounts submitted to researchers by experiencers prior to the publication of Moody's book describing the prototypical NDE model. With the exception of the experience of a tunnel, none of the 15 features Moody described was mentioned more frequently in the recent accounts than it was in the pre-Moody spontaneous narratives. And the tunnel experience has been singled out previously by several independent researchers as being incidental to the NDE on several different empirical and theoretical grounds.

Finally, after critiquing spontaneous case reports of veridical perception, in which we can rarely rule out sensory cues, subliminal perception, memory distortions, and erroneous probability estimates, Augustine reviews controlled studies of veridical perception in NDEs and finds them equally unimpressive. He concludes that not a single case of corroborated veridical perception has been documented after a quarter century of near-death studies. This is a common complaint of debunkers, that "many years of research" has turned up no evidence of survival, as if that represented a huge outlay of resources.

In fact, veridical NDE research has been limited to just five studies with minimal or no funding. Those five studies included a total of only 12 NDEs with out-of-body components: eight in the study by Penny Sartori (2004), four in the study by Sam Parnia and his colleagues (Parnia, Waller, Yeates, and Fenwick, 2001), and none in the studies carried out by Janice Holden and Leroy Joesten (1990), by Madelaine Lawrence (1997), or by Greyson, Holden, and Paul Mounsey (2006). Twelve NDEs with out-of-body components is a rather small sample on which to base a conclusion. I would suggest that this effort is not yet worth abandoning. In fact, I am aware of one international consortium of researchers who are seeking funding for the kind of multicenter study that Augustine suggests may settle the issue one way or another.

Nevertheless, even though the sample size collected so far may be inadequate to justify confidence in Augustine's conclusion, the little evidence we have from these controlled studies points to NDErs being unable to see hidden visual targets. For those researchers who believe that the spontaneous case reports of veridical perception in NDEs are precisely what they purport to be, it is frustrating that the phenomenon has not been replicated under controlled conditions that eliminate sensory cues, control probabilities, and circumvent memory distortions. More than one researcher has attributed this failure to an inherent "trickster" quality to NDEs that teases us with anecdotal
evidence but hides from the light of controlled scientific research (Hansen, 2001; Moody, 1999; K. Ring, personal communication, August 7, 2006 – though this last source made the suggestion “tongue-in-cheek”). But as intriguing as the trickster hypothesis may be to anthropologists, it is a dead-end for neuroscientists. Researchers need to take seriously a variety of hypotheses to explain this lack of evidence, including the hypothesis that the appearance of veridical perception during NDEs is an artifact of faulty or selective memory and reporting.

I am grateful to Augustine for highlighting some of the weaknesses in this evidence, such as the self-selection and delayed reporting of cases, and for suggesting alternative explanations for some of the data that have been offered as supporting the survival hypothesis. As Harold Widdison reminded us, “Judging each other is not a weakness of any field but a sign of growing maturity. We should question each other’s research. Then, if we find weaknesses, we can correct them and do more research. So brick by brick correctly placed, we create a theoretical model that fits and helps to understand near-death phenomena” (Widdison, 2002, p. 285). I hope our field has the growing maturity to learn from critiques such as Augustine’s and to respond constructively to their challenges.

References


The Other Shoe Drops: Commentary on “Does Paranormal Perception Occur in Near-Death Experiences?”

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ABSTRACT: Keith Augustine raises questions about my report of a case of veridical out-of-body perception during a near-death experience (NDE). His analysis is based not on my original description of the case but rather on a distorted account in a magazine written by two college students who misrepresented the facts and made unwarranted assumptions to support their beliefs.

KEY WORDS: near-death experience; veridical out-of-body perception; journalistic ethics.

How interesting to have lived so long that an incident from my life has achieved “urban legend” status. I should be grateful at least that “the shoe on the ledge” story is not on a website devoted to myths and other debunked Internet stories.

The truth is that there was a Maria who observed and reported everything Keith Augustine wrote. I have not previously defended this story against debunkers precisely because it is the truth, and every attempt to discredit the truth has been so full of holes that it has not been worth my time to address it. The difference now is that in the scientific journal of the International Association for Near-Death Studies (IANDS) a skeptical response to the story of the shoe on the ledge has been built on an old article in an obscure publication that was full of inaccuracies, assumptions, and dubious ethical behaviors.

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I provided the whole detailed account of a woman named Maria who observed a number of scenes during her resuscitation at Harborview Medical Center in Seattle in the first chapter of my book, *After the Light* (Sharp, 1995). The story has not changed an iota since day one, much less been embellished, even though over the course of time my memory has certainly been affected, as evidenced by the fact that I forgot about a Nike logo on the shoe. This lapse in memory was discovered three years ago when I came across a filmed re-enactment of the event using the actual tennis shoe. In fact, I let a news crew from Philadelphia copy the tape, which was subsequently broadcast throughout the Philadelphia area as part of a local news story. Others have claimed that the shoe never existed, so I am grateful that filmed evidence exists. The film shows me as much younger in very dated clothes, thus belying any suggestion that this was a recently filmed piece.

The day that Maria had an out-of-body experience while flatlining is already stupefying without gilding the lily, though that has not stopped some authors or the media from doing so anyway. Rather than recount the whole episode, I will refer readers to the account in *After the Light* (Sharp, 1995) and will, in this response, address the article upon which Augustine has based his entire debunking case.

Although I had long since forgotten their names, I do remember the time I spent with two young men from a small college in Canada. They introduced themselves to me on the telephone before attending a Seattle LANDS meeting. The boys impressed me as sincere, enthusiastic, and genuinely interested in the subject of near-death experiences (NDEs), especially that of Maria’s NDE. They were especially persistent in their desire to visit the facility where Maria had been hospitalized. I complied with their request for a visit, because, after many years as a Clinical Assistant Professor at the University of Washington, I was a knee-jerk supporter of students’ curiosities and I wanted to be helpful. They never mentioned investigating Maria’s case, writing an article, involving a third author, or planning to submit an article for publication.

I took these two lads to Harborview Medical Center myself. I showed them from outside the building approximately where I had found the shoe because I could no longer remember which exact window it was. Further confusing the issue was the sharp downward slope of the land under the window (which I told the boys had confused me on the day I searched for the shoe, because Floor 1 looked like Floor 2, Floor 2...
looked like Floor 3, and so on), and the fact that the whole side of the building was now under new construction and was surrounded by a hurricane fence that kept us from getting anywhere close to where I had walked in search of the shoe. They pushed me so hard for an exact location that I finally pointed to a window fourth over from the corner. Ironically, this location became my "truth," but it was a window I chose in order to end the boys' discomforting persistence that I zero in on one specific spot.

The two students asked me to take them inside the hospital, but I told them we could not go into any patients' rooms because I was no longer an employee and would have to go through channels in order not to trespass. They stated their understanding and thanked me for taking the time to give them a "tour." That was the end of that, until a couple of years later, when Bruce Greyson sent me an article published in *The Skeptical Inquirer* debunking my account of finding the tennis shoe (Ebbern, Mulligan, and Beyerstein, 1996). My immediate reaction was emotional pain because I felt betrayed by those two students. But I had never heard of *The Skeptical Inquirer* and thought the article was unworthy of a response, so I let it go. Over the years, the occasional person has asked me to respond to the article, but most people, including mainstream print and television media, have seemed not to care about it. However, the article's citation in this Journal has finally prompted me to respond to the piece written by the boys, which served as the sole basis of Augustine's analysis of this case.

First, Augustine wrote: "Clark reported, she proceeded to search room-to-room on the floor above Maria's room, pressing her face hard against the windows to see their ledges." I made this statement to avoid the minutiae of describing the configurations of the various window styles I encountered in my search. One side of one section of the hospital had screened windows. Other sections of the building had different window configurations, depending on which addition of the huge complex I was exploring. Nonetheless, in many rooms things were stacked up against the lower part of the windows, and I did, in fact, have to walk up to the glass to look down upon the ledge.

Second, the boys wrote that they were unable to locate Maria, or anyone who knew her personally. In fact, they never inquired about her. I am the one who told them that I thought she was deceased, and I could have introduced them to other hospital staff who had met Maria and heard her story, if they had asked. As it turned out, after all these
years, I have accidentally run across three former hospital workers who remember "that patient who saw the shoe on the ledge when she died." I mention this because each encounter was unrelated to the others and almost immediately preceded my writing this response. I am calling these reconnections with former colleagues "mighty timely coincidences."

Third, the boys tried to discredit Maria's memories of her out-of-body experience (OBE), stating that she would have been quite familiar with the equipment monitoring her, and suggesting that her OBE was nothing more than "a visual memory incorporated into the hallucinatory world that is often formed by a sensory-deprived and oxygen-starved brain" (Ebbern, Mulligan, and Beyerstein, 1996, p. 31, cited in Augustine). They also suggested that she could have picked up details about the emergency room entrance from means not related to her OBE. In fact, I am the one who suggested these skeptical responses to the boys, skeptical responses that I described more fully in After the Light (Sharp, 1995). I was doubting Maria's account because I had not dealt with my own NDE, and I fought hard to come to a reasonable conclusion about how Maria could have observed her resuscitation team. One feature the boys cited as conclusive regarding Maria's OBE was that she described all of the paper on the floor. In fact, that was paper flowing out of the electrocardiogram (EKG) machine onto the floor and kicked under the bed. No one ever educates a cardiac patient to that level of detail. There is absolutely no way that she would have known about the paper. It was not taught, it was not discussed, and it is never shown in television and movies depicting cardiac arrest.

Fourth, the boys stated that they could see a running shoe of their own at the place I described from the ground level. Of course they could; they were a half block away. When I looked for the shoe from the ground, I was following a sidewalk that hugged the building, completely unable to see something visible on the ledge a few stories above me. In fact, the reason I went inside to look was because a bird flew onto a ledge above me and I lost sight of it. That was when I realized that I would not be able to find a smallish object outside the building. Because of construction when the boys visited the shoe site, they could not go anywhere near the same sidewalk, even if it had existed at the time, which it did not, having been built over by a new addition. I told the boys this significant detail, but this did not seem to deter them from going to another location and then proudly
announcing they could see the shoe. It is not surprising that they could see it from their better vantage point. I wish I had thought of looking from a half block away at the time, but I probably would have been mowed down by an ambulance.

Fifth, I am appalled that the boys trespassed in the hospital and actually entered a two-bed patient room and messed around with the window. Despite the fact that they specifically knew they did not have permission and had not even sought permission in the first place, they apparently had no ethical concerns about their behavior. Besides the act of trespassing, the floor they were on houses people just out of the coronary care unit and the intensive care unit, people with infectious diseases, and people who are immune-suppressed. By trespassing in these patients’ rooms, they potentially endangered sick people, in addition to violating their privacy. So in other words, the boys asked readers to believe what they wrote in their article despite their having had no problem being dishonest in the first place.

Sixth, they suggested that Maria could have overheard some mention of the shoe, which would be difficult since she spoke very little English, certainly not the level that would have been required to comprehend the details of a shoe’s appearance and location in the building.

Seventh, the boys said that they had no difficulty seeing the shoe’s allegedly hidden outer side. I did have difficulty. Perhaps the boys somehow managed to open the window and stick their heads out.

Eighth, they wrote that I did not publicly report the details of Maria’s NDE until seven years after it occurred. How did they define “public”? Before that time, I had told anyone who would listen about the shoe; it certainly was not a secret. I had included the story at a nurses’ conference at another Seattle hospital and had even spoken about it on a live Seattle television show. Obviously I had “gone public.”

Ninth, the article stated that no one would have a way of knowing what leading questions Maria may have been asked or what Maria may or may not have “recalled” that did not fit and was dropped from the record. I translate that as calling me a liar. However, I was there; they were not. How convenient for them to be able to reach such easy conclusions without any supporting evidence other than their imaginations.

Lastly, they suggested that I subconsciously embellished the details to bolster the case, but less than two years ago I discovered that I had
in fact un-embellished the shoe. I came across an old video, mentioned above, of a re-enactment of the shoe story for a television show. The shoe used for the show was *the* shoe. I was shocked to see a Nike symbol on the ankle. I had not remembered that at all. As I have stated, shortly thereafter, I loaned this tape to a Philadelphia news station, which broadcast for the public to see the so-called “non-existent” shoe.

In summation, it was not a good idea for Augustine to build a case on one obscure article written by a couple of kids from a small Canadian college without attempting to confirm their report. And now the other shoe has finally dropped.

**References**


**Commentary on “Does Paranormal Perception Occur in Near-Death Experiences?”**

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**EDITOR'S ABSTRACT AND NOTE:** In this commentary, Charles Tart critiques Keith Augustine's deconstruction of Pam Reynolds's near-death experience (NDE) while undergoing cerebral aneurysm surgery using the hypothermic cardiac arrest (“standstill”) procedure. However, after drafting this initial response to Augustine’s paper, family medical problems prevented Tart from researching and polishing his comments as thoroughly as he would have wished. He has approved our publication of this commentary but regrets that it is not up to his usual standard.

**KEY WORDS:** near-death experience; hypothermic cardiac arrest; life after death; brainstem auditory evoked response; electroencephalogram.

I would like to address inaccuracies and misleading statements in Keith Augustine’s discussion of Pam Reynolds's near-death experience (NDE). In Augustine’s discussion of this NDE, he wrote that “The case soon became infamous.” His use of the term “infamous” is biased and unscientific reporting, and already prejudges the case. A sentence later he continued: “But it has been sensationalized at the expense of the facts, facts that have been continually misrepresented.” However, he did not provide any evidence either that this case has been sensationalized or that the facts have been misrepresented; this is another *a priori* dismissal.

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Augustine wrote that Reynolds's NDE "is in fact best understood in terms of normal perception operating during an entirely nonthreatening physiological state." This is an odd way to characterize being effectively dead with only the hope that the equipment and surgeons will pull you back. Later he wrote: "Before going into surgery, Pam was fully aware that she would be taken to the brink of death while in the standstill state." That would certainly make the surgery a pretty threatening condition from a psychological perspective.

Augustine argued that it is misleading to claim that Reynolds's NDE occurred during her hypothermic cardiac arrest, when her electroencephalogram (EEG) and evoked potentials showed no brain activity: it is quite clear that Reynolds did not have her NDE during any period of flat EEG. Indeed, she was as far as a patient undergoing her operation could possibly be from clinical death when her OBE began.

This statement is biased and incorrect. Sabom reported that the veridical parts of Reynolds's NDE occurred before cardiac "standstill," but her description "They were feeding me" implied quite clearly that her NDE went on all through the standstill, to and beyond the reinfusion of warmed blood. I am not sure of the relevance of Augustine's statement that "she had no cerebral cortical activity for no longer than roughly half an hour." Thirty minutes of complete cardiac arrest and absent brainwaves are certainly sufficient to raise questions about her ability to think clearly and perceive accurately during that period.

Augustine implied deceptive motivation to Sabom: "Despite accurately reporting the facts, Sabom himself encouraged these misrepresentations." Might Sabom's description simply be ambiguous rather than intentionally misleading? Augustine provided as an example of Sabom's deception: "Though he informed the reader that Reynolds's experience began well before standstill, he revealed this incidentally, so that a careful reading of the text is required to discern the point." On the contrary, Sabom made it quite obvious that her NDE began well before cardiac standstill.

Augustine further accused Sabom of erroneously implying that Reynolds's NDE occurred when she was dead or near death, quoting him as writing:

But during "standstill," Pam's brain was found "dead" by all three clinical tests – her electroencephalogram was silent, her brain-stem response was absent, and no blood flowed through her brain.
Interestingly, while in this state, she encountered the “deepest” near-death experience of all Atlanta Study participants.

Augustine viewed these comments as an attempt to mislead, but Reynolds’s description of her NDE occurring up to and beyond warmed blood infusion makes Sabom’s inference quite reasonable. It is unreasonable only if one ignores experiential evidence and assumes that Reynolds’s NDE was over before cardiac standstill. Augustine went on to argue:

As Sabom’s own account revealed, her standstill condition had absolutely nothing to do with the time when we know that her near-death OBE began: a full two hours and five minutes before the medical staff even began to cool her blood, during perfectly normal body temperature (see Figure 1)!

Augustine has a valid point here about timing. The bone saw cutting was done around 9:00, total standstill at 11:20, and Sabom’s presentation of Reynolds’s NDE did not seem to fill all that time. However, Reynolds’s own account of her NDE suggested that many things occurred during that period about which Sabom did not ask her.

Augustine was guilty of his own misrepresentation in his description of the blocking and monitoring of Reynolds’s hearing: “A standard electroencephalogram (EEG) was used to record activity in her cerebral cortex, while small earphones continuously played clicks into her ears to elicit auditory evoked potentials (AEPs), a measure of activity in the brain stem.” This is a major distortion of the facts. Augustine counted on everyone knowing that “small earphones” do not fit very tightly, and that sound from the room can leak in around them. But Sabom specifically described them as “small molded speakers,” and molding to an individual ear canal is like wearing ear plugs that shut out sounds much more effectively. Augustine also neglected to mention the 100-decibel level of these clicks, which is the level of sound of a full symphony orchestra playing really loud, masking room noise quite effectively. Because Augustine knew that these were molded speakers, he appeared to be deliberately misrepresenting facts to bolster his own case, just as he accused Sabom of doing.

Augustine wrote that he “did a little research on the matter” and concluded that Sabom’s claim that Reynolds could not hear was false. He discovered that patients being evaluated for brain tumors sit in a soundproof room and wear headphones to measure their auditory evoked potentials:
But a soundproof room would be unnecessary if the earphones used to measure AEPs “occlude the ear canals and altogether eliminate the possibility of physical hearing.” It is theoretically possible that the earphones used in 1991 made physical hearing impossible, whereas the earphones used today do not. However, that would be highly unlikely because it would be far cheaper for medical institutions to continue to invest in the imagined sound-eliminating earphones, rather than soundproofing entire rooms to eliminate external sounds. As Gerald Woerlee pointed out, “earplugs do not totally exclude all external sounds, they only considerably reduce the intensity of external sounds,” as demonstrated by “enormous numbers of people ... listening to loud music played through earplugs, while at the same time able to hear and understand all that happens in their surroundings.”

This is a clever argument, but it is unsupported by any data. I have tried muff-type headphones, which are not as tight a seal around the ear as molded speakers would be, and with 100-decibel sound piped in I could not hear anything of a conversational level in the room around me. Critics should try this instead of just imagining what is or is not possible.

Augustine also discounted Reynolds’s account of her experience because she did not provide positive visual descriptions of everything that happened: “Given such vivid ‘perceptual capabilities’ during her OBE, we would expect there to be no confusion about what Reynolds saw during the experience.” But this is an arbitrary statement. Obviously, people can be confused in ordinary vision, especially looking at unfamiliar things.

Augustine later made much of a minor error in Reynolds’s description of the bone saw used to cut open her skull, namely that the groove she described in the saw’s handle was not where she described it as being: “it is telling that the one visual observation that Reynolds (almost) could not have known about other than by leaving her body was the very detail that was not accurate.” Instead of all this supposition, it would be more useful to have some empirical studies of how people describe the bone saw after a brief glance. I thought Reynolds’s description was pretty accurate.

Augustine continued this theme: “If Reynolds had truly been out of her body and perceiving, both her auditory and visual sensations should have been accurate.” Here Augustine assumed a certain model of OBEs and NDEs that is not necessarily correct. He continued: “it is interesting that Reynolds reported uncertainly about the identity of the voice she heard when her OBE began: ‘I believe it was a female
voice and that it was Dr. Murray, but I'm not sure.” As I noted, normal perceptions are often unclear, so Reynolds's uncertainty about the identity of Dr. Murray is of no evidential value.

He dismissed her observation that only part of her head was shaved on the grounds that she could have guessed this at the time of her experience, but there is no need even for that assumption in order to account for the reported observation. Surely Reynolds would have noticed this soon after awaking from general anesthesia, by seeing her reflection, feeling her hair, or being asked about it by visitors. And she certainly would have known about it, one way or the other, by the time she was released from the hospital.

This argument basically accuses Reynolds of lying about what she claimed to have seen — a convenient way to throw out data, but hardly scientific. He went on to suggest that Reynolds may have learned (to her surprise) that her head would be only partially shaved in a consent briefing prior to her experience, but "filed away" and consciously forgot about that information, given so many other more pressing concerns on her mind at the time. That would be exactly the sort of mundane, subconscious fact we would expect a person to later recall during an altered state of consciousness.

But this is certainly an odd claim: is Augustine asserting that altered states deal only with the mundane?

Augustine also discounted Reynolds's account of her NDE because of the time lapse between its occurrence and its reporting:

although he did not give the exact date of the operation, Sabom reported that the procedure took place in August 1991. He later told us that he interviewed Reynolds for the first time on November 11, 1994 (Sabom, 1998). That left more than three years between the dates of Reynolds's NDE and Sabom's interview, plenty of time for memory distortions to have played a role in her report of the experience.

To say this is to throw away all the common reports by NDErs that their experience is vividly remembered, along with the statistical evidence of no significant alteration in NDE memories over years (Alvarado and Zingrone, 1997–98; Greyson, 2007; Lange, Greyson, and Houran, 2004; Lester, 2003; van Lommel, van Wees, Meyes, and Elfferich, 2001).

Augustine argued that Reynolds "did not need to guess what the bone saw sounded like, since she probably heard it as anesthesia
failed.” This is quite an accusation against the anesthesiologist that he was incompetent enough to allow this sort of surgery to start when Reynolds was not adequately anesthetized. That is not an impossibility, but it is the wildest speculation postulating a highly unlikely event.

Finally, Augustine noted “At least five separate studies ... have documented cases in which fear alone triggered an NDE.” But the fact that some people can have an NDE induced by fear does not necessarily show that all NDEs, and particularly Reynolds’s, were induced by fear.

References

Commentary on “Does Paranormal Perception Occur in Near-Death Experiences?”

Michael B. Sabom, M.D.
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ABSTRACT: Keith Augustine raises questions regarding Pam Reynolds’s near-death experience (NDE) while undergoing cerebral aneurysm surgery using the hypothermic cardiac arrest (“standstill”) procedure. I specifically address questions regarding anesthesia and brainstem auditory evoked response procedures; and the relation of Reynolds’s NDE to “standstill” and life after death.

KEY WORDS: near-death experience; hypothermic cardiac arrest; life after death; brainstem auditory evoked response; electroencephalogram.

I have read and agree with Charles Tart’s Commentary on Keith Augustine’s discussion of Pam Reynolds’s NDE reported in my book Light & Death (Sabom, 1998). I would like to make a few additional comments.

First, Augustine wrote:

But just prior to standstill, anesthetic drugs are no longer administered, as deep hypothermia is sufficient to maintain unconsciousness. The effects of any remaining anesthetics wear off during the warming of blood following standstill (G. Woerlee, personal communication, November 8, 2005).

Reynolds was placed on cardiopulmonary bypass at 10:50 A.M. and cooling of blood was begun. At 11:10 A.M., the somatosensory cortical response evoked from her left median nerve was “flat line.” At 11:24...
A.M., her brainstem evoked response was documented to be "flat line." At 11:25 A.M., cardiopulmonary bypass was shut off, blood was drained from her head, and the aneurysm was clipped. At 11:30 A.M., she was placed back on cardiopulmonary bypass and her blood was gradually rewarmed over the next 65 minutes.

Although anesthetics were discontinued during deep hypothermia and prior to standstill, isoflurane was reinstituted 35 minutes into the rewarming procedure at 12:05 P.M., and nitrous oxide was reinstituted at 12:50 P.M. Both anesthetics were continued without interruption until surgery ended around 2:00 P.M.

Second, Augustine wrote:

First, it is quite clear that Reynolds did not have her NDE during any period of flat EEG.... As Sabom's own account revealed, her standstill condition had absolutely nothing to do with the time when we know that her near-death OBE began: A full two hours and five minutes before the medical staff even began to cool her blood, during perfectly normal body temperature (see Figure 1)!

The question here is not when Reynolds's NDE began, but when it ended. Reynolds described her NDE as an uninterrupted, continuous experience perceived to be as real at the beginning, during her "out-of-body" experience, as it was throughout. According to her, the NDE ended at the close of surgery around 2:00 P.M., a time frame that included the period of "standstill" and "flat EEG." Arthur Hastings pointed out:

In NDE research, the initial stage of leaving the body (an OBE) often involves perception of the physical location, such as an operating room or an accident scene. These perceptions can be verified, and thus can provide an external confirmation of the subjective OBE report. If it is assumed that the continuation of the NDE perception is just as valid as the OBE perception, then the implication is that the further visionary settings have some kind of independent reality that acts as a stimulus for the perception. However, there is no way of knowing at present whether the assumption of continuity is justified (Hastings, 2002, p. 94).

My reconstruction of Reynolds's combined autoscopic and transcendental NDE as a continuous, unbroken encounter was based entirely on her testimony - testimony correlated at times with events in the operating room. Interestingly, Reynolds's claim of continuity within her experience is consistent with virtually all other reports of combined NDEs that I have studied over the past 30 years.
Augustine asserted, on the other hand, that “it is quite clear that Reynolds did not have her NDE during any period of flat EEG.” This assertion – one which has been created out of nothing, assumes discontinuity within Reynolds's NDE, and runs counter to Reynolds's testimony and to other descriptions of combined NDEs – is anything but “quite clear.”

Third, Augustine quoted Gerald Woerlee as writing: “earplugs do not totally exclude all external sounds, they only considerably reduce the intensity of external sounds.” Steven Cordova, Neuroscience Manager at the Barrow Neurological Institute, who was the intraoperative technologist responsible for inserting small molded speakers into Robert Spetzler’s patients in the early 1990s when Reynolds’s surgery was performed, told me that after these speakers were molded into each external auditory canal, they were further affixed with “mounds of tape and gauze to seal securely the ear piece into the ear canal” (S. C. Cordova, personal communication, October, 10, 2006). This “tape and gauze” would “cover the whole ear pinnae” making it extremely unlikely that Reynolds could have physically overheard operating room conversation one hour and twenty five minutes after anesthesia had been induced.

Fourth, Augustine wrote:

Two mischaracterizations of this case are particularly noteworthy, as their errors of fact greatly exaggerate the force of this NDE as evidence for survival after death.... Despite accurately reporting the facts, Sabom himself encouraged these misrepresentations.

I offered Reynolds's case with no life-after-death strings attached. From a scientific standpoint, I wrote:

Even if all medical tests certify her death, we would still have to wait to see if life was restored. Since she did live, then by definition she was never dead. Doctors can save people from death and rescue some who are close to death, but they cannot raise people from the dead. (Sabom, 1998, pp. 49–50)

From a theological standpoint, I wrote: “I conclude that modern-day descriptions of NDEs are not accounts of life after death” (Sabom, 1998, p. 198). The evidence suggests that

[t]here is no definable moment of death, but only a process of dying which starts with life and eventually ends in death. The journey through a near-death experience may best be understood as an experiential counterpart to this physical dying process. (Sabom, 1998, p. 51)
In *Light & Death*, I offered this disclaimer:

Further exploration of Pam's case continues to raise the same questions: If we accept what she “saw” or “heard” as being accurate, then could she have been told about it either before or after the surgery to allow for the correct description, could she have somehow known about it from her own knowledge, or could it have been just coincidence? These are all legitimate questions that continue to becloud the claim of the near-death experiencer that “I saw it from the ceiling.” For some, evidence arising from cases such as Pam's will continue to suggest some type of out-of-body experience occurring when death is imminent. For others, the inexactness which arises in the evaluation of these cases will be reason enough to dismiss them as dreams, hallucinations, or fantasies.... [T]he promise of Pam's near-perfect laboratory conditions, with its detailed and accurate physiological data, gives us tantalizing clues, but no definite answers. (Sabom, 1998, pp. 189–190)

I am certain of the existence of life after death. This certainty, however, does not rest on “proofs” derived from NDE research, but on truths centered in my Christian faith.

**References**

"Does Paranormal Perception Occur in Near-Death Experiences?" Defended

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ABSTRACT: Four preceding commentaries present a variety of criticisms of "Does Paranormal Perception Occur in Near-Death Experiences?": that most near-death researchers do not interpret near-death experiences (NDEs) as evidence for life after death; that near-death researchers never appeal to NDE accounts incorporating predictable or uncorroborated details as evidence for veridical paranormal perception during NDEs; that reliable data contradict my critique of near-death veridicality studies; that it is unscientific to suggest a role for embellishment in NDE reports; that the patient in the Maria’s shoe case reported veridical details that she could not have learned about through conventional means; and that my critique of the Pam Reynolds case amounts to an "a priori dismissal" of features suggesting veridical paranormal perception or consciousness in the absence of brain activity. I respond to each of these and other criticisms in kind.

KEY WORDS: out-of-body experiences; survival hypothesis; veridical paranormal perception; embellishment; anesthesia awareness.

According to Bruce Greyson, my critique of near-death veridicality research — particularly my claim that the majority of near-death researchers interpret NDEs as evidence for survival after death — is founded on “unsubstantiated speculation from the popular media” rather than any scientific data or scholarly literature. In fact, the claim is an inference based on the explicit comments of prominent near-death researchers themselves, including the very researchers...
Greyson cites, as well as the focus of their research. Admittedly, the inference is not supported by any direct survey data; to my knowledge no surveys on the beliefs of near-death researchers have yet been done. But it is specious to describe my claim as the result of nothing more than how near-death researchers have been portrayed by the popular media. Moreover, there are some relevant, albeit indirect, survey data here.

First, in 1980 Robert McConnell and T. K. Clark published a survey of the beliefs of 203 members (84 percent) of the Parapsychological Association. McConnell and Clark found that the parapsychologists surveyed were most skeptical about the case for survival after death, with only 11 percent of Parapsychological Association members affirming that survival had either been demonstrated by, or made probable in light of, the parapsychological evidence. Moreover, prominent parapsychologists have been ambivalent about the relevance or import of existing parapsychological evidence to the survival question (Broad, 1925; Broughton, 1991; Irwin, 2002; Radin, 1997).

By contrast, near-death researchers are far more likely to be sympathetic to life after death. Greyson notes that “The vast majority of near-death researchers are nurses, physicians, and other clinicians.” A 2005 survey by Farr Curlin, John Lantos, Chad Roach, and Sarah Sellergen found that American physicians were roughly one-and-a-half times more likely to affirm life after death than scientists in general, with 59 percent of American physicians reporting belief in life after death, as compared to the 38 percent of American scientists who expressed belief in “human immortality” in a 1996 survey by Edward Larson and Larry Witham. By comparison, the 1998 General Social Survey found that about 82 percent of the general population of the United States affirmed belief in life after death (Greeley and Hout, 1999). Thus rates of belief in life after death among nurses and other clinicians are almost certainly even higher than those among physicians.

Greyson accuses me of conflating “scholarly near-death research with popular or New Age writings” on NDEs. But this is simply not the case. I said that the majority of near-death researchers believe that NDEs provide evidence for life after death, regardless of what they think near-death research has scientifically established. Surely there is a distinction between how a researcher assesses evidence as a scientist — what he or she believes the field has demonstrated — and what he or she personally believes to be the best interpretation of that evidence as an individual.
Near-death researchers as a whole may “show little if any interest in the question of survival of death,” but that would be no indication that they lack such interest. Hence Greyson’s claim that “Only a small minority of near-death researchers even address the possibility of postmortem survival” in academic publications is entirely compatible with my claim that the majority of them interpret NDEs as evidence for survival. Researchers are far more guarded about their conclusions within the scholarly literature than in what they personally believe; and except for the most stoic of scholars, personal beliefs are typically revealed in interviews and popular works. Moreover, if “few of those [who publish academic work on NDEs and survival] could be said to regard NDEs as proof of survival of bodily death,” surely that is because they know the difference between personal interpretations of the findings of near-death research, and what findings near-death research has established.

Accordingly, that most NDE research “has focused on transformations in attitudes and values that are reported by NDErs” is hardly surprising, whatever the beliefs of near-death researchers. It is much easier to answer straightforward empirical questions about the transformative effects of NDEs than it is to establish their ontological significance. And as far as beliefs about survival are concerned, the real issue is not whether “speculations about physiological mechanisms possibly underlying the phenomenon” constitute a considerable portion of the near-death literature, but whether near-death researchers as a whole tend to promote or discredit purely physiological explanations of NDEs.

Most near-death researchers tend to (hastily) conclude that if current models cannot fully explain NDEs, that is because no purely psychophysiological explanation of them is possible. Penny Sartori’s speculations are typical:

Previous arguments against [transcendental interpretations of] the NDE are no longer valid. Such discoveries indicate that the current scientific worldview needs to be revised and expanded. According to the current worldview, consciousness is merely a by-product of the brain and without the brain there can be no conscious awareness. However, [NDE] research ... appears to demonstrate that conscious awareness does occur when the brain has ceased to function. (2004, p. 39; italics added)

Indeed, prominent near-death researchers are apt to employ a mutually reinforcing dual strategy to undermine any psychophysiological explanation of NDEs: appealing to veridical perceptions that
purportedly cannot be explained by normal means, and claiming that
NDEs occur during a period of no brain activity. Consider the
concluding comments of Pim van Lommel and colleagues:

How could a clear consciousness outside one's body be experienced at
the moment that the brain no longer functions during a period of
clinical death with flat EEG? ... Furthermore, blind people have
described veridical perception during out-of-body experiences at the
time of this experience. (van Lommel, van Wees, Meyers, and
Elfferich, 2001, p. 2044)

That consciousness ever functions outside of the body during NDEs
is the very issue in dispute. The Reynolds case is widely celebrated
precisely because researchers have erroneously attributed both
features – veridical paranormal perception and consciousness without
brain activity – to Reynolds's NDE. While technically these features
"do not necessarily tell us anything about postmortem conditions," if
ever jointly demonstrated (with veridicality allowing us to correlate
perceptions to a period of brain inactivity), they would show that
consciousness can persist independently of a functioning brain, and
that would make it quite "conceivable that [minds] are capable of
functioning after the body dies" (Greyson 2000, p. 341). I doubt that
any near-death researcher who believes that the mind can function in
the complete absence of brain activity for any period of time
nevertheless believes that it ceases to exist once brain activity
permanently ceases. Such minimalistic dualism is probably as close
as one can get to affirming survival without actually doing so.

Consequently, advocating consciousness in the absence of brain
activity is tantamount to advocating discarnate survival. While
awareness in the absence of brain activity does not technically
demonstrate the postmortem persistence of consciousness, the issue
is what most near-death researchers believe, not what they can prove.
And few near-death researchers, I suspect, would deny that an actual
separation of mind and body implies survival after death (making it
more likely than not), even if it does not strictly entail it.

In any case, Greyson acknowledges that near-death researchers
may very well tend to emphasize NDE cases with "the more
problematic features that suggest a disconnect between mind and
body," while neglecting cases with hallucinatory features that tend to
undermine such a disconnect, or at least the need to postulate one.
And this is the fundamental issue here. For if the majority of near-
death researchers approach the phenomenon assuming that NDEs
provide evidence for mental activity outside of the brain, that will surely color how they do their NDE research.

Such a bias has already impacted what sorts of issues near-death research has addressed. Countless examples could be enumerated. First, there are attempts to rule out all purely physiological explanations of NDEs. Second, there are experiential comparisons between NDEs and drug-induced or naturally occurring hallucinations, clearly motivated by a desire to distinguish NDEs from these other things. Similar comparisons have been made between spontaneous OBEs and electrochemically induced ones (for example, ketamine-induced OBEs or OBEs resulting from electrical stimulation of the temporo-parietal junction). Third, near-death researchers have repeatedly argued, despite few reliable data, that NDEs are remarkably consistent across cultures, no doubt to bolster the notion that purported crosscultural consistency results from a shared external reality. Finally, there is a concerted effort to corroborate the paranormal nature of NDEs, whether in the systematic search for "veridical cases," compilations of NDErs’ claims to have gained psychic abilities after their NDEs or prophesied future events during them, or reports of NDErs seeing recently deceased persons they could not have known about beforehand during their experiences.

Perhaps Greyson should survey previous issues of the Journal of Near-Death Studies for those sorts of issues instead of sparse explicit discussions of survival. A substantial portion of the near-death literature addresses them. Little near-death research, by comparison, has been devoted to divergent ends. Just how much near-death literature has aimed to bolster psychophysiological explanations of NDEs, note similarities between NDEs and other kinds of hallucinations, emphasize variability in NDE content between cultures, or question the quality of the data claiming NDEs with paranormal characteristics? Some of the literature has aimed to do these things; but overall, it is undeniably unbalanced. For instance, there is nothing even remotely like a concerted effort by any prominent near-death researcher to document known hallucinatory NDE cases.

Greyson’s citation of Raymond Moody and Kenneth Ring, of all investigators, as examples of prominent near-death researchers who do not take NDEs to be evidence for survival is surprising. According to Greyson, Moody even insists "that NDEs cannot provide evidence for survival" when he writes: 'I have never equated ... my reporting of so-called 'near-death experiences' with a declaration on my part of the
unquestioned existence of 'life after death.'” But Greyson’s inference does not follow from Moody’s words: Moody has simply acknowledged that NDEs do not constitute proof of survival, not that they provide little or no evidence for it. And it strains credulity to think that Moody does not personally believe in life after death after authoring or coauthoring titles like Life After Life: The Investigation of a Phenomenon – Survival of Bodily Death (Moody, 1975), Reunions: Visionary Encounters with Departed Loved Ones (Moody and Perry, 1993), and Life Before Life: Regression into Past Lives (Moody and Perry, 1990).

Of course, researchers like Moody might speculate on the “discoveries” of survival research, endorse hypnotic past-life regression, and facilitate visions of deceased relatives through ancient Greek divination techniques solely for therapeutic purposes, without believing in life after death; but it does not seem particularly likely. Is it not exceptional for past-life investigators to doubt the reality of reincarnation, or alien abduction hypnotherapists to reject the reality of extraterrestrial visitation? Fortunately, we can move beyond extrapolation and confirm that Moody both believes in life after death and takes NDEs to be evidence for it:

I find that even after I have asserted that I am not trying to prove that there is life after death and have made all of my usual qualifying remarks, some people ... want to know what I, Raymond Moody, feel.... I have come to accept as a matter of religious faith that there is a life after death, and I believe that the phenomenon we have been examining is a manifestation of that life. (1977, p. 111)

And while Ring may have once asserted that NDEs “do not and cannot [even] suggest the existence of an afterlife,” it is doubtful that a researcher with a curriculum vitae dedicated to corroborating “prophetic visions” and “veridical perception” during NDEs could really believe that. After all, Ring described the Maria’s shoe case as “the single best instance we now have in the literature on NDEs to confound the skeptics” (2000, p. 218). And what, pray tell, does it confound the skeptics about? Certainly not whether NDEs occur, but rather how to interpret them. If there is any remaining doubt, one need only consult Ring’s Lessons from the Light, where after describing preoccupation with an afterlife as “a distraction ... that can draw us away from the lessons we have come into a body to learn and practice here” (Ring and Valarino, 2000, p. 281; italics added), he nevertheless confirms that he believes in life after death and thinks that NDEs tell us something about it:
There are many books ... filled with accounts of afterdeath communications or deathbed visions, or apparent reincarnational episodes or regressions into possible states of consciousness between lives whose findings are highly congruent with the implications of NDEs and with the hypothesis of survival following bodily death. And had I chosen to, I could have cited many such cases ... that would have added even more evidence in support of an afterlife.

What the NDE really teaches about the afterdeath is that we are at this very moment and throughout our lives writing the script that will govern our soul's posthumous journey — that no one other than we ourselves is [sic] the shaper of our soul's destiny after death. Not just what we are in our essence, but how we have in fact lived will be evident — perhaps painfully so — after death. (Ring and Valarino, 2000, pp. 281 and 283; italics added)

After citing my reference to Tillman Rodabaugh's example of a physician wearing green scrubs during surgery, Greyson protests that near-death researchers never appeal to NDErs' "high probability guesses" as evidence of veridical paranormal perception during NDEs, but rather cite "only descriptions of extremely low antecedent probability." But, in fact, prominent near-death researchers have cited likely details as evidence of veridical paranormal perception during NDEs, as well as details that it would be difficult to guess correctly but which have not been corroborated.

I have already illustrated the latter in Mark Fox's critique of studies of NDEs in the blind. The former is illustrated by Michael Sabom's comments on the visual details of Reynolds's OBE: "I was shocked with the accuracy of Pam's description of the saw as an 'electric toothbrush' with 'interchangeable blades'" (1998, p. 187). (I defer the reader to Gerald Woerlee's sketch of why this particular detail constitutes a likely detail, already cited in "Does Paranormal Perception Occur in Near-Death Experiences?") Appeals to likely details as evidence of veridicality can also be found in Kenneth Ring's Lessons from the Light, where the first half of the second chapter is devoted to a half dozen cases of NDErs reporting observations of dust on top of hospital light fixtures during OBEs (Ring and Valarino, 2000), hardly the sort of detail that would astonish anyone who has done a little housecleaning. One particular example is noteworthy for combining likely details with purportedly accurate but uncorroborated details that it would be difficult to correctly guess:

In finite detail, I saw the dust on the supposedly clean and sterile OR lights [predictably, an area that janitors could easily overlook], someone just outside smoking a cigarette [discernable by smell], the
near-panic of the medical staff [predictable and discernable by hearing], and the expression of the big, black Air Force corpsman who was called to come in to forklift me in his arms to get me on my back. He had a clearly discernable scar on the top of his closely cropped head, in the form of a small cross [not predictable or easily discerned at the time, but uncorroborated and discernable after-the-fact]. He was the only one not wearing a face mask, having been summoned on the spur of the moment [uncorroborated and discernable after-the-fact]. He watched as the staff tried to pound life into me, pounding on my chest, pushing, seemingly forever [predictable and discernable by touch or hearing]. (Ring and Valarino, 2000, p. 61)

The anecdotal nature of these reports virtually ensures that they will never amount to compelling evidence for veridical paranormal perception during NDEs, as it is nearly impossible to rule out lucky high probability guesses, specific prior knowledge of the procedures generally involved (perhaps suppressed by cryptomnesia), or the acquisition of unique accurate information by normal means during or subsequent to such experiences. This is why controlled studies utilizing hidden visual targets are critical for the future of NDE veridicality research.

Greyson cites Sabom's study of NDErs' descriptions of cardiopulmonary resuscitation (CPR), which found that nonNDErs were far more likely to imagine inaccurately or describe only vaguely CPR procedures compared to NDErs who claimed to have witnessed their own resuscitations during OBEs. But Sabom did not use the proper control group; he compared NDErs who underwent CPR with nonNDErs who were not resuscitated. As Susan Blackmore has already noted:

[T]he real NDErs actually went through the procedure. If they had had any residual sensory ability they might have heard things and felt things that were going on and this would allow them, in their vivid imaginations, to piece together the procedure much more accurately. Sabom's control group ... did not have access to anything like as much information as the real patients. (1993, p. 120)

Michael Potts added that corroboration for the specific details unique to the NDErs' own resuscitation was lacking in Sabom's study:

Without the details of the resuscitation in the medical records, which often leave out the specific details of procedures used, there is no accurate way to check a patient's account to determine whether it is accurate. Also, some NDErs were interviewed years after their resuscitation, and that is more than enough time for these patients to learn about the specifics of CPR, especially since they were
resuscitated and might be interested in learning about the procedures used. (2002, p. 250)

The continuation of Potts’ discussion succinctly captured the actual state of the evidence for veridical paranormal perception during NDEs:

Blackmore went on to note that in cases of “distant vision” ... the reports of the NDEr are usually not specific enough to warrant belief in [accurate] visual experience, such as a boy who noticed that his two dead grandfathers had brown and black hair. But as Blackmore pointed out, brown and black are very broad descriptions of a wide range of hair colors...

... If there were cases of NDEs in which patients recalled visual information that could only been learned by actually being outside the body, such as recalling specific details of the clothing worn by the code team, specific details of the resuscitation including the order of events, or details of the room in which the resuscitation occurred that could have only been learned by actually being there, then this would support the out-of-body interpretation of NDEs, which could then be used as evidence of a “minimalist life after death.” If reports of NDErs seeing those whom they did not know were dead turn out to fit the facts of the case, then this would seem to mark some evidence of continuation of life beyond biological death. It is thus possible that NDEs could be used to make a strong case for a “minimalist” life after death; but such evidence is lacking at present. (2002, pp. 250–251)

If there were evidence of the sort Potts outlined, then the data would contradict my critique of near-death veridicality studies; but, as Potts also noted, anything of the sort has yet to happen.

Next Greyson touches upon the true heart of the matter in the ongoing dispute between skeptics and believers over the best way to interpret NDEs. He charges me with being unscientific in assuming that NDE reports claiming veridical paranormal perception “were embellished or otherwise distorted.” However, in offering such alternative explanations, it was not my intent to definitively establish that such reports were embellished or contaminated, but simply to show that they could have been. And as Greyson correctly points out, just because “investigators could have asked experiencers leading questions or ... corroborating witnesses could have lied or ... NDErs could have remembered incorrectly,” it does not follow that any of them did do those things.

Nevertheless, the issue is not whether one can demonstrate these alternative explanations, but where the probabilities lie. Given the extraordinary nature of claims of veridical paranormal perception, the
burden of proof falls on proponents to rule out more mundane, and antecedently much more likely, sources of supposedly paranormal information. This is an epistemological requirement that even seasoned parapsychologists recognize, as when Stephen Braude attempted to rule out normal sources of potential survival evidence he dubbed "the Usual Suspects," such as fraud, misreporting, malobservation, and cryptomnesia, before making a positive case for survival (2003, p. 10). This burden falls on proponents because embellishment, memory distortion, and interviewer feedback are established features of human psychology whose reality is not in dispute, whereas the reality of genuinely paranormal phenomena is highly contentious.

Parapsychologists have failed to convince the larger scientific community of the existence of any paranormal phenomena. Indeed, parapsychologists cannot even agree amongst themselves about which purportedly paranormal phenomena are genuine, as McConnell and Clark's survey demonstrated. Furthermore, there is little evidence of progress within parapsychology: A century and a half of parapsychological research has failed to yield so much as a single indisputable parapsychological fact, let alone anything that could be called a body of knowledge for future generations of parapsychologists to build upon. And while Greyson correctly notes that several years of direct research within controversial disciplines like parapsychology does not represent the substantial investment one might find in, say, genetic research, that does not entail that substantial resources have not been incidentally enlisted to test the paranormal. Nicholas Humphrey pointed out that tests of the limits of people's normal powers of perception have been run again and again in conventional psychological laboratories, using methods that would be exquisitely sensitive to any kind of information transfer... And in literally thousands of experiments they have established that there really are sensory stimuli that people cannot see ... even when these stimuli are physically distinct and known to another person. In these thousands of experiments they have therefore incidentally, but nonetheless conclusively, shown that ESP does not occur. (1996, p. 139)

Peter Geach reiterated the point concerning ostensible evidence for survival. Considering that today there are 10 to 20 times as many deceased human beings as living ones (Dillard, 2000; Haub, 1995; Thatcher, 1996), if something leaves the body during OBEs or after death and can interact with the physical world, as out-of-body vision would require, why is it the case that
“subtle bodies” have never forced themselves upon the attention of physicists, as X-rays did, by spontaneous interference with physical apparatus? There are supposed to be a lot of “subtle bodies” around, and physicists have a lot of delicate apparatus; yet physicists not engaged in psychical research are never bothered by the interference of “subtle bodies.” (Geach, 1992, p. 226)

Given our well-established background knowledge of what is known to be real, normal factors like deception and errors in observation, memory, or reporting are always going to be antecedently much more likely sources of claims of veridical paranormal perception than actual paranormal factors, at least until such time that the reality of the paranormal is no longer in dispute. Consequently, extraordinary claims like those of veridical paranormal perception require much greater evidential justification than ordinary claims like embellishment. That people are known to embellish is an indisputable fact, but that people have ever been known to perceive outside of the body is arguable at best. Hence normal explanations for NDE accounts must be ruled out decisively before appeals to paranormal explanations are warranted.

Greyson points out that, despite his preliminary findings suggesting that the longer the delay between having an NDE and reporting it, the more intense the NDE reported, a more conclusive follow-up study found no such effect suggesting embellishment in NDE reports over time. I applaud Greyson for following up on his preliminary finding. However, I never claimed that that finding was anything more than suggestive, and cautioned the reader that it “may have been peculiar to that particular sample of NDErs” rather than something that should be generalized to all NDErs, particularly in light of the conflicting findings of two similar studies. Indeed, I never claimed that either his preliminary finding or the results of any follow-up study would definitively confirm or falsify the role of embellishment in NDE reports. Instead, I merely noted that a follow-up study would “definitively determine the extent of embellishment in NDEs.”

What Greyson’s most recent study has established is that, between the first and second reports of their experiences, his NDErs as a whole were not particularly prone to embellish. However, it remains to be seen whether NDErs who, in particular, report more elaborate or coherent NDE narratives, or NDEs with paranormal elements, are prone to embellishment, such as those claiming veridical paranormal perceptions during out-of-body NDEs, accurate prophetic visions shown to them during their experiences, or encounters with recently
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deceased persons they did not know about at the time of their NDEs. Moreover, since an average of 17.7 years passed between the NDE itself and the first report of it, if any embellishment had occurred in the nearly two-decade interval between the NDE and its first report, it would not have been detected in Greyson's follow-up study, as Greyson himself acknowledged (Greyson, 2007).

Since reports of elaborate or ostensibly paranormal NDEs constitute only a small subset of NDE accounts, Greyson's follow-up study does not shed much light on the extent to which, say, NDErs reporting rich narrative plots, or claiming veridical paranormal perceptions during OBEs, tend to embellish. That is why I characterized Greyson's preliminary finding as merely suggestive, and why I mentioned that another study by Carlos Alvarado had found that although about 20 percent of his OBErs claimed "verifiable observations" during their experiences, only about 5 percent of them even "qualified as potentially veridical when experiencers were asked to provide fuller descriptions" (Alvarado, 2000, p. 187). Alvarado's study provides more direct evidence that OBErs claiming paranormal veridicality tend to embellish, although that tendency might also be peculiar to Alvarado's sample and not something that can be generalized to all OBErs or even to out-of-body NDErs.

On target identification experiments, I concur that a mere dozen out-of-body NDEs to test hardly settles the issue of veridical paranormal perception during NDEs. That is why I concluded merely that "existing veridicality research presents no challenge to the current scientific understanding of near-death experiences as hallucinations," and why I urged the continuation of such experiments. I share Sartori's desire to engender "hundreds" of out-of-body NDEs in a controlled setting so that we can answer this question confidentially one way or the other.

Regarding the Maria's shoe case, I never denied that Maria was a real person. Indeed, that Maria has long been deceased is hardly the sort of presumption one would make about a fictional character. So I do not know who Kimberly Clark Sharp is addressing when she writes that "there was a Maria who observed and reported everything Keith Augustine wrote." It is also unclear why she brings up nondescript "others" who deny that the shoe ever existed, since neither I nor my source ever denied the existence of the shoe. Indeed, the investigators whose analysis I summarized performed tests with their own tennis shoe to determine what one could discern about such a shoe from
various locations, and the very performance of those tests implicitly grants the existence of a shoe behind the "legend."

Sharp writes that she had never addressed skeptical critiques of the case because they have never been worth her time. But that strikes me as an odd reaction to a critique as abundantly "full of holes" as she claims. A critique so wrought with errors should make a researcher more inclined to point out at least a few of the most prominent ones. But that is neither here nor there.

Referring to her 1995 book *After the Light*, Sharp urges that the story has not changed "an iota since day one" even though her memory of the details "has certainly been affected." But my original citation was of her first published report of the case seven years after the fact, in 1984, not her reconstruction of it yet another 11 years later. The details reported closest to the event itself are less susceptible to the sorts of memory distortions that Sharp herself acknowledges have been a factor in her recounting of that now 30-year-old case.

Since I am not in any position to defend the details of Hayden Ebbern and Sean Mulligan's field investigation, I will only note that, had the investigators revealed their intention to write a skeptical critique of the case at the outset, it is doubtful that Sharp would have allowed them to perform a proper field investigation in which her previous claims about the case would be directly put to the test.

In response to the fact that the investigators were able to discern their own "test shoe" so easily in 1994, on the window ledge Sharp identified as the location of Maria's shoe, Sharp claims that she simply guessed the exact location of Maria's shoe because Ebbern and Mulligan were uncomfortably persistent in pushing her for an exact location. This strikes me as an incredibly convenient reply to the discovery of a detail that she admits previously reporting but which a follow-up investigation found to be erroneous. Just how bullying could "a couple of kids from a small Canadian college" that she wanted to help out really be?

Sharp then turns to another reported detail that turned out to be erroneous: how difficult it would be to see a tennis shoe on a window ledge from inside the overlooking hospital room. Her statement that the relevant window ledges were not visible from inside the overlooking rooms unless she pressed her face hard against the window was purportedly just a simplification, but it was undoubtedly a rather convenient one, since it happens to bolster the case's impressiveness. She mentions, for instance, that in some rooms "things were stacked
up against the lower part of the windows” making it difficult to see the window ledges; but was that the “configuration” of the room in which Maria’s shoe was discovered? If not, there was certainly some misleading innuendo in describing how difficult it was to see the window ledges, since the room where the shoe was actually discovered is the only room that matters as far as the visibility of the ledge from inside the room is concerned.

Next, Sharp reveals that she could have introduced the investigators to hospital staff who had met Maria and listened to her story if they had asked for as much. But even so, their secondhand testimony of events that happened nearly two decades earlier would never be as good as early testimony directly from Maria herself. The earliest testimony we have to go on for discerning the facts of this case is Sharp’s alone – her already cited 1984 paper – and subsequent investigation by Ebberm and Mulligan uncovered serious problems with the reliability of that account (Ebbern, Mulligan, and Beyerstein, 1996).

Although Maria was hospitalized long enough prior to her NDE to become familiar with her monitoring equipment, Sharp retorts that “There is absolutely no way” Maria could have known by normal means that electrocardiogram (EKG) printouts flowed onto the floor and were kicked under the beds because “No one ever educates a cardiac patient to that level of detail.” But that sort of fact need not ever be taught, discussed, or shown in media portrayals of cardiac arrest in order for Maria to have learned about it by normal means. Maria was monitored by such equipment for three days before she had her NDE. Are we to really believe that in all that time there is no way that she could have observed EKG printouts from machines in close proximity to her bed?

Sharp explains the ease at which the investigators saw their own “test shoe” in 1994 in terms of their unproblematic vantage point compared to hers back in 1977: “When I looked for the shoe from the ground, I was following a sidewalk that hugged the building, completely unable to see something visible on the ledge a few stories above me.” She complains that, instead of doing a room-by-room search from inside the hospital for the shoe on the ledge, she wishes she would have thought of looking for the shoe from further away when she was outside of the building. But whether Sharp herself could see the shoe after a superficial search of the building’s perimeter is immaterial to whether Maria could have gained knowledge of its
location by normal means. I emphasized the ease with which the investigators saw their “test shoe” from outside in 1994, at the spot where Maria’s shoe was reportedly located in 1977, because others within earshot of Maria’s hospital bed could have easily noticed the shoe from outside before entering the hospital back in 1977. This focus was clear when I pointed out that the investigators’ construction area was a “high-traffic parking lot and recreation area back in 1977” and that the unpublicized “test shoe” from 1994 was so conspicuous from outside that by the time of the investigators’ next visit, the “test shoe” had already been removed, before explicitly noting that Maria could have overheard a conversation about the shoe she reported. Though Sharp does add that this scenario is unlikely because Maria purportedly “spoke very little English,” it is impossible to verify this detail now since Maria is presumably long dead and no one even knows who she really was.

Sharp notes that in the seven years between Maria’s NDE and Sharp’s first published report of it, she discussed the case in casual conversation and even on a local television show. But her occasional conversations are not part of any verifiable record we can now check, and her brief comments in a live television interview are unlikely to have revealed very much about the case. Full details awaited the publication of After the Light (Sharp, 1995) nearly 20 years later, and who knows how many factual errors could have crept into Sharp’s account after all of that time?

Finally, Sharp interpreted the point that she may have shaped her account of Maria’s NDE over the years as an accusation of lying. But potential embellishment does not necessarily imply deception, as people tend unintentionally to remember details that support a narrative while forgetting those that contradict it. Though embellishment is not something that a person is typically conscious of, it is an established factor in how memories are reconstructed. Some details are remembered accurately, some are forgotten, and some are subconsciously “invented” to fill in the gaps and produce a coherent narrative structure. It is near-death researchers’ responsibility to rule out such conventional explanations before demanding that the scientific community overhaul its current understanding of human nature.

Charles Tart finds fault with my characterization of the Reynolds case as “infamous.” What I should have said is that the case was immediately hailed by near-death researchers eager to highlight
purportedly veridical paranormal perceptions during out-of-body NDEs.

Nevertheless, characterizing my observation of the sensationalism and misrepresentations surrounding the case as an "a priori dismissal" is simply incorrect. I cited near-death researchers hailing the "inexplicability" of the case from the outset, and directly quoted misrepresentations in the parapsychological and medical literature. Van Lommel and colleagues, for instance, referred to verifiable perceptions during a period of flat electroencephalogram (EEG) that never happened (van Lommel, van Wees, Meyers, and Elfferich, 2001).

My statement that Reynolds's NDE implied the operation of normal perception within a nonthreatening physiological condition struck Tart as "an odd way to characterize being effectively dead with only the hope that the equipment and surgeons will pull you back." But indisputably, Reynolds's out-of-body NDE began hours before she was, by any criteria, effectively dead. And since I explicitly referred to her veridical perceptions in that sentence, I was clearly referring to the out-of-body component of the experience. No one disputes that during her period of veridical perception, when her experience began, there was nothing more than general anesthesia for Reynolds to be "pulled back" from. That Reynolds would be brought to the brink of death at some point during the procedure would indeed "make the surgery a pretty threatening condition from a psychological perspective," which is precisely why I suggested that fear triggered the experience.

Tart then complains that my statement that Reynolds's NDE did not occur when any of her EEG recordings were flat "is biased and incorrect"; but it is neither. While conceding that her NDE began well before standstill, he argues that her description of the remainder of her experience "clearly" implied that her NDE continued all the way through "and beyond the reinfusion of warmed blood." But because the remainder of her experience lacked any veridical elements, it is impossible for us – or her – to timestamp any elements of her NDE subsequent to her OBE. Her entire NDE could have occurred well before standstill; two hours certainly seems ample time for such an experience to run its course. Indeed, Tart himself says that this is the most natural way to read the experience when he concedes that "Sabom's presentation of Reynolds's NDE did not seem to fill all that time."

To my statement that Reynolds's cerebral cortical inactivity did not exceed about a half hour, Tart replies: "Thirty minutes of complete
cardiac arrest and absent brainwaves are certainly sufficient to raise questions about her ability to think clearly and perceive accurately *during that period.* But that any part of her NDE occurred during this period is precisely the issue in contention. There is no evidence that any part of Reynolds's NDE occurred during a period of "complete cardiac arrest and absent brainwaves," and consciousness in the absence of brain activity is an extraordinary claim requiring extraordinary evidence before we are warranted in accepting it. By contrast, consciousness during anesthesia awareness has a comparably much higher initial probability, and we already know that Reynolds's NDE began when her brain was functioning normally.

Tart suggests that Sabom's account was merely ambiguous rather than intentionally misleading; but the important point is that he was misleading, intentionally or not. Why else would Braude characterize the case as a "detailed veridical near-death OBE" during a period of "flat EEG and absence of auditory evoked potentials from her brainstem" (Braude, 2003, p. 274), while later concluding that "the case for survival receives very little independent support from OBEs, NDEs, and apparitions" (2003, pp. 280–281). Although Tart claims that "Sabom made it quite obvious that her NDE began well before cardiac standstill," he does not cite a single supporting sentence from *Light & Death* (Sabom, 1998). Moreover, Sabom repeatedly associated Reynolds's NDE with the time when she was clinically dead, despite knowing that whatever triggered her NDE occurred well before, and thus had nothing to do with, the induction of hypothermic cardiac arrest.

Surprisingly, Tart argues that because Reynolds also attributed her NDE to the period "up to and beyond warmed blood infusion," her testimony "makes Sabom's inference quite reasonable." But except in cases when bodily sensations, such as chest compressions, or veridical perceptions, such as heard conversations, are incorporated into NDEs themselves, NDErs have no more means to correlate parts of their experiences with specific physiological events than we do. So Tart's accusation is false that assuming that Reynolds's NDE ended before standstill "ignores experiential evidence"; for the only potentially relevant experiential evidence is absent subsequent to the out-of-body component of her NDE.

Though Tart concedes that "Sabom's presentation of Reynolds's NDE did not seem to fill" the hours preceding cooled blood infusion, he adds that Reynolds's description implies that many other things that Sabom did not ask her about occurred. Such speculation is shaky
grounds on which to resist so natural a conclusion. Moreover, *Light & Death* (Sabom, 1998) contains the nearest first-person testimony to the experience itself, and consequently is inherently more reliable than any subsequent testimony from Reynolds.

Next Tart accuses me of “a major distortion of the facts” in describing Sabom’s “small molded speakers” as “small earphones,” even though I quote Sabom’s description immediately after offering my own, as I evidently “counted on everyone knowing” that “sound from the room can leak in around” earphones to bolster my own case. He asserts that small molded speakers “shut out sounds much more effectively” than standard earphones. But “small molded speakers” do not completely eliminate external sounds; they only reduce their intensity. A minor change in terminology hardly warrants the conclusion that it was impossible for Reynolds to pick up a conversation through normal hearing.

Tart’s most poignant observation concerns “the 100-decibel level of these clicks [in the molded speakers], which is the level of sound of a full symphony orchestra playing really loud, masking room noise quite effectively.” That level of volume would certainly drown out any interoperative conversations.

However, was the machine designed to measure auditory evoked potentials (AEPs) actually turned on and generating clicks at the time that Reynolds overheard an operating room conversation? It is plausible that Reynolds’s speakers would not be operational at the time of her veridical perceptions – about 8:45 AM – given that her brainstem activity would not be expected to falter two hours in advance of hypothermia. But even if such equipment was fully functional at such an early stage, we would need to know the duration of the silent pauses between 100-decibel clicks to conclude that it was impossible for Reynolds to recall sufficiently coherent fragments of an overheard conversation.

That I discounted the paranormal veridicality of Reynolds’s NDE report “because she did not provide positive visual descriptions of everything that happened” is not faithful to my original point: that Reynolds’s description of her “perceived” instrument noted features that the instrument used did not have – exactly what one would expect if her imagery was reconstructed from scraps of conversation rather than obtained through eyeless vision.

Although Reynolds’s knowledge of her shaved head hardly required paranormal abilities, Tart snapped back that any normal explanation
requires one to assume that she lied about her experience. But that she learned about how her head was shaved *subsequent* to her NDE is only one possible explanation. Another is that she learned that her head would be shaved in a particular way *prior* to her experience, consciously forgot about this, and that that information resurfaced during her OBE. Second, she could have *unintentionally* incorporated a detail that she had actually learned subsequent to the experience itself. The brain often fabricates details in order to make different memories consistent with each other within a coherent narrative. Surely if Reynolds had become aware that her head had been shaved in a certain way subsequent to her experience—and we know that she *must* have—her brain would bias her to “remember” the same detail whenever she recalled her NDE.

Tart dismisses memory distortions on the shakiest of grounds: that NDErs typically report vivid memories, and that there is no statistical evidence that, *in general*, NDErs significantly alter their accounts over time. But even if NDErs do not *generally* embellish, that is no indication that embellishment was not a factor in this case specifically. Second, it is arguable that the (varied) statistical measures of embellishment within accounts have really been fine enough to discern subtle changes within the accounts considered. Had the Reynolds case been included among any of these studies’ samples, would a change in Reynolds’s description of how her hair was shaved have been detected?

Tart characterizes the possibility of anesthesia awareness as an accusation of incompetence on the part of Reynolds’s anesthesiologists. Yet most cases of anesthesia awareness do not result from human error, but from the fact that different people respond to anesthetics differently. He adds that while anesthesia awareness is theoretically possible, “it is the wildest speculation postulating a highly unlikely event.” Is he suggesting that the *ad hoc* postulation of a form of eyeless vision completely unknown to science to explain ostensibly veridical perceptions during OBEs and similar experiences but nothing else is somehow *more likely* than an undoubtedly real phenomenon like anesthesia awareness?

Tart rightly notes that just because *some* NDEs are triggered by fear does not imply that all of them are. But since *no physiological threat precipitated Reynolds’s NDE*, fear is the most likely cause. For if not fear, then what? anesthetics? Because no immediate medical crisis existed at any time even close to when her experience began, there are not many potential candidates for its cause.
Sabom writes in his commentary that the important point is not when Reynolds's NDE began, but when it ended. But if her NDE began so far from any immediate medical threat, the fact that she would eventually come close to death a few hours later is rather incidental to her experience. Evidently, her NDE would have occurred even if, after she was anesthetized, hypothermic cardiac arrest had been postponed until another day. Furthermore, when her experience began is surely relevant to when it plausibly ended. It is plausible (though not demonstrable) that her NDE ran its entire course before hypothermia was induced.

To support his contention that Reynolds's NDE proceeded beyond hypothermic cardiac arrest up until she awoke from general anesthesia, Sabom adds that Reynolds herself “described her NDE as an uninterrupted, continuous experience.” But just because Reynolds’s experience felt continuous does not entail that it was uninterrupted from beginning to end. We cannot rule out that her experience began prior to hypothermia, ended when she slipped into unconsciousness as hypothermia deepened, and resumed with the reinfusion of warm blood, after her brain activity had been restored. Aside from the overheard conversation and sequence of events in her NDE, there is no way definitively to correlate specific parts of her subjective experience with specific physiological events. Any period without conscious awareness would not be felt by Reynolds, and so any interruption would not be evident to her. So the fact that Sabom constructed his account of Reynolds's NDE as a continuous experience “based entirely on her testimony” does nothing to validate the reliability of that construction. Every subjective element of Reynolds’s experience that Sabom correlates “with events in the operating room” beyond those early auditory perceptions is pure speculation.

Sabom quotes Arthur Hastings to the effect that, if we assume that the OBE component of an NDE involves the actual perception of the physical world, it is both natural and reasonable to anticipate that the continuation of the NDE beyond that component also involves the perception of “some kind of independent reality” (Hastings, 2002, p. 94). I agree; indeed, faced with compelling evidence for veridical paranormal perception during out-of-body NDEs, I think that the burden of proof would fall on proponents of a rather ad hoc, unfalsifiable, and blanket super-ESP hypothesis to demonstrate otherwise. But we cannot just assume that out-of-body imagery present during NDEs is “valid” rather than hallucinatory, even when
NDE reports incorporate accurate information that could have been obtained through normal means such as hearing.

Sabom asserts that my statement that Reynolds’s NDE did not take place “during any period of flat EEG” was invented out of thin air. But we know that her experience began well before any such period and “did not seem to fill all that time” up to either cortical or brainstem flatline. The burden of proof falls on Sabom to show that any part of her NDE must have taken place during brainstem flatline, for we have never corroborated any human experience that was not mediated by brain activity. Sabom adds that my reconstruction assumes a discontinuity that “runs counter to Reynolds’s testimony.” But it does not assume either a physiological or subjective discontinuity, as the entire experience could have taken place before hypothermia. Though I do not assume a physiological discontinuity, one is certainly compatible with the facts. Moreover, even if I had assumed physiological discontinuity, that would not have implied any subjective interruption, since unconscious periods are not perceived.

Sabom assures us that the “mounds of tape and gauze” securing Reynolds’s molded speakers would have made her ability to overhear an operating room conversation by normal means during her procedure “extremely unlikely.” But the only way to know for sure would be to place similarly fitted subjects under conditions matching, as closely as possible, those that Reynolds encountered. Such an experiment could be performed under the pretense of a perceptual test, while operating-room-like conversations were played in close proximity to subjects who would later be quizzed on the contents of those conversations.

Sabom concludes that because he explicitly stated that, by definition, Reynolds was never truly dead, this absolves him of any responsibility for the misrepresentations made by other researchers. But Sabom’s qualification only concerned an issue of semantics — how “death” is defined — not whether Reynolds was having conscious experiences during brainstem flatline. That is the real issue here, and Sabom’s reconstruction clearly encouraged the perception that Reynolds was conscious during a period of “complete electrocerebral silence” (Sabom 1998, p. 43), a period that Tart’s commentary characterized as “being effectively dead.” So when Sabom wrote that “NDEs are not accounts of life after death” (1998, p. 51), he was arbitrarily picking out one meaning of the term “death,” not all possible meanings or even the most relevant one. Finally, that Sabom
devoted a few sentences in *Light & Death* (Sabom, 1998) to alternative explanations for Reynolds's ostensibly paranormal perceptions, and concluded on a note of uncertainty, is no indication of the general orientation of the relevant chapters. Disclaimer aside, Sabom undoubtedly steered his discussion in a direction that favored a paranormal interpretation of the facts of the case.

**References**


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