

“Psychophysiological and Cultural Correlates Undermining a Survivalist Interpretation of Near-Death Experiences” Defended

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ABSTRACT: Some largely convergent objections arise from independent commentaries on my lead essay. These include claims that noted psychophysiological correlates can be accommodated by models which presume that something leaves the body during out-of-body experiences (OBEs) and near-death experiences (NDEs), that social expectation alone cannot account for actual NDE content, that crosscultural diversity does not challenge a survivalist interpretation of NDEs, and that conceding well-defined commonalities within Western NDE accounts while denying crosscultural uniformity is problematic. I concede some of these objections up to a point, but conclude that they neither strengthen the case for a survivalist interpretation of NDEs, nor weaken the case against one.

KEY WORDS: near-death experiences; altered states of consciousness; temporal lobe signs; expectation; successful explanation.

I am grateful that Bruce Greyson, Allan Kellehear, Mark Fox, and Harvey Irwin have responded to “Psychophysiological and Cultural Correlates Undermining a Survivalist Interpretation of Near-Death Experiences.” Without their meticulous research, many central questions about near-death experiences (NDEs) would remain shroud-

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ed in mystery, and my own contribution to the debate about the meaning of NDEs would be much more provisional than it already is.

All of the commentators have made a number of fair points. Greyson is right to criticize my oversight in characterizing all altered states of consciousness (ASCs), rather than simply a subset of them, as inward-looking. But I never claimed that ASCs must completely “blind us to the outside world,” and in fact noted sleep paralysis as an example of an inward-looking ASC even though it involves the projection of internally generated imagery on to a subject’s otherwise veridical perception of external events.

Greyson also rightly points out that instances of extreme focus on particular aspects of the physical environment to the exclusion of “peripheral” sensory data do not call up any internally generated imagery. It is nevertheless notable that ASCs featuring *either* diminished or amplified awareness of one’s surroundings are almost always considered to be experiences occurring *within* the normal physical body. Only out-of-body experiences (OBEs) and NDEs are taken to be potentially discarnate experiences, and their inclusion within a class of otherwise ostensibly embodied experiences gives us some reason to think that they are embodied experiences as well. As before, I am not suggesting that this fact *entails* that OBEs and NDEs must be embodied, but it does warrant “a reasonable presumption that they do not reflect any objective existence outside of the normal physical body” – and nothing more.

Next Greyson criticizes me for using definitions of dissociation and absorption – “the shutting out of sensory stimuli” and “focusing on the imagination,” respectively – which do not come close to standard clinical ones. Ironically, I was paraphrasing Greyson’s own characterization: “According to [Kenneth Ring’s] model, to register and recall alternate realities, one must transcend the sensory world (dissociation) and attend to internal states (absorption)” (2000, p. 323). How I read Greyson’s distinction was undoubtedly colored by other near-death researchers’ characterizations, such as Irwin’s comment that absorption “might usefully be thought of as a capacity for imaginative involvement” (2000, p. 263) and his theory that OBEs are enabled when a “state of absorbed mentation is paralleled by a dissociation from somatic (somaesthetic and kinesthetic) stimuli” (2000, p. 272). Clinically adequate or not, my use of these terms was not far off from what near-death researchers themselves have offered.

I never implied that individuals could *not* “become ‘absorbed’ in perception of the external world, such as [through] reading a book, watching a movie, or [intently] listening to a conversation,” and even explicitly characterized absorption as a “capacity to become highly engrossed in the imagination, including through books or movies.” Out of thin air Greyson conjectures that I aimed to convey the erroneous notion that “fantasy-prone individuals mistake fantasy for reality” and falsely accuses me of highlighting “fantasy prone individuals’ ‘strong investment in fantasy life’” while glossing over “their more intense sensory experiences.” In fact, I simply *quoted his definition* of the concept, which gave no more weight to the ability to fantasize than to intense sensory experience or excellent visual memory, and then summarized what correlations have been found. Later I asked why mind-body separation would be expected to “make individuals more prone to fantasize” – say, to daydream – but no one should take that question to suggest that NDErs are less competent reality-testers than control groups.

Another issue is whether NDErs’ statistically significant but only slightly higher scores on measures of fantasy proneness are sufficient to label NDErs “fantasy prone personalities.” As Greyson points out, they are not; but then I never claimed as much, just as I never claimed that NDErs’ dissociative tendencies were pathological rather than “adaptive responses to serious stress.” My aim was never to pigeonhole NDErs into the false dichotomy of being either out of their bodies or out of their minds, but simply to ask what these psychophysiological correlations might mean.

Greyson eventually returns to the issue at hand, offering an alternative explanation agreeable to a survivalist interpretation – that NDErs’ “sensory perceptions of the outside world are much more vivid than those of nonNDErs.” But for having criticized me earlier for imputing a survivalist bias among near-death researchers, he seems remarkably eager to attribute positions to me that I do not hold, even insinuating that I advocate the ridiculous argument that NDErs “are unreliable witnesses because they have epilepsy” – as if subtle temporal lobe *instability* amounted to full-blown epilepsy and constituted grounds to dismiss NDErs’ testimony about their experiences.

Again, he proposes an alternative explanation of “the defensive value of dissociation” which is more amenable to the hypothesis that something leaves the body during OBEs and NDEs: Literal detachment “would be even *more* effective in helping a victim escape from a traumatic situation than if they were mere mental illusions.”

However, more robust instances of dissociation such as multiple personality disorder help victims escape from far greater trauma – typically repeated physical or sexual abuse – than the fear that yields OBEs and NDEs, and yet “split personalities” are widely regarded as “mere mental illusions” relative to the subject’s primary personality.

Next Greyson opines that “it makes perfect sense for a person with unusually rich ‘capacity for imaginative involvement’ – and therefore greater ability to foresee a potential threat – to flee the body in anticipation of trauma.” But since my original question was why *any* psychological mechanisms, as opposed to physiological crises, would prompt a detachment from the body, this answer strikes me as evasive. If mere anticipation is not sufficient to cause an individual to go into shock, for example, it hardly seems credible that it could be sufficient to prompt the mind to *literally* detach from the body, if such a thing is possible at all.

To my contention that the superior imagery skills of OBErs and NDErs are more amenable to psychophysiological explanation, Greyson counters that “the separation hypothesis also predicts that OBErs, because of the visuospatial training they receive in their OBEs, should have better imagery and visuospatial skills.” This is a fair point; though there are reasons to give deference to a psychophysiological explanation, these reasons are merely suggestive, leaving plenty of room for others to interpret the extant data differently.

For instance, various OBE induction techniques train subjects to call up internally generated imagery *before* they induce their OBEs (Irwin, 1999, p. 228). However, that only gives reason to prefer a psychophysiological account of *induced* OBEs. If spontaneous OBEs and NDEs could be shown to be qualitatively no different than induced OBEs, then this fact would also provide reason to favor a psychophysiological account of spontaneous experiences; but I doubt that the current data show this. In the end, which model better accommodates such data can only be resolved through prospective studies where, say, dreamers’ spatial perspective during dreams, or dream control skills, are measured *before* a certain percentage of them happen to report spontaneous OBEs or NDEs. Unfortunately, such studies seem unlikely given how difficult it would be to obtain large enough sample sizes to conduct them.

Irwin proposes that ostensible psychophysiological traits of OBErs and NDErs may not actually reflect who is likely to *have* such experiences, but simply who is likely to *report* them. That NDErs

willing to report NDEs are *psychologically* distinctive from NDErs who are not so willing is less reaching than the notion that reporting NDErs are *neurologically* distinctive from nonreporting ones. But it is notable that the same sort of concern has never, to my knowledge, been raised when the focus was the correlates of, say, psychedelic experiences. This testifies to the implausibility of such an alternative explanation in the case of OBEs and NDEs, and in any case even Irwin concedes that this explanation is not particularly likely.

Greyson mischaracterizes my aim when he writes that I draw “sweeping conclusions from rather small correlations” between medical factors and specific NDE elements. None of the implications that I drew were meant to be more than suggestive, and I conceded that my noted correlations were entirely compatible with something leaving the body. While Greyson argues that there is “no reason why these relative frequencies should count as evidence that NDEs are hallucinations,” they must have *some* underlying causes, and psychophysiological factors seem to be the most plausible candidates. After all, Greyson offers no alternative explanations for why these relative frequencies might obtain if reported NDE content accurately reflects events occurring outside of the brain.

Instead, he rejects the common assumption that *reports* of NDEs are accurate reflections of the experiences themselves, writing that “all we know about NDE content is what experiencers *choose* to tell us about what they *are able to put into words* of what they can *recall* about their NDE content.” Since changes in brain chemistry may only influence *reports* of NDEs – namely, what NDErs are able to recall, grasp, or verbalize about their experiences – any potential influence of medical factors on NDEs *themselves*, he argues, is forever beyond our reach. While this response neatly discounts data inconvenient for a transcendental interpretation, there is a certain amount of irony in Greyson offering it. For one, there is a little tension between this view and Greyson’s later comments that clarity of thought and “a clear memory of the experience” represent “the norm for NDEs, even when they occur under conditions of drastically altered cerebral physiology,” and that cardiac arrest NDErs “almost invariably retain vivid memories of their experience.”

Moreover, in a previous letter he lambasted me for “arguing that [I] never claimed that the bias or embellishment or sensory cuing [I] postulated for NDE accounts actually existed, but rather simply that they *might* have existed, as if that provided a reasonable argument for

anything” (Greyson, 2007, p. 69). Now that it is convenient for him, Greyson similarly argues that, though he does not claim that medical factors actually *do* influence NDErs’ recall, grasp, or ability to verbalize their experiences, they *might* – as if that provided a reasonable argument for anything! As often as he complains that I invoke unfalsifiable hypotheses “of no scientific interest,” he has implicitly taken the unfalsifiable position that whenever the data seem to undermine a transcendental interpretation of NDEs, we can chalk that up to the brain’s effects on consciousness or memory, but when other data seem to support that interpretation, we should take that to be evidence for the mind’s independence from the brain. Who is sweeping facts under the rug now?

Next Greyson writes that seizures or electrical stimulation of the temporal lobe “might explain the *failure* of normal perceptual integration, but not the *production* of coherent experiences such as NDEs.” However, the position that temporal lobe activity has a role in the production of NDEs does not entail that NDEs arise due to the same mechanisms that cause seizures. That “only 6 percent of seizure patients described any body image anomalies, let alone OBEs” in one study may indicate that the temporal lobe activity necessary to induce OBEs occasionally *coincides with*, but does not necessarily always accompany, full-blown seizures. If that finding had indicated that temporal lobe activity makes no contribution to the production of OBEs, it would have also had the unlikely consequence that such activity has nothing to do with the *other* body image anomalies found in the study. And in any case, there is plenty of clinical evidence contradicting Greyson’s presumption that seizures cannot produce complex, integrated, multisensory hallucinations (Daly, 1975; Kolb and Wishaw, 1990; Lukianowicz, 1958).

Greyson criticizes me for proposing “that electrically induced bodily illusions and spontaneous OBEs may be variants” of a single mechanism without specifying what that mechanism might be. However, my intention was simply to hint at how a recent psychophysiological theory of OBEs *might* account for such differences (Bünning and Blanke, 2005), and I also noted that electrically stimulated and spontaneous OBEs may involve *different* mechanisms.

Predictably, Greyson emphasizes that “*None* of the proposed neurophysiological mechanisms have been shown to occur in NDEs.” Elsewhere he wrote: “No one physiological or psychological model by itself explains all the common features of near-death experiences” (Greyson, 2003, p. 275). As Irwin noted, absent decisive evidence that

something leaves the body, “the evaluation of the ‘literal separation’ theory has become a matter of disproving other potential theories” (1999, p. 212). But just as showcasing potential flaws in evolutionary theory does not enhance the credibility of young Earth creationism, rebutting *specific* psychophysiological theories of OBEs and NDEs does not boost the plausibility of transcendental interpretations. For it is quite plausible that OBEs and NDEs have purely psychophysiological origins even if their exact mechanisms are unknown. Because correlations between *specific* mental states and *specific* brain states are *generally* not well-known, the lack of a demonstrable physiological explanation for each NDE element is hardly surprising *even if NDEs have purely psychophysiological explanations*. We can correlate specific periods of dreaming to general patterns of brain activity, after all, but are nowhere near sophisticated enough to be able to determine whether someone is dreaming *about running* simply by looking at that person’s brain activity at the time.

Greyson implicitly acknowledges this point when he offers an objection to *all* possible psychophysiological models. He asks why NDEs are typically characterized by “mental clarity, vivid sensory imagery, a clear memory of the experience, and a conviction that the experience seemed more real than ordinary consciousness” even when they accompany acute neurophysiological changes, citing Sam Parnia and Peter Fenwick’s statement that “NDEs in cardiac arrest are clearly not confusional and in fact indicate heightened awareness” (2002, p. 8). But as I have previously noted, there are a number of potential nontranscendental explanations for why coherent NDE reports arise from the experiences of a disorganized brain (Augustine, 2007a, pp. 208–209; Fox, 2003, p. 203).

Greyson adds that any adequate theory of NDEs must “take into account this vivid and complex thinking, sensation, and memory formation under conditions in which current neuroscientific models of the mind deem them impossible, such as under general anesthesia and in cardiac arrest.” But this argument appears to either overstate what “current neuroscientific models of the mind deem” impossible, or rely too heavily on an incomplete neuroscientific understanding of when such things are possible. For unmistakably hallucinatory experiences have occurred under such conditions, such as NDErs imaginatively flying backward in time while in a formation of swans, being interrogated by nurses about subversive activities, and approaching giant fangs threatening to devour them (Augustine, 2007b).

Next Greyson writes that “every report of a large study of NDEs published in a mainstream medical journal has concluded that these phenomena cannot be explained as hallucinations. Such unanimity among scientific researchers is unusual and should tell us something.” Indeed: that those researchers willing to devote substantial amounts of time and energy to conduct large-scale studies of NDEs tend to be predisposed to dismiss psychophysiological explanations of them.

As to why researchers “who regard NDEs as hallucinations by and large have not conducted any studies” of NDEs, my guess would be that they have different academic priorities than separationist researchers aiming to vindicate what is largely perceived to be a fringe position. For instance, researchers interested in how proprioceptive, tactile, and visual stimuli interact in the neural representation of body schema are likely to be narrowly interested in studies of multisensory disintegration during OBEs which may shed light on how the brain represents one’s body in extrapersonal space.

Greyson concludes that, whatever the evidence for separationist accounts, psychophysiological models of OBEs and NDEs are “supported by even fewer data.” But it seems to me that Greyson does not give enough weight to factoring in the *quality* of the data cited in favor of each kind of explanation. For instance, Greyson argues that attributing claims of veridical paranormal perception during NDEs to “fraud or misperception is the hallmark of pseudoscience, not science.” But if our extant data are based on research that has not sufficiently controlled for these variables – as replicable positive results in NDE target identification experiments would – then our data are not impervious to error, and such possibilities remain open ones. Only improvements of the quality of the data will ever resolve these issues.

Greyson ends his commentary with a sermon railing against “promissory materialism.” Like separationist accounts, psychophysiological models stand or fall according to how well they accord with the data, and to invoke “promissory materialism” in this debate is to unduly imply that my brief for a psychophysiological model of NDEs amounts to a steadfast conviction, the facts be damned.

Greyson’s claim that “many NDErs speak ... of being aware simultaneously of the physical environment (including their bodies) and also of a transcendental dimension” does not do justice to what NDErs typically report. If all that NDErs typically reported was “alternating” between this world and the next, then the prototypical

Western NDE would not consist of the elements that it does, such as ostensible perception of the physical world from a position above the body, or any sort of transitional passage between the physical world and the NDE world, “as if” they were separate places accessible in different ways.

Finally, Greyson concludes that in light of the data, hallucination theories cannot be considered serious alternatives to separationist models of NDEs. If he is right about that, then separationist models have won the day; for all practical purposes, the issue is settled, even if it is not technically “proven.” Like the scientific community at large, however, I am afraid that I do not share Greyson’s confidence that near-death researchers have “all-but-proven” that something leaves the body during OBEs and NDEs.

Kellehear rightly notes that I understate the differences between actual NDE features and what we would predict social expectation to contribute to hallucinations near death. Fox similarly maintains that commonalities between Western NDE reports “cannot be accounted for wholly in terms of culturally produced expectations of what dying and death might be like.” However, a psychophysiological explanation need not maintain that NDE content is derived *solely* from social conditioning. The primary sources of NDE content are likely to be conscious and subconscious personal expectations – *shaped* but not fully *determined* by cultural influences – as well as NDErs’ unusual physiological states.

For instance, Kellehear notes that NDErs occasionally “report colors they have not seen on Earth,” but unusual neurological conditions can produce experiences as exotic as adventitious synesthesia, in which colors “blend” with other sensory modalities, and hallucinatory form constants are typically perceived in saturated colors. Such bizarre and *consciously* unexpected imagery as androgynous beings and huts suspended in mid-air are typical of ASCs like dreams, and so not particularly noteworthy in NDEs.

On the face of it, the possibility that NDErs might be using different labels to describe the same experience is no more problematic for isolating a core of recurrent, well-defined elements than the opposite possibility, that NDErs might be using the same labels to describe *different* experiences. For instance, the term *tunnel* glosses over several manifest differences between a number of things, such as caves and underground train lines. But absent evidence of either sort of extensive mislabeling, each concern seems to be balanced out by the other.

If there were a *widespread and substantial* gap between descriptor and experience, then we could not have any inkling of the extent to which descriptors differ from the experiences they are intended to represent. And this would entail that we cannot know whether different NDEs *themselves* are either similar or dissimilar to each other. If NDErs' descriptions were not accurate enough to communicate some novel information about what it is like to have an NDE, then NDErs could not communicate what their experiences were like to nonNDErs or even fellow NDErs, and even something as basic as the common features of NDEs would be forever inaccessible to near-death research.

If an episode of darkness were a crosscultural element, for instance, then NDErs' use of the term *tunnel* would typically represent the use of a less-than-ideal descriptor for such an episode. But NDErs have often described encounters with tunnels exhibiting physical characteristics, and these reports cannot be simple instances of mislabeling.

So there is more to hesitating to accept hypothetical mislabeling than simply taking NDErs at their word; the essential qualifier is that we should take them at their word *in the absence of adequate evidential grounds to think that their descriptions are inaccurate*. Such grounds include open-ended interviews in which, as further details unfold, NDErs' initial use of the term *tunnel* clearly refers to an episode of darkness; but Kellehear does not produce any such evidence. By contrast, I have provided ample reasons to think that NDErs' "oft-heard conclusion that NDEs are glimpses of an afterlife" is likely to be mistaken (Augustine, 2007b).

Kellehear argues that crosscultural diversity does not challenge a survivalist interpretation of NDEs because there could be several "otherworlds" after death, while Irwin infers that I needlessly presuppose that survivalists must hold that "there can be only one 'afterlife reality'" – adding that it is unclear whether NDE diversity even requires survivalists to reject that assumption. But there are two ways in which NDE diversity undermines a survivalist interpretation of NDEs that none of the commentators address.

First, arguments *for* a survivalist interpretation are often premised on purported uniformity across times and cultures. Insofar as the rule seems to be substantial *diversity*, however, one foundation for a taking a survivalist interpretation of NDEs is eliminated. Second, NDE diversity provides positive grounds for thinking that a survivalist interpretation is likely to be *false*. Encounters with different

transcendental environments might explain starkly different landscape visions, but would not explain different *modes of travel* to those “otherworlds.”

For instance, if NDEs are transitions to another world initiated by something leaving the body, then *all* NDEs ought to begin with OBEs. But a substantial portion of prototypical Western NDEs do not, and nonWestern near-death OBE accounts are sporadic. Are NDErs who do not report OBEs simply amnesic about leaving the body, even though NDErs commonly report recalling their NDEs more sharply than any other events in their lives? Why do out-of-body NDEs in the West typically transition quickly from seeing the physical body and its immediate surroundings to another NDE element, while NDErs from Guam evidently “project” thousands of miles away to see relatives living in America? These sorts of questions are awkward for those taking a survivalist interpretation of NDEs.

On a survivalist interpretation, feelings of peace, OBEs, passages through a tunnel or darkness toward a light, and life reviews are initial stages of a transitional experience from this world to the next that should be common to all or most human beings, even if “the next world” in fact consists of multiple “otherworlds.” These initial stages would be expected to be present, by and large, crossculturally and across historical eras. But these elements are strikingly *absent* from most extant nonWestern NDE accounts.

Even within highly consistent prototypical Western NDEs, there is wide variation in the form that NDErs’ “astral bodies” take: sometimes they are mirror images of the normal physical body, other times they are balls of light or amorphous clouds, and sometimes NDErs do not even perceive having a “secondary body” at all (Irwin, 1999, p. 225; Moody, 1975, p. 37). But if NDErs’ secondary bodies were real rather than imaginary, we would expect their described characteristics to be about as uniform as those of different human beings’ normal physical bodies. And though most NDErs describe their out-of-body vision as comparable to normal 180° color vision, some report surprising idiosyncratic traits like 360° “spherical vision” (Ring and Cooper, 1997, p. 139) or at-will x-ray vision (Lawrence, 1993, p. 125). Though such differences might be explained in terms of extremely variable astral genes or other fanciful constructs, such peculiarities are certainly awkward for a survivalist interpretation of NDEs.

Fox wonders why I did not discuss epistemological concerns accompanying any attempt to identify an experiential core across

different individuals, even when limiting the discussion to whether there could be a discernable core just to Western NDE reports. I am puzzled by his comment that, had I engaged the material in his third chapter, I might have found the concept of a core NDE within cultures (if not across them) “philosophically permissible.” Simply put, I did not find the *philosophical* objections to the possibility of a crosscultural core that he addressed to be persuasive to begin with. If I *had*, I could not have consistently called for further research into the sociological sources of Western NDE motifs, or the need to collect a greater variety of nonWestern NDE reports, for better empirical evidence can never resolve a purely conceptual issue.

Though I noted that individual Western NDEs often contain idiosyncratic features, I never suggested that I thought that there were any significant conceptual problems with the possibility of a crosscultural core to NDEs. Rather, my contention was that *according to the evidence available to us now*, there seems to be no crosscultural core of well-defined NDE elements. Instead, only broadly defined elements that we would expect to see among those who feel that they are dying are evident crossculturally. This is an empirical finding, not an *a priori* objection.

As Fox sees it, I am in a bind: I cannot deny the commonalities between Western NDE reports even while concluding that they are largely absent from extant nonWestern accounts. I concur, only I would hasten to add that all of us are in the same bind. We are pushed in two mutually exclusive directions: the absence of a clear sociological source of Western NDE motifs pushes us toward positing universal features, while evidence from current nonWestern studies suggests only locally well-defined motifs, pushing us toward positing a sociological source. This is why further research is needed.

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