

Research Essay

The Theory of a Natural Afterlife A Newfound, Real Possibility for What Awaits Us at Death

Bryon K. Ehlmann*

Abstract: For centuries humans have considered just two main possibilities for what awaits us at death: a “nothingness” like that of our before-life or some type of supernatural afterlife. The theory of a natural afterlife defines a vastly different, real possibility. The natural afterlife embodies all of the sensory perceptions, thoughts, and emotions present in the final moment of a near-death, dreamlike experience. With death this moment becomes timeless and everlasting to the dying person—essentially, a never-ending experience. The relativity and timelessness of the natural afterlife must be clearly understood to appreciate why it’s not supernatural yet indeed an afterlife and potentially the optimal heaven. The theory of a natural afterlife is now only a hypothesis; however, science, human experience, and logical deduction suggest that it’s extremely plausible and advances in science and technology could someday make it a scientific theory. This paper states the theory, describes the unconventional afterlife it defines, extensively analyzes its validity, and briefly addresses how it can significantly impact how people view death. Analytical tools, typically used for system modeling and language definition, are applied here to present an abstract model of a lifetime within time eternal. The model is used to support and explain the theory.

Keywords: afterlife; natural afterlife; human mortality; death and dying; near-death experience; imperceptible death

1 Introduction

Many claim that near-death experiences (NDEs) provide proof of a supernatural afterlife—i.e., that human consciousness continues after death. Books making this claim, each based on a personal NDE, have become bestsellers. Examples are *Proof of Heaven: A Neurosurgeon's Journey into the Afterlife* by Eben Alexander (2012) and *Heaven is for Real: A Little Boy's Astounding Story of his Trip to Heaven and Back* by Todd Burpo (2011). Other books, each based on studies of numerous individual NDEs, also make the claim. Examples include those by Raymond Moody (2001), Jeffery Long (2010), and Pim van Lommel (2010).

Many, however, dispute that NDEs provide proof or even evidence of an afterlife. Several articles in popular scientific publications point to scientific research showing that the common features of NDEs are explainable as natural physiological responses, which can be replicated by brain stimulations, certain drugs, or diseases. Such responses are believed to be induced by the brain as it senses disaster or goes into shut down. Based on this research, the claim is made that near-death experiencers (NDErs) are just mistaking a natural *hallucination* (as some call it) for a supernatural afterlife. For example, see “Why a Near-Death Experience isn’t Proof of Heaven” by Michael Shermer (2013).

The *theory of a natural afterlife* brings a new interpretation to this scientific research and a middle ground regarding both claims concerning NDEs. It does so by defining a newfound possibility for what may happen to us—more precisely, to our conscious self—when we die. The

* Correspondence: Bryon K. Ehlmann, PhD, Retired Professor of Computer Science and now Independent Researcher, Tallahassee, FL, USA. Email: bryon.ehlmann@gmail.com

theory, a hypothesis in a scientific sense, suggests the existence of a natural, versus supernatural, “afterlife”—one amazingly created within the mind, perhaps but not necessarily induced by brain physiology as some scientists suggest. The possibility of this *natural afterlife*, which seems an oxymoron, has never been mentioned in scholarly publications. More surprisingly, until recently it hasn’t even been part of the conversation regarding an afterlife.

Admittedly, the natural afterlife is unconventional, as indicated by the quotes around *afterlife* in the previous paragraph. It requires no belief in anything supernatural, including a God. Thus the theory of a natural afterlife is religiously neutral; however, like the NDE, its defined afterlife can be interpreted as a spiritual “heaven” (or “hell”). Here, quotes enclose *heaven* (and *hell*) as they too are unconventional. The heaven, though unconventional, is at least philosophically consistent, unlike the conventionally envisioned heaven associated with many, yet mainly Western faiths; that is, logical conflicts among perfection, time eternal, free-will, evil, and boredom do not exist.

Hopefully, all of this is clarified in the remainder of this article, organized as described below. Quotes around *afterlife* and *heaven* are hereafter not used since the natural afterlife is indeed an afterlife and possibly a heaven to the dying person, which in the end is what really matters.

- Section 2 states the theory and explains the essence of the natural afterlife it defines.
- Section 3 elaborates on important aspects of the afterlife and theory.
- Section 4 addresses the theory’s validity and verifiability. It provides supporting evidence and a *near-proof*, indicates future advances that would allow for testing, underscores the theory’s explanatory power, and deals with some likely challenges to the theory and obstacles to its acceptance and appreciation.
- Section 5 concludes by summarizing the essential claim and credibility of the theory and by touching on its scientific, philosophical, and religious significance.
- An appendix expounds on how humans perceive time, comparing the natural afterlife to permanent anesthesia and formally defining it in the context of life and time eternal.

2 Statement and Explanation: The Essence of the Natural Afterlife

In its most inclusive form, the theory of a natural afterlife can be stated as follows:

The natural afterlife of a NDE-enabled creature is the NDE from which it never awakes—essentially, a never-ending experience (NEE) relative to the creature’s perception.

The theory defines the natural afterlife, implying its existence by its association with the NDE—a phenomenon evidenced by numerous accounts recorded across cultures and throughout history as far back as the oral tradition (Holden, Greyson, & James, 2009b; Moody, 2001). Here, the NDE is assumed to be a *near-death* experience, not an *after-death* experience as some postulate. It occurs in an altered state of consciousness, as do dreams, and is thus dreamlike to some extent.

To accept this seemingly implausible, NDE-based NEE and *natural* afterlife as plausible, one must fully understand its essence. To do so, one must be able to imagine what may be in their mind at near-death *and think of nothing else*. So, imagine this scenario:

You are having what will be called your NDE should you recover. In this very profound, all too real experience, you’re overcome by marvelous feelings of wonder, love, and

contentment. You truly believe that you have arrived and are experiencing heaven, and you're excitedly anticipating the next moment and an eternity of joyful experiences.

With death and the end of consciousness, this is your natural afterlife. You perceive nothing more, *yet nothing less*. Everything else that happens thereafter is totally irrelevant *to you*. However, very relevant and *relative only to you*, is that the moment described above goes on forever. Your NDE consciousness, your sense of self, and, if one exists, your soul has entered a timeless dimension. You are finally, fully, and forever "living in the moment." You believe you're in heaven, and for all eternity you never know otherwise.

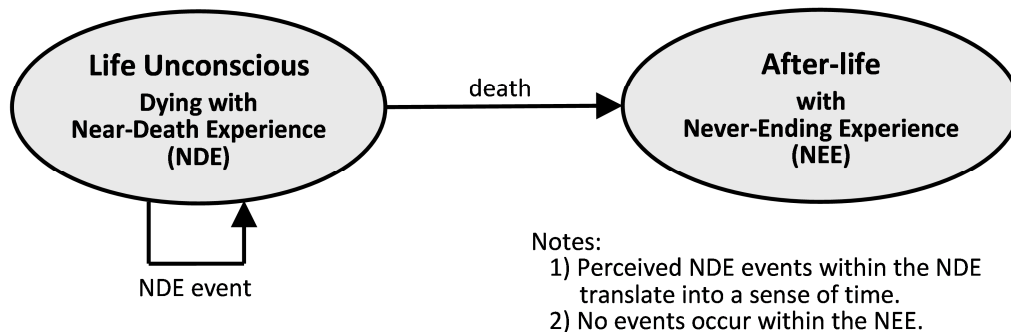
Ironically, this afterlife is possible not because individual consciousness continues after death but because with death, when *and if* such consciousness ends, you won't know that:

- you've died. You won't see the "NDE screen" go blank.
- your NDE has ended. You won't notice that nothing more happens in your NDE.
- an eternity is fleeting by. Is this happening just before or after you died? You can't tell. *Relative to you*, it's irrelevant, time is suspended, and your NDE is essentially timeless and everlasting, i.e., an *NEE*.

Analogies along with thought experiments (those carried out only in the imagination) are helpful towards understanding the natural afterlife. First, it's like the most realistic, intense dream you've ever had except that you never wake up from it. This scenario can only be imagined as no living person has ever experienced it. Second, the natural afterlife is like the following scenario, enhanced only slightly from real human experience:

You're totally engrossed in watching an extremely exhilarating movie. Then, without knowing: you unexpectedly, without any perceived drowsiness, fall asleep; for you the movie has been paused and time is fleeting by. Until you wake up, you still believe you're watching that movie.

When you do finally wake up, you're shocked that you fell asleep and that the movie has continued on. Of course, with the natural afterlife, you just never wake up.



- Notes:
- 1) Perceived NDE events within the NDE translate into a sense of time.
 - 2) No events occur within the NEE.

Fig. 1. A state diagram showing the transition in the state of mind upon the event of death assuming an NDE. An oval denotes a state. A directed line (arrow) labeled with an event description denotes a state transition resulting from the event.

When the NDE ends in death, the dying person simply transitions from a dynamic into a static state of mind. The final moment of the NDE becomes the NEE. Fig. 1 gives a state diagram

showing the final two states of mind and the transition assuming an NDE, death, and with death the loss of all consciousness.

A statement given earlier and repeated below describes the heavenly natural afterlife in a nutshell and can be used to both stress its relativity and explain Fig. 1.

You believe you're in heaven, and for all eternity you never know otherwise.

The "believing you're in heaven" with a sense of self and all that the NDE offers, exists only in your mind within the **Life Unconscious, Dying with NDE** state. It's only relative to you because those living don't know "you're in heaven." It becomes timeless, relative to you, because with the loss of consciousness and death you don't know that nothing more will happen in your NDE, while those living do. It's "for all eternity," i.e., everlasting, because your "never knowing otherwise" extends beyond the event **death** into the **After-life with NEE** state. It's everlasting, however, only relative to you because you will never know that your NDE ended with death, while those living do. So, it's timeless and everlasting and *it's all relative!*

What's peculiar about the natural afterlife and key to understanding it is this: it's not about realizing you're in the afterlife *after* you've died, as humans have always imagined, but about realizing you're there *before* you've died and then never knowing otherwise.

3 Elaboration: Aspects of the Natural Afterlife

Important aspects of the natural afterlife and the theory, which can be called the *NEE theory* for short, need to be emphasized, clarified, or expanded upon.

3.1 Relative

The relative essence of the natural afterlife cannot be emphasized enough. The theory of special relativity asserts that time is relative to one's velocity. The NEE theory asserts it may also be relative to one's being alive or dead. In life one perceives time as a marching parade of events, while in death one may perceive only a forever moment of time, not realizing it is eventless.

Humans have always been solely transfixed on a *sustained* conscious afterlife that must be seen as such by everyone, especially the living. Thus hidden from view has been an afterlife that is only *momentary* to the living yet *to the dying person alone* is timeless and everlasting.

3.2 Timeless and Everlasting

The eventless, thus timeless, and everlasting essence of the natural afterlife also cannot be emphasized enough. Death is an event that is only perceived by others. At death, a person is simply left in a pleasant (or unpleasant) instance of time—i.e., $\Delta t = 0$ (delta t , meaning change in time, equals zero). The loss of memory is irrelevant since memory is only necessary when time elapses, i.e., when $\Delta t > 0$. Zero energy is needed for any sustainability because, again, $\Delta t = 0$.

Again, using analogy and imagination, the natural afterlife can be likened to your before-life *except* for a hugely significant difference. It begins with you being "paused" in an NDE-conscious state of mind. Then, like your before-life, billions of years pass by without your knowledge "in no time at all," literally. The one other difference is that, unlike your before-life, your natural afterlife has no terminating event, like birth. Thus, it is everlasting.

3.3 Logically Consistent

Since $\Delta t = 0$ in the natural afterlife and one is just “living” in a moment, no decisions are made and thus free-will is not an issue. Also, one can never *become* bored. In contrast, in any time-perceptive ($\Delta t > 0$) perfect world, free-will is impossible as imperfect decisions would introduce imperfection, perhaps even evil. Though without free-will in such an infinite ($\Delta t = \infty$) world, boredom is most likely as there will be no decisions to make and no challenges. Apparently, *any* eternal afterlife where a time-perceptible consciousness survives death must be either imperfect or logically inconsistent. The conventionally envisioned heaven is the latter, while the NEE heaven is neither for within it one can logically experience a forever, perfect moment.

3.4 Dreamlike and Spiritual

The natural afterlife is dreamlike in that NDEs and dreams are somewhat similar. Both provide alternative, spiritual experiences to the fully conscious, awake one. Both can be very intense and indistinguishable from reality. Both seem mysteriously produced in content and have been historically viewed by many as providing a potential passage into a transcendental realm. *Oxford Dictionaries* defines a dream as “a series of thoughts, images, and sensations occurring in a person's mind during sleep,” which also describes the NDE except that it normally occurs during a brain diminished state rather than during sleep. Other notable differences are 1) the NDE can be even more intense than a dream and so have a more lasting impact (Noyes, Fenwick, & Holden, 2009), so much so that many claim their NDE was not dreamlike (Long, 2008), and 2) the NDE can occur during general anesthesia whereas dreams cannot (Greyson, Kelly, & Kelly, 2009, p. 226; Hameroff, 2010b), implying a differing production mechanism or source.

In regard to whether a natural afterlife results with death, some differences between NDEs and dreams may not be that important (but certainly not #2 above). The possibility exists that a dying person has no brain-diminished NDE but instead dies in their sleep interrupting an intense dream. Vivid and meaningful end-of-life dreams and visions (ELDV's) have been recorded throughout history. A recent study found ELDV's to be very common and also found that comforting perceptions of meeting deceased loved ones within them were more prevalent as participants approached death (Hoffman, 2016; Kerr et al., 2014). It seems very plausible that such vivid, “near-death” dreams have been reported as NDEs and with death also result in NEEs.

Given that the natural afterlife is NDE-based, it is spiritual. All beings—the NDEr, other humans, and nonhumans—are present only in spirit, certainly not in body, perhaps just as they are in normal dreams or perhaps not. Nevertheless, no physical objects of any kind and no physical space are involved. The natural afterlife exists beyond both time and space.

3.5 Varied and Personalized

The theory does not say what the content of the NEE will be or whether it will be pleasant or a nightmare. It could be a celestial communion with angels, a glorious day on the beach, or an eerie encounter with demons. The most common features of pleasurable NDEs are well documented: OBEs; heightened senses; guided or surrounded by light; otherworldly; feelings of peace, joy, and/or cosmic unity; and encountering mystical and/or familiar human beings (Kellehear, 2009; Zingrone & Alvarado, 2009). Variations, however, abound. Indeed, variations include *distressing NDEs (dNDEs)*, a term used by Nancy Evans Bush (2009) to describe “‘frightening,’ ‘negative,’ or ‘hellish’” NDEs. Based on many NDE studies, she concludes that

the percentage of such NDEs among those reported is “possibly in the mid- to high teens” but also that likely “dNDEs are underreported” (p. 81).

Variations in NDEs may result from a person’s life experiences, beliefs, culture, their interpretations of the experience, and/or near-death brain physiology. However, research on reported NDEs has shown that none of these factors can reliably predict the content of an NDE (Greyson et al., 2009, p. 226; Holden, Long, & MacLurg, 2009). Whether the natural afterlife is a gift from God or nature and whether a God (versus nature) plays a role in fashioning it may forever be a matter of one’s religious or spiritual faith or lack thereof. The fashioning, however done, permits the natural afterlife to be profoundly personalized. The human beings that often appear in NDEs, who may be deceased or still living, are most often those who were emotionally close to the NDEr (Zingrone & Alvarado, 2009).

3.6 The Optimal Heaven

The natural afterlife can provide the most heavenly afterlife possible given the extremely pleasurable features of many NDEs, as has been reported, and the natural afterlife’s timeless, everlasting, logically consistent, spiritual, and personalized aspects. This statement may seem incredible since within the natural afterlife nothing happens! As humans we are so addicted to happenings—i.e., events and thus human-time—that it’s hard to appreciate the happiness that is possible in an eventless afterlife. We think we need events, i.e., perceived change, to make us eternally happy—hence the illogical longing for the supernaturally *perfect*, everlasting, and *yet changing* thus time-perceptive afterlife. But do we really need events? First, in the heavenly natural afterlife one doesn’t know that nothing more will happen and thus won’t miss a thing. Instead, humanly habituated by the experience of time always marching on, one is left in a state of exuberant, unspoiled anticipation of many more heavenly moments to come. Second, are life’s events what give us pleasure or is it the feelings aroused by these events? The natural afterlife can be a moment where, based on past NDE events, one feels the ultimate in happiness, knowing they’re in heaven forever, immersed in love (in the absolute presence of God as the theist would believe). Once this happens, exactly what more needs to happen?

3.7 Not Guaranteed but Perhaps Prevalent and Apparently Unbiasedly Bestowed

The theory does not guarantee a natural afterlife. Clearly, the percentage of people having an NDE before dying is unknown. The percentage of near-death survivors reporting an NDE varies widely among studies. A 1981-82 study found that 47% of near-death survivors of attempted suicide reported an NDE (Zingrone & Alvarado, 2009). Though this result is high relative to other studies, reports of NDEs only grow as advances in medicine—e.g., cardiopulmonary resuscitation (CPR)—continue (Brennan, 2014, p. 329; Holden, Greyson, & James, 2009a, jacket summary). Also, studies of survivors thought “near-death” likely underestimate the frequency of NDEs among the dying because such survivors may not wish to divulge their NDEs or, more significantly, may not have been quite *near-death* enough to have one.

Suppose there’s no NDE at death? The after-life (with hyphen) could be just like the before-life, often described as “nothingness.” However, the NEE theory doesn’t address this question.

Though the natural afterlife isn’t guaranteed, it appears to be unbiasedly bestowed, at least based on one study of NDEr (Holden, Long, & MacLurg 2009). After reviewing research on the characteristics of NDEr—e.g., age, sex, race and ethnicity, education, religious affiliation and

religiosity, sexual orientation, and psychological factors—the study concludes NDEs appear to be “equal opportunity transpersonal experiences” and that “everyone is a potential NDEr.”

3.8 Independent of NDE Explanation

Some scientists think that NDEs are purely the creations of brain physiology, perhaps involving similar mechanisms as dreams, while others contest such views. Dr. Kevin Nelson (2011), a neurologist who studies NDEs, thinks NDEs employ the same brain apparatus that is used for dreaming within a REM (rapid eye movement) state of mind. Also, the out-of-body experience (OBE), sometimes an initial part of the NDE, is thought by some to be related to lucid dreaming (Green, 1995; Levitan, 1991; Nelson, 2011). However, Bruce Greyson, Emily Williams Kelly, and Edward F. Kelly (2009, pp. 213-244) provide a credible rationale as to why current physiological “explanatory models” (i.e., explanations) cannot account for some NDE features. They argue that serious consideration should be given to a transcendental explanatory model where “some level of reality transcends the physical world.”

Explanations of how NDEs and OBEs occur, however, are immaterial to the validity of the NEE theory. Also immaterial is evidence that similar experiences happen to people when they are not near death. The only thing that is material is that NDEs provide “thoughts, images, and sensations” very near to death that are “even more real than real”—a phrase used to describe the NDE by neurologist Steven Laureys based on a study of NDE memories (as cited in Thonnard et al., 2013) and quoted in Brumfield (2013). Thus, they provide the prerequisite final, intense, perceptive moment that with the loss of all subsequent perception becomes a forever present, i.e., the NEE.

3.9 Applicable to Other Creatures

The theory applies to any “NDE-enabled creature”—i.e., those capable of a near-death dreamlike experience. Research has shown that REM sleep, conducive to dreaming, occurs in higher level mammals, including rats (Bekoff, 2012; Louie & Wilson, 2001). Moreover, rats have shown a surge in brain activity just prior to death, which could be indicative of NDEs (Borjigin et al., 2013) and thus NEEs. Thus, there may be a dog heaven after all!

3.10 Natural but Nonexclusive

The NEE theory uniquely labels the natural afterlife as *natural* since, unlike others, its definition and associated explanation, now completed, are presently within the scope of conventional scientific understanding. As such, and likely shocking to its adherents, the theory provides religious naturalism (Crosby, 2008; Stone, 2008) with a spiritual afterlife.

The theory, however, merely defines this afterlife and implicitly claims its existence. It does not deny the existence of any supernatural afterlife, no matter how apparently illogical or (at least for now) unscientific. This afterlife could be an after-death type of NDE (e.g., Long, 2008), or an afterlife that immediately or subsequently overrides the NEE, thus providing a new perceived present—e.g., the initial moment of a judgment day or a reincarnation.

4 Validation: Can the Theory Be Verified?

4.1 Near-proof

The natural afterlife results from the conjunction (\wedge) of three natural phenomena. First is the ability to have an NDE. Label this *NDE*. Second is the animalistic perception of time as relative only to perceived events. Label this *event relative time*. Third is the *imperceptible death*, which is the inability of a dying creature to perceive their moment of death, however inexact the event. Label this *imperceptible death*. The NEE theory can now be logically expressed as

$$(NDE \wedge \textit{event relative time} \wedge \textit{imperceptible death}) \rightarrow (NEE \Leftrightarrow \textit{natural afterlife})$$

where each phenomenon is treated as a proposition. To prove the theory, one must show that all three propositions and the implication (\rightarrow) are true. The equivalence (\Leftrightarrow) is true by definition.

The ability of humans to have NDEs is beyond question based on numerous reports (Holden, Greyson, & James, 2009a; Long & Perry, 2010; Moody, 2001). Thus, *NDE* is true for humans and perhaps for other NDE-enabled creatures (Borjigin et al., 2013).

Also, well established is our animalistic perception of time as relative to and dependent on an observable, ordered sequence of events, real or imagined. Einstein revealed that “time has no independent existent apart from the order of events by which we measure it” (Barnett, 1964, p. 19, 47). Philosophy also acknowledges the dependency of our perception of time on “changes or events *in time*” and our perceptions of “their temporal relations” (Le Poidevin, 2015). Accordingly, current dictionary definitions reflect an event relative time. Merriam-Webster, for example, defines *time* as “a nonspatial continuum that is measured in terms of events which succeed one another from past through present to future.” Thus *event relative time* is true.

The dependency of time on events implies that when events cannot be perceived within a state of mind—e.g., dreamless sleep—we experience timelessness, not nothingness. That is, timelessness trumps nothingness. We only lose our sense of time, not our senses of self and being, which are very important things. To be perfectly clear, within an eventless state of mind, our senses of self and being are lost (or more precisely, become inactive) *in the minds of the time perceiving awake* (i.e., in reality); however, *in our minds*, relatively speaking, we never lose them. They were present in the last event experienced before entering the eventless state, nothing happens in this state to tell us we’ve lost them (not even total darkness), and so they become timeless until another event is experienced. The Appendix further elaborates on how our perception of time and timelessness supports the NEE theory.

Fig. 2 shows a simplified, abstract model of life including the before and after, giving major states of mind, or consciousness, and the transitions (arrows) between them. The rightmost two states (ovals) are the same states shown in Fig. 1, except an NDE is not assumed. A time-perceptive state has an arrow that is labelled with a type of *event* and loops from and into the state. Time is perceived to advance within such states as these perceived internal events occur. States that are timeless have no such looping arrows. Examples of perceived events are the tick of a clock, a spoken syllable, the flap of a wing, a blink of the eye, and a new thought or feeling.

Assume temporarily that *imperceptible death* is true. Then, when an NDE ends due to death, one isn’t informed in any way that “You’re dead, NDE over.” And clearly, once dead, one never notices that no more NDE events occur. Also, no perceivable event will ever occur to end the ensuing timelessness. Hence, one’s mind is suspended in the last NDE moment with senses of self and being both intact. Such suspension results in the NEE. Thus the implication (\rightarrow) is true.

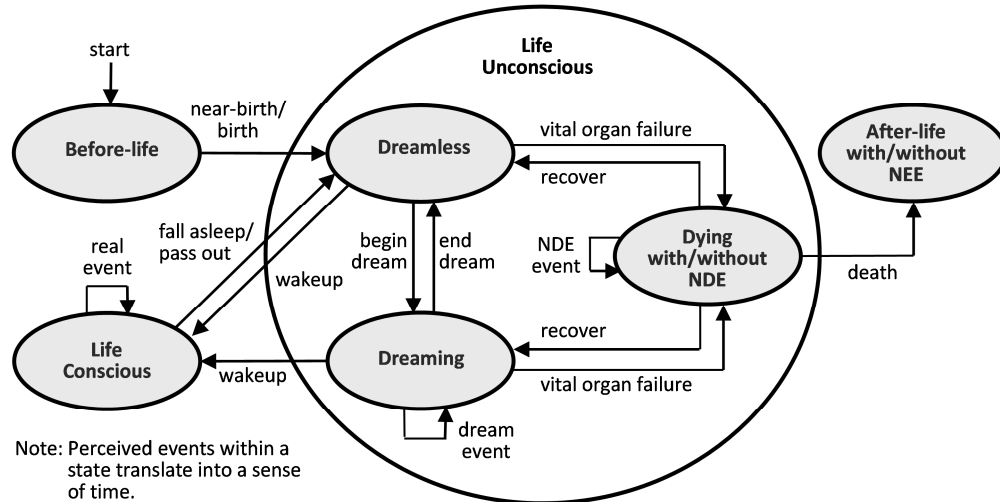


Fig. 2. Major states of mind in life and state transitions—an abstract model where dreams and NDEs are given more prominence. Again, an oval denotes a state and a directed line (arrow) denotes a state transition resulting from the described event.

Now only *imperceptible death* remains a proposition to prove. If until regaining consciousness, i.e., coming to, humans never perceive the moment of

- 1) falling asleep while watching a movie or just lying in bed,
- 2) passing out while being given a general anesthetic, and
- 3) ending a dream,

then it is extremely likely they never perceive the moment of

- 4) death while unconscious and dying, with or without the NDE.

Item 4 seems especially true given that brain cells are being deprived of oxygen and electrical signals in the brain are fading.

Indeed, with the model in Fig. 2 an imperceptible death can be seen as consistent with a more general phenomenon and proposition. Call this the *imperceptible loss of time*. It states that a person can never perceive the moment of transition from a time-perceptive state into a timeless state. The reason is obvious. No perceptible event indicates the transition, neither the transitioning event (in Fig. 2 *fall asleep, pass out, end dream, and death* for items 1-4 above, respectively) nor clearly any event afterwards within the timeless state (*Life Unconscious, Dreamless* for items 1-3 and *After-life* for item 4).

From the above analysis of human experience, *imperceptible death* is *nearly* certainly true.

Therefore, since *NDE, event relative time*, and the implication (\rightarrow) are all true, the NEE theory is *nearly* proven by logical deduction. ■ (Nearly!)

4.2 Testability

Unfortunately, it seems that unless science can someday resuscitate those beyond the “moment of death” to verify the imperceptible death proposition (and the NEE itself), the NEE theory cannot be tested. However, is this really the case?

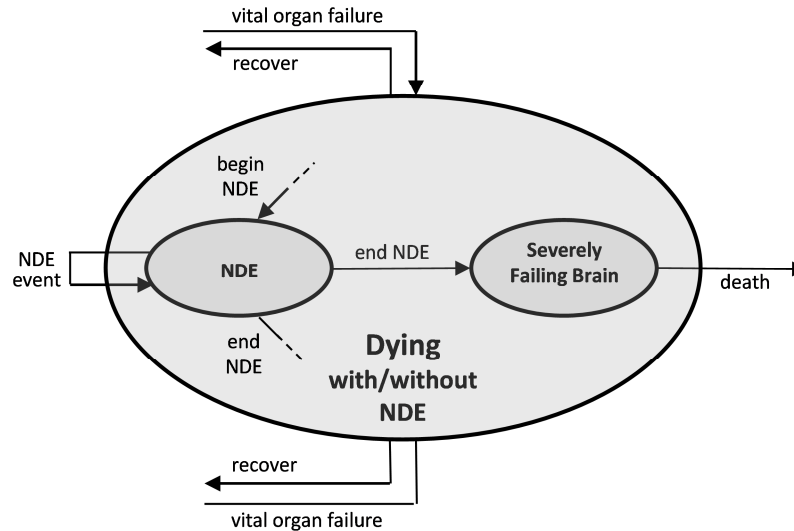


Fig. 3. A zoom-in to the Dying State of Fig. 2 that focuses on the two internal states most relevant to the NDE and death.

Or, could advancements in medical science and technology allow the theory to be tested and thus verified or possibly falsified in the future? The key to this possibility lies in the fact that most likely *a person never really dies in the midst of an NDE*. Instead, as indicated in the Appendix, a span of time follows the last NDE event and precedes the actual event **death**, as shown in Fig. 2. This time span is timeless relative to the dying person and can be viewed as occurring within a state of mind that is internal to the **Dying** state of mind shown in Fig. 2. This internal state of mind is shown in Fig. 3 within the **Dying** state and labelled **Severely Failing Brain**. It exists because brain death is a gradual process that can be viewed as ending only after the last detectable moment of any brain activity. The **Severely Failing Brain** state is entered in the case of **Dying with NDE** when the deterioration of brain cells at some point ends the NDE. Given the existence of this state, the following sequence of science and technology breakthroughs and research results may be within the future realm of possibility:

- 1) Technology allows close and detailed monitoring of the condition of brain cells and brain activity within dying patients.
- 2) Such brain monitoring along with interviews with NDE survivors reveal the signature brain activity within certain regions of the brain that identifies the NDE.
- 3) Brain activity in dying patients is monitored to detect the beginning and end of NDEs.
- 4) Testing reveals the levels of brain cell functionality (BCF) typically remaining just prior to when all NDE brain activity ceases as brain cell deterioration progresses. Let $minBCF_{NDE}$ represent these levels.
- 5) Testing also reveals the levels of brain cell functionality that are required in order to think—i.e., to consciously entertain a thought (T), any thought but especially one like “I’m awake.” or “My NDE has ended.” or “I’ve died.” Let $minBCF_T$ represent these levels.
- 6) The conclusion is reached that $minBCF_{NDE}$ falls well below $minBCF_T$, which verifies the imperceptible death proposition and thus the NEE theory.

- 7) Medical science and technology allows some dying patients to be resuscitated who are within the time period after NDE brain activity had ceased and $minBCF_{NDE}$ had been detected.
- 8) Interviews with these survivors surprisingly reveal that they perceived the moment when their NDE ended. *If true, this finding would falsify the imperceptible loss of time proposition and thus the NEE theory*, since the theory depends on the dying person not knowing their NDE has ended.

The above sequence provides one possible future scenario, and perhaps there are others, that would allow the NEE theory to be verified or falsified—making it a scientific theory, someday.

4.3 Supporting Evidence and Explanatory Power

Though the theory cannot *yet* be verified, the given proof shows how near it is to being certain, or at least extremely plausible. Moreover, the theory is supported by and consistent with the existence of an amazing dreaming and NDE capability within the human mind, the reported scientific explanations for NDEs, and the intensity and reality of them. As such, it offers greater explanatory power over other theories about an afterlife.

4.3.1 An Amazing Dreaming and NDE Capability

The ability of our minds to create dreams and NDEs is a little understood and under-appreciated phenomenon. The model in Fig. 2 was designed to emphasize the role of dreams and NDEs in our lives. In these spiritual altered states of consciousness and in our material awake state, we experience objects, events, thoughts, and emotions. Most often, we can't distinguish the spiritual states from our material one. In the spiritual ones we are not in control, yet we never lose our sense of self. In our dreams, our self is in some ways our super self. For our mind can almost instantaneously paint beautiful landscapes, design and decorate rooms, create new faces, compose plots, and create dialog and events. Such rapid creativity is likely well beyond our talents and abilities while awake. Though exactly how dreams and NDEs relate is not yet understood, they are truly another dimension of being.

Why does such an incredible dimension exist? The NEE theory provides an answer. It posits at least one momentous purpose—namely, the natural afterlife, perhaps evolved in conjunction with evolved intellect, senses, and emotions. Science, on the other hand, has yet to provide a better answer. While some purposes for dreaming have been posited, no scientific theory yet exists (Breus, 2015; Lewis, 2014), and no purpose for dreams or NDEs has been posited that is commensurable to their amazing features or as momentous as the natural afterlife.

4.3.2 Reported Scientific Explanations for NDEs

If a number of scientists are to be believed, our brains seem to have a natural propensity for producing NDEs and thus NEEs. As mentioned previously, the scientific explanations for this propensity—essentially brain physiology—have been reported by many articles in popular scientific publications. The aim of the authors has been to explain NDEs as just a natural phenomenon, not proof or even evidence for any afterlife. All make the same problematic assumption, however, about an afterlife.

“Peace of Mind: Near-Death Experiences Now Found to Have Scientific Explanations” (Choi, 2011), largely based on the work of Mobbs & Watt (2011), describes the common

features of NDEs and explains how each might be the result of “normal brain function gone awry.” He suggests the features can be caused by certain diseases, by artificially stimulating parts of the brain, by high-level releases of a stress hormone in the brain during trauma, by medicinal and recreational drugs that affect the brain in a similar manner as does trauma, and by the depletion of blood and oxygen flow that can happen with extreme fear and oxygen loss when dying. Choi’s main thesis is stated in his first sentence: “Near-death experiences are often thought of as mystical phenomena, but research is now revealing scientific explanations for virtually all of their common features.” The implicit claim here is that NDEs *do not* provide evidence of an afterlife. This claim is made explicit in *The Death of “Near Death”: Even If Heaven Is Real, You Aren’t Seeing It* by Kyle Hill (2012).

The assumption, however, made by Choi and Hill as well as Shermer (2013), cited earlier, and by many others is that an afterlife must be *supernatural*. Remove this assumption, and the research that supports a *materialistic* explanation for NDEs ironically supports the likelihood of having a *spiritual* natural afterlife.

4.3.3 *The Intensity and Reality of NDEs*

The intensity and reality of the experience provided by most NDEs, as revealed by scientific research, begs the question: “Why such an intense, all too real, dreamlike experience just before death?” Again, science has no answer, yet the NEE theory may provide one. How better to imprint a moment into the mind so that it will never be “forgotten”?

4.4 Likely Challenges and Obstacles to Acceptance and Appreciation

Two likely challenges to the NEE theory deserve consideration. Neither, however, concerns its plausibility.

The first concerns its applicability to the situation where death is so sudden—e.g., one is blown apart in a blast—that the NEE seems impossible. But is it really?

Research on rats, cited earlier, showed a surge in brain activity for up to 30 seconds after their heart stops beating and blood flow to their brain ends, i.e., clinical death. Again, such activity was seen to have features providing a scientific foundation for NDEs (Borjigin et al., 2013). But in humans is even one second of brain activity needed for the NDE? In an NDE, our brain can likely paint a complex heavenly scene almost instantaneously. Also, if an NDE can make “one’s life flash before one’s eyes” as has been reported (Moody, 2001), perhaps in shutting down, our brain can create an NEE in nanoseconds.

Another challenge to the NEE theory concerns its significance. Some may claim that the heaven it makes possible, even if optimal, isn’t real—i.e., it’s only a delusion—and thus not particularly intriguing or desirable as an afterlife. Since this claim involves opinion, it can’t be entirely refuted. However, the following should be considered.

- As already stated, NDEs have been described as “even more real than real,” based on studying the NDE memories of coma survivors (Brumfield, 2013; Thonnard et al., 2013). Elaborating, neurologist Steven Laureys states “To our surprise, NDEs were much richer than any imagined event or any real event of these coma survivors. The difference was so vast.” Thus in the NEE heaven, one very likely believes it real and experiences its bliss. Believing now that it’s delusional and thus undesirable likely won’t change this, making

such belief in the end irrelevant. Besides, if the natural afterlife were a *real* afterlife, how would one experiencing it know that it's real and not just an NDE leading up to an NEE?

- What is a “real afterlife” anyway? One definition would relate *real* in this context to human, earth-bound, materialistic, real life experiences. No afterlife, except for perhaps reincarnation, can be real in this sense. The conventional, time-perceptive, perfect world afterlife can't be truly real if it's illogical. On the other hand, a broader definition of *real* would include dreams and NDEs as they are in fact real life experiences.
- Although the sensory perceptions and events within dreams and NDEs are not real in a material sense, the very intense emotions they can invoke are real (McNamara, 2014; van der Linden, 2011), which is why people wake up from dreams immediately feeling the dream emotions, for example fear. When a heavenly NDE ends with death and events have ceased, likely the most important part that remains in the NEE are the heightened emotions—often love, joy, and peace (Zingrone & Alvarado, 2009). *And they are real!*
- Finally, how can a phenomenon, a particular state of mind, that has evolved by nature, is produced by nature (whether or not via a God), and isn't fabricated by humans—versus, for instance, a movie or a drug-induced hallucination[†]—not be considered real?

Despite the above considerations and the arguments for the natural afterlife, some will still think it unreal, thus undesirable; simply undesirable; implausible; or even absurd. For instance, despite various descriptions of the natural afterlife given in this paper, all stressing its reliance on consciousness ending with death, several journal reviewers have thought it implausible because, generally stated, “with death a non-functioning brain cannot sustain any experience,” when no such *experience*, i.e., consciousness, or *sustaining* (implying a $\Delta t > 0$) is needed. Such thinking is likely due to one or more obstacles to accepting and then appreciating the natural afterlife. As already indicated, its relativeness and timelessness ($\Delta t = 0$, *not* > 0), if misunderstood or ignored, can block acceptance, and its eventless-ness and dream likeness can block appreciation.

Yet, the biggest obstacle to accepting the natural afterlife can sometimes be one's close-mindedness. After all, when first encountering the natural afterlife, one must deal with its *prima facie* outlandishness. It's a phenomenon that's way “outside the box.” Hence, it can be too readily dismissed without serious thought. Also, the NEE theory can *seemingly* pose a threat to one's current after-life beliefs—which may have been strongly held for years, into which much may have been heavily invested, and from which a sense of certainty and comfort ensues. Hence, a strong bias toward not wanting to accept the natural afterlife is quite understandable.

Finally, still one more obstacle to accepting and appreciating the natural afterlife is its content uncertainty and everlastingness. Like other supernatural afterlives, it can possibly be everlastingly hellish. Nothingness can no longer be a reassuring certainty.

Oddly, evoking this hellish possibility in a terrifying thought experiment may help some more appreciate a heavenly *eventless, dreamlike* afterlife. So, just imagine its exact hellish opposite: you're dying while believing you're in hell and for all eternity nothing will happen to make you believe otherwise. This is certainly as awful an NEE as the heavenly NEE is magnificent.

[†] Hallucinations occur when awake or semi-awake, often as a result of drugs or mental illness. For the purpose of simplification, the events and moments of such hallucinations are not represented in the state diagram of Fig. 2 and the NEE notation in Fig. 4 of the Appendix.

5 Summary and Significance

When the NDE ends in death, the natural afterlife almost certainly results unless replaced by another afterlife that is currently beyond scientific understanding. To understand and appreciate this default, NDE-based, natural afterlife one must focus on only what their mind can perceive when they're dying. This may include an NDE. If so, and they were somehow resurrected after a billion years, the NEE theory claims they would report having an NDE, and, if not resurrected, they would still believe they were "living" their NEE. Unfortunately, the dead cannot be resurrected to tell us if this is true, but perhaps in the future, testing on the near-dead can.

This audacious claim, made by the NEE theory, is based on how consciousness is assumed to end in the process of dying, or possibly transition in a relative manner. First, sensory perceptions are lost and all awareness of the physical world ends based on the physical senses. Then, near death an altered state of consciousness, a new awareness, possibly awakens and an intense, all too real experience begins within the mind. Then, due to brain deterioration, the experience ends and with it the sense of time is lost—though most significantly, not the senses of self and being. Consequently, the experience, as embodied in its last moment, becomes timeless. Finally, with an imperceptible death, it becomes never-ending as death is nothing more than an eternal continuation of this timelessness. *To the dying person*, the new awareness in the altered state of consciousness and the experience has transitioned into a static, everlasting state of mind.

For centuries humans have pondered and debated just two possibilities for what they may encounter at death: a kind of nothingness like that of their before-life or some type of supernatural afterlife. The significance of the NEE theory is that those now living have a third possibility to consider, the natural afterlife. In doing so:

- Those claiming that heavenly NDEs provide "proof of heaven" and a time-perceptible consciousness that continues after death may want to more justifiably claim that *at the minimum* they provide *evidence* of a relativistic heaven and altered state of consciousness that with death is made timeless and eternal.
- Those claiming that scientific research shows that NDEs provide no evidence of an afterlife should instead unassumingly claim that they provide no evidence of a *supernatural* afterlife.
- Theists may question their conventional view of heaven and perhaps welcome one that is scientifically and philosophically defensible—a timeless heaven, personalized by God, and one that can provide a realistic answer to the age-old question: "Where is heaven?"
- Atheists may question their conventional view of an after-life of nothingness and welcome the possibility of a credible, heaven-like afterlife—one created and personalized by nature and thus one that doesn't require believing in a God.
- Those who believe that one's actions in life matter not at all since in the end all merely "return to dust," may wonder how one's beliefs, morals, and memories impact the contents of an NDE—i.e., if what "is within you" determines what your natural afterlife will be like.[‡] Stated more philosophically, will nature or God deliver justice in the end?

[‡] The words here are purposely suggestive of certain religious teachings: "... the Kingdom of God is within you." [Luke 17:21] and the principle of karma, that one's actions determine what one's next life will be like.

- And finally, those who simply find it difficult, scientifically or philosophically, to believe in any kind of afterlife may find new hope and comfort in the natural afterlife, especially in their dying moments.

Given the above, the theory of a natural afterlife can have a huge impact on how individuals view death and hence life (of which dying is a part). The strong possibility that at death one is forever frozen in a dreamlike yet very real, sensually and emotionally intense, heavenly (or hellish) state of mind would seem hard to ignore.

Acknowledgements

I am grateful to my wife Barbara Ehlmann for proofreading and finding my errors in grammar and word selection. I especially owe much thanks to Donald A. Crosby, Professor Emeritus of Philosophy at Colorado State University, for considering my theory early on and giving me the needed confidence in its originality and plausibility that facilitated its full development and then for continuing to review my articles, challenge my assertions, and offer support and advice.

References

- Alexander, E. (2012). *Proof of heaven: A neurosurgeon's journey into the afterlife*. New York: Simon & Schuster.
- Barnett, L. (1964). *The universe and Dr. Einstein*. New York: Signet.
- Bekoff, M. (2012, December 4). Do animals dream? Science shows of course they do, rats too. *Psychology Today*. Retrieved from <http://www.psychologytoday.com/blog/animal-emotions/201212/do-animals-dream-science-shows-course-they-do-rats-too>
- Borjigin, J., Lee, U., Liu, T., Pal, D., Huff, S., Klarr, D., Sloboda, J., Hernandez, J., Wang, M. M., & Mashour, G. A. (2013). Surge of neurophysiological coherence and connectivity in the dying brain. *Proceedings of the National Academy of Sciences of the United States of America*, 110 (35), 14432–14437. Retrieved from <http://www.pnas.org/content/110/35/14432.full>
- Brennan, M. (Ed.) (2014). *The A–Z of death and dying: Social, medical, and cultural aspects*. Santa Barbara, CA: ABC-CLIO/Greenwood.
- Breus, M. J. (2015, February 13). Why do we dream: New insights into what really goes on when we drift into sleep. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/blog/sleep-newzzz/201502/why-do-we-dream>
- Brumfield, B. (2013, April 10). “Afterlife” feels “even more real than real,” researcher says. *CNN*. Retrieved from <http://www.cnn.com/2013/04/09/health/belgium-near-death-experiences>
- Burpo, T. (with Vincent, L.) (2011). *Heaven is for real: A little boy's astounding story of his trip to heaven and back*. Nashville, TN: Thomas Nelson.
- Bush, N. E. (2009). Distressing western near-death experiences: Finding a way through the abyss. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 63-86.
- Choi, C. Q. (2011, September 12). Peace of mind: Near-death experiences now found to have scientific explanations. *Scientific American*. Retrieved from <http://www.scientificamerican.com/article/peace-of-mind-near-death/>
- Crosby, D. A. (2008). *Living with ambiguity: Religious naturalism and the menace of evil*. Albany, NY: SUNY Press, 1-4.

- Green, J. T. (1995). Lucid dreams as one method of replicating components of the near-death experience in a laboratory setting. *Journal-of-Near-Death-Studies*, 14(1).
- Greyson, B., Kelly, E. W., & Kelly E. F. (2009). Explanatory models for near-death experiences. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 213-234.
- Hameroff, S. (2010a, September 9). Consciousness and the nature of time with Stuart Hameroff. *Huffington Post*. Retrieved from http://www.huffingtonpost.com/deepak-chopra/consciousness-and-the-nat_b_711116.html
- Hameroff, S. (2010b, September 16). Consciousness and anesthesia with Stuart Hameroff. *Huffington Post*. Retrieved from http://www.huffingtonpost.com/deepak-chopra/consciousness-and-anesthe_b_719715.html
- Hill, K. (2012, December 3). The death of "near death": Even if heaven is real, you aren't seeing it. *Scientific American*. Retrieved from <http://blogs.scientificamerican.com/guest-blog/2012/12/03/the-death-of-near-death-even-if-heaven-is-real-you-arent-seeing-it/>
- Hoffman, J. (2016, February 2). A new vision for dreams and dying. *The New York Times*. Retrieved from http://mobile.nytimes.com/2016/02/02/health/dreams-dying-deathbed-interpretation-delirium.html?emc=edit_th_20160202&nl=todaysheadlines&nid=36858477&referrer=
- Holden, J. M., Greyson, B., & James, D. (Eds.) (2009a). *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO.
- Holden, J. M., Greyson, B., & James, D. (2009b). The field of near-death studies: Past, Present, and Future. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 1-16.
- Holden, J. M., Long, J., & MacLurg, D. (2009). Characteristics of western near-death experiencers. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 109-134.
- Kellehear, A. (2009). Census of non-western near-death experiences to 2005: Observations and critical reflections. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 135-158.
- Kerr, C., Donnelly, J., Wright, S., Kuszczak, S., Banas, A., Grant, P., & Luczkiewicz, D. (2014). End-of-life dreams and visions: A longitudinal study of hospice patients' experiences. *Journal of Palliative Medicine*, 17(3): 296-303. doi:10.1089/jpm.2013.0371.
- Lanza, R. (with Berman, B.) (2009). *Biocentrism: How life and consciousness are the keys to understanding the true nature of the universe*. Dallas: BenBella Books.
- Le Poidevin, R., The experience and perception of time. *The Stanford Encyclopedia of Philosophy (Summer 2015 Ed)*, Edward N. Zalta (Ed.). Retrieved from <http://plato.stanford.edu/archives/sum2015/entries/time-experience>
- Levitin, L., & LaBerge, S. (1991). Other worlds: Out-of-body experiences and lucid dreams. *Nightlight (The Lucidity Institute)*, 3(2-3). Retrieved from <http://www.lucidity.com/NL32.OBEandLD.html>
- Lewis, P.A. (2014, July 18). What is dreaming and what does it tell us about memory? [Excerpt from Lewis, P.A. (2013). *The secret world of sleep: The surprising science of the mind at rest*. New York, NY: Palgrave MacMillan.]. *Scientific American Mind*. Retrieved from <http://www.scientificamerican.com/article/what-is-dreaming-and-what-does-it-tell-us-about-memory-excerpt/>
- Long, J. (with Perry, P.) (2010). *Evidence of the afterlife: The science of near-death experiences*. New York: Harper One.
- Long, J. A. (2008). Dreams, near-death experiences, and reality. NDERF. Retrieved from http://www.nderf.org/NDERF/Research/dreams_reality032703.htm

- Louie, K., & Wilson, M. A. (2001). Temporally structured replay of awake hippocampal ensemble activity during rapid eye movement sleep. *Neuron*, 29(1), 145–156. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0896627301001866>
- McNamara, P. (2014, October 14). Dreams more accurately track thought and emotion than waking. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/blog/dream-catcher/201410/dreams-more-accurately-track-thought-and-emotion-waking>
- Mobbs, D., & Watt, C. (2011). There is nothing paranormal about near-death experiences: How neuroscience can explain seeing bright lights, meeting the dead, or being convinced you are one of them. *Trends in Cognitive Sciences*, 15(10), 447–449. doi: <http://dx.doi.org/10.1016/j.tics.2011.07.010>
- Moody, R. (2001). *Life after life: The investigation of a phenomenon—survival of bodily death*. San Francisco: HarperSanFrancisco.
- Nelson, K. (2011). *The spiritual doorway in the brain: A neurologist's search for the God experience*. New York: Dutton.
- Noyes, R. Jr., Fenwick, P., & Holden, J. M. (2009). Aftereffects of pleasurable western adult near-death experiences. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 41-62.
- Shermer, M. (2013). Why a near-death experience isn't proof of heaven. *Scientific American*, 308(4), 86. Retrieved from <http://www.scientificamerican.com/article/why-near-death-experience-isnt-proof-heaven/>
- Stone, J. A. (2008). *Religious naturalism today: The rebirth of a forgotten alternative*. Albany, NY: SUNY Press, 1-4.
- Thonnard, M., Charland-Verville, V., Brédart, S., Dehon, H., Dedoux, D., Laureys, S., Vanhaudenhuyse, A. (2013, March 27). Characteristics of near-death experiences memories as compared to real and imagined events memories. *PLOS ONE*. 8(3) 1–5. Retrieved from <http://www.plosone.org/article/authors/info%3Adoi%2F10.1371%2Fjournal.pone.0057620;jsessionid=5A0F931344E579EB81DC2F884B99775B>
- van der Linden, S. (2011, July 26). The science behind dreaming. *Scientific American Mind*. Retrieved from <http://www.scientificamerican.com/article/the-science-behind-dreaming/>
- van Lommel, P. (2010). *Consciousness beyond life: The science of the near-death experience*. New York: Harper One.
- Zingrone, N. L. & Alvarado, C. S. (2009). Pleasurable western adult near-death experiences: Features, circumstances, and incidence. In J. M. Holden, B. Greyson, & D. James (Eds.), *The handbook of near-death experiences: Thirty years of investigation*. Santa Barbara, CA: Praeger/ABC-CLIO, 17-40.

Appendix

Our Perception of Time: Anesthesia Analogy and Formal Definition

Our animalistic perception of time is fundamental to the NEE theory. Understanding it is crucial to understanding the natural afterlife. Previously, to help explain the natural afterlife, an analogy was used—that of falling asleep during a movie. Here, to further help explain it and our perception of time, a better analogy is used—that involving general anesthesia.

Perhaps you've experienced this. One moment you're lying on an operating table with a mask over your nose and mouth, someone telling you to breathe in and out deeply. The next thing you know you're surprised to find yourself in a recovery room, perhaps with a loved one beside you. Stuart Hameroff is a professor of anesthesiology and psychology and director for the Center for

Consciousness Studies at the University of Arizona. After 35 years of administering anesthesia, he states in (Hameroff, 2010b): “It’s still incredible that they’re awake, they go to sleep, and come back the same person. Where do they go?” He goes on to state that “we can learn a lot about consciousness from anesthesia.”

And consequently, we can learn a lot about the natural afterlife from anesthesia. Of course, with any afterlife we never “come back.” Thus, some have likened the natural afterlife to permanent general anesthesia. This analogy can be helpful towards understanding how a time-perceptive consciousness followed by an everlasting timeless unconsciousness creates the natural afterlife. The analogy, however, offers insight only when analyzed from the perspective of the anesthetized and the dying person. Again, imagine in both cases that this person is you.

Your natural afterlife, then, is *like* being permanently anesthetized for with both:

- Your last perceived moment includes an anticipation of more such moments to come. When saying “92” in counting backwards from 100 on the operating table, you fully anticipate within that moment to next be saying “91” in the same room to the same people—even despite knowing that your experience here will soon end in an unconscious state (which you will not know in an NDE). However, unknowingly, you never say “91”.
- Your mind never gets the message that “you’ve passed out” (more precisely “passed away” with the natural afterlife). Instead, you merely lose your sense of time.
- You never lose your sense of self. You remain “the same person,” never having to ask “Who am I?” (likewise with dreaming and dreamless sleep).
- You won’t experience nothingness, the concept is meaningless. Hameroff states that patients under general anesthesia experience no passage of time. Thus both are timeless and there is simply no time to experience nothingness.
- You won’t dream. Hameroff states that patients don’t dream under general anesthesia (making it an internal state within the **Life Unconscious Dreamless** state of Fig. 2). Such dreams would create another moment of time replacing the moment last experienced on the operating table, likewise with the natural afterlife last experienced in the NDE.
- Your memory, whether taken offline by anesthesia or wiped out by death, is useless and anyway superfluous. Memory fragments need not be accessed since you’re not dreaming (Lewis, 2014) and besides, timelessness makes such access purposeless.
- Your last perceived moment, on the operating table or in your NDE, is timeless and everlasting since you never wakeup.

The lack of dreaming (which is not true with sleeping) makes the permanent anesthesia analogy excellent for understanding the concept of a timeless, forever moment.

This concept can be expressed as follows: a moment in time is suspended and perceived as lasting forever, i.e., a forever present, when there’s no next moment in time to replace it. Prior to the moment a person awakes from anesthesia, the moment perceived as suspended is the moment just before passing out. And this moment is perceived as lasting forever until the person wakes up or has some type of NDE. No intervening stuff is being perceived by the person, not even nothingness. Robert Lanza, a world renowned scientist and stem cell researcher, defines our sense of time as follows:

[T]ime is the *inner* form of animal sense that animates events—the *still* frames—of the spatial world. The mind animates the world like the motor and gears of a projector. Each weaves a series of still pictures—a series of spatial states—into an order, into the “current”

of life. ... Spatial units are stagnant and there is no “stuff” between the units or frames.
(Lanza, 2009, pp. 100, 101)

Hameroff (2010a) identifies the “still frames” as “conscious moments” and “snapshots”: “Normally we have about 40 conscious moments per second ... each of these seems to be ... a snapshot, a moment of consciousness.”

The above statements can also be extended to dreaming and NDEs. There is no time and thus no “stuff,” not even nothingness, between dreaming frames. And at death, when the “projector” finally breaks down, we may merely be stuck on an “NDE frame”—a timeless “snapshot” capturing not just the visual but every sense, thought, and emotion.

Fig. 4 precisely defines the natural afterlife by putting this final NDE moment into the context of a lifetime within time eternal. Fig. 4 can be viewed as a detailed extension to the model of Figs 1, 2, and 3, breaking down life’s events into life’s moments. Using a formal notation, time eternal is represented by variables, symbols, and just ten equations. Nine of these represent a lifetime. The final NDE moment, when it’s the final moment in a lifetime due to death, is represented by the variable m_{nde} in equation 10, repeated below for easy reference.

$$(10) \text{ natural-afterlife} = NEE = m_{nde} \sim \text{timelessness} \sim \text{after-life}$$

This m_{nde} encompasses the sense of self and all of the brain-induced sensory perceptions that are present within the NDE at its ending. It also includes the thoughts, beliefs, and emotions formed from past m_{nde} s, i.e., NDE moments. One such belief is most likely of a future consistent with the NDE’s past and present. Thus, in the mind of the NDEr, the m_{nde} in equation 10 essentially represents the NDE itself.

What then follows and transforms the NDE into the NEE and natural afterlife is simply an eternity of imperceptible timelessness, as indicated by equation 10. First, it’s the timelessness that is represented by *timelessness* and occurs in the **Severely Failing Brain** internal state (Fig. 3) after the NDE ends due to brain deterioration. The first \sim in the equation represents the event **end NDE**. Then, it’s the timelessness that is represented by *after-life* and occurs in the **After-life with NEE** state after death (Figs. 1 and 2). The last \sim represents the event **death**. Relative to the dying person’s perception (or, more precisely, lack thereof), the timelessness within the **After-life** state is no different than that within any other state of mind.

More insight into the now formally defined natural afterlife can be gained by returning to the anesthesia analogy. The natural afterlife is *not like* permanent anesthesia in some very important ways—but again, only from the perspective of you, the dying and the anesthetized person.

- First, your NDE is not like the tedium of counting backwards from 100 while people hover over you. Rather, NDEs are often described as more intense than a party drug hallucination and seem to pack a wallop on the people experiencing them, often having a tremendous impact on the rest of their lives. So, the last moment of the NDE surely provides a much sharper “imprint on the mind” than does the last moment of counting backwards.
- Second, in your NDE you may firmly believe that “I’ve arrived” and my future is here. Not so in counting backwards from 100 and believing this monotony will be short-lived.
- And finally, with an imperceptible death, you likely feel no grogginess, the going in and out of consciousness, as you may experience in passing out under anesthesia. (You also feel no grogginess in transitioning from dreaming into dreamless sleep.) Thus, there’s no hint whatsoever that your NDE is over—which again, relatively speaking, makes your natural afterlife everlasting.

The Natural Afterlife in the Context of a Lifetime within Time Eternal

Equations (the NEE notation)

- (1) *time-eternal* = *before-life* ~ *life* ~ *after-life*
 (2) *life* = *timelessness* [(~ *E* ~ *timelessness*) ...] (3) $E = E_r | E_d | \mathbf{E}_{nde}$
 (4) $E_r = e_r \dots$ (5) $E_d = e_d \dots$ (6) $\mathbf{E}_{nde} = \mathbf{e}_{nde} \dots$
 (7) $e_r = m_r \dots$ (8) $e_d = m_d \dots$ (9) $\mathbf{e}_{nde} = \mathbf{m}_{nde} \dots$
 (10) *natural-afterlife* = *NEE* = \mathbf{m}_{nde} ~ *timelessness* ~ *after-life*

Explanations

- (1) The variable *time-eternal* is (represents) all of time—past, present, and future. *before-life* is the span of time before a person’s lifetime, timeless relative to the person. *life* is a person’s lifetime. *after-life* is the time span after this lifetime, here presumably timeless relative to the person. A ~ represents the appropriate state changing event as described in Figs. 1-3. The equation states that *time-eternal* is (equal to) *before-life* followed by ~ (here birth) followed by *life* followed by ~ (here death) followed by *after-life*.
- (2) *E* is a sequence of perceived events, which define a span of time, in a time-perceptive state of mind, e.g., Life Unconscious Dreaming in Fig. 2. *timelessness* is a time span when a person is in a timeless state of mind, e.g., Life Unconscious Dreamless in Fig. 2. []’s mean that what’s inside may (or may not) follow. A ... means what’s given just prior—one item or many items grouped within ()’s, e.g., ~ *E* ~ *timelessness*—may be repeated one or more times.
- (3) *E_r* is a sequence of real events. *E_d* is a sequence of dream events. \mathbf{E}_{nde} is a sequence of NDE events, the boldness indicating heightened intensity. A | means “or.” An \mathbf{E}_{nde} that does not occur near death is extremely rare.
- (4) *e_r* is a real event. (5) *e_d* is a dream event. (6) \mathbf{e}_{nde} is an NDE event.
- (7) *m_r* is a real moment. (8) *m_d* is a dream moment. (9) \mathbf{m}_{nde} is an NDE moment. These moments are the “still frames” or conscious moments described by Hammeroff (2010a) and Lanza (2009). A perceived event unfolds (i.e., time marches on and life is experienced) over the span of one or more such moments.
- (10) Given equations 1-9, *natural-afterlife* is an *NEE*, which is \mathbf{m}_{nde} ~ *timelessness* ~ *after-life*. (*m_d* ~ *timelessness* ~ *after-life* may also result in an *NEE* but hasn’t been |’ed onto the equation.) The *timelessness* here occurs in the Severely Failing Brain state shown in Fig. 3. The first and last ~s represent the imperceptible events end NDE and death, respectively.

Example:

A person wakes up, falls asleep (in time), dreams, dream ends, wakes up, passes out, has heart failure, has NDE, NDE ends, and dies with an NEE as shown below. *tl_n* abbreviates *timelessness*.

$$\dots \text{tl}_n \tilde{m}_r \tilde{m}_r \dots \tilde{m}_r \tilde{tl}_n \tilde{m}_d \tilde{m}_d \dots \tilde{m}_d \tilde{tl}_n \tilde{m}_r \tilde{m}_r \dots \tilde{m}_r \tilde{tl}_n \tilde{tl}_n \tilde{\mathbf{m}}_{nde} \tilde{\mathbf{m}}_{nde} \dots \tilde{\mathbf{m}}_{nde} \tilde{tl}_n \tilde{\text{after-life}}$$

← NEE →

Fig. 4. Ten equations, representing the *NEE notation*, that formally define a lifetime and a natural afterlife at the most minute level in the context of time eternal. They extend the model given in Figs. 1 - 3 by adding life’s *moments* and are defined using a modified Bachus-Naur Form, a notation normally used to define formal languages.