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Verified account of near-death experience in a physician who survived cardiac arrest

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ABSTRACT

Research exploring the nature of near-death experiences (NDEs) is extensive. There are a variety of hypothesized mechanisms proposed to explain the origin of the experiences, including hallucinations due to physiological changes in a dying brain. However, there is growing evidence that these theories cannot explain a number of the characteristics of NDEs. In this article we present a detailed and extensively verified case study of a physician, Bettina Peyton, who experienced an NDE during the birth of her third child when she was 32 years old. The data provide additional evidence that supports the hypotheses 1) that during NDEs individuals have sensory perceptual experiences that are not possible according to the materialist framework in which consciousness is solely produced by the activity of neurons in the brain, and 2) that NDEs lead to a fundamental change in their understanding of the nature of consciousness, and in the place of the sacred in their lives.

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Introduction

The research literature exploring the nature of near-death experiences (NDEs) is now extensive (see Parnia,¹² for a review). NDEs occur in a variety of situations, including but not limited to cardiac arrest, coma, attempted suicide, near-drowning, and also serious but not life-threatening circumstances, such as automobile accidents and other traumatic physical incidents.¹¹ There are a variety of mechanisms proposed to explain the origin of the experiences, including physiological changes in the brain such as low oxygen levels, or excessive transmitter release occurring in a dying brain.^{7,11,12} However, there is a growing body of literature that offers evidence that these theories cannot explain a number of the characteristics of NDEs, including verified visual and auditory perception of events happening around the patient that should not be physiologically possible during, for example, cardiac arrest and no cerebral cortex activity, verified by recordings of a flat EEG.^{11,5,13}

Though a number of prospective studies on NDEs during cardiac arrest have been carried out, including those by van Lommel et al.,¹¹ Greyson,⁵ Schwaninger et al.,¹⁶ Klemenc-Ketis⁹ and Parnia et al.,¹⁴ the number of cases reported in these studies, in which there are verified sensory perceptions when the brain and heart are not functioning, is low. Other researchers, including Rivas et al.,¹⁵ have collected

over 100 cases of verified sensory experiences during NDEs related to cardiac arrest and other causes. In spite of these cumulative data on sensory experiences occurring during NDEs, this area of research is not yet accepted as valid by most neuroscientists and physicians, who adhere to a materialist framework.¹²

A second characteristic noted in many NDEs is a transformation in the individual's life perspective on the nature of consciousness, and on whether one's consciousness survives death of the body.^{6,8,16} This change of perspective is typically embedded within a broader spiritual transformation, i.e., a fundamental change in the place of the sacred in their lives, which also leads to a radical reorganization of identity, meaning, and purpose in life.⁶ Greyson and Khanna have shown that persons who had an NDE scored significantly higher on the Spiritual Transformation Scale¹ than control individuals who were also near death but did not undergo an NDE. This is an important characteristic of the NDE in that it suggests that an experience that may have only lasted but a few minutes is able to significantly transform an individual's entire subsequent life.

In this article we present a detailed and extensively verified case study of a physician, Bettina Peyton, who experienced an NDE during the birth of her third child. We submit this as additional evidence that supports the hypotheses 1) that during NDEs individuals have perceptual experiences that are not possible according to the materialist framework in which consciousness is solely produced by activity within neurons in the brain, and 2) that NDEs lead to fundamental

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changes in their understanding of the nature of consciousness, and in the place of the sacred in their lives.

Methods

The individual discussed in this case study is Bettina Peyton, MD, who is the second author on this study. Marjorie Woollacott, co-author, met Bettina Peyton at an event in Boston. After hearing of Woollacott's interest in NDEs, Peyton shared her own NDE experience. In discussing the experience she noted subsequent transformational changes in her life and career. Woollacott asked if Peyton would be willing to be recorded in an interview about her NDE and her subsequent life changes. She also agreed to complete the Near Death Experience Scale (NDE Scale³) and the Spiritual Growth subscale of the Spiritual Transformation Scale.¹

Peyton is a Caucasian female, who at the time of the interview was 58 years old. She received her medical degree from Rutgers Medical School (now known as Robert Wood Johnson Medical School) in New Jersey, and completed the first two years of her residency in Internal Medicine there. She and her husband, also a physician in training, then transferred to Beth Israel Hospital (now called Beth Israel Deaconess) in Boston, a Harvard teaching hospital, where she completed her third year of residency, finishing it in 1986. After a maternity leave of absence (in which she gave birth to twin boys), she worked at Tufts–New England Medical Center as an internist from 1987 to 1989. It was on March 24, 1988 that during the birth of her daughter she had an NDE. In August of the following year Peyton began the practice of meditation. She also took a leave of absence from the practice of medicine to care for her children, during which time she and her husband moved to New Hampshire. There, in 1992, she returned to the practice of medicine, specializing in Hospice and Palliative Medicine, until she retired in 2010.

The instruments used in this study included the NDE Scale^{3,4} and the Spiritual Transformation Scale.¹ The NDE Scale is a 16-item questionnaire that is designed to measure cognitive, affective, paranormal, emotional and transcendental components of an NDE. The items each address a different aspect of the NDE and are scored by the individual as follows: 0: absence, 1: presence, or 2: strong presence of the component. A score of 7 out of a maximum possible score of 32 suggests that the individual experienced an NDE. Greyson and colleagues showed that this instrument is both reliable and valid, and confirmed the psychometric properties of the scale using the Rasch rating scale model.^{3,10}

The Spiritual Growth subscale of the Spiritual Transformation Scale (STS) is a 29-item questionnaire using Likert-type questions, such as “spirituality has become more important to me” and “I more often see my own life as sacred”.¹ It has high internal consistence and test-retest reliability. In a previous study by Greyson and Khanna, using this scale to test spiritual transformation in NDE experiencers vs. controls, they found subscale scores ranged from 29 to 203, with a mean of 153.6 (SD \pm 41.2) for the NDE experiencers vs. a mean of 95.9 (SD \pm 55.2) for control individuals.

For the interview, on January 23, 2014, Peyton and Woollacott connected on Skype and Woollacott made an audio recording of the interview. This was supplemented and edited with previous notes Peyton recorded during the years after her NDE.

Results

Peyton's NDE scale responses and scores are shown in Table 1. For the NDE scale her score was 23 out of a possible 32 (a score of 7 or higher suggests that the individual experienced an NDE). This is a substantially higher score than the mean of 230 NDEs (15.1 \pm 6.7) from a previous study by Greyson and Khanna.⁶

The following is Peyton's narrative about her experience. The circumstances of her NDE experience are summarized, followed by a

narrative, mainly in her own words, of the contents of her experience and subsequent changes in her life and career.

The NDE occurred in March of 1988, when Peyton was 32 years old. She had been practicing Medicine for two years when she had the NDE. She was working at Tufts New England Medical Center in general internal medicine.

Peyton had no familiarity with NDEs; she had not heard of NDEs. She says that at the time she felt that death was the end of one's existence. She states that she was inculcated in the scientific culture—a strident materialist.

Peyton's Narrative

It had been just over a year since my obstetrician attended my first pregnancy, delivering me of healthy twin boys. My second pregnancy would be more complicated. An ultrasound revealed that the placenta was obstructing the birth canal and would be at risk of bleeding as the uterus enlarged.

The bleeding started in the seventh month of the pregnancy. I was admitted to the very hospital where I'd completed my training two years before. The plan was to deliver the baby as soon as its lungs were mature enough to breathe on its own, without a respirator. My husband, also a doctor in the same hospital, came to my bedside every evening with our year-old twin boys for a bedtime story and a kiss goodnight.

I am aware that this surgery is a high-risk procedure. Because the placenta extends across the front of the uterus, my obstetrician will have to make the incision directly through it, cutting across what is essentially a spongy mass of venous lakes. A substantial amount of blood loss is expected. So, to prepare I began donating my own blood, to be transfused back if needed. Every week a unit of my own blood has been collected and stored in the blood bank. My anesthesiologist has recommended the use of general anesthesia, in case any unexpected complications arise during the surgery.

Finally, one month later, the baby's lungs are ready, and now I'm lying on the operating room table, being prepared for surgery. Several bags of my own blood hang ready on the IV pole above my right shoulder. While the nurse scrubs my abdomen and lays down the surgical drapes, I'm trying to act nonchalant, joking with my anesthesiologist as he inserts a large-bore IV in each arm. The cool flow of the anesthetic enters my vein, and I lose consciousness.

“Her blood pressure is too low!” My anesthesiologist's alarmed voice has snapped me awake as if from a deep sleep. Suddenly, right in the middle of the operation, I am wide-awake. As if with a flick of a switch, I have awakened to a heightened awareness, the likes of which I have never before experienced, as if the majority of my brain, dormant all my life, has suddenly switched on. How wondrous that this super-alert state is beyond the reach of the drugs bathing my brain! I am truly awake for the first time—while under general anesthesia! It is starkly evident that this awakened self is the *real* me!

Just as amazing is how calm I am - given the circumstances. There is absolutely no fear. I can feel the painless tugging sensations in my abdomen of the surgery in progress. I can hear the anesthesiologist anxiously asking the surgeon about blood loss. The surgeon's tense answer is shocking: “The baby is gone,” he says.

From over my right shoulder there bursts forth a loud expletive. “Shit! Now she has no blood pressure at all!”

In the next instant, I feel a profound stillness in the center of my chest. Something's missing. It's the beat of my heart. My heart has stopped. At the same time, I can suddenly see into the room. How amazing! The eyelids on my physical eyes have been taped shut to protect the corneas, yet by some other mechanism I can see perfectly clearly. There are the bags of blood hanging on the IV pole, already being transfused. My anesthesiologist is crouched on his stool next to me, oblivious to the fact that I have no heartbeat.

Table 1

Bettina peyton's greyson scale results.

TOTAL NDE SCALE SCORE: (Sum of 16 items) = 23	
A score of 7 or higher is considered a NDE for research purposes. (answer to the right of individual questions, below)	
2 1. Did time seem to speed up or slow down?	0 = No 1 = Time seemed to go faster or slower than usual 2 = Everything seemed to be happening at once; or time stopped or lost all meaning
0 2. Were your thoughts speeded up?	0 = No 1 = Faster than usual 2 = Incredibly fast
0 3. Did scenes from your past come back to you?	0 = No 1 = I remembered many past events 2 = My past flashed before me, out of my control
2 4. Did you suddenly seem to understand everything?	0 = No 1 = Everything about myself or others 2 = Everything about the universe
2 5. Did you have a feeling of peace or pleasantness?	0 = No 1 = Relief or calmness 2 = Incredible peace or pleasantness
2 6. Did you have a feeling of joy?	0 = No 1 = Happiness 2 = Incredible joy
2 7. Did you feel a sense of harmony or unity with the universe?	0 = No 1 = I felt no longer in conflict with nature 2 = I felt united or one with the world
2 8. Did you see, or feel surrounded by, a brilliant light?	0 = No 1 = An unusually bright light 2 = A light clearly of mystical or other-worldly origin
2 9. Were your senses more vivid than usual?	0 = No 1 = More vivid than usual 2 = Incredibly more vivid
2 10. Did you seem to be aware of things going on elsewhere, as if by extrasensory perception (ESP)?	0 = No 1 = Yes, but the facts have not been checked out 2 = Yes, and the facts have been checked out
0 11. Did scenes from the future come to you?	0 = No 1 = Scenes from my personal future 2 = Scenes from the world's future
2_ 12. Did you feel separated from your body?	0 = No 1 = I lost awareness of my body 2 = I clearly left my body and existed outside it
2 13. Did you seem to enter some other, unearthly world?	0 = No 1 = Some unfamiliar and strange place 2 = A clearly mystical or unearthly realm
2 14. Did you seem to encounter a mystical being or presence, or hear an unidentifiable voice?	0 = No 1 = I heard a voice I could not identify 2 = I encountered a definite being, or a voice clearly of mystical or unearthly origin
0 15. Did you see deceased or religious spirits?	0 = No 1 = I sensed their presence 2 = I actually saw them
1 16. Did you come to a border or point of no return?	0 = No 1 = I came to a definite conscious decision to "return" to life 2 = I came to a barrier that I was not permitted to cross; or was "sent back" against my will.

Then, a series of loud beeps from the cardiac monitor sends out the alarm. The anesthesiologist springs up and slams the large red knob on the wall, summoning the hospital resuscitation team. He flings off the surgical drapes and begins pumping on my chest with his muscular arms. My ghostly pale body flops up and down.

The worst is happening. I've lost my baby, I've lost all my blood, and I'm having a cardiac arrest. But amazingly, instead of being terrified, I'm watching the catastrophe from a space of extraordinary equanimity, even as I realize: I'm dying. Something in me already knows: it's useless to fight; the only thing to do is relax and let go.

The stillness in my chest expands, and I can feel a current of energy drawing me inside. I let go into the flow, floating deep inside. All awareness of the room and of my body drops away. I'm floating toward an edge, toward a vast emptiness beyond. And then, gliding over an invisible threshold, I plunge backward in a graceful free-fall, down and down into...nothingness. Darkness engulfs me. And then—nothing. No sense of the world, or of my own existence.

Ka-BOOM! —a thundering sound, echoing all around, and I'm...suspended in space, as if I've exploded through some great barrier. The echoes fade away. *I am free—and I am alive!* Bodiless, eternal, pure being —*This is who I really am!* I have always been so, and always will be so.

Profound silence. Velvety darkness, like the night sky, all around... An endless expanse of radiant darkness, shimmering, mesmerizing... In all directions, without horizon, astounding beauty... Boundless, sparkling light.

A realization dawns: This light is *alive!* In every direction, this light is *looking back* with friendly recognition. And I know: This shimmering void is Supreme Reality, and it's made of nothing but Consciousness—all-knowing, infinite, and pulsating with potentiality. It is the foundation of all. With a burst of awe and exhilaration, my focus soars over the vast expanse, delighting in its boundless splendor. Then, stillness. I am anchored in a state of perfect repose, absolutely fulfilled, enveloped in the silent, velvety light.

You must live. A voice, resounding through the shimmering light, speaking not in words, but in a kind of silent thunder. *You must live*, the command resounds again. The message is simple, but it makes no sense. Who is this “you”? And what does it mean to “live,” when I am already absolutely alive?

Something catches my attention: a twinkling light, like a tiny jewel, nestled deep within the darkness. I focus on this light, and I see its many facets—the colorful scenes of a whole lifetime on simultaneous display. It is the entire experience of someone who once lived... someone very familiar... and gradually I remember... I once was a person, and am looking at the that person's entire experience, past, present and future, playing out simultaneously, all contained in a point of flickering light.

You must live. The command resounds a third time. It is clear: I am to return to that life. But how can I possibly fit into that tiny world? And besides, that person's life is all over. How can it possibly be resurrected?

Then, in an unbroken flow of wordless communication, the knowledge of how I am to return to that life streams into my awareness: I must be fearless. I must remain focused in the present moment. I must maintain the certainty that I am going to live. Any distraction or worrying, and I might not revive.

In the next instant, there is a tremendous rushing sound, accompanied by a rapid swirling and contracting, as if the entire expanse of consciousness is twisting into a great vortex, I am funneling downward at tremendous speed. Then, just as abruptly, the tumult comes to a sudden stop, and my perception balloons open to reveal the scene in the confines of the hospital operating room, unfolding as if not one moment has passed. Watching from a vantage point above the scene, I am an open conduit through which the power of the transcendent Consciousness flows.

The anesthesiologist is still pumping on my chest, and the surgeon is toiling away in my blood-filled abdomen. The resuscitation team is rushing in. Doctors are bursting through the double doors and practically skidding to a stop, wide-eyed and breathless. As they take their places around my body, I can feel their minds bracing for the inevitable: *She's already gone.* And it's true: That body, rocking flaccidly under the anesthesiologist's chest compressions, appears quite irreversibly dead. The skin is ghostly white and the abdominal cavity, exposed by a large midline incision opened wide by retractors, is sloshing with bright red blood. There is blood on the floor.

I feel Bettina's mind at some lower level, churning in fear and anguish, yet managing to fuss about being seen by colleagues in such a condition—no white coat and stethoscope, stark naked—abdomen wide open with guts on display. Recognizing Bettina's agitated mind as a perilous distraction, I give it no attention.

Consciousness communicates directly to the team members as they take their places around the operating table. *“I am going to live! You can do this! Now let's get to work!”*

Consciousness pours a continuous stream of encouraging energy into the scene, cheering like a coach on the sidelines. *Yes, yes! I'm going to live!* The whole room is suffused with miraculous light.

The room is teeming with personnel. In the center of the action my surgeon is totally focused. Amidst the clamor and urgency, working in a lurching surgical field filled with blood, he is performing what he would later declare was his first three-minute hysterectomy.

My visual standpoint transcends and encompasses the scene, but I can also feel all the sensations occurring within the corpse-like body below. And although the surgery is excruciatingly painful — an intense wrenching and pulling in the abdomen—my experience is totally free of suffering. At one point though, the wrenching in the abdomen becomes so intense that it threatens to capture all of my attention. In what seems a bold request, I wonder if the pain could possibly let up, just a little bit? With playful enthusiasm — *You have only to ask!*—the pain instantly plummets to a much lower level.

There is pain in my neck as a catheter is being inserted into my right jugular vein and threaded toward my motionless heart. A sharper pain is tugging at my attention: the anesthesiologist is trying to insert a line in my right wrist, but the bloodless artery is collapsed, and the needle is poking the sensitive bone underneath. The persistent stabbing pain in my right wrist is a distraction. I suggest to the anesthesiologist that he try the larger, more proximal artery at the elbow. I sense his negative response as concretely as if he shakes his head in refusal. I know that he is concerned about injuring the nerve that runs alongside the larger artery. I urge him again and again, more forcefully, but he continues to poke at the collapsed artery. Finally, with a surge of will, Consciousness bursts forth in a blast of silent power, ***Just go for it!*** With a start, the anesthesiologist straightens up, turns to the larger artery in the crook of my arm and inserts the catheter, gaining access on the first try.

I cheer everyone on. *“Yes, yes!! You all are doing great! You can do it! I am going to live!”* The power of Consciousness flowing through from the transcendent realm charges the room with its energy. The whole team in synch, moving together as if in a choreographed dance. Each person is playing his or her part perfectly, but despite all their best efforts, they can't restart my motionless heart.

A white-haired surgeon enters the room, looking very different from the rest. A flame of white light seems to blaze out of the top of his head, and around his body is a golden aura. This senior surgeon moves with unhurried, dignified grace, weaving a path through the crowded room. He comes to my right side. Directly opposite him, intensely concentrating on his task, my obstetrician doesn't even look up. Without a word, the elderly surgeon reaches into my abdomen. As his hand disappears into the lake of blood, my point of view drops down, and now I'm watching from inside my body. The fingerprint whorls on the tips of his fingers are visible to me in exquisite

detail—it seems in the interest of saving time he has forgone surgical gloves. Wrapping his fingers around my aorta, he clamps the great vessel shut, cutting off the flow of blood. He is interrupting the hemorrhaging into the abdomen and redirecting what blood is left in my system toward my brain and heart. The whole force of my awareness is gathered in his fist at the core of my body, contracted to a point of intense sensation, a stab of pain worse by far than any other, deep in the core of the body.

Suddenly, from a point within the surgeon's fist, there is an explosion of white-hot light like a sunburst, at the very center of my body. It surges through my body at lightning speed, branching into millions of delicate channels, lighting up every pore, every cell. Though searingly hot and stunningly brilliant, this radiance is absolutely benevolent. As it streaks through my system, every level of my being is loved, healed, revitalized. The light coalesces into a single infinite mass, and for an unknown amount of time I am lost in supreme ecstasy.

When my individual consciousness returns, I am now stationed inside my body, lying stunned on the operating table. Gratitude overflows toward everyone on the team, but especially toward the elder surgeon. His hand was the connection through which universal Consciousness did its life-saving work, and I know that his simple action was critical turning point.

Then I hear the voice of the elder surgeon: "Stop compressions." He can feel a throbbing in my aorta. Everyone falls silent, waiting. Sure enough, eight minutes after it stopped, my heart is beating again. A few moments later one of the doctors leans over and whispers in my ear a message that fills me with even more joy: "You have a beautiful baby girl, and she's doing fine."

Initial transformation

Peyton describes her initial transformation, after waking in the intensive care unit

When I woke up from the anesthesia in the ICU, there was a circle of doctors and staff members around me, plus my husband. I had vivid recall of what had happened. I had an endotracheal tube down my throat – so I couldn't speak. I put up my hand and motioned that I wanted to write. And they brought me a napkin. I wrote a few words indicating that I knew about the cardiac arrest, the hysterectomy, and that I had a baby girl. I wanted to show them, before they could tell me anything, that I had been conscious during the whole event.

I was excited to tell my husband the good news: "You are not your body! Dying is nothing to be afraid of!" My husband, an atheist, looked at me like I was crazy. When I tried to tell him what I had discovered, I had only one word: 'consciousness'. To him, this word was merely a medical term we used, to diagnose the level of alertness in a patient. "No, no, you don't understand," I said. "The consciousness I'm talking about is something extraordinary – it's a consciousness that is all-pervasive, all-knowing, all-powerful!"... He shook his head. These words reminded him of the religion he had rejected long ago. "No, you're the one who doesn't understand," he said. "Nothing extraordinary happened. It's just a fantasy, an altered state produced by your oxygen-deprived brain."

Evidence for the veracity of the experiences during cardiac arrest

Woollacott asked if Peyton spoke afterwards with the anesthesiologist or surgeon about inserting the arterial catheter in the arm or other incidents during her surgery. They confirmed that she had seen things that didn't seem physiologically possible:

As soon as the endotracheal tube was removed, before they could inform me, I told my obstetrician and anesthesiologist the events surrounding the delivery, including the anesthesiologist's efforts to catheterize the artery in my wrist, and how I told him to go for the

brachial artery, and how he refused. I recounted how I'd inwardly shouted to him, "Just go for it!" He went pale, saying he'd heard the actual words inside, "Just go for it," which compelled him to abandon the wrist and go for the artery in the elbow.

A couple of days later, the elder surgeon came to my hospital room and introduced himself as the Chief of Obstetrics and Gynecology. I immediately recognized him and told him I'd seen him enter the operating room and clamp my aorta with his hand. He looked surprised. I told him that his simple action had saved my life. However, he didn't seem to be aware of the life-saving energy that had coursed through his hand into my body, so I didn't mention it.

The medical team remained perplexed by the whole event, but the obstetrician and anesthesiologist were willing to appear on a local TV program with Peyton in Boston about NDEs to acknowledge that something extraordinary had happened, and to say that this was scientifically inexplicable.

Below is a table of the experiences that Peyton had, and the verifiability of those experiences, according to the responses of hospital staff ([Table 2](#)).

Post-NDE transformations

Transformational events are often described as being disorienting at first.² In the case of NDEs and other spiritual awakenings, the transformation that occurs often suggests a dynamic process that includes an initial seed change in the individual's world-view, where he/she understands at some level that consciousness is fundamental to reality, and this new understanding deepens and is expressed over time in their outer life. As will be clear in the next section, Peyton's NDE initiated an immediate transformation in her worldview, which was followed by a longer term transformation, including a search to find a way to re-experience that state of her NDE, and a subsequent transformation in her approach to her career as a physician.

As you see in [Table 3](#), Peyton's Spiritual Transformation Scale score for Spiritual Growth subscale was 186, which was substantially higher than the average score for NDErs (153.8 ± 41.2) from a previous study by Greyson and Khanna.⁶

Long-term transformation in life and career

Peyton then continues her description of her search to understand the experience more deeply and how this transformed her career:

I knew that it was possible to return to this experience, without having to nearly die. I set off in search of understanding. I found the first books on near-death experiences, which led me to attend a meeting of the local International Association for Near-Death Studies (IANDS) group in Boston. It was just a handful of people, back in

Table 2

Perceptions during surgery and cardiac arrest, with eyes taped shut to protect corneas.

	Verified: Yes/No
Said telepathically to the anesthesiologist, "Just go for it." He heard those words. It made him stop trying to insert the IV at the wrist and go for the elbow.	Yes
Saw several units of blood on IV pole directly over her, anesthesiologist seated to her right, hunched over right arm inspecting IV line.	Yes
Saw anesthesiologist slam fist into button on wall: calling a code.	Yes
Saw surgeon performing hysterectomy	Yes
Saw catheter inserted in right jugular vein, and anesthesiologist trying to insert line in her R wrist. Then going for elbow, he finally does and succeeds.	Yes
Saw white haired senior surgeon in scrubs enter room, walk to her side, reach into blood filled abdomen, clamp aorta shut.	Yes

Table 3
Bettina peyton's sts-sgs score.

SPIRITUAL TRANSFORMATION SCALE – SPIRITUAL GROWTH SUBSCALE
(Cole et al., 2008)

XXXX XXXX's Score: 186

Instructions: WRITE the number NEXT TO EACH STATEMENT that best describes any changes that have occurred since your NDE using the following scale.

	1	2	3	4	5	6	7
It is not at all true for you							It is true for you a great deal
___7_1. Spirituality has become more important to me.							
___7_2. My way of looking at life has changed to be more spiritual.							
___7_3. Because of spiritual changes I've been through I've changed my priorities.							
___6_4. I pay more attention to things that are spiritually important and forget about the little things that used to bother me.							
___7_5. I pray or meditate more often.							
___7_6. I spend more time taking care of my spiritual needs.							
___7_7. I more often experience life around me as spiritual.							
___7_8. I more often see my own life as sacred.							
___5_9. I have a stronger spiritual connection to other people.							
___6_10. I have a stronger spiritual connection to nature.							
___7_11. Spiritually I am like a new person.							
___6_12. Taking care of my body has taken on spiritual meaning.							
___6_13. My relationships with other people have taken on more spiritual meaning.							
___7_14. I have a stronger sense of the Sacred (God, Higher Power, Allah, Adonai, etc.) directing my life now.							
___5_15. I act more compassionately towards other people since my diagnosis.							
___5_16. I see people in a more positive light.							
___5_17. I more often express my spirituality.							
___7_18. I spend more time thinking about spiritual questions.							
___5_19. I am more humble since my diagnosis.							
___6_20. I more often think about how blessed I am.							
___7_21. I have grown spiritually.							
___7_22. I am more spiritually present in the moment.							
___7_23. I take part in spiritual rituals more often.							
___6_24. I more often have a sense of gratitude.							
___6_25. I more often pray for other people.							
___7_26. My spirituality is now more deeply imbedded in my whole being.							
___7_27. I am more receptive to spiritual care from others (examples: prayer, healing practices, etc.).							
___7_28. I more often look for a spiritual purpose for my life.							
___7_29. I'm finding it more important to participate in a spiritual community.							

1988, sharing our experiences, but no one seemed to know how to get back to that transcendent state.

Then I found an important clue. I was reading a brochure for a conference on mind/body medicine, and the word *meditation* literally jumped off the page. At the time, I had never heard of meditation. My next thought was: *I need a teacher*. After a yearlong search, I found a teacher, a master of meditation, and on our first meeting, I entered the same transcendent state of consciousness that I'd entered a year before. Now I knew that meditation was a way to reconnect with that state.

Peyton changed the focus of her medical practice, devoting her subsequent career to hospice and palliative medicine:

After the NDE, a major change that made me especially effective as a hospice doctor was the absence of fear of death. I think that when I went into a patient's room, that lack of fear could be felt by others. Also, I was able to anchor myself in a peaceful state, which was very comforting to patients and their families. It was clear to me that as death draws near, patients often enter a meditative state. I was privileged to witness patients having experiences of expanded awareness—visions or profound peacefulness – spiritual experiences that can be part of a near-death experience or deep meditation.

Peyton describes an example of the subtle transformation of her work in hospice after her NDE:

In my work as a hospice and palliative care physician, I cared for many patients with end-stage dementia. I sometimes connected

subtly with them on the level of the Self, their inner essence. I recognized that on this level they were completely intact, even though their brain as an organ was minimally functional. And sometimes there was physical evidence that they knew I could see them on this essential level. For example, their eyes might brim with tears as they looked into mine, as if they felt deeply understood.

Discussion and conclusions

For centuries there have been published accounts of persons perceiving events that occurred when they were unconscious during NDEs. There has been considerable debate about the veracity of these perceptions, as they are physiologically unexplainable from a materialist perspective, which maintains the belief that the neurons of the brain are the only producers of consciousness. However, careful medical research has continued to confirm the existence of perception beyond the physical brain through prospective studies of NDEs occurring in the medical setting during cardiac arrest.^{11,5,13} This documented case study of a physician's NDE adds yet one more piece of evidence that highlights the limitation of the materialist perspective, which cannot explain the conscious perception of verified events in the hospital setting during an NDE by a patient while in cardiac arrest with eyes taped shut. Outstanding characteristics of the case include an NDE scale score of 23, indicating a deep NDE and six perceptions during cardiac arrest that were verified by hospital personnel, and which have no physiological explanation.

In a recent review¹² of the NDE literature, Parnia states:

Given that cardiopulmonary resuscitation (CPR) is insufficient to meet the metabolic requirements of the brain and that brain function ceases even with CPR, and is associated with a concurrent slowing and absence of cortical EEG within 2–20 s, reports of consciousness during CPR—i.e. at a time when the brain is thought to be ‘non-functional’—raise questions about the relationship between mind and brain/body (Parnia, p. 69)

We would go further than this in our own discussion. When we add the data from this study to the 100 plus cases reported by Rivas et al. in their book *The Self Does not Die*,¹⁵ and by van Lommel and colleagues,¹¹ Greyson,⁵ and Parnia and others¹³ in their refereed journal articles, the accumulated evidence supports a strong counter-argument against the hypothesis that consciousness is solely a product of the activity of neurons in the brain.

The transformational qualities of the NDE are also of interest. This NDE precipitated an immediate transformation in this physician's belief system, from a materialist perspective throughout her life and career prior to the NDE, to one in which she immediately perceived consciousness as fundamental and independent of brain activity, as soon as she opened her eyes in the Intensive Care Unit after the NDE. This immediate change was then followed by a search for a way to return to that state of expanded awareness, and culminated in a transformation in not only her personal life, but also her career. These qualitative data are corroborated by Peyton's score on the Spiritual Growth subscale of the Spiritual Transformation Scale, which was 186, substantially higher than the mean of NDE transformation scores (153.8) from a previous study of 230 NDEs.⁶

Peyton learned that she could return to the essence of that experience through meditation, and this became a regular part of her life after the NDE. This statement is supported by her scores on the STS Spiritual Growth subscale,¹ in which she gives the highest score (7) to questions related to meditating more often, seeing her own life as sacred, having a stronger sense of the sacred directing her life, more often being spiritually present in the moment, taking part in spiritual rituals, and her spirituality now being more deeply embedded in her whole being. In addition, her work in hospice care took on a new significance after the NDE, as she observes that one thing that made her effective as an end of life doctor was her lack of fear of death. She states, “When I went into a room that lack of fear could be felt by others.”

The qualities of Peyton's NDE experience are reflective of those described in the literature^{6,16}) for the NDE itself and its immediate effect on the individual's worldview. Greyson and Khanna state that NDEs include many features described as spiritual, including the “sense of leaving the body, encountering nonphysical entities and environments, a sense of cosmic unity, transcendence of time and space, deeply felt positive mood, sense of sacredness, noetic quality or intuitive illumination, paradoxicality, ineffability, transiency, and persistent positive aftereffects” (Greyson and Khanna,⁶ p 45). Peyton

experienced all of these, as can be seen in her answers to the Greyson NDE scale, in Table 1 Greyson and Khanna noted that the depth of NDE and the degree of spiritual growth were positively correlated in their study of post-NDE transformation. As Peyton's score were high on both the Greyson NDE scale and the STS Spiritual Growth subscale, her data support this research.

In summary, these data, along with those previously cited,^{6,11,16} suggest that near-death experiences open a doorway to a higher or expanded awareness, associated with the stilling of brain activity. Data show that this initial experience has an immediate effect; a seed is planted that transforms the individual's understanding of the nature of consciousness. In addition this serves as a trigger for a longer term process of spiritual transformation, including a search to find a way back to that experience, which in the case of Peyton, led to an in-depth study of meditation and spirituality and a transformation in her approach to hospice care, as an endoflife physician.

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