

# Quasithanatology with Dr. Bruce Greyson

## Ologies Podcast

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Oh hello, it's that sentence that your cat just typed out that you're decoding for supernatural clues, Alie Ward. Here we are, here we all are before we're dead. If you're listening, you're on this side of the known universe, but come, take a walk with me to the border, where I'll ask a guy who studies the brink of death a bunch of not-very-smart questions about just what the fuck is going on here. And somehow, perhaps it will put you in a better mood.

He's not just some guy though. He is one of the world's experts on this; he's a scientist and a psychiatrist on the hospital medical faculty at two teaching hospitals, even as the Clinical Chief of Psychiatry, he's the University of Virginia Professor Emeritus of Psychiatry and Neurobehavioral Sciences, and the American Psychiatry Association gave him their highest honor of being a Distinguished Life Fellow. His work has spanned over 45 years of research, over 100 published papers, with titles such as "Western Scientific Approaches to Near-Death Experiences," "The phenomenology of near-death experiences," "Do any near-death experiences provide evidence for the survival of human personality after death?" and the banger, "Dissociation in people who have near-death experiences: out of their bodies or out of their minds?" Ohhh, we'll get to that stuff.

So, for 27 years this guy served as the editor of the only journal about near-death research, he also authored a book about all of this, called *After: A Doctor Explores What Near-Death Experiences Reveal About Life and Beyond*. And there's a new documentary out about near-death experiences... and he declined to be in it because it wasn't fact-based enough, which tells you something, he's legit. So, he is an esteemed psychiatrist with a lot of clout, he is dubious of flimflam, and he's here to tell us what he knows about biting the dust. What studies are bogus? What commonalities do we share? And what's it got to do with street drugs? We'll get right to it.

But first, thank you to everyone who submits questions ahead of time at [Patreon.com/Ologies](https://Patreon.com/Ologies), where you can join for a dollar a month. Thank you to everyone ordering merch for the holidays at [OlogiesMerch.com](https://OlogiesMerch.com). Thanks to everyone leaving reviews; I read them all, including this piping hot one from Edr1720 who wrote:

*This podcast is so good. Wanna know how good? I wore my AirPods into the shower and had to get new ones. Totally worth it!!!*

Edr1720, I am sorry. Everyone else, please pause this before you go on a waterslide. And if you have ever left me a review, I have read it with my own eyes, and I've appreciated it. Edwin Collins, it was worth booting up the iPad to leave it. Thank you.

Okay, let's get into it. Quasithanatology. This term is an amalgam of Latin and Greek to mean the study of almost death and hey, this field doesn't have the best ology, but we're going to take what we can get. Content-wise, we'll be covering rigorous research at the forefront of these happenings. I was so nervous to talk to this man, and not because we'd be dancing around the topic of our own mortality. I was more immediately concerned with just, wasting his time, and what if I asked if ghosts are naked? Also, would this episode bum me out? Mmm, you'd be surprised, it doesn't, and there are some of my biggest secrets I've ever told woven throughout it.

So, we cover brain activity during death, near-death events versus near-death experiences, bright lights, tunnel visions, the statistics on near-death experiences, neurotransmitters, party drugs, religion versus spirituality, accounts from patients, out-of-body experiments, time dilation, the

Swiss Alps, deathbed visions, accidental morgue visits, what matters most in life, and more. And if this sounds like a Spooktober episode, you might be surprised by the end of this. So, get cozy, enjoy the sunshine and breeze or fresh snow or cozy blankets, and let's cross over with psychiatrist and quasithanatologist, sure, Dr. Bruce Greyson.

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**Alie:** I'm just really excited to talk to you. I imagine a lot of people who get to chat with you are pretty excited about it as well.

**Bruce:** Thanks, thanks. I enjoy these. I am Bruce Greyson.

**Alie:** And pronouns are he/him?

**Bruce:** Yes.

**Alie:** So, you have been the editor of journals. You have written so many papers on this. You have a book called *After*. You're known as kind of the expert of near-death experiences, which is, it seems like a, a weighty title. *[laughs]* Do you tell people what you study when you're at a dinner party or on an airplane, or are you just like, "I'm a scientist, don't worry about it."

**Bruce:** When I'm at a dinner party or I just tell people I'm a doctor.

**Alie:** Yeah. *[laughs]* Have you gotten into long conversations before you learned that hack?

**Bruce:** Not so much, I get more strange looks.

**Alie:** Really? How about in the industry among other doctors?

**Bruce:** Among other doctors, there's no problem. I'm very open with them. I think they need to be educated so I tell them everything I know about it.

**Alie:** Has there been a learning curve over the years as we've gotten better at imaging and better at brain studies? You've been doing this for so long, have you seen tides shift in terms of how people see the validity of it?

**Bruce:** Yes. We've seen tremendous shifts. When we first started doing this research back in the 1970s, 1980s, we would talk at large medical conferences and there would be a polite silence in the audience, nobody knew what we were talking about. *[crickets]* Nobody thought these things really existed. Now, when we talk to the same medical audiences, it's rare that doctors don't stand up in the audience and say, "Let me tell you about my near-death experience." I think the change is less to the research, unfortunately, than to the public acceptance of near-death experiences. They're in movies, they're on television shows. Even Homer Simpson has had a near-death experience now. *["Homer, Homer wake up! You're alive!" "I'm alive, I'm alive!"]* So, everyone knows about them.

**Alie:** Do you think that the internet has done anything to kind of democratize people's voices in that way? Do you think it was harder to get these kinds of experiences in print versus people just one-off self-publishing on blogs and stuff?

**Bruce:** I think the internet has done a lot, both positive and negative. But in general, I think it has spread the word more so that people are less reluctant to talk about their own near-death experiences now.

**Alie:** How dead do you have to be? For how long do you have to be...? You always think a near-death experience, you've got to be out for maybe a few minutes, but have you found trends or data?

**Bruce:** That's a great question, Alie. Most of the research that's been done with near-death experiences has been with people who have a cardiac arrest, that is, their hearts have stopped. So, we know

they have had that occasion. However, before the last 20 or 30 years, people were just collecting cases, and most of those were not people for whom we had physiological measures. For example, the first collection of cases was published in 1892 by a Swiss geologist in the publication in the yearbook of the Swiss Alpine Club. He himself had had a near-death experience when he fell while climbing in the Alps; he fell 60 feet and had a very elaborate near-death experience but as far as we know, his heart never stopped.

**Alie:** Oh!

**Bruce:** He was so impressed by that, that he started asking fellow climbers and quickly found 30 other cases and published these. So, you don't have to be that close to death, and you have the same type of experience.

**Aside:** For more on this see the paper, "The Experience of Dying by Falls," written by one Albert Heim, that Swiss geologist who in 1872 was leading a pack of climbers on the descent when a gust of wind took his hat, he tried to catch it, and ate shit 66 feet down a craggy mountain. Spoiler alert: He survived, which is the whole point of this. He wrote later:

*Let us apply ourselves rather to the scientific study of a horrible event. The subject may thereby lose a portion of its ghastliness. Sometimes, to be sure, a fall is dreadful for the survivors, but it is something quite different for the victim himself. The subjective perceptions of those who fall to their deaths are the same whether they fall from the scaffolding of a house or the face of a cliff. It has been proven that one who is run over by a wagon or crushed by a machine, even the drowning person, looks death in the face with similar feelings. It may be briefly characterized in the following way: no grief was felt, nor was there paralyzing fright... There was no anxiety, no trace of despair, no pain; but rather calm seriousness, profound acceptance, and sense of surety. No confusion entered at all. Time became greatly expanded. In many cases there followed a sudden review of the individual's entire past; and finally, the person falling often heard beautiful music.*

He writes of his own experience:

*As I fell in 1872, I merely heard the blows that injured my head and back; I felt no pain... For those who are unconscious, death can involve no more changing. It is absolute rest.*

He ends:

*We have reached the conclusion that death through falling is subjectively a very pleasant death.*

So yes, Swiss geologist, one of the first scientists to turn his work toward collecting accounts of near-death experiences, Albert Heim. Also, his wife, Marie, was the first female physician in Switzerland. And Albert loved Swiss Alpine dogs, but they were about to die out, so he headed efforts to bring back breeding programs. So, next time you see a Bernese Mountain dog, say, "Hey Albert, glad you didn't die on that mountain that day, even if it would have been pretty chill. Your work wasn't yet done here, as evidenced by this giant, cute dog." But why was it so chill?

**Alie:** Do they find that any of it is related to brain chemicals for anxiety? Like just the "Oh shit, oh shit, oh shit," response. Or how do you even... How do you even quantify that?

**Bruce:** Yeah, that's difficult to quantify because there are a lot of chemicals that are released in the brain under stress, and we unfortunately don't have the ability to measure them when someone is in that near-death situation. Furthermore, they are usually just released for a short period of time, maybe a second or two, and we don't even know where in the brain to look for it. So, it's virtually impossible with our technology today to measure those things. People have tried with non-human

animals, with sacrificing rats and measuring what's going on in their brains at that time. But I'm not sure how transferable that information is to human beings.

**Alie:** Hmm. Is there a correlation between this field of study and consciousness in animals?

**Bruce:** Actually, I've just finished writing a paper about this because it's something that's not been studied to a great degree. We have a lot of anecdotes about animals who had a near-death event, for example, being hit by a car or having their heart stop with a severe illness, and then they had a dramatic personality change, much like you see in humans when they have a near-death experience. We also have a lot of accounts of human near-death experiences in which people claim that while they were unconscious, they were greeted by deceased pets. So, those are suggestions that some type of consciousness in animals does survive bodily death, but we don't have any good evidence for that. We don't really have the ability to interview these animals and ask them what they experienced.

**Alie:** I mean, unless you get a pet psychic. But I think that's dicey at best. *[laughs]* ["*You have questions, I have the answers.*"]

Can you explain to me what is a near-death experience? Where does it start and where does it end in terms of the criteria?

**Bruce:** Well, it starts when someone is coming close to death, and usually that's a very terrifying and painful experience. The first thing that happens is people are overwhelmed by a feeling of tremendous peace and well-being, which is not what you'd expect when someone is coming close to death. *["I'll say."]* They find that their thinking is faster and clearer than usual, which again, you wouldn't expect when their brains are shutting down. They have very strong emotions, usually very positive emotions. They have unusual sensations, like the sense of leaving the physical body. They have a sense of being in some other realm or dimension where they may encounter entities, which they consider either deceased loved ones or deities. They may review their entire lives and they will say they went through their entire life, not only saw it, but relived it in vivid, vivid detail, and that only takes a matter of seconds or so to go through decades of life. And at some point, they come to a border, or point of no return in that they can't go past that and still return to life. And they either are sent back against their will, or they're given a choice and they choose to come back for a certain purpose. Of course, the ones that don't choose, don't get interviewed by us. *["You ghosted me."]*

**Alie:** Right, exactly. Did you have to research historically what evidence we have for the last several millennia about near-death experiences? Did you have to work with archeologists at all?

**Bruce:** Not with archeologists, but we have lots of accounts from Greek and Roman historians, with accounts of near-death experiences that are very similar to the ones we hear today. Likewise, we have accounts from cultures all around the world, from Stone Age cultures around the world, and from Hindu, Buddhist cultures, Muslim cultures, and they have the same types of experiences that we find in Western societies, in the US, and in Western Europe.

**Aside:** So, in his recent book *After*, Bruce explains his own stance. He writes:

*I'm a scientist comfortable with dealing with this-world evidence, but I'm out of my element in dealing with religious doctrines. And having been raised in a scientific household without a strong sense of the divine, I was uncomfortable with the overwhelming numbers of experiencers who described meeting some kind of godlike being – not just because it was not part of my personal background, but also because it seemed like something that couldn't be verified scientifically.*

So, going way back, this guy Dr. Raymond Moody, who first coined the term near-death experiences, found fifteen elements that seemed really consistent across people and patients of all these different religious and spiritual, and cultural backgrounds. They are:

*Feelings of peace, hearing unusual noises, seeing a dark tunnel, being out of the body, meeting spiritual beings, encountering a bright light, or a "being of light," panoramic life review, a realm where all knowledge exists, cities of light, a realm of bewildered spirits, supernatural rescue, a border, or limit, and coming back into the body.*

So, Moody described all these in 1975 as being like, if you're going to have a near-death experience, this is probably going to happen. After coming to, many folks had the same aftereffects, one of them being frustrated trying to relate the experience to other people, but also having a deeper appreciation of life, being less afraid of death, and sometimes, freaking people out by things they shouldn't have seen or remembered. So, these kinds of experiences have been consistent over these different cultures, backgrounds, religions, spiritual beliefs, and Bruce says, also over time.

**Alie:** Oh wow. So, for longer than it would take to be a fleeting trend or something like a social contagion?

**Bruce:** Right. There's no question that people back in the ancient world, long before we had Christianity, had the same types of near-death experiences we have now. Now, of course, we didn't have any way of measuring their physiology back then but we're still on the ground level of finding out how to do that now.

**Alie:** And I know you wrote a paper, "Near-Death Experiences and Spirituality," and with the topic of religion, where is the split between it being a spiritual experience and a religious experience? Because I'm sure some people are like, "I was in heaven," and other people are like, "I don't know, I saw white light or myself on an operating table."

**Bruce:** Yeah, that's a good question, Alie. Most people who have a near-death experience say they are tremendously transformed by it. The first thing to say is that they're no longer afraid of death. No matter what the near-death experience was composed of, they feel like they're looking forward to death eventually. But that paradoxically makes them more willing to engage in life; they feel that there's no reason they shouldn't go ahead and jump in with both feet and enjoy all there is to life and take risks, because what's the worst that can happen? You die. And that's good. *[Alie laughs]* So, they feel much more joyful about life and also less frightened about death.

**Aside:** But don't get too excited about being a corpse!

**Bruce:** Now, I should say that people who have come close to death, but don't have a near-death experience also tend to value life more highly but they don't have this decreased fear of death; they tend to fear death more.

**Aside:** So, if someone has had a near-death event, like a motorcycle crash, but not a near-death experience where things get all funky, then they may still find life precious but they're not looking forward to death, that shit is still a horrifying proposition for them. So, a near-death event and a near-death experience might hit a little different. And just like all cacti are succulents but not all succulents are cacti, all near-death experiences come from a near-death event, but not all near-death events result in a near-death experience. You with me?

**Bruce:** Now, most near-death experiencers say they're much more spiritual now than they were before. And by that, they do not mean that they're more religious. They say they feel more connected to other people, to the natural world, to the divine, and this gives them a sense of compassion for other people. They often come back saying that they experienced, in their near-death experience,

that they are the same as every other person, and they're intimately connected with other people. And if you believe that, then it doesn't make sense to hurt other people because you're just hurting yourself, or to try to get ahead at someone else's expense. I've known lots of people who had to change their careers after a near-death experience; people who are in a violent profession such as career military officers or police officers, who just could not think about hurting someone, shooting someone after the NDE, and people who were in cutthroat businesses who had to leave their jobs. They usually end up training in something like healthcare, or social work, or clergy, or teaching; something where they're helping other people rather than hurting them.

I've heard these same changes from people who were atheists before the near-death experience, and again, they become much more spiritual but not necessarily more religious. They tend to feel that all our religions are man-made approximations of what's really going on.

**Alie:** I feel like some of these changes in perspective, and even some of the experience of it sounds a lot like someone I know who did mushrooms... named me, [laughs] once. Do you find any correlations between psychedelic substances and what people experience? I know that they use it too for the terminally ill to sort of confront an existential fear.

**Bruce:** Yes. Yes. There are definitely a lot of similarities between what we have in a near-death experience and spiritual experiences from other causes, and one of those causes is often psychedelic drugs. People have been reporting these experiences for centuries, of a sense of leaving their bodies and encountering some other realm or dimension. And then returning to this, "normal, everyday life" with a much more spiritual outlook. It doesn't happen as reliably with drugs. Drugs often have a lot of negative trips as well, but it does happen.

Now, several years ago, I was part of an international group that compared hundreds of accounts of near-death experiences with thousands of accounts of psychedelic drug trips with different drugs. And we tried to look at which drugs produced the experience that was most like a near-death experience. It turned out that the number one drug was ketamine, which is an anesthetic that is used mostly for animals, not for people very much because it often produces unpleasant experiences in people.

**Aside:** So, according to the paper, "Essential Veterinary Use of Ketamine," ketamine is the MVP of those dart guns used to sedate zoo animals and wildlife, and it's used also as a surgical anesthesia for horses and camels. In addition to cattle and tigers, other species that use ketamine are ravers, calling it Special K, and sometimes slipping into a mid-groove dissociative state known as a K-hole. So, ketamine therapy can be an effective option for treatment-resistant depression when it's administered in a calm setting by doctors who read the instructions on the box.

But why would anyone want to take a horse anesthetic on a Saturday night in a loud room, that's dark, with a bunch of strangers? Well, according to Bruce's paper, "Neurochemical models of near-death experiences: A large-scale study based on the semantic similarity of written reports," published in the *Journal Consciousness and Cognition* from 2019, the researchers write that near-death experiences often result in:

*A state of consciousness characterized by... the perception of leaving the body boundaries, feelings of peace, bliss and timelessness, life review, the sensation of traveling through a tunnel, and an irreversible threshold.*

So, these researchers looked at 15,000 reports linked to the use of 165 psychoactive substances and found that... little drumroll here...

**Bruce:** The reports of a ketamine experience sounded most like a near-death experience. The second most common one was psilocybin, and the third was salvia or sage.

**Aside:** Just a PS. Salvia is a type of sage which is native to Central America, and it's been used for centuries as a holy medicine by Indigenous groups. If you've ever watched videos of college kids on stained couches ripping bongos of this stuff, you're going to turn into Nancy Reagan, because although that high lasts maybe five minutes it looks *harrowing* existentially. That bowl comes in my direction, I'm like, "Keep it moving, man." [*Excuse me... I have to go to space now.*"]

**Bruce:** We were kind of hoping this would give us clues as to what was going on in the brain that might facilitate a near-death experience. But when you look at what these drugs do in the brain, each one of the top ten drugs works by a different mechanism in the brain, working with different neurotransmitters. So, it didn't really help us. Basically, what it boils down to is if you interrupt the normal working of the brain, you're open to having a near-death experience, and it's not a specific chemical effect.

**Alie:** I was reading in this paper that the N-methyl-D-aspartate receptor antagonist [*laughs*] which had some sort of effect on the endogenous serotonin 2A receptor agonist which... I was pouring through this paper, and I was like, I'm just going to ask him what that means. [*laughs*]

**Bruce:** Sure, sure, sure. Well, actually, ketamine works mostly by inhibiting the NMDA receptor in the brain. But, you know, these drugs that we give people, whether it's ketamine or psilocybin or salvia or any of the others, LSD, they're dirty drugs, so to speak; they have many different effects on the brain. So, you're not giving a drug that just has one effect, it has many, and it's hard to sort out which one is the one that's effective in facilitating these experiences.

I should also say that if it's associated with an experience, that doesn't necessarily mean that it's causing the experience. One of the psychiatrists who was most active in pushing the ketamine model of near-death experiences back in the '80s had had lots of experiences with ketamine that produced events like a near-death experience. And then eventually after a couple of decades, he had a spontaneous near-death experience with a heart attack, and at the end of that, he said, "You know, it's not the same thing."

**Alie:** Really?

**Bruce:** He said that he doesn't think that ketamine produces the experience. He said, ketamine opens the door and allows you if conditions are right to have this experience.

**Alie:** Aha!

**Bruce:** Another person I know who had a near-death experience and had had previous experiences with psilocybin, said that with psilocybin, he saw heaven with his near-death experience, he was in heaven.

**Alie:** Oh, wow! That's a really chilling anecdote to think of how immersive that must be and why that has such lasting effects if you come back to life.

**Bruce:** Yeah. I think the issue is we just have so many words in the English language to describe our experiences. And most people who have a near-death experience say, "There aren't any words for it. I can't describe it for you." So, then we researchers say, "Great. Tell me about it." [*Alie laughs*] So, we make them use metaphors, and there are just so many words you can use to describe it, and they don't always mean the same thing. So, people all over the world describe a warm, loving being of light. And people in the US will often say that that's God. Now, people in India will not use that word. But even people here will say, "I'm going to call it God, so you know what I'm talking about. But this is not the God I was taught about in church. It's much bigger than that." They're just using it for a metaphor.

**Alie:** And heaven meaning not an actual pearly gate with angels and harps, but something else that was pretty cool.

**Bruce:** Right, something pretty different from this normal, everyday, physical world.

**Alie:** Well, I'm wondering if ketamine is used as a therapy that's a far but kind of an approximation of a near-death experience, and if people after near-death experiences have a sense of peace and less anxiety and less existential, kind of, crises, does ketamine produce some of those lasting effects, too? Is that why it's being looked at as a therapeutic drug?

**Bruce:** Well, it's a good question. Ketamine is now being used to treat depression, and there's some exploratory work now using it to treat post-traumatic stress disorder, but we don't know about the long-term effects of it. There's been a lot more work done with psilocybin since that's much easier to control and a lot of the work being done at Johns Hopkins University here in the US and at Imperial College in London, giving people psilocybin and then having them describe their experiences, which are often quite spiritual. The group at Hopkins has now followed people up for a year or two, and they find that after just one extended session within the lab, they have a decrease in anxiety that lasts for a couple of years at least.

**Alie:** I followed the Imperial College of London protocol when I had my one psychedelic trip, it was right after my dad died. I think about that experience daily. I mean, it was such a profound experience. I didn't believe that it would have such a lasting impact. I mean, I don't have any explanation for it, whatever my brain was doing, it was pretty cool though.

**Bruce:** Right, right.

**Aside:** *[read with a quick, steady pace]* Note: This podcast is not intended to provide any medical advice. Also, this treatment was suggested to me by my long-term Western medicine psychiatrist familiar with my medical history, who sent me the protocol. I then prepared for weeks, obsessively reading studies, interviewing others who had undergone this treatment, and printing a 57-page booklet of treatment protocol from an Ivy League medical school's psychiatry department. Just know, it was wacky and also it is illegal, but I'd be lying if I told you that I didn't have silent conversations with dead people in a rainbow-colored candy land for a few hours and the epiphany that anxiety is the biggest waste of brain resources, and that fear is truly the mind-killer.

**Bruce:** Way back in the 1970s, Stan Grof was using LSD to assist people who were dying to help them relieve their anxiety in the dying process. All of these drugs are not just given to someone and say, "Here, go home and take this." They're usually administered in a very controlled setting with low lights and smooth music and someone there to help you process the process as you're going through it.

**Alie:** Mm-hm. I'm wondering about what led you to this field, if you can tell me a little bit about your backstory.

**Bruce:** Well, I was raised in a scientific household. My father was a chemist and, you know, as far as we knew the physical world was all there was, we didn't have any spiritual tradition in our family. You know, when you die, you die, that's the end. That was fine with us. That wasn't a depressing fact, I wasn't afraid of death, it was just the end. I went through college and medical school with that mindset that the physical world is all that is, and all our thoughts and feelings are created by the brain.

And then when I started my psychiatric training back in the early '70s, I was confronted by a patient who was unconscious when I tried to see her in the emergency room. But her roommate was waiting for me in another room down the hall. So, I went to talk to the roommate to see what



was going on with the patient, what she might have overdosed on, and so forth. And then I came back to see the patient, and she was still totally unconscious. So, she was admitted to the intensive care unit.

When I saw her the next morning, I started to introduce myself, and she stopped me and said, "I remember who you were from last night. I know who you are." And that kind of stunned me because I was pretty sure she was unconscious. So, I said that to her, and she said, "Well, not in my room. I saw you talking to Susan down the hall." [*Alie gasps*] That just blew me away. I couldn't imagine what she was talking about. As far as I could tell, the only way that could happen was she had left her body and followed me down the hall and, you know, you are your body. How can you leave it? But then she went on to tell me about the conversation I had with the roommate; what I asked, what she answered, what we were wearing, what the room looked like.

And I just didn't know what to make of this. I was completely dumbfounded. But, you know, I wasn't there to deal with my confusion, I was supposed to be dealing with hers. So, I kind of pushed that out of my mind for a while and thought, I'll think about this when I have time sometime in the future. And then over the next few years, I heard a few more cases like this from patients who had usually overdosed, or one case had shot himself in the head, and had a near-death event and then claimed to have elaborate near-death experiences. And I just assumed, you know, these are all psychiatric patients, who knows what they really experienced?

And then several years later, one of my colleagues at the University of Virginia, Raymond Moody, published a book called *Life After Life*, in which he gave us the name near-death experience and described what they were like. And I realized that this was what patients were talking about, only Raymond's participants were not patients, they were people from all over the world having the same types of experiences as my patients were.

I still couldn't understand it, but I'm a scientist. So, scientists don't run away from things they don't understand, they run towards them and try to explain them. So, I started collecting cases to try to find what patterns are consistent across cultures, across ages, across genders, across ethnic groups, and trying to find out what's going on here. Eventually, we started looking at different physiological hypotheses; is it a lack of oxygen to the brain? Is it drugs given to the patients and so forth? And one by one, we tested all these hypotheses and none of them panned out. For example, if you measure the oxygen levels of people who are close to death, you find that those who have near-death experiences actually have better oxygen supplied to the brain than those who don't have near-death experiences.

**Alie:** Oh, wow.

**Bruce:** So, that means the oxygen deprivation is not causing the NDE. Likewise, with drugs given to patients, the fewer drugs you're given, the more likely you are to tell about a near-death experience later on.

**Alie:** I'm wondering, it must be very difficult to do imaging on these experiences because you really kind of never know when it's going to happen.

**Bruce:** That's right.

**Alie:** What kind of measurements can you do while it's happening?

**Bruce:** You can't do much while it's happening. There have been one or two people who have tried to bring near-death experiencers into the lab and have them try to recreate in their minds the memory of the near-death experience while they're having an MRI, an EEG, or a CAT scan. And what they find is that there's no one spot in the brain, the entire brain gets involved in these.

Which is not surprising because you've got thoughts, you've got perceptions, you've got feelings, you've got emotions, the whole brain's being involved in this. Now, there have been a couple of reports recently about people who serendipitously have had a heart attack while they had their EEGs being measured, their brain waves being measured. What they find is that there is some continued brain activity, apparently, after the heart stops.

**Alie:** Oh, wow.

**Bruce:** Now, this flies in the face of decades of clinical observations where we know that the heart, uh, after the heart stops, the blood supply to the brain stops also, and within about ten seconds, you start getting a marked decrease in brain activity. Within a minute or so, you get totally flat-lining. So, it was surprising to see these new reports of continued activity.

However, it's very difficult to do this kind of research. And what they find is that the types of supposed brainwaves they're finding, the electrical activity they're measuring, could just as well be due to muscle activity in the head around your temples or on your forehead that are contracting or going into spasm. That can produce the same types of waves that electrical activity in their brain does. And we don't know how to separate those two. So, they may not even be measuring brain activity.

**Alie:** Ah, it might just be muscular so it's tough to parse out, right?

**Bruce:** Right.

**Alie:** Do you have any statistics on how many people who have a near-death event have a near-death experience?

**Bruce:** Yes. We have data from several different studies, large studies with several hundred patients each, in several different countries in the US, in the UK, in Belgium, in Germany. And what we find generally, is that if you look at only people whose hearts have stopped, between 10 and 20% will report a near-death experience. [*That's a lot.*] Now, we're relying on them to voluntarily tell us about it. There may be more people who just don't want to talk about it, but we know at least 10 to 20% have an experience.

**Alie:** Do you think it might be like how you might dream but not remember it in the morning?

**Bruce:** That's a possibility. Although most people who tell about a near-death experience say it's not at all like a dream, it doesn't fade over time. And in fact, we've done research now where I've gone back in recent years to contact people I interviewed in the 1970s and 1980s about their near-death experiences and I've re-interviewed them and I find there is actually no change at all in what they tell me; the memory is not faded at all, it doesn't become distorted at all, it doesn't change over time the way most of our memories do. So, when they say to us, "This was more real than life itself," that seems to be true when it looks at the memories. The memories are so vivid, they don't change over time the way memories of our normal life change.

**Alie:** Yeah. I imagine too that when people say they remember where they were when they heard that JFK was shot or that 9/11 happened, it really imprints, and you can remember a lot more details because of the significance.

**Bruce:** Exactly.

**Alie:** Well, your paper about near-death experiences and spirituality, the false positive claims and the false negative denials... How do you determine what might be an embellishment or what might be a denial? Do you have to hook them up to a lie detector test?

**Bruce:** No, no we don't do that.

**Alie:** Okay. [chuckles]

**Bruce:** No, we just look at the consistency of the reports. We have a scale that we use to quantify the depth of the near-death experience.

**Aside:** Just a side note, he was the expert who invented this scale, which is a baller move. It's called the Greyson NDE Scale. It's a 16-point survey with questions such as: Did scenes from your past come back to you? Did you see, or feel surrounded by, a brilliant light? Did you feel separated from your body? Did you come to a border or point of no return? Did you seem to encounter a mystical being or presence? And the best thing about your score on this test is that you won't give a shit because nothing matters except for peace and unity, and love. You might be out the door to a parasailing appointment or draining your savings account to buy a mini donkey sanctuary by the time these eggheads bust out the calculator to figure it out.

**Bruce:** And if an experience falls below a certain point in that scale, we say, well, they didn't really have a full-blown near-death experience. Now, we use that for research purposes to make sure that we're all talking about the same experience when we do research on them but it's not helpful for an individual person. If a person comes to me and says, "My heart stopped and I have this incredible experience, and my life will never be the same again," and we give them the scale and they don't score high enough on it, that doesn't mean they didn't have a near-death experience. I can't say to this person that even though their life has been totally turned around, they didn't have an experience. Obviously, the person did. But it's not the type that we want to include in the research because it's not consistent with the others.

**Alie:** How many data points do you have to collect for a study? Can you do a small sample size? Or are there bigger reviews that have a lot of data points of correlations between different peoples' stories and things like that?

**Bruce:** Yeah. Well, it depends on what measures you're using, what measures you're using as your outcome. Most research into near-death experiences uses several hundred near-death experiencers to get any significant results. There have been a few papers published with 10, 20 and as you might expect, their results are not as consistent, and later reports with larger numbers may not confirm what they found. But most of the research has been done with several hundred experiencers.

**Alie:** And are the most common flavors kind of a bright light or a tunnel or floating above yourself? Do you find that those are the most common experiences?

**Bruce:** They are. The most common one is a sense of overwhelming well-being and peace and sense of being unconditionally loved. [*"Mm, it's cute. I wish I could get it but..."*] Many also report leaving their bodies and watching what's going on around them and being able to describe accurately what's going on around them, things they shouldn't be able to see or hear. And then a sense of reviewing their lives and meeting other entities. They seem to do that.

**Aside:** Okay, not that I don't love all this but Dr. Greyson and most of us are science-first kind of people. He was raised secular, all about data and myth-busting. So, how does he make sure that people aren't absolutely making this stuff up? Do they have to verify with other, nondead witnesses?

**Alie:** Do you ever have to do any follow-ups with other medical personnel or nursing staff to say, "Hey, did anyone overhear something? And then tell another patient?" Do you ever have to go down, like, an investigative hole like that? Or did you the first time it happened?

**Bruce:** Well, we do. When people just say, “I left my body, and I watched what was going on” if they described things that were unusual or that couldn't have been guessed about, then we ask other people in the room, doctors and nurses who were there, to corroborate or not what the patient was saying. Now if they say, “Oh, I saw doctors wearing green scrubs.” Well, of course, you might expect that. [*Alie laughs*] But if they say, “Well, the nurse had mismatched shoelaces,” that's a little more surprising and we will then go ahead and ask the nurse whether that happened. And we have some very surprising things that patients saw, of doctors and nurses doing embarrassing things they shouldn't have been doing that were accurately right.

**Alie:** [*laughs softly*] Can you tell me what any of them were?

**Bruce:** Well, one was a 55-year-old truck driver who had an emergency quadruple bypass surgery; that means four of the vessels supplying his heart were blocked and had to be replaced. In the operation, he later told me, he left his body, rose up above it, and saw his surgeon flapping his arms like he was trying to fly. And he demonstrated by placing his hands on his chest and wiggling his arms up and down. Now, I had never seen anything like that in an operating room. I've been a doctor for 30 years at this point and I'd never seen that. You don't see doctors on TV doing that. So, I said to him, “You know, it sounds to me like this is a hallucination from the drugs you were given.” He said, “No, no, no. I really saw it. You can ask my doctor.”

So, I did. And the doctor sheepishly admitted that he had done that; that he had developed this habit he'd never seen any other doctor do. He lets his assistants start the procedure while he puts on his sterile gown and gloves, and then he walks into the operating room to watch them start the procedure. And to avoid touching anything that's not sterile, he places his hands flat against his chest, so they won't touch anything. And then he points things out to his assistants using his elbow so that he doesn't touch anything with his fingers. [*Alie laughs*] And he demonstrated just the way the patient did. [*Alie gasps softly*] And you know, I don't know how the patient could've known that. I said to the patient, “Did you ask the doctor yourself about it?” He said, “Yes, I did.” “And what did he tell you?” He said, “Well, I must've done something right because you're here, aren't you?”

**Alie:** [*laughs*] I thought for sure you were going to tell me that he was doing the chicken dance. [*Bruce laughs*] I was like, I had no idea surgeons were so goofy.

**Bruce:** No, this was a very straight-laced doctor, he wouldn't have done anything like that.

**Alie:** What about you? Have you ever had a near-death event or experience?

**Bruce:** I have not. I have had a very calm, peaceful, boring life. I haven't had any near-death events.

**Alie:** Are you afraid of death after hearing so many?

**Bruce:** No, I'm not but I can't say that I was ever afraid of death before I got into this work either. As far as I could tell, death was the end and what's to be afraid of? You just don't exist anymore. So, it wasn't a frightening thing. I don't think that's true anymore. After talking to thousands of people who claim to have died and still persisted in some form, I think that there is something after the body dies. I don't know what it is. You know, most of them say, “I can't describe what it is for you,” and then they go ahead and use metaphors. But I don't take those metaphors literally because they're just that, they're metaphors and I don't think we have the words or the brain power to understand what it's like after you die.

**Alie:** Right. There's still so much, obviously, that science doesn't know. I mean, the internet is very new, electricity is very new, indoor plumbing is relatively new. But what do we know or where are we at with understanding consciousness?

**Bruce:** Wow. That's a good question.

**Alie:** It's a big one, sorry.

**Bruce:** We are really at ground zero. Most doctors are taught that the mind is what the brain does and that all our thoughts, feelings, and perceptions are created by the brain. If you ask them, "Well, how does it do that?" They have no idea. How does a chemical or physical electrical change in the brain create a thought? No one has the slightest hint of a suggestion, of an idea of how we might go about answering that question as a total black hole.

**Aside:** So, speaking of black holes, more on cosmology in a bit but first...

**Alie:** Can I ask you some questions from listeners?

**Bruce:** Sure, sure.

**Alie:** They have great ones. Also, we donate to a charity of your choosing, a related charity so just let us know if there's one that comes to mind and then we'll shout them out and tell listeners what they're all about.

**Bruce:** Well, what comes to mind Alie is the International Association for Near-Death Studies, that's IANDS.org which is a 501(c)(3) nonprofit organization.

**Alie:** That's great, that's absolutely perfect. We'll donate in your name.

**Bruce:** Good.

**Aside:** So, this 501(c)(3) org promotes multi-disciplinary exploration of near-death and similar experiences, and their effects on people's lives. They publish a peer-reviewed scholarly journal, they sponsor conferences, they work with the media, and encourage regional support groups for experiencers and people close to them, healthcare professionals, and educators. So, to find out more about the International Association for Near-Death Studies, you can go to IANDS.org which will be linked in the show notes. That donation was made possible by sponsors of the show.

[Ad Break]

Okay, I am dying to know what you asked. So, thanks to patrons at [Patreon.com/Ologies](https://patreon.com/Ologies) for submitting questions before we recorded and the folks at the BFF Tier for submitting audio questions.

Now, many folks had chemical queries such as Isa Brillard, Mish the Fish, Holly Giorgio-Dundon, Amanda Lask, Pavka34, Doug Paice, Susana Capucho, Interstitial K, and first-time question-askers Malia Asosi and Rachel Prestayko and Loren.

**Alie:** Okay, some questions. Loren from California wanted to know:

*"My question is about chemicals released by the brain during near-death experiences. I read about a study done on rats that measured their serotonin levels upon dying and I'm wondering if there are any studies that tried to determine what other chemicals might be released by the brain in addition to serotonin?"*

**Bruce:** That's a difficult question because we're all talking about speculation, we don't have data on this. We do know that endorphins are produced under stress and presumably they would be when you're approaching death as well. Endorphins produce a sense of euphoria, the so-called "runner's high" is an endorphin effect. But that's one of dozens and dozens of chemicals that are produced by the brain under stress and it's hard to know which ones are causing which effects. If it's associated with the near-death experience, that doesn't necessarily mean it's causing the experience; it may be having an effect on the brain that gets it out of the way so you can go ahead and experience this.

**Aside:** So, in his book *After*, Bruce further explains that:

*If near-death experiences are not associated with medications given to people, might they be related to chemicals produced by people in crisis? We know that our brains produce or release a number of chemicals that help the body cope under stress. The chemicals I thought to be most likely to be associated with NDEs were endorphins, the “feel-good hormones” that produce the “runner’s high” and that are known to reduce pain and stress. Other scientists have suggested that NDEs might be connected to serotonin, adrenaline, vasopressin, and glutamate, all of which are chemicals that transmit signals between nerve cells. But in spite of the theoretical reasons for thinking that brain chemicals might be involved in NDEs, at this point, there has been no research looking into this possibility. I don’t expect any such research to be done in the near future. Bursts of these chemicals in the brain tend to be very short-lived and localized, so in order to find them, we’d have to look at exactly the right time at exactly the right place in the brain—and as I discovered, we don’t even know where in the brain to look.*

So yeah, surprise! We don’t know.

**Alie:** Katie from Glasgow in Scotland wanted to know:

*“I was just wondering if there had been any kind of research done into people’s experiences and specifically memory loss in an intensive care or critical care department in hospital. I work as a research nurse and I remember vividly speaking to someone who was taking part in one of our drug trials during the first wave of the COVID pandemic and although they were actually conscious for protracted periods during their stay in intensive care, when I was speaking with them afterwards they said the only thing that they really remembered about it was this person with pink hair being obsessed with the time [laughs].*

*We figured out it was because of when myself and my other research colleagues were in there, shouting out times to each other of infusions starting and stopping and blood samples getting taken and things like that. It just seemed like a really odd... of all the things [laughs] to have stuck in mind during that period, was someone shouting the time to each other. It was very odd.”*

And wanted to know how auditory retention is affected by a near-death experience. I understand that when you’re dying, that’s maybe the last sense to go? Do you hear of people who hear things a lot?

**Bruce:** Yeah. Generally speaking, vision goes first, and hearing is the last thing to go. But there have been studies where people had blocks put in their ears so they wouldn’t be able to hear anything. They actually had molded speakers put in the ears that would emit a loud burst so you could measure in the brain when the brain was responding to these clicks, then when the brain stops responding, you know that they’re totally anesthetized. And even in such circumstances, people have vivid memories of hearing and seeing things in the operating room after a near-death experience. So, it’s hard to say what is preserved and what’s not preserved as someone is dying, because we don’t have a measure of how close to death someone is. Now, there have been a couple of reports of people who are actually pronounced dead and left in a morgue for a couple of days before they recovered to tell about a near-death experience.

**Alie:** [softly] No.

**Bruce:** And those are another problem, how do you deal with those people?

**Alie:** I mean, I guess you get a lawyer? Is that a malpractice suit? [both laugh] It’s like, “You thought I was dead! Still alive.” Have they ever found anything that is similar across other cases? Because that sounds like the worst nightmare ever, to be honest. [laughs]

**Bruce:** Yes, yes. I mean, these people are usually not inclined to sue. They come back with a sense of “We’re all in this together,” and be very forgiving.

**Alie:** That’s a good point. *[laughs]*

**Aside:** I looked to find these rare cases, these macabre fates, and went spelunking into research only to discover right away that y’all, this happens all the time. All the time! Here are some choice bits from somewhat recent news stories. You ready?

Iowa: “A funeral home employee reportedly unzipped the bag, saw the woman’s chest moving and the woman gasped for air.” Mississippi: “Funeral workers find a man alive and kicking when they open a body bag.” Brazil: “The crematorium staffer who went to collect the deceased patient opened the bag and noticed that the body was still warm and not yet showing rigor mortis.” Poland: “A woman wakes up feeling very cold, only to discover she was in the morgue’s cold storage.” So yes, declared dead, but still alive. The most bittersweet of mistakes?

I have a lot of feelings about this. One of them *[deep inhale]* is that if you’re given a second chance at life and they have to rip up your death certificate, do you want to spend the time on Earth giving depositions and filing lawsuit paperwork at a courthouse? I don’t know.

**Bruce:** Most near-death experiencers come back embracing what we call the golden rule, you know, treat other people the way you want them to treat you, which is a part of every religion we have. But for these people who have a near-death experience, they say that for them it’s no longer a goal we’re supposed to follow, a guideline. It’s a law of the universe, they’ve experienced this in their near-death experience, and they know that when you hurt someone, you can’t avoid hurting yourself as well. And when you help other people, you’re helping yourself as well.

**Alie:** That seems like a huge paradigm shift in what we’re taught culturally.

**Bruce:** It is.

**Aside:** This next question is from Donoi, who hails from the land of northwest Florida:

Hello, Dadward. I was wondering, are there any cultures current or past that have incorporated a near-death experience into some kind of ritual?

**Alie:** Anything like that that you know of?

**Bruce:** We don’t have good evidence of this but some of the ancient Egyptian and Greek mystery religions would either put people into drug-induced trances or in Egypt, actually bury them for a day or so to try to induce this type of experience. Often those people were then hailed as seers or shamans after they came out of this, if they survived. Now there are accounts in Tibet of people who have come back from death, they call them *deloks*, and they are revered. But it’s not done as part of a ritual, it’s just that they happen to have this and then they are revered as knowledgeable people.

**Alie:** I mean, it does have some cachet, I’m not going to lie.

**Bruce:** Yes, yes.

**Alie:** I’m like, “That’s pretty cool, tell me everything.” *[laughs]* Also, just the victory of defeating death in the first round.

**Bruce:** Exactly.

**Alie:** Yeah. What about age? Terena, Grace Robisheaux, and Donald Merritt wanted to know if, in Grace’s words: Does the rate of near-death experiences go down after the teenage years? Terena wants to know: Do children have them?

**Bruce:** Most of the cases that we have looked at are in older people because those are the ones who come close to death more frequently. But there have been a number of studies of children having near-death experiences, and they are generally the same as those of adults with one exception, actually more than one exception. They tend not to have the elaborate life review that older people do, they haven't that much of a life to review. And they tend not to see a lot of deceased loved ones because they don't know a lot of people who have died as older people do. But with those two exceptions, children seem to have the same near-death experiences that adults do, including preschool children who have not really been indoctrinated into what to expect when you die.

**Aside:** So, on that note, many of you asked about astral reunions such as Emilie, Johanna Burr, Deli Dames, Rayna, Allison Muller, Ellie Schaeffer, Teddy Egelhoff, Audrey Ayers, and first-time question-asker Charlotte Parkinson who said: In the moment my dad was dying, he hadn't been able to say a word in two weeks due to being in and out of an induced coma and having brain damage. His last word was my mum's name who had passed away years before. And then patron Krista Jones asked: Do a lot of people really have visions/dreams during near-death experiences or is that flimflam perpetuated by movies?

**Alie:** A bunch of people, you just mentioned seeing loved ones... I had done a lot of reading about hospice because my father passed last year and some booklets and guidebooks were like, it's not uncommon for your loved one in hospice to start talking to people who have passed away. Any, kind of, explanation for that or any data on that you want to share?

**Bruce:** Well, when people report that in their near-death experience, they were greeted by deceased loved ones that can easily be dismissed as wishful thinking or expectation, or you think you're dying so of course you want to have your deceased spouse or mother, or father come greet you. But we have a number of well-documented cases where someone claimed that in a near-death experience, they encountered someone who was deceased that was not yet known to have died.

**Alie:** Oh.

**Bruce:** So, there's no expectation here. And sometimes they come back telling about this and the people around them are very disturbed because this person's still alive that they're talking about. And then they find out a couple of days later, no, they actually died just shortly before the person saw them.

**Aside:** Gwen Kelly asked: I have always wondered if there is a difference in the experiences of NDEs between people who nearly died slowly versus people who had something quick or sudden where your brain has very little time to process or react, to realize, "Oh shit, I'm gonna die."

**Alie:** Therese wrote: Please, please just reassure me that even when people die horrifically, their dying brains fire up in a way that makes their last moments peaceful or less terrifying. Lie if you must. *[laughs]* In terms of a violent or sudden death, have you talked to anyone who went through that who said that there was an absence of terror or horror?

**Bruce:** Yeah, most people report that as soon as the near-death experience starts, all the pain goes away, all the fear goes away, and they become enveloped by this blissful feeling of peace and well-being and being unconditionally accepted.

Now, I have to say that there are some near-death experiences that are not pleasant. We don't really know how many there are. Most people who have studied this find that about 10% are not pleasant. But again, we're dealing with people who voluntarily talk to us about this. And I can imagine that people who have an unpleasant near-death experience are less willing to talk about it than other people. As to why that might happen, we don't know. I've known people who were in



prison for life, for murder, who had beautiful near-death experiences when they had a heart attack in prison.

**Alie:** Wow.

**Bruce:** And we certainly have a lot of writings by Catholic saints over the centuries describing their dark night of the soul when they have terrifying mystical experiences. So, we don't really know. What we do know, though, is that people who have frightening near-death experiences also come back feeling they're no longer afraid of death as they were before. And they come back saying, "Even though I had a bad experience, I was sent back so I can change my life and now have a better life, better death next time."

**Alie:** Oh, like a little bit of a do-over?

**Bruce:** Exactly. "I was given a second chance."

**Alie:** Mm-hm, well I mean, I guess that's hopeful if you're out there being a dick.

A few people, Annmarie Everhart, Jessica Cerchiara, and Clayton Harding wanted to know about the ceiling experiments about putting things up on a shelf, high up in the room of patients. Can you tell me at all about designing and conducting those experiments?

**Bruce:** Sure, sure. Well, there have been numerous anecdotes about people who claim to have seen things accurately from an out-of-body perspective. Jan Holden at the University of North Texas actually looked at almost a hundred of these cases and she found that in 92% of them, what the person described is entirely accurate. In about 6%, there were some little inaccuracies in it, and only 1% was it dead wrong. So, the vast majority was completely accurate.

So, that has stimulated us to start doing experiments where we placed, usually visual targets, up high on a shelf in a room where people are likely to have a cardiac arrest, like in the cardiac care unit, facing upwards so you can only see them from looking down. There have now been six published studies of this type of research protocol, and none of them has found anyone who claimed to have left their body and seen the target. So, it doesn't tell us yes or no, can they really do it? Because no one claimed to have tried to do it.

**Aside:** So, I found their study with the protocol: An Apple Macintosh Pismo PowerBook laptop computer was placed above eye level in the procedure room so that the computer screen faced the ceiling. The surface was approximately six feet above the patient and on the screen were randomly selected animations which might involve a floating butterfly, or fireworks, or a jumping frog. The results were disappointing. Bruce says that the struggle in this kind of science is that so much of the evidence is anecdotal. Plus, these patients were under heavy sedation so that may have been a factor.

**Bruce:** When I talk about this to near-death experiencers, they just laugh. They say, "If you're having a near-death experience, you're out of your body for the first time watching your body being resuscitated. Are you going to look around the room for some target you didn't know was there and then try to remember it?" [*Alie laughs*] You know, they think it's just a ludicrous thing to try. [*"I wasn't paying attention."*]

**Alie:** That is a good point. That would probably be the least interesting thing happening in the room.

**Bruce:** Right.

**Aside:** For more on this you can see his study with Dr. Holden and Dr. Paul Mounsey, titled, with honesty and chagrin, "Failure to Elicit Near-Death Experiences in Induced Cardiac Arrest." So, actual scientists are doing the work to see what's up, on the ceiling, as far as flimflam and

debunkery. So yes, we have no good scientific data from controlled experiments to verify that people's consciousness dips out and takes a gander from the top. I'm sorry, y'all.

Now, on the topic of consciousness and the universe, Matt Ceccato, Chris Curious, Rob Lara, and Sharon had questions and they're not alone.

**Alie:** Tigeryuri says: I saw a presentation by a Caltech professor that consciousness and unconsciousness was partially controlled by the quantum state of atoms in the brain. Have you had to talk to any theoretical physicists or anything like that about this?

**Bruce:** Uh, yes. It's a challenging area because it's all speculation, we don't have any ways of measuring these quantum fluctuations in the brain. Stuart Hameroff, an anesthesiologist in Arizona, and Roger Penrose, a physicist in England, have collaborated on a theory to explain consciousness in this way. They talk about microtubules in the atoms in the brain that can have quantum effects, but they don't explain how that can produce a thought or a feeling. Again, you're dealing with a physical event and trying to figure out how that creates a thought or a feeling, and there's a gap there that they haven't really crossed.

**Aside:** If you're thirsty for more on this, saunter yourself down a cyberhole about Orchestrated Objective Reduction, a hypothesis that came onto the scene in the early 1990s via a Nobel Laureate in Physics and an anesthesiologist. I'll read you a snippet from your friend Werkopedia, who told me:

*Orchestrated objective reduction (or Orch OR) ...*

Worst nickname, it's the worst,

*... is a theory which postulates that consciousness originates at the quantum level inside neurons, rather than the conventional view of connections between neurons. The mechanism is held to be a quantum process called objective reduction that is orchestrated by cellular structures called microtubules, which are subneuronal cytoskeleton components, or protein filaments inside our cells. It is proposed that the theory may answer the hard problem of consciousness and provide a mechanism for free will.*

So, just when you think you know yourself, someone throws quantum cytoskeleton brain microtubules at you and you're back wondering how you're a blob of molecules that loves a cat.

**Bruce:** For the most part, physicists are very divided about whether quantum physics can really have anything to do with consciousness or not. The original people who developed quantum physics a hundred years ago came to the conclusion that physical matter doesn't really exist, consciousness is everything. And unless consciousness looks at the universe, it doesn't exist. And when you look at it, then it comes, comes into creation. And later physicists said, that's totally ridiculous. So, most physicists today are split about whether that's true or not and they tend to deal with it by saying that quantum physics is not a description of reality; it's a mathematical formula that lets us predict how things are going to turn out. But it's not a literal description of reality.

**Alie:** There are so many exciting things that people will know after we die.

**Bruce:** Most physicists now say that the visible matter we can see is 5% of the matter in the universe [*Alie laughs*] and 95% of it is dark matter, which we have no idea about!

**Alie:** [*still laughing*] Yeah! I talked to a dark matter expert about that.

**Bruce:** Yeah. How can you possibly think we understand the world if that's true?

**Alie:** I know. I asked him if dark matter could be ghosts. [*clip from Scotology*]

**Alie:** *And be honest with me, without having to name names, how many astrophysicists out there think that dark matter might be ghosts? [Flip laughs] What if dark matter is ghosts? What if dark energy is ghosts? What if it's all ghosts? What if we're swimming in ghosts?*

**Flip:** *There is something to be said about maybe dark matter is something much more exciting than particles. There are theories where the dark matter could form dark atoms, just like you have protons and electrons, maybe you have something like a dark proton and a dark electron that we can't see but they can see each other and those form dark atoms. Then it's not hard to imagine, those dark atoms could have dark chemistry, that dark chemistry could form dark life, that dark life could maybe... Maybe there's an entire sentient civilization living in our dark matter halo where our galaxy is sitting, and we just don't realize it. But because there's five times more of them than there is of us, we're the ghosts. We're the weird thing.*

**Alie:** *Ahh! Wow. Oh my gosh.*

**Alie:** And he said, if there are ghosts, we are the ghosts in the dark matter universe.

**Bruce:** *[laughs]* Good point, good point.

**Alie:** *[laughs]* Wild.

**Aside:** So, that was Dr. Flip Tanedo who is a theoretical particle physicist from the Scotohylogy episode, and a real gem. But from dark matter to white light, some folks including Tom Boodry, Avery Elloway, Matt Hirschl, Mark McPhillips and NDE-havers, Jenn 'Squirrel' Alvarez, Yves Hebert, and Schlee Schwinghammer had brightly burning questions.

**Alie:** So many people, including first-time question-asker Schlee Schwinghammer wanted to know: Why is it the color white that people tend to see? And a ton of people wanted to know about the light in the tunnel. Is it just a Hollywood trope or in Devin's words: Are there any theories about the bright light? Anything that might be causing that? A flood in the retina, or something like that?

**Bruce:** Yeah. Well, there have been people who try to explain this in terms of the physiology of the brain, and as the brain starts shutting down, you have less and less oxygen, the outer edge of your visual field tends to go dark, and what you're left with is a small light area in the center. But that's not what people see in a near-death experience. They don't see just a smaller and smaller section of light in the middle. They tend to see the tunnel, they can see on the outside of the tunnel, they can see around it. So, it's not like you're just having a small visual field getting smaller and smaller. It's like you're seeing a tunnel in your visual field.

**Alie:** Ah!

**Bruce:** It's not the same thing at all. Now I will say that you see tunnels in a lot of other experiences as well, besides near-death experiences. And some people think that the tunnel is not an integral part of a near-death experience. It's the way we have, retroactively, of explaining how we got from this physical world to the other world of the near-death experience. "I'm here, then I'm there. How did I get there? I don't know. Must've gone through a tunnel."

**Alie:** Ahh! So, it's a mode of transport, kind of.

**Bruce:** It is. And I'll say that here again that we're dealing with metaphors. Most people here in the US will talk about a tunnel. People in countries where there aren't a lot of tunnels, will not say that; they'll say, "I went through a cave, or I fell into a well." I talked to one person here who's a truck driver

who said, "I got sucked into this long tailpipe." [*Alie laughs*] Whatever metaphor comes to you is what you use to describe this long, dark, enclosed space.

**Alie:** Do you have a lot of truck drivers that have near-death experiences because of highway crashes and...

**Bruce:** Yes, yes, yes. People of all types, who come close to death from all different ways have the same types of near-death experience.

**Aside:** Of course, I had to look this up and I know a lot of you listening out there are on a long haul, maybe at the helm of an 18-wheeler. Yes, tragically, life expectancy in that profession is 61, 17 years shorter than the national average. And it's not due to accidents, but rather the majority of y'all hauling rigs tend to be men, who have shorter lifespans overall, and according to some CDC studies, many truckers struggle with a poor work/life balance, which can contribute to stress. Due to the pressures of long hours, the average amount of sleep is several hours less per night than other professions. Access to a healthy diet on the road is also harder, as is the sedentary nature of the job. But doctors say you can keep your job and your health, by packing fresher healthier food if you can, try to get in 40 minutes of activity a day if possible. Some truckers keep a set of hand weights in their cab to use while loading and unloading happens.

Also ask a doc about a sleep study, since many long haulers have sleep apnea and a CPAP machine can really improve the levels of alertness and fatigue. My grandpa Walter Willis Ward was a trucker, and he lived a jolly active life until his nineties. One day he collapsed, buck naked, and my grandma got him up and called the paramedics. When they resuscitated him, he seemed disappointed and slammed his fist on his hospital meal tray and said, "I'm 92 years old, let me go already." So, perhaps what lay beyond was too tempting. He died shortly thereafter. He was, as people said politely in those days, a real firecracker. Speaking of...

**Alie:** Meagan Walker, MB, and Clayton Harding wanted to know, in Meagan's words: Do people who have near-death experiences score differently on personality scales from people who don't have them, or before and after?

**Bruce:** Well, we don't really have before and after measures on a lot of these people so it's hard to say whether they have, they score differently on tests. Now, they usually say that they're very different. And when you talk to their friends and family, they describe, "Oh, yes, this is not the same person I used to know, they're totally different now."

**Alie:** Really?

**Bruce:** And one way they're different is that they're much more relaxed about life; they tend not to be as controlling or as obsessive about things. They tend not to be worried about earning more money or having more power and fame and prestige; those things aren't important to them anymore.

**Alie:** Are they more likable?

**Bruce:** That's a good question.

**Alie:** [*chuckles*] Sounds like it.

**Bruce:** Well, you know, it sounds like they're wonderful ways to be; more loving, more compassionate. But it actually is very difficult for the families sometimes to tolerate these changes. You know, imagine if one member of a family suddenly has a religious conversion and the other ones don't, they don't see eye to eye on things anymore. There have been a number of divorces because of this, families sometimes don't accept the changes, I've known parents who are very puzzled by their children suddenly changing personalities after a near-death experience. And I should say that sometimes

the experiencer himself or herself gets very upset when they find themselves back here in this world when they don't want to be, and they sometimes can get very angry or sad for a while.

**Aside:** Imagine being bummed to be not dead. Well, I guess sadly probably a lot of us have had days where that's relatable. And just a little content warning for the next two or three minutes we do discuss death by suicide. Dr. Greyson has found that about a quarter of people who survive a suicide attempt report having a near-death experience. So, what has he found through his research and decades of experience in emergency psychiatry?

**Alie:** We did have two questions related to suicide. Skella Borealis and Audrey Keen, Skella said: I remember reading somewhere that a huge percentage of people that survived suicide attempts by jumping regretted it the second they, say, jumped.

**Bruce:** I'm glad this came up because as a psychiatrist, when I first heard decades ago that near-death experiencers are no longer afraid of dying, I was worried that that was going to make people more suicidal. So, I started a study of this; I looked at people who were admitted to my hospital with a suicide attempt, and I compared those who had a near-death experience as a result of the suicide attempt with those who didn't. What I found was that those who had a near-death experience tended to be much less suicidal afterwards than those who didn't have a near-death experience.

I tried to ask them, you know, "Why? Why is this, if you're not afraid of dying anymore, why are you less suicidal now?" And they said a couple of things. They said, "Well, now I understand that there's a meaning and purpose to everything I go through in life and the problems that used to make me run away from life, now I realize they're there for me to, to learn from and to grow from, they are challenges for me, nothing I need to run away from." And they also say again that if you're not afraid of dying, then you're not afraid of living either. And you can enjoy life much more than you did before.

**Alie:** That's a beautiful thought. And it's something that I wonder how much of it is, is cultural in terms of the way that we live, sometimes disconnected from family members, disconnected from nature, from, you know, sun, dawn and dusk cycles, all the ways that we were not part of the Earth.

**Bruce:** Right. I think in our society, there's been a marked movement away from organized religion in recent decades and that's made a lot of people less spiritual and more invested in the physical world, which doesn't usually produce the same type of satisfaction that spiritual developments used to. So, I think you're seeing a lot more people striving for some spiritual connection that used to come from religions. Now we have to look for where we're going to get it from, and near-death experiences do give that to people.

**Aside:** Okay, big question here, what is the difference between being spiritual or religious? Because just having spirit in the word spiritual, it's kind of ick-giving for some of us. So, I asked science and found a nugget in the 2016 paper, "Spirituality/Religiosity: A Cultural and Psychological Resource among Sub-Saharan African Migrant Women with HIV/AIDS in Belgium" which, drawing on a 2002 paper in the *Journal of Advanced Nursing* titled, "Towards clarification of the meaning of spirituality," the former paper, many, many paragraphs in happened to say:

*Spirituality and religion are often used interchangeably, but the two concepts are different. Some authors contend that spirituality involves a personal quest for meaning in life, while religion involves an organized entity with rituals and practices focusing on a higher power or God. Spirituality may be related to religion for certain individuals, but not, for example, for an atheist or yoga practitioner.*

**Alie:** Do you ever come up on friction in the field in terms of, can a scientist be spiritual? Can you find your spirituality just from looking at a bee on a flower or does it have to be something more, like, metaphysical?

**Bruce:** No, it doesn't have to be more than more than that. You know, people from Einstein to Carl Sagan said that their science is a spiritual endeavor and I think most atheists would say that they do feel a part of something bigger than themselves. That may mean they're part of a family, or a larger clan, or a group of atheists but they feel that they're attached to something that's beyond themselves, which is a form of spirituality.

**Aside:** So, I asked Twitter AKA X, and also Bluesky if any atheists and agnostics wanted to weigh in on if spirituality was a part of their lives because I still wondered what it meant for different people, especially those of us who were raised with religious dogma that we disliked. I got some great answers from non-religious folks, so many. I will read you just a few. Rob said:

*The most spiritual experience I had was standing at fossilized tetrapod footprints on Ireland's Atlantic coast. Staring out at the ocean and realizing that those prints were made at a time when the East coast of North America was still connected to Ireland was very awe-inspiring.*

Mads said:

*I define spirituality as anything that reminds me that I am part of everything that has and will ever happen, and that it's part of me— ideas, experiences, and people that make us feel like we belong to an existence as large and as strange as the universe are all quite spiritual.*

David AttenBruh said:

*When I access spiritual moments, they are often in the quiet of my mind, in moments of song and joy, and in the sharing of food.*

Anthro\_Andrew said:

*Anthropologist here – gotta say that you can be spiritual without being religious. A spiritual experience can happen without one knowing even, such as with the whales I study invoking a deeply emotional response.*

RachelLense said:

*I'm an atheist but I would also consider myself spiritual. To me, spirituality is more of an emotional state than anything metaphysical. It's slowing down, learning to revel in awe and wonder. It's appreciating things at scales billions of times larger, longer, smaller, or deeper: the magnitude of the cosmos, the interconnectedness of nature, the infinitesimally small building blocks of the universe. To me, spirituality is love and poetry.*

**Bruce:** I like that.

**Alie:** Elie Zwiebel and many others wanted to know: Why does time seem to slow down in those precious moments when one is flirting with mortality?

**Bruce:** Yeah, yeah. That's a good question. There have been other studies of time slowing down in crisis situations that don't involve near-death experiences. And it does seem to be something that we do to ourselves to try to help us deal with a crisis situation. If you slow time down, then you've got more time to figure out, how do I get out of this? One person described to me, he was up on a ladder, cleaning out his gutters and he fell, and he said, "As I was falling, time seemed to slow way down and almost stopped. So, I was able to see how I needed to twist around to land in the bushes rather than on the pavement."

**Alie:** Oh my gosh.

**Bruce:** And you hear that again and again from people who are in crisis situations that time slows down and allows them to think. Not only does time slow down, but their thinking speeds up so it helps them survive the near-death event.

Now, having said that, many near-death experiencers say, "It wasn't just time slowing down. Time did not exist in that other realm." And they realized that what we think of as linear time is an artifact of being in a physical world, that it doesn't exist outside this physical realm.

**Alie:** It sounds so cozy. [*Bruce laughs*] It sounds like a cozy place to be.

**Bruce:** It is, it is.

**Alie:** Makes me less afraid.

**Aside:** So, according to a letter published in the Journal of Near-Death Studies, bearing the headline, "Did NDEs Play a Seminal Role in the Formulation of Einstein's Theory of Relativity?" It explains that apparently, Albert Einstein once saw a man fall off a rooftop in Berlin. The man survived and later told Einstein that while falling, he did not feel gravity, which may have suggested new ideas of looking at the universe to young Einstein.

Let's go back a little further though. Einstein went to a polytechnic institute in Zurich at the age of 16, which was in 1895, just after Albert Heim fell off that cliff in the Swiss Alps. What are the chances that a professor of geology who wrote about time and space seeming to slow down and expand would be in the same city as a young Einstein? Well, hang on to your hats, because Albert Heim was a *professor* of young Einstein. So, the two Alberts knew each other, studied together, and likely swapped stories of time expansion and gravity. In fact, two years before Einstein's death, he penned a letter to his former professor, telling him that his lectures were "magical." What a world!

And for more on quantum physics and the nature of the universe and gravity and black holes, and space, and time, you can see the Quantum Ontology episode with astrophysicist Dr. Adam Becker who wrote the book, *What is Real?* We'll link that and an episode on Cosmology and one of dark matter, Astrobiology, and one with two UFO experts in the show notes because... the fuck?

**Alie:** Gosh, there's so much we don't know.

**Bruce:** Exactly.

**Alie:** Last listener question, a bunch of people wanted to know...

**Aside:** Looking at you, Derek Peloquin, River Rowan Stone, and Helena DiMarzio.

**Alie:** If you have thoughts on the Netflix show *The OA*. Dorit said: What do you think of it? There's so much flimflam, they're sure. Have you heard of that OA? I think they use near-death experiences for research. I haven't seen it but maybe you have.

**Bruce:** I have not, I have not. But there have been so many television shows and movies going back decades when there was that movie *Flatliners* about medical students who tried to put themselves into cardiac arrest. A lot of them are based on real information, but they're fiction, they take off in more sensationalized ways that end up doing damage to the real facts about a near-death experience.

**Alie:** Is anyone doing it right?

**Bruce:** Yes, there are some. Gosh, going way back decades, there was a movie *Resurrection* that did a very good job, not only of the near-death experience itself but how people are changed after the experience. [*"I'm Doctor Haran, welcome back."*]

**Alie:** And then of course, for reading, there's your book which I feel like if you're going to read a book about near-death experiences, read *After*.

**Bruce:** Well, thank you. Thank you.

**Alie:** And the last questions I always ask. Obviously, there's got to be something about your job that sucks. There has to be the hardest thing about it. What is difficult about what you do?

**Bruce:** I think the most difficult thing about it, for me, is trying to get my head around it because I was raised as a scientist thinking that we're going to be able to understand everything. And I've confronted a lot of things now that I don't think we can understand, that are beyond the ability of our brain to make sense out of. That's difficult for me and that still grates against me, and I want to try to understand things. I haven't given up on it, it just becomes less and less plausible to me that we're going to understand it. But I still keep trying because I enjoy doing science.

**Alie:** What about your favorite thing about what you study? I know that must be hard, but do you have a highlight or a thing that still gives you butterflies?

**Bruce:** What I like best about it is just talking to the people who have had these experiences because you can't talk to them and not absorb some of this feeling of the world is a friendly place, it's full of unconditional love. And how can you be unhappy with that?

**Alie:** I bet it's such a relief for them to be validated by a scientist who's collecting information and really looking at this seriously. Any other myths that you want to dispel at all that you could, if you could get on a soapbox, you would scream over a megaphone?

**Bruce:** Well, I want to say that these are normal experiences that happen under unusual circumstances, they are not tied with mental illness in any way. We've done studies of this and shown that people who have mental illnesses, who are diagnosed with psychiatric disorders have the same number of near-death experiences as everyone else, neither more nor less. Likewise, if you look at near-death experiencers, they have the same rates of mental illness as people who don't have near-death experiences. So, it's totally independent of that. They are not unusual experiences, they happen to about 5% of the general population, that's one of every 20 people. So, think about the people you work with, people in your classroom, people in your family, some of them have had near-death experiences. And that near-death experiences also lead to profound, long-lasting effects that need to be addressed, both positive and negative.

**Alie:** This has just been such a joy. I was so nervous to talk to you because what you do is so cool, and you're so esteemed in this field so it's really an honor.

**Bruce:** Well, thank you. It's been a pleasure talking with you, Alie.

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So, ask lively people deathly questions because honestly, [*deep inhale*] being alive and part of the universe is just pretty wicked in a good way, and how fun to live in an era where mysteries remain and so many people are trying to figure it out. So, I hope this episode has helped you take a deep breath, has made you ponder how science is more of a question than an answer, and has maybe made you look toward the stars or a worm to realize that you made it as a person to the planet. Enjoy it. Fuck the bullshit. That's a poem I just wrote you.

Okay, thank you, Dr. Bruce Greyson, Professor Emirates, psychiatrist, quasithanatologist and author of the book *After: A Doctor Explores What Near-Death Experiences Reveal about Life and Beyond*, for being on and sharing your expertise with us. His info and book and the charity of choice are all linked in the show notes, as well as a link to our website with so many more research links. Also,



Bruce, I'm sorry for all this swearing. I'm not really that sorry but thanks for putting up with it. If any of you listeners don't like episodes with swearing, feel free to enjoy *Smologies* which are shorter, kid-friendly versions of classic episodes, which will soon be moving to their own feed as soon as I get my bottom together to do that.

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And if you stick around until the episode ends, I tell you a secret and this week it's that putting this show together involves a whole process. It's such a process, it took years to perfect. It involves color-coded transcripts, shared file drives, sound effects, first, and second, and third, and fourth pass notes, et cetera, et cetera. And since the beginning, I write the aside notes in green, and then when I record them, I do a snap or a clap so on the audio file in between them so that we can see a sharp spike and know it's a new aside. [*snaps*. "Aside 22."] And then I edit the asides and move on to the next one before I send them off to Mercedes. And some episodes have, like, 20 asides, some have 50. And this episode, which is about the nature of consciousness and finding personal meaning in the universe, had 42 asides, before I trimmed a few. I have never read Douglas Adam's *Hitchhikers Guide to the Universe*, but everyone tells me I need to, but I understand that the meaning of life is supposed to be 42, so that might be significant for some of you.

Also, please don't arrest me or my doctor for that one time I took mushrooms to process my dad's death, that would be awesome if you did not put me in jail for that. There are so many other problems to fix. But you're doing great, and I'm glad you're here, sincerely. If things are bad, I've been there before, please know that they can and they will get better. Deep breaths help a lot, smell a tree, remind yourself that we are all just squishy, flawed little apes, no one expects you to be perfect. And if you want to text your crush, cut some bangs, maybe take a class at the community center, play hooky from work, go for it. We'll all be dead one day in the future. And if you're on a windy mountain, wear one of those hats that ties under your chin. But then again, would we have the theory of relativity without it? I don't knowwww, anything. Whooo! This world, this life, this timeline. Okay, berbye.

*Transcribed by Aveline Malek at TheWordary.com*

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[The near-death experience scale: Construction, reliability, and validity](#)

[The phenomenology of near-death experiences](#)

[Dissociation in people who have near-death experiences: out of their bodies or out of their minds?](#)

[Do any near-death experiences provide evidence for the survival of human personality after death?](#)

[Relevant features and illustrative case reports](#)

[Albert Heim \(1849–1937\): The Multifaceted Geologist Who Influenced Research Into Near-death Experiences and Suggestion Therapy](#)

[Above paper on Sci-Hub](#)

[Neuroscience and the near-death experience: roles for the NMDA-PCP receptor, the sigma receptor and the endopsychosins](#)

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