



Conscious Life presents

Lessons From the Spirit Molecule

Guest: Dr Rick Strassman

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[00:00:15] Alexander Beiner

I'm here with Rick Strassman. Rick is a Clinical Associate Professor of Psychiatry at the University of New Mexico School of Medicine, and he's one of the world's most influential researchers on DMT or dimethyltryptamine. He pioneered the first study of the psychedelic renaissance in the 1990s, researching DMT on healthy volunteers, which he later recounted in his book, *DMT The Spirit Molecule*, which in turn was made into a film of the same name. Rick Strassman, welcome.

Dr Rick Strassman

Thank you, Ali. Thanks for having me.

Alexander Beiner

Rick, you are one of the world's foremost researchers on DMT, or dimethyltryptamine, and in many ways, you created one of the first studies of the psychedelic renaissance, if not the first. It depends on where you place this renaissance in research, but you were doing this research in the '90s already. I'd like to get into that, but I'd like to ask you first for anyone who's not familiar with DMT, could you explain what it is, and why is it interesting to research in the first place?

Dr Rick Strassman

DMT stands for dimethyltryptamine, it's a chemical cousin of serotonin and melatonin. It's endogenously produced, it's made in the mammalian brain. It's also present in the plant kingdom as well, quite widely distributed. It's the visionary ingredient in ayahuasca, the combination of the two plants, one contains DMT, and the other makes it orally available.

[00:01:53] Dr Rick Strassman

My interest in DMT stemmed from questions about the biological bases of spiritual experience, not necessarily induced by drugs, but from your death states, from meditation, from dreams, things like that, and even psychosis. I studied, or I gave DMT, one of the questions being, does it replicate your features of non-drug highly altered states? And if it did, then one could argue that naturally occurring DMT plays a role in those DMT-like non-drug states.

Alexander Beiner

I'm curious about this, this is another thing I think is useful for people to be aware of, the endogenous role that DMT plays. There's lots of back and forth in the study of DMT about where it might be produced. Where do you theorize that DMT is produced? And what role do you think it might play in the human body?

Dr Rick Strassman

Back in the day, they believed that it was made in the lungs because if you grind up rabbit lung and you add the precursors, you'll get DMT. But more recent studies, just four years ago, five years ago even, demonstrated that your DMT is made in the rodent brain, in quite high concentrations comparable to levels of serotonin or of dopamine.

The concentrations being that high suggests that there may be a DMT neurotransmitter system, in which case it's interesting to speculate what role that may play. The same article of Jon Dean, and Jimo Borjigin, both from Ann Arbor, Michigan at the time, also demonstrated that levels of DMT rise dramatically in the dying brain, especially in the visual cortex. So that's strong evidence pointing to a potential role of endogenous DMT, at least the visual components of the near-death state.

It's interesting to speculate about the role of endogenous DMT. It's neuroprotective and reduces stroke size, or experimental stroke size in experimental animals. It may be released in times of great physiological duress in order to protect the brain, to speed recovery within the brain. Psychologically, the hallmark of the DMT effect is the sense that what you're witnessing is more real than real. So it could be that one of the functions of the DMT is to modulate, or to regulate our sense of reality.

Alexander Beiner

That's fascinating. I want to talk about what the actual DMT experience is. I think a good way to do that is to introduce people to your book, *DMT The Spirit Molecule*, which is probably, certainly on me, one of the most influential books on psychedelics I read. I think it remains... Yes, there it is, perfect. I think it remains one of the core texts of psychedelics, could you talk a little bit about what the book is about, and talk about the study that you ran that you describe in the book?

Dr Rick Strassman

My interest in discovering, or investigating, a naturally occurring psychedelic, which might possibly mediate non-drug altered states, as I was mentioning earlier, began with the pineal gland hormone melatonin. Back in the early '80s, there wasn't much information on human physiology or

psychopharmacology of melatonin. There was even some data suggesting it was extremely psychoactive, stimulated dream states, made depressed people psychotic, and all kinds of things.

[00:06:24] Dr Rick Strassman

The pineal gland has a venerable history theory within spiritual physiologies, the Hindu system of the chakras, the capitalistic sefirot wrote, that the most intense dramatic spiritual experiences occur subjectively in the objective anatomical location of the pineal gland.

We studied melatonin quite carefully as the most exhaustive study in humans at the time. Its psychological effects were simply sedating what everybody knows now.

In the meantime, I learned about your DMT and switched gears. We began working on the permits and the paperwork and all that in 1988. And we received approval toward the end of 1990, it was a two-year process. Ours was the first new study in the US in a generation. There had been a previous new study, which occurred in Germany studying mescaline, which came out a year earlier. I think that was the first above-board, new federally approved, study in Europe.

Our studies involved mostly DMT, but we also began some work with psilocybin. The DMT study was intended to get the ball rolling, and to open the door to doing human research with these drugs. There was lots of animal data, which had accumulated in the intervening generation about your psychedelic effect on the serotonergic system, and the hormone system, and cardiovascular effects, and all kinds of things. At one level, I wanted to confirm or refute the animal data, which I had accumulated, in the human.

We also wanted to develop a new questionnaire to objectively quantify the DMT effect. I suppose the underlying motivation was to test my hypothesis, if you gave DMT to people, mostly hands-off, with no prompting, no psychotherapeutic intent, no props, not coaching people what to do, or what to expect, or what the state would be like.

To just characterize the effects, give the drug in big enough doses for people to have a fully psychedelic experience, and measure a lot of biological variables. But most importantly, to discuss with the volunteer what the state was like.

So we gave lots of DMT, around 400 doses of varying strength, to over 50 volunteers and characterize the effects carefully. They were normal volunteers with experience taking psychedelics, only a small number had used your DMT before, but everybody was experienced with some psychedelic or another.

So these weren't patients, and they weren't naive either, so it was a unique sample of the volunteers. They were educated, physicians and lawyers, psychologists, and whatnot. We performed that study, or a number of DMT studies, with FDA approval, DEA approval, and NIH funding for five years from late 1990 to the fall of 1995.

Alexander Beiner

The results of that study, and what you include in the book, are truly fascinating. I want to talk about one of the aspects of DMT in particular, which so many people are interested in, which is

this encounter with what appear to be intelligent entities or beings, that people, not everyone, but a lot of people report.

[00:11:21] Alexander Beiner

Now, that must have been, firstly, quite a strange phenomena for you to witness as a clinician. But I'm also curious about, in the intervening years, as there's been so much dialog and discussion about this, where do you sit on that question? Where are you on that question now, about what exactly is going on there?

Dr Rick Strassman

Let me briefly describe what I guess you could call a typical DMT experience after being given a high dose. We gave it intravenously, in the street, or in the field, or recreationally, it's smoked, which means you vaporize the powder and you inhale the vapor. We couldn't do that on a research unit.

We started off giving it intramuscularly, which is how it had been given in previous human studies in the 1950s and the 1960s. But one volunteer who had smoked DMT before, he described the intramuscular route as too slow, it did not provide the rush, which is one of the hallmarks of smoking DMT.

So we quickly switched over to the intravenous route. We infused the drug over the space of 30 seconds, and then we flushed the intravenous line for another 15 seconds. It begins working within a couple of heartbeats, there's a rush, as I described, which is a very intense sense of inner tension and acceleration. There's a high-pitched sound that accompanies the rush oftentimes. And then within a minute or two, you're completely out of body, or you lose awareness of your body anyway.

When I say you lose awareness of your body, you lose awareness of your body. We were measuring blood pressure responses at two minutes, five minutes, 15, and then 30 minutes. The first blood pressure recording with one of those mechanical cuffs, which will really stress your arm, nobody was aware of the cuff being inflated at the two-minute point. Most people weren't aware at the five-minute point either.

The effects peak within maybe two to five minutes. You have the experience and you come down rather rapidly, and you're drinking tea at about the half-hour point.

The state itself is full of light, it's comprised of light and figures, visible things in that world of light, morphing, moving, buzzing, quite intensely saturated. There isn't too much of a sound, generally, it's like the after-effects of a large bell. You can't hear anything, but your ears are full of something or another.

As you mentioned, one of the common features in our volunteers, at least half of them, reported apprehending, witnessing, or perceiving these beings that were of various forms and shapes, insects, humanoid, robotic, plants, warriors, machines, those kinds of things. Quite powerful, and sentient, they were aware of you and were aware in general. Most of the time they communicated,

they interacted with the volunteer telepathically, imparting words, or healing, or even harming, frightening some of the volunteers as well.

[00:15:36] Dr Rick Strassman

Even though I describe myself as being extremely surprised when the frequency of these encounters became clear, I shouldn't have been, because I've smoked DMT and had encounters with beings. In my getting ready to put the new questionnaire together, I interviewed 19 experienced smokers of DMT, and almost all of them described, Well, they'll get ready for the beings. But still, the frequency, the intensity, and the utter conviction that the volunteers were encountering and interacting with these things still caught me by surprise.

Alexander Beiner

From my experience of being on Imperial's DMT extended state trial, even as someone who was very experienced with those encounters, whatever they may be, it never ceases to be novel, and strange, and amazing, because of the variety of it, and the intensity of it, and the salience of it never seems to dim.

There's another element of the experience that you've written about in *DMT and the Soul of Prophecy*, which I believe you wrote after *DMT the Spirit Molecules*, is this prophetic quality of DMT. I don't think everyone will know exactly what that means, but I think it's quite important. Maybe you could describe a bit about that. Where that led you to, this study, and why it led you to that conclusion?

Dr Rick Strassman

Sure. As long as I'm pitching my books, you're on hold.

Alexander Beiner

Yeah, no problem.

Dr Rick Strassman

This is the book that you're mentioning, it came out in 2014.

I didn't answer your first question, or your last question, about where I stand on the location of these entities or these beings. I think it's safe to say that we perceive them within our minds. That is the arena in which the beings exist. Otherwise, we wouldn't be perceiving them or apprehending them. Where they reside existentially, or ontologically, or do they reside outside of us? Are they just our unconscious mind becoming visually apprehensible, emotionally apprehensible? Are the cognitions hidden within us, or barely conscious, and become a lot more manifest and convincing and meaningful? We just don't know.

I think the more important... Well, in the future, we may be able to determine if they're out there, or purely just a function of our brain on drugs. Even if they were out there, they still are perceived as a result of our brains on drugs. It's a very difficult thing to tease apart. It's clearly the case that we

witnessed them, that we perceived them, and experienced them with our mind, our subjective state.

[00:19:13] Dr Rick Strassman

I like to use a generic explanation as they represent the previously invisible, they're not there, and then they are. The information they convey, though, is the most important thing, which is the point I wish to make, is what do we get out of those encounters? How do we present the beings with the most coaching questions? How do we understand their answers? What do we do integrating those answers, either into ourselves or the larger society?

I think that's the most important take home at this point, rather than their actual location in fact. The reason that I moved into the notion of Hebrew Bible prophetic experience is because the spiritual platform that I was standing on, in looking at what spiritual states I believed would be produced by DMT was the Zen Buddhist one. I had been studying and practicing Zen Buddhism under the supervision of a Western Zen order for 15, 16 years by then.

I was expecting a Buddhist enlightenment state, unitive white light, no self, no perceptions, no mind, no body, those kinds of things, kenshō, satori. Most of the volunteers were expecting those kinds of states as well, because the vast majority were practicing some Eastern meditation. It was quite surprising to me, and to them, that instead the DMT state was full of content. One's personality and ego were maintained. You could interact with the contents of the state completely different than the unitive mystical experience, which everybody is talking about still.

The mystical experience will score if you've had a full or incomplete mystical state. Of course, most people's experiences are not like that, and even if they are, what do you do with a unit of mystical state? If it has no verbal content, you have to make it up as you come down, or as you go along. On the contrary, or the opposite end of the spectrum, is what I call the interactive relational experience, which is full of content with which you interact.

In explaining spiritually, the nature of the DMT experience, I had to go back to the drawing board. Like, okay, if it's not a mystical, unitive, white light, ego-dissolving state, what is it?

It was around that time that I parted ways with my Zen community, and as a result, I was able to return more comfortably to my Jewish roots, and began to read the Hebrew Bible, both for spiritual support, as well as, what is the paradigm? What is the paradigmatic spiritual experience in the Hebrew Bible, as opposed to the Buddhist sutras?

The more that I dug into the Hebrew Bible, the more I was impressed with the overlapping phenomenology between the DMT state and any altered state characterized by, or experienced by, figures in the Hebrew Bible. Most people think of a prophecy as predicting or telling the future. But that's an artifact of the Greek translation of the Hebrew word 'navi', which actually means interpreter, or speaker, or spokesman, spokesperson... Well, spokesman 'nevia' would be a spokeswoman.

It is any altered state that's encountered in any figure in the Hebrew Bible. It can be unusual courage, it could be an inspiration to sing or make poetry, it could be like Ezekiel's visions of the chariot, which is completely DMT-like. Chapter one of the Book of Ezekiel, is completely DMT-like.

There's beings, and there's wheels, and there's eyes on the wings, and there's spinning, and there's lightning, and there's the firmament, there's a roar. Ezekiel falls down, and Angel picks them up and pulls them through the heavens, it's very DMT-like. The Burning Bush, Moses on Sinai, Daniel's visions, and Zechariah's visions are completely psychedelic, too.

[00:24:44] Dr Rick Strassman

I then started to speculate, well, perhaps naturally occurring DMT is elevated in the mind of the prophet, and it's responsible for the visual and psychedelic components of that state. It isn't as if the prophets were smoking DMT, or mimosa, or acacia, or whatnot. The stimulation of endogenous DMT occurred through divine means. It was the way in which God transmitted the information that he wished, or it wished, to convey using visual imagery, which then the mind of the prophet, the intellect, had to interpret and then communicate.

Alexander Beiner

Brilliant. I think people can look up biblically accurate angels on Google, which has become quite a popular thing. You can get a really nice visual representation of how angels and beings are described in the Bible, and they look very much like DMT encounters.

Last thing I wanted to ask you about is, what are you most excited about right now in terms of research around DMT? What mysteries do you still really want to try and unravel around this molecule?

Dr Rick Strassman

I think the most important thing is to understand what is DMT doing in the mammalian brain. There's only one person in the world who's now really studying that, Jon Dean, he's a postdoc at UC San Diego, and he's looking to visualize the synthesis of DMT in the living human brain using MR spectroscopy. It's completely strange that there's this compound in DMT all throughout the natural world, including our brains, and it's unbelievably psychedelic and weird, and there's no one looking at it other than this young guy in San Diego. If you look at the literature, there's 160 clinical trials looking at psilocybin, and there are 54 indications for using psilocybin. And there's one guy who's just barely getting funding off the ground to study endogenous DMT.

We can even begin looking at that in lower animals. A recent doctor at University of Michigan, Nicolas Glynos, recently got his doctorate looking at DMT synthesis in the rodent and discovered some very interesting things. I think we can look at, is DMT elevated in dreaming rodents, near-death rodents? It seems to be. What is an animal like, that is modified genetically to not produce DMT? What about animals that are engineered to produce way more DMT?

I think there's a great opportunity for preclinical and clinical research interactions regarding the nature of, or the role of endogenous DMT. I think also that one of the interesting aspects of what naturally occurring DMT may be doing. If you look at the panacea-like effects of your psychedelics in general, they do everything for everyone, Charles Manson, mystical experience, neo-nazis solving the Israel-Palestinian conflict. I mean, you name it, and they will do it.

[00:29:08] Dr Rick Strassman

It makes you wonder, well, are our psychedelics simply super placebos that do everything you want them to do? Placebos are real things, there is a biological accompaniment in them, so the placebo effect. Placebo analgesia is reduced by opiate-blocking drugs. There's a whole recruitment of innate biological functions that are turned on as a result of a placebo response.

I think if one starts to look at the generic overarching function or mechanism of action of the psychedelics, I think they will provide a lot of insight into the placebo response. If you're looking at a role for naturally occurring psychedelics in the brain, perhaps they're involved in every day placebo responses.

We could start to unravel the mechanism of the placebo response, either as a result of drugs, or naturally, and then start optimizing it. You would imagine that placebo-responsive conditions would be especially responsive to psychedelics, like depression for example. And if the placebo response without drugs could be understood more precisely, we could optimize it within clinical medicine.

Alexander Beiner

That's fascinating, I haven't heard that before, in fact. The idea of a super placebo is really intriguing and quite compelling, it remains to be seen, but I'm glad the research is ongoing on endogenous DMT still. Rick Strassman, thank you very much for joining us.

Dr Rick Strassman

Well, thank you for having me. Good luck.