

Speaker 1: Bulletproof Radio, a stage of high performance.

Dave: You are totally going to love today's episode because we talked about dreaming with a Harvard researcher, and you're going to hear when you listen through the whole way both about nightmares and some of the things that can cause those, some of the substances that can cause you to have different types of dreams and some of the techniques that can go to work for you so that you can remember what's going on in those altered states and maybe getting more out of your sleep.

I certainly had a fun time telling some of my stories and hearing even about things like dream art. This is a fascinating episode unlike any other you've ever heard. Listen through all the way to the end and you're going to hear a whole bunch of stuff you can use.

You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact is of the day is that a traditional Amazonian drug called ayahuasca is linked with an improved sense of well-being. Some new research at the University College of London found some support to the notion that ayahuasca could be an important and powerful tool in treating depression and alcohol use disorders. Ayahuasca is a blend of one kind of bush and stems from a kind of vine that works synergistically to turn on some stuff in your brain that's usually not turned on.

I first did it more than 20 years ago in Peru with an Amazonian shaman and it's used today as a way of sometimes accessing altered states and sometimes allowing people to go into dealing with old trauma and things like that and is used in shamanic ceremonies and things. It's become pretty popular in Silicon Valley but this is one of the earlier studies that show that it's actually having an effect on people's brains around these big hard to treat things like depression and alcohol use.

I would just caution you that if you're going to do it, don't use it recreationally and use it with someone who really knows what they're doing. You might have considered going and seeing a traditional healer who studied how to do this because it's ridiculously easy to order it on the dark web. Get it and get into trouble because you don't know what you're doing.

On that note, before we get into today's show, I wanted to take a quick second to tell you about Headstrong, my new book. Headstrong hit The New York Times bestselling Science book list and the advice book list, which is a super cool thing to do. If you love this show and you like learning how to make your brain work better and make your body work better, Headstrong is a book like no other that tells you about the power system in your brain, in your body and what you can do without spending any money in order to make it work better or things you can do like supplements or changes in diet or changes in exercise and all sorts of environmental variables that improve your body's energy and metabolism.

It's totally worth your time to read, so head on over to Amazon and pick up a copy of Headstrong now. I'd be personally grateful if you pick one up and you also take a second

to leave a review. The book has changed tens of thousands of people's lives and I'd be grateful if you read it. That's Headstrong on the Amazon website.

Today's guest is a psychologist from the Harvard faculty. Her name is Deirdre Barrett and she's the author of books including Committee of Sleep and Supernormal Stimuli and an expert on lucid dreaming and how dreams contribute to creativity and problem solving. Welcome to the show, Dr. Deirdre.

Deirdre: Hi, I'm glad to be here.

Dave: Deirdre, the reason I wanted to interview you today is that you are the editor-in-chief of the journal Dreaming and you've been the president of the International Association for the Study of Dreams and things like that. You even make something called Dream Art. And in the whole history of Bulletproof Radio, I haven't talked too much about dreaming, a couple of shamanic interviews here and there, but so many of the world's top inventors talk about having a dream where they solve the problem, and a lot of people listening to the show today are interested in problem solving or self-awareness. I wanted to just have a real open conversation with you. How did you get into the idea of studying dreaming because it's kind of out there?

Deirdre: Well, I think my situation is probably similar to most dream researchers in that I had very high dream recall as a child and I think I had more vivid, wild, interesting dreams than the average. If your own dreams are especially interesting and you remember them clearly, I think it's rather automatic to be just fascinated. I mean, everyone has some of that weird parallel world experience remembered, but I think I had more than average.

I think that most people get interested in psychology and go into psychology and then they pick a specialty well into grad school, but I think I did sort of the opposite that I was just always fascinated by dreams. And as I got to maybe junior high age or so, I got that if people are going to pay me to just think about dreams all the time, then I needed to major in psychology and go to graduate school in psychology. I kind of picked the specialty before I picked the general field.

Dave: That's interesting. It was just a personal interest that drove you to pick becoming a Harvard psychologist just because dreams are so cool even as a kid.

Deirdre: Yes.

Dave: How do dreams change? I know kids almost live in a dreamworld like when I look at my kids brainwaves on the EEG equipment and yes, I hacked my kids' brains but you see a lot of theta state and when our babies were almost constantly in this dream time and as we become adults, our brain shift. What age do kids start to come out of the dream state and start being more aware of reality and how often do we go into it? And like when do we lose that if ever?

Deirdre: Well, I mean, there are two things going on there. One is the theta state you're talking about. That isn't actually when our full blown dreams occur but it's definitely a more imaginative imagery related state, and that is gradually waning. But the other, the more specific thing that's gradually waning is that kids not only sleep more hours but a higher percentage of their time is in rapid eye movement sleep when we're actually dreaming.

Late stage fetuses have the most REM time. God knows what they're dreaming about, but then babies have the most of, I mean, post-birth creatures and then toddlers, a little less and older children a little less than that. It's not a sudden, "Oh, they quit at this age." It's a very gradual decline that almost plateaus in the young adult years but actually there's a slight loss of percentage of dream time even throughout the adult life cycle. But it's mostly from babyhood to the start of young adulthood.

Dave: I'm going to ask you another very strange question here. Last year, I came down with a brain-eating amoeba, a GI bug. And for four months, I had like really bad GI problems before I figured out what was going on. I got this from something as dramatic as eating salad in Arizona. That's sort of a random thing, but the first week when I had this, every night, I would wake up with nightmares. I haven't had a nightmare in 15 years like I've done a lot of personal development work but these are always like things threatening me, threatening my company. It just sort of like doom-and-gloom things that were so out of character for me that I'm absolutely certain that they were correlated with this really bad gut infection that I had. Have you seen research or have you come across this in patients wherein people have something physically wrong with them they start having nightmares?

Deirdre: Yes, I don't know anything about your particular amoeba but bacterial infections that raise your fever, a fair amount definitely make people report more nightmares and probably, they're actually having more nightmares because the body is registering things are wrong. But also the fever is simply disturbing sleep and since you have to wake up to remember a scary dream, you may simply be remembering more nightmares. But you're probably having more also.

And then, there are other mechanisms. Viruses trigger a lot of interferon in your body, which again is just kind of telling your body something is wrong and you don't necessarily have a fever, but a lot of biochemical things are off. Yeah, a lot of infections can cause you to have more nightmares and any number of drugs that you take for those infections also can be ... Forgetting of the name of the main ... The best modern anti-malarial drug but it has a lot of side effects including daytime extreme anxiety for some people, but it causes traumatic nightmares. Sometimes, it's the treatment of the infection, not just the infection.

Dave: The pharmaceuticals can do that?

Deirdre: Yeah.

Dave: I also routinely ask people. I'm an expert in toxic molds because I grew up in a basement that had toxic molds. And I filmed a documentary called MOLDY and for people listening

who haven't heard me talk about it, it's at moldymovie.com. One of the things I'll ask someone who says, "How do I know if I have mold in my house?" I say, "Do you have bizarre, vivid nightmares?" Because it's really common when either you first get the mold in the house or if you sleep in a moldy hotel room where you're just like, "What just happened to me when I woke up?" Is there some kind of like an attempt for the body to communicate with you through dreams? Do you believe that or it was just this purely physiological chemical stuff?

Deirdre: Yes, I mean, you're hitting the specifics that I know the least about, mold and amoebas. I haven't actually seen research on their causing nightmares like viruses and bacteria and some chemicals. But the general process question that you asked me, I'm not sure that I would personify it like the body is trying to communicate with you, although perhaps ... But I think one phenomena is just that things that aren't conscious by day often get through in our dreams because we don't have to pay attention to all. Our band of consciousness is pretty narrow compared to everything going on in our brain.

By day, we're focused on everything we're looking at and seeing and processing visually, and sounds, and conversations we're having and your brain just has to be keeping you upright and balanced in everything. At night, there's no visual real stimuli coming in. Your perception of sounds is damped way down. You're not having to deal with any balance movement stuff. A lot of the things that occupy us by day are just not there and those brain areas are quiet at night.

Things like if something is suddenly pressing around the nerve in a way that you don't even feel as pain or you do have a lot of interferon running around your body kind of making you feel vaguely sickish. Just things that we wouldn't notice by day because they're being crowded out of our attention I think often get through into our dream content just because they don't have to compete with all the sort of basic visual input.

Dave: Okay, that makes sense.

Deirdre: I definitely hear a lot of stories about people who, especially with kind of long-term illnesses, I do not put any kind of psychic attribution. Some people tell these stories as, "Oh, this means my dream was knowing I was going to get cancer or knowing I was going to get this neurological disorder." But it's very striking to me that it tends to be the disorders that are rather slow in forming in the body where the process is there long before you would usually clinically notice it where somebody has a dramatic dream that occasionally tells them they have cancer in a way that they understand it. But more commonly, just in retrospect, as soon as they do get diagnosed with cancer, it's about some monster growing in exactly that part of the body where the cancer actually was.

I think that's a function of just that our body is making antibodies even when they're not working against infections and cancer and nerves are getting pushed out of the way. And so, I see a lot of dreams that seem to be sensing things that the person isn't realizing and the doctor wouldn't diagnose yet clinically and yet, that are already going on in the body.

Dave: The vague sense of unease can come through?

Deirdre: Yeah.

Dave: I was with a person once or we had a toxic mold breakout. I'm not using mold here because I know that's my area of expertise but what she did is she woke up and accused me of random things that simply did not happen like coming into the bedroom and turning the lights on and off, and then picked up her car keys, stormed out the house, and got into the car to drive somewhere and then went to sleep in the car. She came back in a couple of hours later and I was completely bewildered. She had been asleep the whole time that she did that, and I didn't know it because her eyes are opened and she was talking to me but this was like part of a nightmare sequence that she was having.

And I've read other things about people going places and doing things when they're still asleep. Is this something that you've come across in your research, or something you've seen in patients, or is this just one of those random things?

Deirdre: Well, that sort of thing can happen very rarely in some people who have something just a little different neurologically and will have an overlap of a sleep state with the waking state. It can happen spontaneously and you're saying in this case you think it might have had something to do with mold, but where that's really common is some of the benzodiazepine sleeping pills are very bad about producing hybrid states where somebody is not completely alert. They won't remember things and yet, they had their eyes open and they're able to speak as we are not usually able to during sleep.

Sleeping pills produce that sort of appear to be awake but aren't actually fully awake behavior pretty often, but it can happen spontaneously even without sleeping pills. Do you know if she had taken a sleeping pill?

Dave: She had not taken a sleeping pill and wasn't on any weird medications. It happened on probably the hottest, most humid night of the year when we were both experiencing all sorts of weird symptoms that we didn't yet understand what they were. That was always our theory and some of the mold experts have talked about this like people keep having strange nightmares but it wiggled both of us out because to be moving around and walking and talking but asleep, I didn't quite realize that that was something that was possible until I saw it.

Deirdre: Yeah. Well, I mean, I've heard similar stories a lot pointing to sleeping pills and occasionally for other [inaudible 00:16:17] or no obvious reason.

Dave: Well, let's switch gears into something where I know you've spent a lot of your work, which is how do we put our dreams to work for us? I've been interested in lucid dreaming for 20 plus years and I do interesting types of neurofeedback that oftentimes will cause me to have more intense dreams and I have looked at various techniques for creating lucid dreams and even the out there stuff like astral travel like you perceive

yourself leaving your body and floating around, and all those kinds of things. What's your take on the usefulness of dreams? Like can we put them to work for us?

Deirdre: Yeah. First of all, I think they're naturally already working for us to a certain extent without us having to have any very specific intent about that. In my work from my book, *The Committee of Sleep*, where I went around interviewing experts in all fields about whether they ever had had a dream that was useful that the majority of the examples I collected were completely spontaneous. The narrative would often be, "You know, I never paid much attention to my dreams until I was working on this chemistry problem that I just couldn't solve and then one night, I had this dream where dream solved it."

People who aren't particularly paying attention to their dreams can sometimes have breakthrough dreams. I think it happens a lot more in cultures that explicitly teach that dreams may be useful for practical things, because I think some of the problem-solving dreams are so obvious that when you wake up, it's just you remember being told exactly the literal answer to this problem.

But some of them that are just a little bit more metaphoric and it takes a little reflecting on whether that could actually be the answer, I think a lot of westerners might brush the dream aside and they've had a problem-solving dream and they'll never know it. Whereas in a culture where you're taught that your dreams are going to show you a better way to build a hut or where the prey animals might be hiding this month or something. You have a dream and you immediately kind of think about whether that's telling you something. It's a lot likelier to be useful.

I definitely have spent a lot of time developing dream incubation techniques that help people guide their dreams toward particular questions and problems and those can really increase the rate at which our dreams give us really practical help. But I think simply paying attention to the dreams you're already having is the first big step for that.

Dave: Well, the reason that I invited you on the show is that I think everyone listening to this would love to know some of those techniques and I think a lot of them will probably want to read your books about this. But what are the steps that I could take or anyone could take to do that?

Deirdre: Well, there are sort of c and one is just to increase your dream recall to get more content that's already there that may be helpful. And first of all, just to have the dreams, sleeping seven or eight hours a night is very important because we dream about every 90 minutes but each dream period gets much longer than the preceding one. If you sleep four hours instead of eight, you're not getting half your dream time. You're getting like 20% of your dream time.

Short sleeping hurt us in a lot of ways but it impacts dreaming sleep more than the other forms of sleep. Sleeping eight hours is just the single most important thing to increase your dream recall. But also paying attention, telling yourself as you're falling asleep that you want to remember your dreams in the morning keeping either your phone with some recording app on it next to the bed or old-fashioned paper and pencil

to write with. And when you wake up in the morning to just take a moment to think about whether there's a dream there.

The recall for dreams is so fragile that if you hop up and pay attention to something else, a dream that sort of was in your memory will be really gone. Actually, I think everyone has had the experience of kind of waking up and going, "Oh, wow, what an amazing dream." Then, half an hour later, when they're trying to tell somebody, they can remember that thought of having amazing dream and they can't remember what the amazing dream was. Going over it in your mind, at least, and writing it down or recording it preferably.

Just making an effort to remember more dreams, lots of people find just opens up a whole other world to them. The second step though is in thinking about more explicitly interpreting them. The best forms of dream interpretation are not some expert telling you what they think your dream means or certainly not those cookbook things that say, "If you dream of a dog, this means X. You will have bad fortune. You will have good fortune."

The best interpretation, even if someone else is doing it for you, is to help you figure out your own symbols and metaphors asking somebody, "What is a dog to you. Pretend I'm from another planet and tell me about dogs." One person will say, "Well, they're big, fierce, scary animals with short teeth that can bite you." And the next person will say, "They're loyal. They're man's best friends. They're more reliable than your human friends." And the next person will say, "Oh, they're these cute little baby-like things that we need to protect." For those three people, the dog in the dream will represent those three very different things.

Sometimes, it's helpful to have an objective outsider querying you on these things but you can do a certain amount of this for yourself just playing through each of the main characters or animals or activities and kind of what does this represent to me and then kind of stringing it together. Is there anything in your waking life right now where it feels like there's some helpless little thing that's being menaced by a big scary thing and et cetera?

And especially focusing on the emotions in the dream, is there anything in my waking life that gives me that gut feeling in the pit of my stomach that I had when the witch was chasing me down the hall nightmare often gets us in touch with things that are important in our waking life that we've kind of been shoving aside. Interpretation is important but then, the sort of third most advanced step is in trying to guide and influence your dreams, which of course, isn't worth doing until you're remembering them basically.

But then, you can tell yourself as you're falling asleep, anything as simple as you want to dream about a particular person or topic or a specific as that very technical problem at work that I'm stuck on and I'd like to have a dream that showed me some other solution to this, and just kind of form your question or problem or topic as a simple phrase or sentence to repeat yourself, "I want to dream about X," as you're falling asleep. And then because dreams are so very visual, it's helpful to come up with imagery that relates

to it. I mean, it's a person you're trying to dream about, obviously, you picked through them. For more complicated problems, you may have to think a little bit more about what one or several visual images go with them.

And if you're pretty good imager, just doing that in your head as you're falling asleep is what you want to do. But if you're someone who doesn't really have very much visual imagery clearly when you're awake, you might want to put some real physical object on your night table like just a photograph of the person you're trying to dream about, or some little grouping of objects that represents the problem or question.

You have something to physically stare at so that one way or the other, you're getting a visual image in because their dreams are so visual that they're cued even better by imagery than by words. So, do those two things. Kind of tell yourself what you want to dream about, stare at or eyes closed, visualized something connected to it. And in one of my studies where I had college students trying to solve fairly simple problems that they would eventually solve but had not yet solved like homework problems for some of them, they were doing this incubation for one week at bedtime. And 50% of them dreamed about the topic of their problem in a week of doing this, and about one-fourth solved the problem.

Now, that part would vary a lot depending on how difficult the problems were and I think would drop off some from these easy problem situation but about 50% of them easily in a week achieved the topic they were targeting that seems to hold up across lots of kinds of content.

Dave: That's pretty impressive. Are there supplements or herbs that make it more likely? Like I know 5-HTP and L-Theanine I've heard people talked about those as things that can ... I assumed those can manipulate sleep quality but I have a friend who says he takes 400 mg of L-Theanine and has hours and hours of fully lucid dreaming every night. It doesn't work for me, but have you come across like magic potions that give you better dreams?

Deirdre: Those are two I have seen research on REM and in the case of 5-HTP, I don't think it's thought to be very relevant to REM. It's definitely a precursor for serotonin which should help you go to sleep easier and sleep more soundly, but that's just sort of generally falling asleep. And obviously, if you're troubled recalling dreams as because of general insomnia, it might be useful in that sense.

There's at least one study on B6 which does serve as an enzyme precursor to some of the things that are necessary to rapid eye movement sleep. There are two of the Alzheimer's drugs have been studied and found to slightly increase the odds of having lucid dreams, which we'll talk about more in a minute, the dreams where you know you're dreaming while you're dreaming. They don't generally enhance dreaming and they actually make you wake up more often. Probably lucid dreams are a little closer to waking.

There's definitely a lot of research on chemicals that either increased dreaming a bit more or altered in some way. None of them seemed to be just really dramatic effects

for all people but they'll be statistically significant if you have a reasonably large group. It certainly makes sense because our neurotransmitters in our body are influencing just that the rapid eye movement sleep starts it all and different qualities of it. The substance is that our precursors for neurotransmitters are very likely to have some effect.

On the other hand, our body has always homeostatic mechanisms kind of regulating that we don't have way much more than it considers normal at any given time and sort of pushing back and dumping down excesses of things. I think that keeps the effects from being real dramatic.

Dave: Do you remember the names of the Alzheimer's drugs? I'm guessing memantine might one of them? But-

Deirdre: Galantamine is the prescription one that's been studied. And the other one is that really common health food store thing that a lot of people take for-

Dave: We'll find that name and put it in the show notes.

Deirdre: Basically, both of them are affecting acetylcholine, one of the neurotransmitters that is involved in rapid eye movement sleep and they're both pushing the REM sleep a little closer to the arousal threshold, which both can wake you up and interfere with sleep and personally, I tried the galantamine and it mainly made me sleep less well.

Dave: Me too. I've tried that as well.

Deirdre: But in the well-controlled studies, again, there are a lot of things that show some effect when you got a large enough group and it's averaging over the group effect because for a few people, it's working very well. It seems to be anything that pushes acetylcholine up is somewhat likely to push lucid dreaming a bit but also to wake you up a bit more.

Dave: For people listening who aren't familiar with neurotransmitters, acetylcholine is one of the stimulatory neurotransmitters. And there are lots of herbs that will prevent your body from breaking it down and you can take it directly. In fact, I've got a couple of supplements coming out very shortly that have some of that in it but too much acetylcholine causes like muscle cramping and tension. And so, there's a big complex interplay here and I think what you said is really important, Deirdre, that the stuff that works for one person may completely not work for another person, which is why these like complex stacks of all sorts of different things. You're going to get results that are very different because some things are going to be working against each other in the same stack.

Deirdre: I think that they don't work dramatically. They work no better than some of the more just sort of psychological practices that you can do to have more lucid dreams. I definitely do not recommend doing prescription Alzheimer's drugs to see if you have more lucid dreams. Even though I just said I have done this, do as I say not as I do.

Dave: Well, the audience of Bulletproof Radio is the kind of people who are probably willing to self-experiment a little bit but there are long-term side effects for most of these things, but if you did try it once and you looked at the drug and sort of undecided if it was worth the risk for you, I'm sure some people will try it. And there are lots of reasons you might want to or not want to and I'm grateful that we're in a society where people can be free to make that choice.

Now, I may or may not have experienced the difference when I was or wasn't experimenting with microdosing LSD where you're taking about 5% of a normal dose of LSD as a cognitive enhancing substance. Have you come across any research on changes in dreams from people who are taking way below the, I'm going to go have a trip doses of hallucinogenic drugs?

Deirdre: I haven't seen any research per se on that. On the microdosing LSD specifically, I've not seen any.

Dave: Okay.

Deirdre: There are a lot of drugs where coming off them seems to produce dramatic dreams. You certainly don't want to become alcoholic and go into withdrawal just to have really, really vivid dreams but that increases ... Actually getting drunk kind of give a night will ... It will reduce your REM sleep through the early part of the night and then you'll tend to have a little more REM toward the end.

But people who are withdrawing from or really habituated to alcohol and are somewhat in withdrawal have huge amounts of REM sleep. Lots of the dreams are nightmares. Some of the worst nightmares in the world happened then, but some really kind of dramatic pot ... It's just more vivid in all directions and vivid visual imagery, but to a lesser extent, the amphetamines, most of the stimulants, MDMA, as people are coming off those, there's a kind of heightening of REM in the sleeping off ... You pretty much can't go to sleep including dreaming sleep while you're on most of those substances.

And there does seem to be a high rate of report of vivid dreams after any of those stimulant drugs including MDMA, which doesn't really feel like a stimulant but people can't sleep on it and it's closely related to amphetamine. It doesn't feel as speedy as amphetamine or coke or most of the "stimulants".

Dave: What about ketamine? I've been working with a physician and anesthesiologist who uses ketamine to help people deal with PTSD and also during certain types of IV infusions that are really uncomfortable. Is that something that affects dreams?

Deirdre: I think most of these drugs haven't been studied for their effects on dreams specifically and the ones that affect dreams the most are not generally the dreamiest. There are things like the stimulants that have been ... They are essentially suppressing REM sleep while you're on them and then you have this kind of REM rebound after them.

Some of the drugs like LSD, and ayahuasca and ... I'm not sure I'd put ketamine in this category. But the ones that induce dreamy states while you're awake and have some of the transmitters that would be involved in REM sleep higher, then you might even get a rebound in the other direction of kind of less dream-like activity once you finally go to sleep from those. Those are two separate issues whether they actually affect your nighttime dreams in some way versus whether they make your waking daytime experience somewhat more like you usually only experience in your dreams. And I think it's different classes of drugs that would do one versus the other.

Dave: Okay.

Deirdre: No one coming down from ayahuasca really worries about whether there are dreams or dream-like if they've just been through 12 hours of hallucinating awake.

Dave: Yeah, you're probably just glad you can go to sleep because you're little worn out after that. At least that was my experience.

Now, one of the most incredible books on dreaming that I've read was a book on Tibetan sleep yoga. This is an obscure book. I read it maybe 10 years ago and I'll get the exact title, but it's probably called Tibetan sleep yoga if I remember right. This was a guy who is a lama somewhere and he starts out the book saying, "Look, I'm a really busy guy. All day long, I'm teaching and I'm being a monk and all those things, so I found I didn't have time for meditation. Now, when I go to sleep, I do all my meditation while I'm asleep because I'm actively dreaming the entire time I'm asleep. So, I do all of my personal enlightenment process work while I'm just like essentially sitting in lotus pose while I'm asleep."

He was sleeping lying down but in his dreams, he's full on meditating consciously. Is this just like a half-human sort of person or is this a state that maybe people listening to the show could achieve or like, "Wow, I actually can consciously either work on my personal development process, or like, "Put all those eight hours of nightly downtime. Can I put those back in the production?" Is this possible? Do you know anyone who does this?

Deirdre: Yeah. Probably if you devote your entire life to studying Tibetan Buddhist practices, you could. I don't think it's easy for most people to learn to do the things that they are talking about, and the Tibetan Buddhist have all kinds of dream practices and different branches of them seem quite different. They're way more interested in dreams than Buddhist or other branches of Buddhism.

But actually, there are two books out there by Tibetan Buddhist monks that have pretty much the title Tibetan Dream Yoga but they differ by one word and I'm not keeping them straight right now. One is by a Tibetan who has settled in Virginia and has his main center out of Virginia. And his book is all about how you're supposed to, as you fall asleep and meditate on different like the heart chakra with the red lotus there, while breathing through your left nostril, and lying on your right side to induce a certain kind of dream. All this sort of position, nostril, chakra and color will produce certain kinds of

dream content. It's this like very precise obsessive system of having the dream you're supposed to have next.

And then the other one is probably the one that you're talking about or maybe there's a third where there's a lot more emphasis on developing lucid dreaming. It's actually advocating lucid sleep in general, but you should learn to be aware as you're falling asleep and watching yourself sleep. But also, that's the one that talks a fair bit about how you can learn to do your meditations in your sleep.

Dave: Yeah. That's the one I read.

Deirdre: Yeah. But my understanding is they are talking about things achieved after 10 years of full-time practice of these things for the most part, unless one is going to devote one's life to Tibetan Buddhist practices. I don't think they have a particularly quick ways to go back, getting some kind of dream control. But I totally believe that they happen and that those people are talking about very authentic, very interesting experiences.

Dave: Those 10-year type practices, it kind of pissed me off because a lot of us have careers and families and things we want to do in the world. I actually started the neuroscience thing up in Seattle called 40 Years of Zen. And the point of 40 Years of Zen is to be able to teach you to put your brain when you're awake into the same state of someone who's done 40 years of daily Zen practice. It's been a big part of my personal development thing where I'm like, "Wow, I can really push things."

But you're really inspiring me to think about whether I can measure the brains of some of these people and find out what they're really doing when they're asleep and then make it teachable in less than 10 years. You totally gave me something to work on there. Thank you for that, because some of these states like they tell you to meditate on the heart and look at these lotuses because they don't have ways to say, "This is what's happening in the brain," so they're trying to pick up like the feeling and the body, and then use language for something that's the world of feelings, not the world of language. It's very hard to translate that even any discussion around dreams.

You and I running into that same problem where we're trying to describe something that only you see even though someone next to you might be seeing something different, but in a similar state. I think that's why a lot of research is really behind on sleep, maybe not on sleep but on dreams specifically. That's why I want to talk to you because they go, "Let's look at that because it's interesting," which is thank you for doing that work because it's also hard.

Deirdre: Yeah. Well, actually let me tell you a little bit about the techniques that I think so far worked best in a quicker way for westerners which are ... These tend to be pioneered by Steve LaBerge or to be alterations of things that he's had out there for 20 or 30 years. Basically, the most effective low-tech approach is, if one's not going to spend one's life meditating, seemed to be a combination of what we call daytime reality checks where part of it is just asking yourself if you might be dreaming right now, and taking that question seriously, and thinking about it. Freeform is good but then to have some very

specific reality check where you have determined that you seemed to work differently in your dreams versus awake, and you check a couple of those things.

And none are completely universal for all people, but some of the things that are likely to be different in dreams for most people are most people can't read well in their dreams. Some people can't read at all. Any letters will look like hieroglyphics. Other people can read a short [inaudible 00:42:54] but they'll lose the flow after that. Other people can read something but if they look away and look back, it says something different in the dream. If you think now how written language behaves in your dreams, then you know whether you just have to find something to read or whether you needed to read something, look away and look back at it. But for a lot of people, that works well. That's one of the checks.

Also, clocks and watches do not work properly for most people in dreams. They will not change time every minute, or they will change much more than a minute, or they will not change in sequential numbers, or they'll be displaying numbers that don't correspond to possible times, or they'll be blurry and vague and you can't read and understand the numbers. Thinking about what timepieces do, most people, if they flick a light switch in a dream, it won't immediately dim or greatly brighten the light. It may have no effect or if they dim it just barely or there may be lag time before the dimming or brightening.

There are a number of things that work differently for most people but you have to identify a couple for yourself. These work this way in my dream and they work this other way when I'm awake. And then, take seriously doing that. Ask yourself if you're dreaming just freeform. Notice if there's anything that doesn't seem plausible to waking and then whichever couple you've picked up, go over and flip a light switch and then pick up something with written material on it.

It's hard to get yourself to take the question seriously. We're often like, "Well, of course, I'm awake. I know I'm awake." But to really, really ask yourself that question and test it, first of all, it usually has some interesting effects just then and there in your waking state to really take that question of, "How do I know I'm awake seriously?" A lot of people report that that's just a very ... It induces a very interesting state of consciousness even as you're practicing it. But the main point is that any new practice that we do by day is likely to carry over into our dreams. If you check whether you might be dreaming regularly, several times a day awake, you will very likely have a dream in which you're remembering to do your, "Am I dreaming" practice and you'll do it in the dream and the light switch won't work or the driving will.

That's one of the two main techniques. And the other thing that is also very helpful and they also combine well is much closer to the dream incubation I already described to you where you're trying to influence the content of your dream that night in any way, but very similarly to how you might say, "I want to dream about X problem," or, "I want to dream about X person." You're just telling yourself, "I want to be lucid in my dream tonight. Tonight in my dream, I want to know I'm dreaming." And you tell yourself that as you're falling sleep, and again, some kind of imagery to go with that.

If you've ever had a lucid dream already, you might replay the moment in that dream where you realized it was a dream in your mind because again, the kind of a narrative or visual imagery will get through to your dream in mind even better than the verbal part. If you do that, if you practice those two things regularly, it is very likely to increase your rate of lucid dreams.

Dave: A couple of times, I've been tempted to order these little devices that I've seen. This is going back at least more than 10 years. It's like a little thing you wear in your belt that looks like a pager for people who are old enough to remember what pagers look like, and it just has like a green button on it. And the idea is you wear this thing during the day, and you check it to say, "Is the light green?" And you just sort of tell yourself, "It won't be green if I'm in a dreaming state," so that you start questioning exactly like you just described, "Am I dreaming now? Am I dreaming now," so that when you have a lucid dream, you sort of know it. Have you ever tested a device like that? Have you heard of people who've done that?

Deirdre: Steve LaBerge did one of the first versions of sleep goggles. There all kinds of less expensive imitators working off the same things, but he has had one little electro lead to detect rapid eye movement sleep simply by the eye movements themselves, which is much ... Anyone that claims they're doing EEG leads off a simple chip device, it's not really measuring brain waves. But right on the surface, you can pick up the muscles controlling the eyes. He had one lead to detect eye movement, and then a very soft red light would flash and you had to, by day, keep telling yourself, "If I see a red light flashing, yeah, only I'm dreaming." You did this reminding yourself and especially reminding yourself as you fell asleep. But then you wore this device that was detecting rapid eye movement sleep and blinking your red light at you.

And he did some well-controlled research, and it definitely increased the rate of lucid dreams. It tends to wake a lot of people up every REM period if the light is not just at the exact right threshold for them. And again, I wore this device some, and it was making me recall every REM period of the night because it was waking me up a little bit, but I slept with it a few nights and then one morning, I woke up and I threw the thing across the room in my sleep. My guess because my sleeping mind didn't like the lights flashed at me.

Again, that's the range you see. I would have been one of the not success stories in the group. But definitely, there were people having more lucid dreams than if nobody was sleeping with that device. And then he ... Also though, we can trick ourselves about any of these things including the reading and light switch thing that I just told you about because with his goggles, he did have some people report dreams where it was a red light flashing in their dream, and they would wonder why that was, and then they would say, "Oh, there must be cop car going by," or, "That's a fire engine going by outside making the blinking red lights," and they proceed with the dream without being lucid.

I think Steve LaBerge's funniest story about a miscue was something he never developed for the general public but he was trying on himself, which was he had a sleep with a REM detector electrode. And when he was in REM, it would activate a tape recorder that he had attached to it that would play a recording of his own voice going,

"You're asleep. You're dreaming, Stephen. You're dreaming." And again, just like with the red light, the threshold was attempting to be set just high enough that it would be perceived in the dream and not so high that it would wake you up.

He actually found some success with that but his funniest dream was that he was in his sleep lab walking around the hall and he began to hear, "Stephen, you're dreaming." And in the dream, he thought, "Oh, my God. Someone's gotten a hold of my sleep tape and as a joke, they're playing it over the loudspeaker system in the building."

Dave: He was definitely mixing his realities there, and that can-

Deirdre: Yeah. Our sleeping mind will rationalize, when coming up with why this could be happening, sometimes, it makes up some other explanation that consider as plausible. But this works because a fair bit of the time, it goes, "Oh, light switch is not working. That's because I'm dreaming," rather than, "Light switch is not working. That means I need to call an electrician." It triggers lucidity enough of the time that it certainly increases the rate of lucid dreams.

Dave: That is so cool, and this is something that I think is maybe missing from a lot of the discussions in bio-hacking where these altered states that come when we're asleep can have a real value for us. And I am grateful that you've spent so much time writing about these in your two books and just putting some science behind something that is... It's hard to measure because it's all subjective. I have one more question for you, and this goes beyond just your field of study, but certainly can include it. If someone came to you tomorrow and they said, "Deirdre, I want to perform better at everything I do as a human being." What would your three most important pieces of advice be for them?

Deirdre: I think that would actually depend on the individual because somebody who has already a pretty rich dream recall and especially, if they're already having a lot of lucid dreams, I would probably encourage them to much more strongly focus on exactly some of the techniques we've just been talking about. But on the other hand, one of the areas I used to do a lot more work in is hypnosis. And hypnosis has very modest effects on some low hypnotizable people. But if you happen to be a high hypnotizable person, the things that you can do with hypnosis or soft hypnosis are just hugely dramatic.

I really think what are already some of your personal strong points for having big experiences and having learning and creativity already seeming to have spontaneously are probably the ones that you should pay more and more attention to and try to more consciously guide. I certainly do the most work on dreams lately, so that's the one I'm the most enthusiastic about. But I think there are some individual differences and again, you can probably hear in my voice that I do not take the idea that somebody would decide to spend their whole life being a Buddhist monk as an idea that has ever been taken seriously by me. But obviously, that's a path that gets people to just amazing conscious control of mental and emotional abilities if someone chooses that.

Dave: I think that was one good piece of advice, which was focused on your strengths with this stuff. Any other pieces of just general advice for someone who wants to be a better human?

Deirdre: Well, definitely. I think at all levels that paying some attention to your dreams is helpful, and it's one that westerners often haven't taken very seriously. In tribal cultures, the idea that your dreams are just another type of thought that your brain is doing, and that we may get really interesting ideas in there. Dreams is a part of many cultures and I think sort of, "Oh, it's just a dream," or if western culture focuses on it. After all, it's more that you might get some emotional understanding or something about relationships, which you can. But the idea that your dreams may solve problem at work, or tell you when a medical problem is developing in your body, or just very practical things.

I think just to be aware of that and take that seriously, and when you remember a dream to give it a moment to think about whether it's telling you something like that is good advice for low dream recallers or high dream recallers.

Dave: Awesome. I think we had two things. We had one around kind of focus in your strengths and focus on the value of dreaming, and then any third piece of advice for people, just things that worked for you on your path?

Deirdre: Definitely, the idea that even though spontaneous dreams can help you that trying to incubate specific questions, writing down a particular problem as a brief phrase to think about as you're falling asleep, visualizing or having some concrete representation of it, keeping a pad and a pen by the bed, and when you wake up not turning your attention to something else but letting yourself think about whatever bit of a dream memory you may have, and what it may say about that problem. I think that greatly increases the rate of useful suggestions from dreams even though I think they are spontaneously already working on our waking thoughts and concerns anyway.

Dave: Well, thank you so much for being on Bulletproof Radio. And thanks for your extensive work on dreaming and lucid dreaming. Where can people find out more about your work and your books?

Deirdre: I have a website, which is deidrebarrett.com. You just need to spell it right, D-E-I-R-D-R-E is my first name, then no break, B-A-R-R-E-T-T dot com. And on the main page, one category is books, one category is my academic research and one category is my dream art. So, click on any of those or if you just want to see the art, slash art or the books, deidrebarrett.com/books.

Dave: Deirdre, you do some really interesting work around dream art. Can you tell me about that?

Deirdre: Yes. I've been studying other artists' art my whole career. But recently, I found that even though I can't draw well that by taking photographs and doing some heavy digital manipulation, that I could really bring my dreams to life. I've been making this digital

dream art. One series is a dream I had of wandering around Harvard Square discovering weird little animals lived on the rooftop. So, I've got every building in Harvard Square with the weird little animals. It's just really fun to drag visual images from the dreams into waking world.

Dave: Well, we will definitely put some of those up on the YouTube channel, and we'll put those up on my Facebook page with little snippets from the interview. That will be a lot of fun. And some of the really cool art in existence comes straight out of people's dreams. I think it's really cool that you're a Harvard psychologist, that you're also going there from an art perspective, and I appreciate that, and I think a lot of people who hear this episode will be really intrigued to see some of your art. Excellent.

Well, thank you for being on the show, and I look forward to having really, really good dreams as a result.

Deirdre: Okay, it was fun to do this.