Announcer:

Bulletproof Radio, a State of High Performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey.

Dave:

Today's guest is Thomas B. Roberts, Ph.D., a professor emeritus of educational psychology at Northern Illinois University, and he's got an almost 50-year career studying psychedelics. He's presented around the world on consciousness, psychedelic science, and has been one of the founding members of MAPS. If you're a long-time listener, you know I've had Rick Doblin on from MAPS as well.

Dave:

We're going to delve deep into the world of psychedelics, altered states, and to this concept of something called mindapps that Thomas has come up with, and even mind design, which is the idea of technology that lets you decide how you want your mind to work. As the father of biohacking, I'm kind of interested in this sort of stuff. Any way you can make your mind do what you want, that's controlling your biology.

Dave:

Without any further introduction other than one of the elders of the movement around psychedelics and spirituality, welcome to the show.

Thomas B. Roberts, Ph.D.:

Thank you. I'm glad to be here.

Dave:

50 years of looking at this stuff. What was the impetus? You were there with Stan Grof, who's also been on the show, by the way, and Albert Hofmann, the early fathers. But just tell me the story. Tell me, how did you get started in this field? Because it was not a field when you did it.

Thomas:

Well, I was a graduate student at the University of Connecticut in the 1960s, and that's when everybody was having all those problems at Harvard. It was just sort of a news background noise to me, but I was curious about it because I'm interested in psychology and the human mind. So I sent up to Harvard and got a copy of the Harvard Review that had an article by him or about him, and that was sort of interesting, but again, it was background noise.

Thomas:

Then in 1967, I went to graduate school at Stanford to start my doctorate. That was the summer when the song “When You Go to San Francisco, Be Sure to Wear Some Flowers in Your Hair” was on the radio. Now, that wasn't for me, but it was just fun to imagine this in the background because I was going to Stanford to get a doctorate and an MBA on the side. So the hippiness was not something I was interested in except as background and entertainment.

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Thomas:

But at Stanford, I started my dissertation, Maslow's Needs Hierarchy, and there was a guy named Willis Harman who had a class called Human Potential and he had studied Maslow, so I thought I should have a class with him. Now, it was so popular. It was called a Graduate Special. You had to sign up for it in advance and I had to wait two quarters to get on the waiting list to get into the class. When I got in, they were discussing real fringy stuff like meditation, and Eastern religions, and chanting, and all this stuff that if we talked about that in university, people would sort of roll their eyes or raise their eyebrows and think, "That guy's kind of gone beyond the bend."

Dave:

Especially back then, right?

Thomas:

Yes, even biofeedback was wild then.

Dave:

Still is. Most people think I'm nuts for doing neuroscience, yeah.

Thomas:

Anyway, there was a couple taking the class. We met once a week. There were probably 25 people in the class, graduate students from Stanford, a lot from engineering because Willis Harman, who ran the class, was in engineering, and people from professional schools and so forth. It was called the Human Potential. That was the name of the class. One couple came in one day and started to describe their psychedelic experiences that first Saturday. They were talking about flowers moving in a vase and the things they felt. This is the first time I ever heard anyone describe a psychedelic experience. To my, really, amazement, probably two-thirds of the class joined in and talked about their own psychedelic experiences. Now, this is an advanced graduate seminar at an advanced university.

Dave:

Did they give you drugs in the class?

Thomas:

Oh, no, no, no.

Dave:

So people, they found some on the weekend, but then everyone just talked about it. Okay.

Thomas:

It was only 65 miles from San Francisco, okay?

Dave:

They weren't in short supply back then, as I understand?

Thomas:

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No, not at all. So, that really surprised me because my idea of people taking psychedelics was this sort of dirty, scruffy, old, mind-rotted people, and here were advanced graduate students at Stanford. That sort of jolted me on that. Then one of the students has a ticket to a lecture. [inaudible 00:04:54] Institute had a special weekend program at Stanford and they'd bring their people up to Stanford because it was too hard for them, the students, to go down there.

Thomas:

This guy has a ticket for some guy I'd never heard of, but he couldn't use the ticket, so he gave it to me. I thought, "Well, I'll go and if it's boring, I'll leave." It turned out it was Alan Watts talking about religion, East and West, and the use of psychedelics. He was a very erudite, scholarly, British scholar talking about it. It was the first time I realized one could talk about this in an academically responsible way. So that got me interested, but still, I hadn't had my first experience.

Thomas:

I had my first experience a year or two later in Lake Tahoe during a winter up there. I realized there was something very interesting and curious about this. I was interested in it. There was a sense of [inaudible 00:05:52], something interesting and important then something that happened or would happened or is going to happen, so that got me interested in it intellectually. From then on, I was lucky to go to a number of different places and meet a lot of different people.

Thomas:

Little by little, I sort of learned about the field. I'm not someone who goes in one direction and suddenly changes distance direction, but I changed like a big aircraft carrier, a little at a time. Little by little, one thing brought me to another, and then another, and another. Then after my first experience in 1970, I started teaching here at Northern Illinois University that fall then, in 1982, started teaching class in psychedelics. So all these little pieces sort of fit together very nicely.

Dave:

Are you happy with how the world of psychedelics has evolved over the past 50 years?

Thomas:

Very much so, yes. Particularly the work that's going down on the psychotherapy and it's really absolutely top work the top graduate schools and medical schools are doing with absolutely top period. For a while, everybody who went to psychedelic conferences were either gray hairs or about to become gray hairs. If you go to the recent ones, they're people who are in their 20s and 30s who are really bright neuroscientists, and psychotherapists, and so forth, getting into the field. It's really very gratifying to see all these new young people coming into the field and then there are these different, like MAPS as an example developing MDMA, they're working on the psychotherapy angle. I'm really delighted with what's coming along.

Thomas:

Also, I'm a little annoyed with one aspect of it.

Dave:

Okay, what's that.

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Thomas:

And that's Bicycle Day. I started Bicycle Day and I'm very glad it caught on.

Dave:

Remind listeners. A lot of people probably don't know about what it's celebrating, but it would be great if you walked us through that.

Thomas:

It's a holiday that I invented to celebrate the day when Albert Hofmann, the discoverer of LSD or synthesizer of LSD, second, took his first intentional trip. On a Friday, he had a little dose and something weird was happening. So he went back on Monday and he had what he thought would be just a very small dose and it couldn't possibly have any effect on him. It was 250 micrograms, which is enough for a good solid experience.

Dave:

Two and a half normal tabs, basically.

Thomas:

Yeah. Nothing had been active in that small dose, so he thought nothing would happen. He had this blow out trip. He rode his bike home because there was no cars in Switzerland because the war was on and they couldn't get gas. So he rode his bike home and so I called it Bicycle Day.

Thomas:

Originally, I would have had the first experience become Bicycle Day, but it was during the middle of the week and not a good day to have a party, so I moved to the 16th, which was near or on a weekend. I'm not sure if it was a Friday or a Saturday. So I called that Bicycle Day and it's caught on surprisingly well. It's been very gratifying. But I'm annoyed with it because most of my work is in my books and it's about using psychedelics intellectually and for mind development and yet what's caught on is Bicycle Day. There's a friend of mine who said, "That's the way of the world."

Dave:

You're annoyed that you're known for Bicycle Day even though most of this is around hacking the brain for higher performance.

Thomas:

I'm both annoyed and pleased at the same time.

Dave:

Right. I feel you. I'm pretty well-known Bulletproof Coffee, but I do an awful lot of work on the human brain and performance where that's just a gateway drug. So I understand where you're coming from there.

Dave:

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Some of the heavier stuff you've done, you invented something called Multistate Theory that I think is becoming accepted. Walk me through what Multistate Theory is and the impact it's had.

Thomas:

Yeah, the best way to get into that is this word that I've written called mindapp.

Dave:

This is in your most recent book, right?

Thomas:

Yeah, right. It's very similar to the idea that we can invent apps and install them in our devices and the devices can do new things and become more powerful. So I'm just taking an analogy and saying there are things we can install in our brain/mind complex that allow it to do new things and to do things more strongly. I'm not saying that a mind app is like artificial intelligence in electronical sense. I'm just taking that idea and transferring it over to things.

Thomas:

Now, my favorite, of course, is psychedelics, but it includes brain stimulation, hypnosis, breathing techniques, biofeedback, chanting, yoga, hypnosis, on and on. What I'm trying to say is that all of these are mindapps that we can install and use our brain/mind complex in different ways. And while all of these have been on the fringes of psychology, what I'm trying to do it to get psychologists... actually, I'm going to speak about mind studies, people, not just psychologists or not neuroscientists, but the people who study the mind, to recognize that there are all these other ways to study the mind, to use the mind, to use our minds, and probably to do things with them we didn't know we can do.

Thomas:

So mindapp is just a bigger app to allow minds to [inaudible 00:11:29]. Now, what Multistate Theory does is just recognize that there are all these apps and it tries to put them altogether as part of a large whole theory rather than this little isolated fringe group there and another fringe group there, so that say the yoga and meditation, psychedelics, and brain stimulation people can all recognize themselves as working on the same field but using different variables to get into it. That's what I'm trying to get people to recognize. So Multistate Theory just recognizes that.

Dave:

I'm pleased that you included the whole state of altered states technologies, or the whole suite of them in there because like you said, flashing lights or brain stimulation, I've been a tourist of that world for 20 years and it's magically changed how multiple brain works. Bright lights with LED, infrared stimulation of the brain, magnetic stimulation. I run a neuroscience institute that brings about the altered states without the drugs for human performance specifically just because it's changed my life so much.

Dave:

But all of those are sort of put in the fringe science, weird bucket, but they're the biggest things. When you look at the efficacy of psychedelics versus all of this other stuff that is non-psychedelic or at least non-pharmaceutical, how efficacious are the other things? Because a lot of people don't want to do drugs, but they're interested in the states. Do you have to do drugs to get these full benefits?

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Thomas:

To get the full benefits, yes, but there's certainly lots of other drug [inaudible 00:13:10] like hypnosis, and yoga, and the martial arts, and breathing techniques and they would all do different things. In addition to that, there are new mindapps that are appearing. For example, we're importing them for other cultures. Ayahuasca is probably the best example of that or ibogaine because we're discovering that there are these psychoactive plants and techniques around the world. We're importing those just like we import cars, and clothing, and everything else.

Thomas:

Not only that, but there's this great research that's being done on the brain. I subscribe to Science Daily, the brain news, and every day there's new things they're discovering about the brain. Of course, they're interested in mental health and curing diseases and conditions, but also, those are also techniques that can be developed into new types of mind apps. The people working in the field are not interested in that angle. I'd like to get more people interested in it.

Thomas:

For example, when you find out that certain part of the brain cells will work with a certain type of stimulation like, for example, you know about [inaudible 00:14:16]. Okay, that can be used not just only for psychotherapy to cure illnesses, but also as a way of using the brain and turning on that brain [inaudible 00:14:27]. Let's say with neurofeedback, you can learn to actually turn on and not turn on various parts of the brain. This area really, I think, is a huge area to be looked at. There are so many opportunities there it's hard to know which way to look, but my particular way is psychedelics.

Dave:

What's your favorite psychedelic?

Thomas:

Oh, LSD, without a doubt.

Dave:

LSD.

Thomas:

Yeah.

Dave:

All right, why?

Thomas:

It's stronger and purer. Now also, and this maybe just a matter of where I got my start. I started with MDMA, which actually isn't a psychedelic. I consider a psychedelic family to be LSD, mescaline, peyote, and ayahuasca.

Dave:

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No mushrooms in there? Psilocybin?

Thomas:

Psilocybin, yeah. Sorry. Yes. I say MDMA has sort of been adopted into the family. People call it a psychedelic, but it isn't [crosstalk 00:15:20].

Dave:

It's more of a stimulant.

Thomas:

Yeah, that's okay. Yeah, right. Anyway, that's my favorite, very definitely. But maybe if I had started out with yoga and meditation, I'd probably say that's the way to go.

Dave:

When you talk about mind apps, a part of me is really excited, but the part of me that used to run strategy for one of the largest computer security companies in the world, I know that 29 apps just got pulled from the Google Play Store for having malware in them. How do I know?

Thomas:

I don't know what 29 apps is.

Dave:

No, it's 29 different applications you can put on your Android device that had malware in them but looked pretty good.

Thomas:

Oh, okay.

Dave:

So the question is, if installing a mind app, how do I actually know what it does? How do I know that I'm getting, when I put the tab in my mouth or eat the mushroom or whatever it is, how do I know I'm not getting something that's hidden in there that I didn't want?

Thomas:

Yeah, that's exactly why a lot of research has to be done in the field. I think a lot of the apps that are tried are not going to be very useful, but some of them will be very useful. Now, if we jump quick to mind design, here's a possibility. Think of chemistry and we have all these elements out there and we put them together in different molecules. Most of the molecules are just curiosities and interesting, but a few are really good, are really handy.

Thomas:

Now, if we take that model and move it over into mind apps, what happens when we combine, let's say, LSD with hypnosis and brain stimulation? We would produce a mind state that's never been produced before. It would be like a new molecule. We can take all these different mindapps and put them in

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different combinations and this is what I call mind design. Not only that, they can put together in different strengths and we can have a weak dose of this and a weak example of that. Just like with molecules, you can make practically an infinite number of molecules. We can make an infinite number of mind states.

Thomas:

I think lots of them probably won't be very useful, but a few of them will. Also, like with chemicals, some of them are going to be dangerous. What we really need is a big, a whole department in a university or a center that would look at these systematically and go through them and try them all probably originally on other mammals and see what happens to them, although mammals are not very helpful when we're talking about cognitive processes.

Dave:

There's a book. There's PIHKAL by Sasha Shulgin and Phenethylamines I Have Known and Loved. [PIHKAL (Phenethylamines I Have Known and Loved): A Chemical Love Story by Alexander and Ann Shulgin] Actually, there's two of them. I still regret, I was going to buy his test tube set from his lab off of eBay when he passed just to have as a little museum piece and I didn't do that. I still regret it, but I feel like he went through and took every one of the derivatives he could find and carefully journaled it and said, "Well, I didn't die. Here's what I noticed. You should stay away from those."

Dave:

I feel like the explorers like you, to be honest... you're an explorer. You're a pioneer, not to mention a millennia of shamanic practice in different parts of the world. You've gone through and you've done that work, but we still have all these questions like the CIA, apparently, at the time you were doing this, was also pretty interested in these sort of drugs and I think they came out to be against them. But you're pretty convinced on the safety profile, today, it really sounds like.

Thomas:

No, I'm not. I think this has to be studied very carefully, probably in very small amounts. For instance, they all will have some biological effect or they wouldn't have a psychological effect. We have to find out which ones are dangerous and which ones are useful and how it can be used. Just as with chemicals, we have to find out what we can do with some of these chemicals. A lot of chemicals have been used really shouldn't have been used. Even now in our agriculture there are still some that have to be removed. So we have to be at least just careful and probably more careful when we start using mind apps. I don't want to be the first subject, let me put it that way, okay?

Dave:

But you want them to be studied.

Thomas:

Yeah, very systematically. People who have a very good biological background are absolutely necessary. By the way, you mentioned Sasha Shulgin. Let me see if I can show it to you.

Dave:

Yeah. Little bottle up there?

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Thomas:

See on top of that shelf there?

Dave:

Yeah.

Thomas:

There's a bottle. That's from Sasha's 75th birthday party. Anna had a special bottle made for him and with his label on it.

Dave:

Oh, fantastic.

Thomas:

Yeah. That's one of my real gems.

Dave:

Yeah, if you're listening to this and you haven't heard of him, if you really want to dig deep, you read either of his two famous books on psychedelics, you just realize there's a whole universe here. It is, to the point, your work, Thomas, it really is around. They give you visibility in all of what's going on in your brain and I still have this sort of nagging thing I've learned more from the neurofeedback side of things. If you change a setting in your brain, it may very well be invisible to you.

Dave:

I've also taken a few big hits to the head and after you get a smack to the head, you swear a lot and you can't play Go Fish because your brain doesn't work. But when someone asks you, like, "I am not angry!" Because you can't see it. Because you changed the instrument of cognition. I still wonder if people would go out there and try a new psychedelic or even try one that's there, how do they know that it worked? So, I'm going to ask you that. How do you know that it worked for you?

Thomas:

First of all, let me say thank you for suggesting a new mind app to me, getting hit in the head with a baseball bat. I've never thought of that before.

Dave:

Don't try it. Mine was a titanium knee, but it sucked.

Thomas:

You had asked, how do I...

Dave:

How do you know because the instrument you used to measure whether they worked was itself affected? How would you know that they worked?

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Thomas:

Well, you know your own subjective experience, but then you need outside people who are going to let's say do brain scans or just see how you act and how you talk and how your cognitive processes work or perceptual process. It's a whole stand of all the things that the body and brain do to see what differences there are. Sometimes they'll be very minor ones, sometimes very big ones. That's why this field is so exciting because there are all these possibilities. There's endless research. There are generations of research to be done here and to try them out on.

Thomas:

Also, different mind/body effects will have different effects on people at different times. It isn't just going to be one thing we can set in a setting. This will apply not just to psychedelics, but to everything else. Also, that includes the person's own personality and the person's unconscious. So the number of variables here are absolutely enormous.

Dave:

They are enormous and perhaps, never will be that limited. I know that we can hook an EEG up to someone's brain and say, "All right, take this substance and let's see what your brain waves do." But if I was to induce those brain waves using structured magnetic fields, only some percentage of people are going to have the same experience as before.

Thomas:

Yeah.

Dave:

You probably know about the God helmet. Have you come across a person who just wore it?

Thomas:

I've read about it. I haven't done it.

Dave:

I have one back there. I didn't see God, but for people listening, 4% of people who use this carefully structured pulse electromagnetic fields literally say I met God, my version of God standing right in front of me. Now, highly religious people may say that's obviously a tool of Satan. That's not where I'm going with this. All I'm saying is 4% of people can have a reliable, inducible experience of the holy and it's customized for their belief system. So without a judgment on that, why do 96% of people not get that? I find that little bit hard to study academically. Do you have a perspective on why do hallucinogens work for some people in a certain way, but not for others? Do you think it's all chemical or is there something deeper?

Thomas:

Well, it's bound to be a combination of things. Personality, I mean, how the person is feeling at that particular moment, if the person's biologically healthful. I think probably these work much better on people who are in their 20s, 30s, and 40s than people like myself who are in their 70s and 80s. Our kidneys and our livers just aren't working that well.

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Dave:

That's another reason to use acid instead of mushrooms because it's a lot easier on the liver.

Thomas:

Well, that's a good rationalization. Thank you.

Dave:

Just saying.

Thomas:

Yeah, right. I'm sort of out of the loop now. I'm in my 80s. People have been discovering new variables, but Stan Grof talks about the positions of the planets. Now, that's stretching things for me and yet, this is a guy whose mind I very much admire and whose ideas I've learned a lot from, so I'm undecided on what to do with that idea. Is Saturn going to interfere with how I'm doing psychedelics or breathing techniques? I don't know. There are going to be a lot of variables out there we need to know about.

Dave:

I'm very angry at Saturn myself. I don't know about you. But the good thing is we have enough data now that with millions of people being able to measure little fluctuations, we'll actually, within a few years, have enough data to tell you whether Saturn matters because we know the moon matter because that's easy, just go to any emergency room on a full moon. The rest of this, hey, I'm willing to believe something's going on that I don't see or sense that I think is unlikely because the data won't lie. That, in combination with the psychedelic research, is cool.

Thomas:

There are bound to be variables that we just don't know about. People look back on us the way we look back at the people in the Middle Ages with the sewer running through the streets and think, "How do they live like that?" And another generation of us, people are going to look back at us in the early 21st century and think, "How do they live? Why didn't they know about germs or vitamins," or whatever it is that we're missing. There's a really good book by Benny Shanon called Antipodes.

Dave:

Spell that? N-T...

Thomas:

Antipodes, like Australis is in the Antipodes.

Dave:

Okay, got it.

Thomas:

He is a cognitive psychologist from Israel who went on a vacation in Brazil. I think the rest of the story probably falls into place for you. He got interested in ayahuasca and as a cognitive psychologist, he realized there was a lot of cognitive psychology that didn't make sense in the ayahuasca experience. So

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he tried to use cognitive psychology to understand ayahuasca. Then he did the smart move using ayahuasca around to understand cognitive psychology.

Thomas:

I think there are a lot of fields who wouldn't go use psychedelics to understand a field we haven't known about and use the field to understand psychedelics. He sort of sets the picture of how to approach this by not just saying how do I use neuropsychology to understand psychedelics or how do I use psychedelics to understand psychology. That's pretty well established, but there bound to be all these other fields that are out there that really need to be developed.

Dave:

Well, that book you're recommending is 50 bucks for a used paperback, so it must be good.

Thomas:

Oh, wow. It's gone up. Yeah.

Dave:

It sure has. That's pretty cool. It's something I haven't read and I'm pretty well-read on these subjects. But I'm going to order it anyway because hey, that's how I roll. Talk to me more about Multistate Theory. After 50 years of working on this stuff, you've really created it, but I still don't feel like I have a good picture of it in my head.

Thomas:

Okay, the idea is really very simple. It's really to recognize that our brain/mind complex can produce a lot of... I use mind/body state, we're in the state of consciousness because the word consciousness has a lot of different meanings. When you get people together and they talk about consciousness, they think they're talking about the same thing, but they're talking about very different kinds of things. So I use mind/body state in the sense that Charlie Tart means, an altered state of consciousness and mind/body functioning.

Thomas:

What multistate psychology does is it recognizes that we are capable as humans of producing and using a large number of mind/body states and there are a lot of ways of producing them. These are the mind apps. Our question is what are they going to be useful for? Just interesting sort of curiosities like listen to music or getting [inaudible 00:28:42] to music or solving problems or... a way of looking at current psychotherapy is that partially it asks the question and this is the general question that comes out of this. Psychotherapy partially answers the question, how does psychotherapy vary from mind/body state to mind/body state? That's what the research is going on now.

Thomas:

Now, take that question and broaden it and say how does blank, whatever you're interested in, vary from mind/body state to mind/body state? And in that blank, you put in anything you're interested in, anything from the social sciences or psychology or even philosophy. And this applies to every mind/body state, not just our ordinary state, but the states that we use to meditation, hypnosis, et cetera, but in new states that we can invent, the mind. How does, whatever it is we interested in... well, let's use

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perception. That's a nice common... it's actually a cluster of things. How does perception vary from mind/body state to mind/body state?

Thomas:

Probably most people listening to this program knows that their perception will vary from mind/body state to mind/body state. But then what happens when you invent new states? How will perception vary in those state? Will there be useful things we'll be able to see in those states we wouldn't see in other states? Problem-solving, I think, is the real hidden gem in this.

Thomas:

There was this study done in 1966 of people who were mathematicians, physicists, businessmen, designers, and so forth, who all had been on problems and been unable to solve them. Jim Fadiman, who I mentioned, was one of the people. Bill Harman who ran that class at Stanford is the other guy. They got together and they would get people in groups and give them small dose. The information's varied. Sometimes it says mescaline and sometimes it says LSD. But anyway, they would then work on their problems. Out of 27 people who were professionals in the field and were working were stuck on problems. These just weren't ordinary problems, problems they really cared about and thought about and worked on, couldn't solve without insights. Actually, they got 44 solutions, so some people solved more than one problem.

Thomas:

Now, every field has its problems. So problem-solving is not a type of therapy that helps people with certain conditions and problem, but it goes in every field. I mean, the intellectual fields, and religion, and the arts, and all fields have problems. I think the real big future here is to develop centers that will help people working on problems to have psychedelic experiences or other mind/body state experiences and approach their problems from a different perspective.

Dave:

I'm working on that from a neurofeedback perspective [crosstalk 00:31:42] with my 40 Years at Zen company where we get groups of executives, five at a time, who come in and you do some focus work over the course of days. But I'm really interested in Fadiman's work on microdosing of LSD.

Thomas:

[inaudible 00:31:54] why don't you give them a little microdose while they're doing their meditation?

Dave:

There's that whole federal law thing that we need to get past right now, otherwise, I think that could be really helpful, even in conjunction. We can map out some of the states where people go when they're surfing that edge between a dream state and an awake state where the creativity comes out and you can even enhance and train it.

Dave:

I'm intrigued by what a lot of my Silicon Valley friends are doing. They'll take a tenth of a normal dose, 10 micrograms of LSD, a few times a week or sometimes every day, and use it like a nootropic or a smart

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drug. What is your take on microdosing versus doing a full dose experience from that or any of the other hallucinogens? Pros and cons?

Thomas:

Well, the experiences vary enormously with dose and [inaudible 00:32:57] a step function. It will go along... if you add, sometimes it will just make it stronger and sometimes it'll jump up to another step and that clearly is true with psychedelics.

Thomas:

In terms of problem-solving though, there are three bits of research that have come together in interesting ways. The first was done at Imperial College and they show that in psychedelic states, the brain makes more connections through parts of the brain that don't normally connect with each other. Now, there aren't actually more connections, it's just that the connections that are there are more varied than they were previously and parts of the brain that normally don't talk to each other do. You've probably seen that famous circle that shows the brain connections before and after.

Dave:

Of course.

Thomas:

The second part is that [inaudible 00:33:50] University, they did research and they found that people that have better connected brains are more intelligent. Cambridge University, there's a study that says a clear link between... at [inaudible 00:34:09], they found that smart people have better connected brains and then at Cambridge, they found that better connected brains resulted in more IQ. So it moved from psychedelics making more connections to connections increasing IQ.

Thomas:

As far as I know, these are just temporary. That means if you take LSD, you're going to always have a lighter brain. I suspect, and there may be bias on my part, I think that is does open you up to new ideas and to make connections with things. And so I think that the daily dosing probably helps in that part.

Dave:

We do know that many of the psychedelics increased levels of brain-derived neurotrophic factor, or BDNF, so does coffee, so does exercise, so does deep breathing exercises, so does... I'm going down the list of things in your book. Those aren't all on there, but the transcranial brain stimulation does that and sleep does that. It seems like pretty much everything that's good for the brain does that and a lot of people don't recognize that.

Thomas:

Brain-derived neurotrophic factor?

Dave:

Yeah.

Thomas:

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Oh, okay. I haven't heard about it.

Dave:

Okay, so it's basically called [inaudible 00:35:17] nerve growth factor. It causes you to make new connections and to grow new nerves.

Thomas:

Oh, okay. Right.

Dave:

Things like LSD and ayahuasca, but surprisingly, I don't believe MDMA or things like methamphetamine, other non-hallucinogens do that. We know that raising that is good for the brain. It makes you more neuroplastic, so you can have a child's ability to learn and all.

Dave:

At this point, why we haven't done a lot of research on using these compounds for neurodegenerative illnesses or hey, your brain's going away anyway. What's the harm of testing a hallucinogen? Even if it's bad for you, you're starting to put your car keys in the fridge. A tab of acid that might help is not going to make things worse. At least I wouldn't think it would, but that's the sort of academic and medical study that you could do with proper medical oversight and say, "Wow, maybe we reversed something."

Thomas:

As you know, there are enormous number of things to be discovered yet. There are all these hints all over the place and what we need is some sort of systematic way or ways to approach all these possibilities. Again, it's like chemistry when they determine that there are these various elements and you can do all these different things with these elements. The same applies to the brain functions and the mind apps. You can put those together and do different things with them and we just don't know them yet. We're just sort of poking around at the horizon of this.

Dave:

Did you ever get approached by three-letter agencies throughout the course of your academic things saying, "How can we use these things for control, for government things, for interrogation?" All this stuff that undoubtedly the conspiracy theorists will say after this interview anyway. Is that real?

Thomas:

Probably, but I've never been approached.

Dave:

You've never been approached, okay.

Thomas:

But I'm not a lab person.

Dave:

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Got it.

Thomas:

I'm somebody who reads the research and tries to make sense out of it.

Dave:

Got it. So you're teaching about it, but you weren't hands-on there.

Thomas:

Yeah.

Dave:

It's funny, the second I started mentioning hallucinogens and psychedelics, literally the small fringe would come out and say, "Dave, clearly you're a CIA plant, and you're paid." I'm just like, "This is crazy pants." I'm talking about doing ayahuasca in the jungle 20 something years ago and acknowledging that it did something useful. But I always want to ask the people who were there in the '60s because, at this point, if guys in suits showed up and asked you stuff, you'd probably be willing to talk about it 50 years later, right? But nothing like that ever happened. Okay.

Thomas:

No. Interesting, I taught a class in psychedelics at the undergraduate level and the father of one of my students was in one of the government agencies, I'm not sure which one, and his job back in the '60s was infiltrate student groups.

Dave:

Oh, wow.

Thomas:

She told me about it and I said, "Boy, I want this guy to come to class." So he was a class visitor, a guest speaker. [crosstalk 00:38:28].

Dave:

Wow. About how to infiltrate student groups?

Thomas:

Yeah, yeah. He brought along some of the flyer. He was retired by this time or almost retired. He brought along some of their wanted posters that were available then.

Dave:

Wow.

Thomas:

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Of course, the students loved to have him in class. Students love speakers. I've had several different ones come and he was a great favorite because he was a guy who was on the line, but on the other side of the line.

Dave:

Wow. That's fantastic and interesting. Do you worry that there's negative societal implications? If you could go to 7-Eleven and get your tab of acid, would that be a good thing or a bad thing?

Thomas:

This is one of the concerns I have about Oregon and Denver that are making mushrooms, and I guess Oakland, making mushrooms legal. There are some people who should not be doing psychedelics. People who are pre-schizophrenic or have other problems in their family or in themselves. I'm worried that they're going to cause problems and sort of try to clamp down the whole thing.

Thomas:

There has to be some way of allowing some people to do psychedelics and not allowing other people. The problem is we don't have people who are confident to say, "You can do them. You can't do them." All the research that have been done so far like Langone Medical School at NYU or Johns Hopkins Medical School, they screen their subject very thoroughly and they're basically have people who are mentally and physically healthy that can usually almost... in fact, an awful lot of them have graduate degrees and can express themselves.

Thomas:

The problem is people see those results and say, "Oh, this ought to apply to everyone." But they don't have people who are risky taking in that. I'm worried about these risky people because there are definitely people who should not be doing psychedelics or should be doing them only with people who can control them who are psychotherapists. I'm worried about them. Yeah.

Dave:

Especially your first time, it really needs to be there. There are some people, and you won't know who you are, where you have a problem with serotonin syndrome. You're going to take a normal dose of psychedelics, and it's going to blow your serotonin up, and you don't pull it out of your brain fast enough. Your heart rate goes way up. Your blood pressure goes up, oh, which can kill you, and you start shaking, and you can do it for days. Intervenous benzodiazepines will turn that right off as long as you're with someone who can give those to you and knows to do it. That's the risk here. It's also like alcohol. There's some people, you really ought not to drink because you punch people every time you drink, but you still can go buy it.

Thomas:

The two related questions that had come up that I wonder about, for example, I'm interested in the use of the entheogenic use of psychedelics. I use the word entheogen only to apply to religious and spiritual uses.

Dave:

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Thank you for defining that. So religious use of this, which is the first time I used it, was in a religious use in Peru with ayahuasca. Walk people through the religious use, even religious research going on with these.

Thomas:

Well, there's no really good organized research in this. Let's say people go to Peru or the upper Amazon to try ayahuasca, but we don't have a systematic organization. I can imagine a religious order taking this on as their business. The question is, who gets to say who can take it for religious/spiritual purposes? Certainly, not every clergyman is competent in that. On the other hand, if the government sets the standards, the government then determines what is and isn't a religion, legitimate experience. So we're stuck on them.

Dave:

Their track record is pretty crappy there.

Thomas:

Yeah. But should we say only doctors who have spiritual training should be able to do that or clergy who have medical training? That's cutting down the field awfully far. There are all these questions about who's qualified to say who should or shouldn't do psychedelics. Now, I'm just in the intellectual fields. Is any professor of English capable of taking students on a graduate trip? That's a frightening experience, I think.

Thomas:

But somebody would have to be trained on the intellectual uses of psychedelics and that person would probably have to have mental health training as well as training in whatever intellectual field that person is in. In medicine, we have people who are prepared and there's a protocol, and you prepare people, and you sit with them and you [inaudible 00:43:15] afterwards. What are the proper procedures let's say in religion or in intellectual work? We haven't worked that out yet. Yet, there are people in the religious fields and intellectual fields who are doing psychedelics, although I don't talk much about them, but they're definitely out there.

Dave:

It's one of the sad things that's been happening in maybe, Jesus, going back a good 15, 18 years. I did a lot of holotropic breathwork, which is Stan Grof's, we'll call it mind app, where it was to replace LSD because it was hard to get. Also, I wouldn't have known how to take it anyway. So I started doing this with a group, a personal development group, and really had a lot of improvements and awareness and things that came out of that. It was one of the things that pushed me in this direction to go deeper on neuroscience and all.

Dave:

But even that experience, there are some people who kind of go a little bit nuts from doing that. It opens up things maybe that they didn't need to open up or they just weren't quite ready. Then someone said, "Hey, here," and it's a phone number on a piece of paper. This is a therapist who actually uses LSD during therapy sessions, but it was an underground of therapists who would do it. So you could call this person or call that person. This person is too far away for it to work, for me to do any work with them. But even today, there are, what, a dozen or so people licensed to do therapy with psychedelics. It's

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exceptionally rare and it's illegal in most states even for them to practice, but at least they're licensed, whatever that means. Do you think in five years we're going to have therapists licensed to do this in most states, or in 10 years, or never? What's your ...

Thomas:

Eventually, but my hopes have always been too much unexpected to happen within the next several years. But clearly, to the work that MAPS is doing now with MDMA with PTSD is going to be the door-opener. Once the Army Medical Corp and the Veterans Administration Hospital get into using MDMA with PTSD, that's definitely going to be a big advance.

Thomas:

Something that's coming over the horizon now is that the coronavirus problem right now is going to result in a lot of people having mental problems both because of the stress that they've been under and the PTSD that they're under, for example, people in the medical field.

Dave:

A lot of trauma.

Thomas:

Yeah. There's an article by David Nutt, who's one of the major people in Imperial College in London, that came out yesterday and he points out that one of the things that coronavirus can do is to sort of get into the brain and cause actually biological damage to some people. It's not usual. I wouldn't say it's rare, but it's unusual. It's frequent enough so that mental health professionals will have to be looking at this.

Dave:

I believe that some of us out there have a pretty clear understanding of what's going on there. I've been working with a group of docs off the normal channels and we just have a classic case of hypoxic damage to the brain. Fortunately, I've had a few of the world's top experts on the show on how to fix that. So everyone who has neurological symptoms, once they're cured, is going to spend 40 hours in divide doses in hyperbaric and we're going to be able to fix that. In fact, I would actually put hyperbaric oxygen on your list of mind apps.

Thomas:

Oh, I haven't thought about that.

Dave:

It's so powerful.

Thomas:

Thanks. Yeah.

Dave:

You can take someone who's running at one level and they do 40 one-hour sessions with oxygen, and all of a sudden, they're a different person. It is profound. The mechanism there is not well-discussed in public, but that will be on my blog very shortly. Probably by the time this is published, I will have

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finished my piece on that. I'm less afraid of that then most people. But the PTSD side of it, endless people coming in and the germaphobia, we're going to have to upregulate our manufacturer of psychedelics to help people deal with the trauma from this thing.

Dave:

Sorry to go off on a little bit of a tangent there about hypoxia and the brain. It's just one of those things, we've got to talk about this because it affects a lot of the diseases of aging too. You get less blood in the brain, it changes your behavior, it changes your access to the spiritual states to the point that if you were to take LSD in a hyperbaric chamber, you're going to have a different experience because your brain cells can do what they're trying to do without enough oxygen. It's a fascinating-

Thomas:

I never thought of that combination. That's an interesting idea.

Dave:

Additional variables. It's sort of like okay, how do I make the cells better able to do what cells do and then induce a substance? Just from Burning Man at all, even when people take mitochondrial simulators, which help with oxygen utilization. All of a sudden, if they're having a five out of 10, like I'm just too tired to really experience this, they just wake back up.

Dave:

I'm fascinated by the metabolic underpinnings of any hallucinogen experience because it seems like it always work better when the metabolism works better. Deep breathing exercises work better, and yoga works better, and martial arts work better. The whole pallet of technologies. By the way, I very much appreciate the way to you talk about them as mind apps. It's neat. Like oh, do this and get this.

Thomas:

It's a handy idea. It's an idea people can absorb easier than say psychotechnologies.

Dave:

Yeah, exactly. That can be a little bit scary. You talk about two other things in your book about mindapps for the sciences. The idea of taking these apart from trauma release, which we just talked about, into generating ideas and solving problems of humanity. These are about consilience and emergence. Define what consilience and emergence are in the world of mind apps.

Thomas:

Consilience is an idea that E.O. Wilson, the ant guy, invented and it's an idea that's been around and he renamed consilience. It's the idea of taking all the theory and facts that we have on different areas, all the way from let's say subatomic physics through physics, and chemistry, and biology, and psychology, and the social sciences and linking them all together in one big structure, one structure of ideas.

Thomas:

Psychedelics are perfectly set to do this because to do research in this, it helps if you can have an input in one level and an output at another. The psychedelics, for example, you have a chemical input and you may have a religious output or high view of let's say things like reality, truth, goodness, beauty, all those

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things. So you're able to do an experiment that comes in at one level and goes out at another level. Psychedelics are particularly well-suited to do this because then you're linking together these various levels and linking one level of the structure to another level of the structure and that's what consilience is. To makes sense that all these things, by putting them together into one big framework. So that's what consilience is.

Thomas:

All these mindapps are good with this, not just psychedelics. In meditation, you mediate, you're doing a breathing, bodily technique and you get a cognitive or emotional result out of it. Hypnosis is a really interesting one because you can induce physiological changes cognitively, so you're working from the top down in that instance rather than from the bottom up. That's what I think on psychedelics and all the mind body apps really contribute to this building one big structure of scientific knowledge.

Thomas:

Now, emergence is an interesting one. When things are put together in different patterns, new characteristics have evolved. Common, we say, the whole is more than the sum of its parts and the most common example, of course, is you take hydrogen gas and oxygen gas and you put them together and you get water. You get all those watery qualities that neither the gas has. So those qualities, he says, emerge. They come out of nowhere. Then this happens up and down this level of consilience.

Thomas:

And so what psychedelics do, when we take in a chemical and mind emerges... now generally, in our ordinary state, where you and I are probably now, we're both probably drinking a little caffeine so that boosts us up a little bit. The idea of you call the hard question is, how does this biological stuff result in subjective experience? What's that shift that happens there? And David Chalmers, that philosopher calls it "the hard question." It is a hard question, but I want to pose what I call the impossible question.

Thomas:

Now, how about not just “how does the brain produce subjective experience” but when we go down to gases producing water, that's emergence or if you put chemistry together in a certain way to get biology, how does chemistry produce biology and the biological characters emerge? So the all these levels of emergence go up and down here, too.

Thomas:

So the question I have then, is there some law of emergence that applies up and down this whole schedule, this whole scaffolding of ideas? And that I consider the impossible question because you'd have to have to apply how to subatomic particles get together for particles and how those thoughts get together for higher level thoughts. And is this is there a systematic idea that will apply across all this level? I can't imagine. I love to be wrong on this, but I can't imagine somebody coming up with a solution. Somebody will somewhere, but I'd love to see it. Or you're just drinking water or gin, that kind of thing.

Dave:

As long as it looks like water, it's water, right?

Thomas:

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Right.

Dave:

And I'm not saying what may or may not be in it in micrograms or not.

Thomas:

So these are like big background ideas in the sciences. The sciences are built on these ideas, but most scientists are busy doing particulars in this field. And what I want to do seek people to look at some of these larger questions.

Dave:

You talk towards the end of your mindapps book. And by the way, just a side note for our listeners, when you go to the trouble of writing a book, it takes a huge amount of organization, almost like this consilience thing we just talked about, in order to put as much as you can into this because you know that it's going to be at scale. And when you're reading a book from someone who spent 50 years in a field, you're probably going to get something good out of it because that's what happens when wisdom emerges from time. So this is a book, if you're interested in the states of mind that are possible, a book that's worth reading. But towards the end of the book, you talk about that achieving the philosophers mind. What is the philosopher's mind in the way you talk about it here?

Thomas:

So let me just cut and say that I know how much effort goes into writing a book. And when I see a shelf of books, I think of all those authors who put in so much time. And think of a library, I mean, it's just an incredible amount of human effort has gone in. Now, what was the question again?

Dave:

The question of... by the way, I'm a hundred percent with you. It's literally many lifetimes. Each book that you read for 10 hours is, if it's a halfway decent book, so at least 2,000 hours of work went into it.

Thomas:

Oh, yeah. The philosopher's mind.

Dave:

The philosophers mind, yeah. How does the philosophers of mind towards the end of your book, your mindapps book, how do you define that? How do people achieve it?

Thomas:

Okay, well, most philosophy is done in an ordinary mind-body state. I call it a default mind-body state and philosophers basically use thoughts in ordinary cognitive thinking processes, and most philosophy has done in that state and is about that state. That language is actually invented for use in our ordinary state. That's one of the reasons these things are so hard to talk about because there are other states in our ordinary language doesn't fit very well.

Thomas:

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So anyway, what I think philosophers need to do is to recognize that...philosophy is the love of knowledge and knowledge certainly includes the human mind. And if you want knowledge in the human mind, it should be the knowledge of the human mind and all these mind-body states, not just our ordinary default state. So I think philosophers have to do is to get into your mind-body states and do philosophy about that experience and user experiences to do philosophy.

Thomas:

That's getting back to that book that Benny Shanon wrote that I mentioned to you. And so for example, let's say I think, therefore I am. Good old Descartes' statement. Okay, well, the sense of I vary from mind-body state to my body-state. Thinking certain varies. Therefore, a logic varies, and there's I and there's the am. All four of those elements vary from mind-body state to mind-body and you can take that model and apply it to all philosophical ideas.

Thomas:

So, the question then is how does philosophy vary from mind-body state to mind-body state? And we have some philosophers who looked at that, but not in any sort of systematic way. And I hope what'll happen is as multistate psychology catches on them, the psychologists, philosophers might realize that you can do philosophy in and for different mind-body states to and you can look at any philosophical idea and ask, how does whatever vary from mind-body state to mind-body state? And not only that, you have other hundreds or thousands of different states to consider that in. So philosophy can become an experimental field.

Thomas:

Literary criticism is another one. I use graph view of the mind to understand film and arts. So it's an enormously rich field and I think philosophers could really get into this. There was due to be a conference on psychedelic philosophy at Exeter University this month, but they had to call it off because of the coronavirus.

Dave:

I'm not sure I understand what [inaudible 00:58:15] mean regular philosophy and psychedelic philosophy other than, well, obviously, you ate something before you did the psychedelic version.

Thomas:

But what is simply taking other mind-body states seriously? Most philosophers take on a default state seriously and everything is just sort of discarded as trash or junk or don't waste your time with that. Think about an ordinary state. You know, what I'm saying is that the big shift is recognizing that these other mind-body states, they do hold knowledge. There's epistemological value. The fact that problems have been solved and this as an example, mental health problems are an example. But also the problems that I mentioned that Bill Harmon and Jim Fadiman have worked on and published in 1966. So there's not only about what the states, which is interesting, but on how you can use those states to discover different types of knowledge.

Dave:

It's this idea that the interstate matters, maybe more so than a lot of the hard rationalist philosophy where it's all about thinking the meet robot perspective and the idea that spiritual states and perception really does matter. And that's something that I appreciate about your book there and about the whole

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world of hallucinogens or psychedelics, whatever you want to call them, is that what we're thinking, feeling, and experiencing even if others don't experience at the same time, it matters and if you incorporate that into philosophy, you might come up with a different philosophy than you otherwise would.

Thomas:

This brings up a problem that the artificial intelligence people have to get at. Basically, what they're trying to do is to have artificial intelligence do what the human mind can do. Well, now that we recognize the human mind can work in different mind-body states, artificial intelligence would have to have different mind-body states to. And that's the direction they've got to go.

Thomas:

What does it mean to give a computer LSD or hypnosis or meditation? Is that something that can be worked on in ordinary computer sense rather than just having the computer sort of mimic or even do better than what we do, but still try to use the ordinary state as the standard? So what happens with all these other states. For instance, can computers come up with... prompt ask problems that haven't been asked before? And that's what humans can do.

Dave:

So you think we're going to have problems with AI not able to do that until we achieve the philosophies or the philosophers mind?

Thomas:

Well, I'm tempted to say yes, but I don't know the field. I know the people in the field are doing altered states. So they must be thinking about this field, some or other. I'd love to see what they come up with if I can understand. I'm not a computer guy, so I don't know if I can understand.

Dave:

I understand what you're saying. Now, my concentration, my undergrad degree was in a form of artificial intelligence and the people in that field, on weekends, they are doing things and I see them at Burning Man and it's the same for advanced mathematicians, and advanced physics and all because when you're pushing the edge of what humans are aware of now, you sometimes end up here and sometimes you end up in other yogic positions. But the people who are doing really advanced work somehow are circling the same tool set in order to do it and you've spent a lot of time setting that, I think you know that as well.

Dave:

I'm really grateful for your work and it's an honor to be able to talk to someone who's I would say an elder in the field and that you've had a chance to build up that wisdom over time. You've shared it with countless people. Your latest book, especially, is very powerful because you've had enough time to distill that knowledge and that wisdom into something that is worthwhile. So thank you for your work.

Thomas:

Thank you.

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Dave:

Thank you for being on the show. Thanks for writing. Thanks for teaching and just thanks for going against the grain and talking about this before it was as acceptable as it is today. So you're a luminary in the field and I'm really happy we got to talk.

Thomas:

Thanks. I enjoyed talking with you about it. Nice to talk with somebody who knows the field.

Dave:

Thanks.

Dave:

If you've liked today's episode, I think you should check out Mindapps. It's a really interesting book and you don't have to go out and do psychedelics in order to participate in this idea of a mind app. There are many things you can do with neuroscience, with breathing, with yoga, with ancient techniques, with food, with fasting, with lights, with sound, with drums. So there's all sorts of ways you can modify your state and if you're stuck at home right now, maybe now's a good time to play with some of those, especially some of the entry level ones because otherwise, what else you're going to do? You're probably going to sit around and just get re addicted to gluten or something, so there are better things for you.

Dave:

If you liked the episode, please leave a review, whether it's for the book because you bought it, for the show itself, or just any other book that you've read. Take this extra time while you're at home and just go out there and do the equivalent of leaving a tip for your barista, which you can't do right now anyway. So leave a review for an author because we care about that. Thank you very much for listening. See you soon.

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