#12 — Unlock Your Mind: Psychedelics in Physics, Creativity & Religion Transcript

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Introduction and episode overview

Welcome to the trip lab kitchen table conversations about [music] integrative medicine and psychedelics. I'm your host and resident physician, Dr. Mariela Wood. Hello. Welcome back. So, it has been a while since I last recorded an episode. I've been transitioning into my last year of residency and I'm actually one of the chief residents this year. So, it has been quite the process, but I'm back and going forward, I hope to keep things on a more regular schedule from here on out. So, today we are going to be talking about psychedelics as a way to explore your subconscious, the idea of consciousness in general, psychedelics as a way to boost creativity, both in the sense of sparking scientific creativity for new discoveries, as well as any other creative endeavor our minds have to offer. And last, we're going to talk about how psychedelics can help us understand physics better and how they are intimately connected with philosophy, religion, and spirituality.

This is a topic that I have been thinking about doing on the pod for a while, but I really needed to put some thought into it first. As a physician, I want to make sure when I talk about the medical side of psychedelics on such a public platform as a podcast, I am evidence-based and truly relaying what the hard science has shown us in the past few years. But there is something about psychedelics and honestly the rest of integrative medicine too, especially with the more ethereal topics like meditation and mindbody medicine that quite frankly can't be explained by purely scientific means, at least at this moment in time. And in the midst of the psychedelic renaissance, I think it is important to talk about those topics too. My personal outlook on life at this moment in time, it's always evolving. But my personal outlook on life right now is this. Religion, spirituality, physics, the concepts of life in general, they all go together. They're all connected.

Medicine, spirituality, and the limits of science

Physicists at top universities from around the world are discovering more and more about concepts that we read about in the Bible or understand spiritually. And I'm talking about the idea of different dimensions, the quote unquote magic we hear about, whether you call that miracles if you're religious in the Christian sense or psychic abilities in other spiritual senses. We are actually starting to find physics explanations for these phenomenons. Parasychology, which is a field traditionally viewed as pseudocience, is now just starting to scratch the surface, overlapping just in the slightest with hard physics. And I truly do mean just starting to scratch the surface, but the science truly blows my mind. Taking it a step back, one of the primary problems with these types of phenomena and trying to study it scientifically and I would include psychedelics in a separate category but undergoing the same limitations is that the way we study science now is not going to give us the answers that we need for those type of things.

It's like as the saying goes, if you give someone a hammer, the only problem they'll be able to fix is with a nail. The world is not just made up of nails.

But anyways, my point is that I've avoided these topics previously on the podcast because I wanted to just wear my physician hat and report on the hard science that is out there. But the more I thought about it, being a physician is more than going to med school and residency and memorizing guidelines or reading literature and figuring out which studies to incorporate into your practice. Being a doctor is both an art, a science, and most importantly, a humanistic endeavor. Every single day, we sit down with patients one-on-one, be it in the hospital or at the doctor's office, and have intimate connections with them and partner with them to improve their health and in some cases possibly cure them of disease. And of course, to do this, you must be competent in the science. But you also need to be an empathetic human. In my personal opinion, I think that involves dabbling in other humanistic topics that science just can't explain yet. So, with this episode, we're going to do a little trip lab thought experiment, and I will, of course, bring in actual studies that have been done, but then I'm also going to talk about other hypotheses and share some things that I think will blow your mind. Before I begin, I do want to point out that psychedelics are legal

for these spiritual and even recreational and definitely medical uses in other countries outside the US. But right now in the US, these molecules are only available in specific settings and it's different depending on which molecule you're talking about for medical benefit. But in this thought experiment, I'm going to take you into an alternate reality where these molecules are available for more than just treating medical disorders like depression. I'm going to bring you to a reality where these molecules are available to all who choose the opportunity to explore their mind without needing the diagnosis of anxiety to make it legal. On that note, we could do a whole rabbit hole dive into how we diagnose psychiatric disorders. I will give you a quick spiel now because it is pertinent to what I'm going to talk about. So, we have this book called the DSM5.

This stands for the Diagnostic and Statistical Manual of Mental Disorders. Five meaning that it's just the fifth edition of this book. They're working on the sixth now. But this is the book that all psychiatrists, doctors, whoever it may be use to diagnose mental health disorders.

DSM criteria and the subjectivity of diagnosis

And this is how the book works. So each mental health disorder has a set of criteria can be ranging from 5 to 12. Every disorder has a different number of criteria. And to qualify for a specific disorder, you must meet a certain number of that criteria. So let's say for a specific type of depression, there's 10 criteria that you can have. If you meet six of those criteria, you have that psychiatric diagnosis. But if you only need five, you don't have that diagnosis. So one little criteria can change the diagnosis that your doctor puts on your permanent medical record and uses to decide whether you should have a medication or not. Let me give you an example of some of these criterias. So for MDD, which is major depressive disorder, one of the criterias, for example, is decreased concentration or indecisiveness.

and they even qualify that this may be subjective or observed by others. My problem with this is that being indecisive is a part of the normal human experience. Truly, if you look at the DSM, really all of the criteria listed for all of these different disorders are all part of the human experience. But in order to have a manual that we can actually use to diagnose psychiatric conditions, we have boxed all these different experiences together and decided that if you have X number of symptoms present in that particular box, then you have that particular psychiatric disorder. One less criteria and you don't have that condition. Now we are starting to change things a little bit and moving some disorders to spectrums like autism. And this in my opinion is a lot more pertinent to how mental health care should be diagnosed. But my ultimate point here is that diagnosing mental health disorders is a very subjective and reductionistic process. And even though we know that, we then use those specific criteria to make decisions if we should pump someone full of medications that will make them feel blunted in order to make sure that their symptoms don't manifest too much into one of those boxes. Now, this isn't an episode about how we diagnose mental health disorders, so we'll move on from that. But you get my point that it is a little arbitrary and subjective, but this does lead me to our real topic of the day. So, we are all experiencing the human experience with highs and lows.

And I personally believe that we should have access to experiences via molecules, plant or otherwise, or no molecules with meditation. But either way, I think that we have a right as living beings to explore our minds and explore our consciousness. I'm going to talk to you guys about just a few of the possibilities that psychedelics can bring us. Psychedelics can help us understand physics and the deeper workings of the universe. They can help us boost creativity and invent new ideas. And they can also help us deepen our understanding of ourselves, philosophy, religion, and spirituality.

If you want a deep dive on the science behind how these molecules can boost creativity or help us understand all these concepts, check out my episode number three titled an RX for magic mushrooms and LSD.

Psychedelics, creativity, and scientific insight

Because the way that they work to treat anxiety and depression is the same way that they make our minds more creative. essentially by increasing neuroplasticity, creating new neuronal connections and activating many parts of our brain that aren't normally activated during normal waking consciousness. This is parallel but slightly different to the dream state. So, first let's talk about creativity. Those of you guys that have taken psychedelics don't need any

data or scientific explanation to affirm that psychedelics do enhance creativity and open us up to alternative ways of thinking.

But as of lately, we do actually have studies out there. Recent studies have shown that psychedelics enhance your ability to think outside the box, so to speak. Which is interesting to me because those people with psychiatric disorders like depression and anxiety have trouble thinking outside of the box when they get into these depressive and anxolytic cognitive loops. There's been actually a lot of recent studies that have actually been able to prove that psychedelics do increase creativity. So after these experiments, people revealed that while in a psychedelic state, they reported understanding ideas and concepts better than they ever had before. However, they were unable to express them in a meaningful way during the trip. a week later. This induced insightfulness, new ideas and associations, subjective creativity, even around things that they didn't actually think about during that psychedelic trip. Another recent study published this year actually looked at using psychedelics to enhance scientific creativity and insight to help with new scientific discovery. And they decided to study this because there are countless examples of famous scientists who have discovered things because of their psychedelic experiences. I'll give you guys a few examples. So Francis Crick, one of the people who discovered DNA's double helix, actually came up with this idea while he was on acid. More recently, Dr. Carrie Banks Mullis was also on ACID when he discovered the PCR, which stands for the polymerase chain reaction technique that we use to isolate DNA to diagnose diseases. I'm sure you guys have all heard that term now with CO. It's a COVID PCR test. But we actually use this in pretty much any modern research lab to replicate DNA before we study it. And he actually has a fascinating book called Naked Dancing in the Mind Field. and you will see what a genius he is with this laid-back San Diego surfer demeanor here to please no one. Steve Jobs also credits his understanding of computer programming to insights during acid trips as well. And honestly, I feel like understanding this invisible world of the internet and computer programming does require a deeper understanding of the way the world works. Like, think about it. The internet itself is this invisible network that humans have figured out to harness, manipulate, and utilize. And it is now so intertwined with our lives that it truly is this invisible force that shapes us.

So what other invisible forces are out there shaping us? And maybe with the help of psychedelics, we can discover more of them. Ultimately, psychedelics help us see and think differently. And what I mean by that is different than the way we are conditioned to see the world as we grow up. So we grew up going to school and essentially have the idea of convergent thinking drilled into our heads and we are rewarded if we can regurgitate that convergent thinking back to our teachers and even nowadays our superiors at work. And what I mean by convergent thinking this concept is the idea of taking a series of ideas and converging them into one view of the world. So what we learn as we grow up, we take these series of ideas, lump them together, and deduce a single conclusion about it. An example of this, we have our multiple choice tests in school.

With these tests, it implies that one of those multiple choice answers is the correct answer, and all the other ones are wrong and something not on that paper is also theoretically wrong.

Physics, time, and higher dimensions

Divergent thinking which is associated with creativity and what psychedelics stimulate involves seeing things from multiple perspectives and finding new pathways in which to go with certain thoughts. So by that I mean instead of hearing a buzzword and selecting a multiple choice answer that is technically correct, you see new possibilities and new answers that could also be correct. However, society doesn't treat those well that think in that sort of way. We are essentially conditioned by social norms and modern education to let go of your divergent thought patterns because the convergent thought is what's going to get you the grade and eventually what's going to get you the money. We are trained to live within the standards of society in order to climb the chain of financial security and happiness rather than valuing our own minds and our own self. Okay, with that, are you guys ready to get a little weird and peer into the physics concepts of parallel universes and more dimensions than the classic 3 plus time that we understand? So, Carlo Relli, who is one of the founders of loop quantum gravity and who has written multiple books explaining complex physic concepts like like the illusion of time in very simple and poetic ways. He actually started his physics career after experiencing psychedelics. He asked this quote that I think is beautiful and genius. He said, quote, "If a little chemical goes into your body and you see the world so differently, it [snorts] means that the way you see the world normally isn't necessarily so obviously right. Let me break down some of these concepts for you a little bit more. If you know just the basics of Einstein's theory of relativity, you know that

time is relative. It's implied by the name. Time actually passes more slowly for objects moving faster. So what does that mean for time for us? What is quote unquote now? Well, Ravoli theorizes that time itself disappears when you break everything down to the most fundamental level. And when you take a psychedelic, you feel this time just melts away and you experience quote unquote time as cyclical. Nothing is actually happening now. It's just all happening, past, present, and future all at the same time. It sounds a little odd to explain how that could work. If you just take away the element of time, it all makes sense. This also sort of makes me think of the movie Arrival if any of you guys have seen that. Highly recommend if you're interested in all this weird physics type of stuff. Beyond that, also think about the concept of the Heisenberg uncertainty principle and quantum superposition. So basically what this is, this principle states that a particle can assume more than one state at the same time and only the act of observing an electron forces it to be in a specific place. [snorts] And this is actually proven. You can go Google it and look it up and have your mind blown. But it has been scientifically proven that one particle can be in two or more places at once. However, if you take time out of the equation, this actually does make perfect sense.

The act of observing the particle pulls it into the fourth dimension, which is time, where it fixes in a position in that snapshot in time. Without time, it actually is in two places at once because the whole idea of at once just goes away. This is really perplexing to us because we experience the dimension of time and we live in it. But take some psychedelics and that totally melts away. Time is passing through your body but your mind is experiencing it completely differently. Then we get into string theory. So prior to string theory, there was quantum mechanics which deals with the phenomena of particles and basically smaller parts of physics and then general relativity.

The laws of quantum mechanics and general relativity can't both be accurate. Then string theory came along as an attempt to unify both of these theories, stating that rather than elemental particles, the smallest building blocks of the universe are tiny vibrating strings of energy. And for the math to be able to support this, more dimensions than our 3 plus time are required. 11 dimensions to be exact are what would be required. And these modern physicists are theorizing that these dimensions are coiled and bent up within our three dimensions, which is why we don't see them or feel them, but could be why we [clears throat] have these paranormal or spiritual or religious experiences that can't be explained by how we normally understand the world we live in. Quantum mechanics also suggests that each possible outcome in life does happen, each inhabiting its own separate universe. Just something else that blows my mind. And we could go on and on about physics, but I do want to tie this back to psychedelics in a moment here.

Religious visions, plants, and witchcraft

This brings me into spiritual and religious experiences. Let me take you guys to the ICU, the intensive care unit in the hospital, the place where the sickest patients go, where daily as physicians, we are treating people who are on the brink of death. And unfortunately, we experience death in the absolute worst ways. You are managing people who are hooked up to machines to keep them breathing and have medications courarssing through their blood to keep their blood pressure high enough to keep their heart pumping. And we know that without those medications in that moment their heart would stop beating and those people would be dead. So my question is where is the soul when all this is happening? Modern medicine keeps the body alive.

But are we keeping a soul tied to a deteriorating body? Or does it leave long before the family decides to pull the plug? Bringing it back to time, if you take time out of this equation, the time of death is meaningless.

Psychedelics open doors and let us peek into this idea of the illusion of time and push our boundaries to understand these concepts on a higher level, both spiritually, but honestly, scientifically, too. Last, we'll get into some more religious experiences with psychedelics. There are so many stories in the Bible that we are now learning that may actually have been a byproduct of accidental or purposeful psychedelic plant ingestion. So, some examples, we know that salvia, which is a close ancestor to the sage plant that you actually cook with and eat. So, the salvia used to be burned as incense in the Catholic Church. It turns out salvia is actually a hallucinogenic. So the congregation was actually inhaling the psychedelic smoke as the salvia was burned and this was very likely to induce a spiritual moment such as hearing God or seeing saints inside the church. Now I personally don't think that this discounts the spiritual experiences that people have in organized religion. A plant may have induced this so-called hallucination in the eyes of the scientific community. Or these plants could have been placed here on Earth by God or the universe or the goddess or whatever you want to call this higher power in order for us to use them

and communicate with these higher ethereal dimensions. Historians and religious scholars alike are also theorizing that when Moses encountered the burning bush, it was likely another psychedelic plant that when it was burned and he inhaled the fumes, he had this religious and spiritual insight, communications from God that led him to the Ten Commandments. On the other side of the spectrum, in the early modern period of European witchcraft, these witches would anoint their bodies with what we now know as nightshade or the belladana plant. And this plant caused experiences of flying and visiting these spiritual realms. So they would use these ointments during spells and psychic rituals and experience similar spiritual experiences that were described in the Bible. Then they would go and tell these stories of their experiences which likely were happening figuratively in their mind but perhaps connecting them to these higher dimensions I mentioned earlier in the physics section. [snorts] But as these stories passed on, they were expressed as literal flying experiences which obviously created fear for those in power and in other religions which ultimately led these witches to be burned at the stake. In this day and age, this fantastical idea of flying and casting spells is either laughed off by those who think that magic is happening literally rather than figuratively, or it still causes fear in those who believe witches are a sign of what we know in the Bible as the evil devil. But either way you look at it, psychedelics played a role. A quick little medical background on this nightshade Belelladana plant. So, this plant is poisonous if you eat it orally, and you may have seen it on plenty of TV shows. Spoiler alert, uh, Jenny and Georgia and the last season of you. But anyways, people on these TV shows, you would see someone slip this beautiful purple flower into a smoothie to kill their victim. And this is because this flower does contain atropene and a variety of other compounds that can actually stop your heart, which is how it does kill people. However, applied topically, it has psychedelic properties as was used in these flying ointments. And we actually do use it in the hospital as a rectal suppository to decrease ureiteral spasms. In layman terms, that means that we put it up people's butts to decrease their urge to pee when they have bladder problems. But taking this back to witchcraft and a little warning this does get a little graphic but these witches would use broomsticks from their homes to actually insert their belladonna containing flying sves into mucous membranes aka vaginas to induce flight-like experiences. So this is where the whole idea of flying broomsticks association with witches comes from.

Closing thoughts on psychedelics and human potential

And I truly could go on with more and more examples of moments in the Bible or other religious texts that were likely induced by consuming or inhaling psychedelic plants or fungi. I do want to say again though that whether or not these experiences were caused by naturally occurring psychedelic plants, I personally don't think that that discredits the spiritual experiences that people had with them. So ultimately, psychedelics are fascinating compounds that have the potential to do a whole lot more than just treat depression and anxiety. And while I do think that their ability to treat these life-threatening mental health diseases is fascinating and incredibly important to change lives and in some cases actually save lives if they can prevent suicide. I do think that only focusing on this medical aspect of them is severely limiting our potential for humanity as a whole. So, a little bit of a different episode for you guys. I would love to hear feedback, thoughts, comments, anything you'd have to say.

You can go ahead and email me. I will leave my email in the show notes. Thank you. If you liked this episode, please subscribe and share so we can get the conversation started about integrative and psychedelic medicine. Let's destigmatize it and have open-minded conversations so we can fully explore what this could mean in the world.

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