New Science Finds Thinking and Feeling in Both Sides of Your Brain – Dr. Jill Bolte Taylor with Dave Asprey – #828

Announcer:

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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today's episode is one that I've wanted to do for several years. And it is with a relatively famous neuroscientist who wrote a book called My Stroke of Insight. Her name is Dr. Jill Bolte Taylor, and she had a stroke and it taught her a lot about her brain and how thinking happens. She's a Harvard trained and published neuroscientist, and neuroanatomist who looked at the depths of her own mind and you're going to learn a lot more about that in the show. And we're going to talk about these four distinct modes of brain cells or modules of brain cells or characters that make up who you are. There's tons of learning in here that go from anatomy to neuroscience to really what makes you, you. Dr. Jill, with no further introduction. Welcome to the show. It's an honor to have you on.

Dr. Jill Bolte Taylor:

Thank you, Dave. I've really been looking forward to chatting with you, because I just know we're both biohackers in our own weird ways. You did it on purpose, I did it by accident, but boy, have we both learned a lot about the biology of the brain and the body. So this is going to be special.

Dave:

It is indeed. Jill, it turns out mine was maybe less intentional and more accidental than you might think because I didn't have a severe hemorrhage in the left hemisphere of my brain and I didn't lose the ability to walk and talk and read and write or recall my life the way you did. But I did have big holes in my brain, on Dr. Daniel Amen's brain scans he said I had a chemical damage from toxins from toxic mold. And I had severe cognitive dysfunction. That was so worrisome that I bought disability insurance in my mid 20s.

So I'm like, I'm digging myself out of a hole, but I don't even know what the hole is. And once I got out of the hole, I'm like, "Maybe I could keep going," which was the impetus for biohacking. And that's why your book in 1996, which is back when I was struggling with this, well, I guess your book wasn't in '96, but your stroke was in 1996. Talk with me about what happened, share with the audience, what happened to your brain?

Jill:

So I was teaching and performing research at Harvard and I had a major arterial venous malformation in my left hemisphere that I did not know was there. And what that is that is an artery, which is high pressure connected to a vein, which is low pressure directly connected without a capillary network in between. And so, at the age of 37, my brain, the vein could no longer take the pressure of that artery and it popped off and I had a major hemorrhage in the half of my brain. And I was a neuroscientist, all of my life everything was all about how does our brain create our perception of reality?

And so, I guess the universe decided, well, if you really want to know something we're going to take away half your brain and show you what's going on inside of that right hemisphere when it's untethered from the dominant left hemisphere. And it was a phenomenal experience through the eyes

of a scientist. Of course, I could not walk, talk, read, write, or recall any of my life after that experience. But I lived, I survived, clearly, and it took eight years then for me to completely recover.

Dave:

Did you think you'd recover?

Jill:

I thought that I would recover some circuits and I kept asking people, people would say, "Have you recovered?" And I would say, "Recovered what?" Because every ability that we have is dependent on cells that perform that function. And so, I would recover perhaps language, that's circuitry. I would recover function of the right side of my body again, that's circuitry. I would regain eventually a boundaries of where I begin and where I am, perception. That's circuitry. So I thought that I would progress and I thought I would get well, but did I ever think I would be 100%? That was never my goal.

My goal was to continue to observe and try to regain certain functions or abilities without losing my newly gained perception of what I had gained in the absence of that left hemisphere. So I never thought I would be described as normal again, because I would never let my left hemisphere become dominant again. But my commitment to myself was I would recover enough to appear normal enough to be able to communicate with other people what I had gained and what I had learned.

Dave:

I mean, it's been a while since this happened, what percent recovered do you think you are?

Jill:

I think I'm about 120. I think I'm better than I was before.

Dave:

Yeah.

Jill:

I do. I think I'm better than I was before because I had the stroke at 37. It took eight years for me to recover. And my goal was to recover to 37 or younger. And so, I think that I actually became better in the long run.

Dave:

That is so profound. And I think it spreads a lot of hope for people who are dealing with, oh, something's not working right, that it is possible. And I'm the same way. I'm better now than I was before I dealt with all the biological crap I dealt with. Your goal was never to get there, but you did get there. Did you change your goal at some point along the way when you're like, "Wow, I really like this. I'm going to go deeper."' Did you ever go, "I just don't want to progress. I want to become something more," or it just happened organically?.

Jill:

Well, from my perspective, I became more when I experienced the stroke, because what I gained was the awareness that I was as big as the universe. And I gained my relationship to the atoms and molecules around me, I expanded and became open. And then I became aware that if I'm going to be a

functional human being in the world, I needed to gain some of those skill sets back from that left hemisphere. But it was never my goal to let the left hemisphere become the dominant personality again, who wanted to be boss. So for me, I think that's why I feel like I'm 120%. I have so much awareness now of who and what I really am as a living being. And I have such a better understanding about brains at a cellular level. What did I lose? What did I gain? And then the recovery of what I had lost made me more.

Dave:

What did you lose? The left half of the brain is known as the logical hemisphere, which is a gross oversimplification, but walk me through the perception there. And then I want to transition from what you learned there, because your first book, 63 weeks on the New York Times bestselling list. By comparison, all of my books together, I think had been on for 10 weeks. So this is a runaway success of a book. And now you've got Whole Brain Living, which is your new book, what you've learned since then. But I really think it'd be useful for me and for everyone listening to get an understanding of when your left brain turns off all that logical, that thinking, what's left?

Jill:

Yes. So there's a group of cells in the parietal region of the left hemisphere. And the job of that group of cells is to define the boundaries of where I begin and where I end. So I know that my face, I can touch my face and know that that is my face and I can touch my glasses and know that the glasses are not me. So there's a small group of cells in the left brain that defines the boundaries of where I begin and where I end. And I have to have that perception in order to perceive myself as an individual. So once I'm an individual, another group of cells in there is for language. So I have the ability to create a sound, dog. Dog is a sound and then another group of cells that places meaning on that sound.

So now I have language, I have my individuality and I have language that I can then use to verbally communicate in the external world. And so, what that means is that I have an ego and my ego then defines what's my name? Where do I live? What's my phone number? All the details of my life and the machinery of the cells in the left brain are designed to take more information, drill it down, drill it down, drill it down for details, details, and more details about those details. So it is a biological machine designed to give me an identity, give me an individuality, and through that, all the information coming in through my sensory systems now gets filtered through me, the individual. And that's what that machine is doing.

On top of that, Dave, the other thing is that it brings information in about the present moment and it immediately compares any information coming in about that present moment to any experience that I have ever had. So it gives me a linearity of life. It gives me a past, a present and a future. So the emotional cells in that left brain are wrapped around any pain from my past and any fears of my future and the thinking tissue in that hemisphere are me, the individual, manipulating and trying to create order in information processing. So this is my alpha type personality, my A type personality for some people it's A++ type personality and it's details, details, and creating control of people, places and things in the external world.

The right brain doesn't have that individuality. It doesn't have the boundaries of where I begin and where I end. To the consciousness of my right hemisphere, I am open and expansive and as big as the universe. And I'm just completely good with whatever is because whatever is is. And it is that left brain that comes in and says, "No, I have a preconceived notion of what I wanted this moment to be in comparison to what the moment actually is." So we're just this phenomenal machine, essentially with these two very opposite ways of perceiving. And when I lost the individuality, I blended back into the

expansive and openness and I was as big as the universe and it was peaceful and blissful because the present moment is peaceful and blissful.

Dave:

Wow. There's something called the sense of proprioception, which is how our body knows where it is in space. And your elbow knows where it is, it's way you don't walk into walls when you're not looking at them. And you know this clearly because you're a neuroscientist, but some listeners might not know what proprioception is. So you lost that. But what you're talking about is sounds a lot like ego dissolution. Is that something that you would agree with or not?

Jill:

Can you define that for me?

Dave:

Sure. I look at the ego as the part of the meat operating system that keeps your meat alive when you're not in there. And it drives things like fight or flight, fear, and it drives selfish behavior and it drives things like hunger and things like sexual desire, but also, to a certain point, your interaction with your community and things like that. But the things that all animals have and do that keep them alive.

Most of the things we describe as the negative aspects of ego are more animal survival operating system versus expansive universe, I'm connected, I'm part of a greater sense of self. There's various definitions for ego out there. But the connectedness to the universe without being melted into the universe is a classical description of samadhi or some of the other spiritual experiences. Have you mapped out your experience against any of the spiritual ego disillusion states?

Jill:

I have not, but everyone else has. So this is what I can say about that. First of all, when you think about the evolution of the mammalian nervous system, so look at the sophistication of the reptile. And they essentially have our brain stem region, it's mostly on/off switches. I'm hungry, I eat, I'm not hungry. I want to mate, I mate, I don't need to mate now, these kinds of things. I need to run. I run, I hide, I'm okay. So what you describe at that level is essentially the reptilian portion of our brain. Then, over eons of time, all the kinks get worked out between all those cells inside of that reptilian system and it works very well. We have very effective life/death in the reptile. And then new tissue gets added on top of that reptilian brain.

And that's going to be the cells of our limbic, our emotional systems and the emotional system tissue is the tissue that distinguishes a mammal from a reptile. So all mammals have that limbic emotional system, half and half in each hemisphere. So half's going to be in the left, half's going to be in the right. And so, we have that limbic tissue in each of those hemispheres. So in the left hemisphere, our emotions that relate to our past experience, information comes in through the present moment. And then the right brain says, "I'm going to process the right here right now in the right here right now." So I have emotional and experiential in the present moment. And so it's more experiential. What does it feel like to have my clothes on my body? What does it feel like to have headsets against me?

How much humidity is there in the air? What does it feel like to jump into the lake? What does it feel like to jump off a cliff? It's an alarm, alarm, alert, alert system. It's an adrenaline junkie. It wants to go be excited in the present moment. But the left hemisphere, emotional tissue, it comes in from the present moment and immediately compares it to any experience we've had in the past alarm, alarm, alert, alert. So we have these two alarm, alarm, alert, alert systems, emotionally divided between the

two atmospheres, one in the present moment, having an experience and one in the left hemisphere comparing this moment of threat to any potential threat from the past. So immediately, that left hemisphere steps out of the consciousness of the present moment.

So it's processing in order to save our life. And that's the part that pushes away and says, "No, I don't like that." It's looking for differences. And because it feels safe with that which is familiar. So if your skin is my color skin, I feel safe with you. If it's different, than I may push away someone else because of their skin color, because of what language they speak because of what foods they eat. A million different reasons to spot difference and push it away. And it does it by screaming and yelling because the emotional system is developed when we're born and it never matures. And that's really important. The alarm, alarm, alert, alert system inside of our brain be at the experiential part of me that wants to go jump out of an airplane or the emotion of, I don't like that.

I don't want that. You're no good, dah, dah, dah, dah, that never matures. But with the human then we add new tissue on top of the emotion, our thinking tissue in each hemisphere. And that tissue is designed to refine and define the functions of the emotion. And so, we end up with two emotional groups of cells and two thinking groups of cells that are independent of one another, and yet, completely interactive because as you know, the right hemisphere, the left hemisphere, everything is always happening, but there are actually these conversations going on inside of our head and who are those voices and what do they value and can we put them into communication with one another so that we actually have much more control over what's going on inside of our head? And yes, we do.

Dave:

What a beautiful description. And that's a lot of the neuroscience work that I've done in my 40 years [inaudible 00:18:21] company is around for where's that voice in my head coming from, and just gaining a little bit of awareness. But your experience is really profound because turning off half of it would just shine a light on it in a way that no one on earth could have handled better because you already knew what was going on versus just really terror and mystery. You're going, "Oh, look at this. I totally know this."

So that's why your first book has been fascinating. And your new book, Whole Brain Living, you've only done two books with a lot of time to learn and share a lot of wisdom. So I'm really excited about it. And you talk about four characters in the brain, and I think you just touched on some of that when you're talking about these systems talking to each other. Can you define the four characters from your new book?

Jill:

Yes. So the way I do it is I take a brain and I open it up, cut the corpus callosum and then I go left brain, thinking, will be character one. Left brain emotion will be character two, right brain emotion will be character three and right brain thinking will be character four. Now, I personally name my four characters and I think everybody should. I haven't named your four characters for you because I want you to pick names that just ring true for who you are. Because when we get lost in the emotion and pain, we need to be able to call on the rest of our characters to help us rescue ourselves from our own emotional reactivity. So I will share the names of mine and the characteristics. So character number one is left thinking tissue. And this is the tissue that defines the boundaries of where I begin and where I end.

So I have an individuality and I have an ego that goes with that character. And that character is my rational thinking brain that relates all of me to the external world. It is my language, so I can communicate with the external world and all the information coming in through the filters goes into me,

the individual. But I'm thinking, I'm a rational mind and I have linearity across time. So linearity across time means A happens, then B happens, then C happens. For example, I know because I have that group of cells that I have to put my socks on before I put my shoes on, before I tie my shoes, so that ability to create order in the external world is my character one.

So I call my character one, this is the A type personality. It defines what is right, and what is wrong, what is good and what is bad. So it's going to be my moral code based on conforming to a societal norm. I call mine Helen, that's short for hell on wheels. She gets it done. She's busy. She goes to the office. She gets me places on time. She's punctual and she's my right, wrong, good, bad, but she's thinking tissue. So what do you think Dave, got a name for me? Got a name for that part of yourself?

Dave:

Oh, I haven't even thought of a name for that part of myself. I think I'm going to have to ponder on that one.

Jill:

What's a part of you that gets you to business? Okay, I will. [crosstalk 00:22:02].

Dave:

My brain is weird, I don't have a lot of time awareness because I'm very much present and future focused. But my memory of time is very mushy. I can't tell you whether it was two weeks ago or a month ago, or if someone's like, "What were you doing in 2015?" I'm like, "I have no idea. It's the same as 2010." It's just in the before mushy time, and people who are futurist types oftentimes have that. But I almost wonder if maybe I still have some lesions in that part of my brain. I don't I've looked, but I don't know. I resonate with most of that. But to put a name on it, I'd have to think about that. I don't know.

Jill:

Well, somebody got you here on time today and it would be that part of your brain.

Dave:

It wasn't me. It was Becky.

Jill:

You set an alarm on your phone, whatever it takes. It might be Siri, I get it. But there's a group of cells in the left hemisphere that gives us this relationship with time. You wipe that out and there is no time. There is simply the present moment experience, and a moment might be two seconds, or it might be three minutes. But moments are very different, and living in moments as they unfold is very different than being on the clock and watching it tick and being on seconds and minutes and hours.

Dave:

I hear you there. So if we now have our left brain thinking moral compass, right, wrong, aware of time, get shit done part of our brain, that's one of the four characters in the brain. So what's the other part of the left brain then? This is the feeling part of the left brain, right?

Jill:

This is going to be the emotions and these are going to be the emotions where information comes in and emotions. And it's the limbic system of the left hemisphere.

Jill:

... and it's the limbic system of the left hemisphere. And those cells are designed to save our life. Alarm, alarm, alert, alert. Am I safe? I determine if I'm safe by that group of cells if everything about the present moment coming in feels familiar. But as soon as something happens that doesn't feel familiar, then I move into that alarm, alarm, alert, alert. And this is the character where our trauma from our past is going to be residing and wipe out those cells. There's no past, so there's no experience of a past trauma.

The other interesting thing about this specific group of cells is that there's a group of cells deep inside called the insular cortex. The insular cortex is where craving happens. So if we have an addiction to anything that we crave, it is that tissue of that little character two. So the little character two is the part of ourselves that probably lands us in most hot water with our partners and our friends and our family and our parents and our everybody. It's also the part of our brain that gets us into therapy because we need to do some work on this little character to help it heal.

Dave:

So much of the work that I've talked about with PTSD and things like that are in that part of the brain. What I'm not really clear on in your model, though, is there's some stuff in the right brain that's also emotional. And when you're dealing with past trauma, whether they're big traumas or little traumas, they set pattern matching for threats. It's really interesting to look at the left and right brain the way you do as a neuroscientist and as someone who's lived it. What sort of threat detection happens in the right brain on the emotional side? Oh, and what's your name for character number two? I got to get your name because [inaudible 00:26:00]

Jill:

Yes, my name for character number two is Abby, and Abby is short for abandoned. I believe that the moment I was born, I began in this magnificent, symbiotic, beautiful, wet relationship. Fluid environment of my mother's womb for all these months of development, from a single cell to how many trillions of cells are in the body? And the moment I come out, I am now [inaudible 00:26:32] I'm gasping for air. Air comes into my lungs. I'm in air, I'm being poked, I'm being prodded, I'm being handled. The lights are no longer muted, the sounds are no longer muted. To me, this is the initial moment of my abandonment circuitry. So everything else then builds up on top of that pain.

So that's my introduction to pain in the external world. And then I'm looking at all kinds of things, trying to protect myself from more of that pain. And I want to push it away and say, "No, no, no." And I can scream very loud and I can run from it, I can play dead from it, I can get big and ugly and mean and whatever. So that's the alarm, alarm, alert, alert from that character.

Character three is going to be the emotion of the present moment. It's the experience of the present moment. So right here, right now, if I see a bus coming right at me, then I can be aware that that's a threat and I need to get out of the way of it. It's also young. The two emotional systems of character two and character three, again, they never mature. So this is going to be a part of me that doesn't have the judgment of the left hemisphere. Right, wrong, good, bad. Which means it's an explorer. It's an experience. It's right here, right now. It's alive and it doesn't have me, the individual. So it doesn't have, I'm worried about my life ending because I'm not defining myself as an individual. And instead, yeah, jumping out of an airplane with my pal, Dave, sounds like a fantastic idea. Let's go do that or let's try this or let's try that.

So it doesn't have the judgment of that left hemisphere. So it is more creative. It's more open to possibility. It's imaginative. It's intuitive, meaning it has a bigger picture perspective of how all the different pieces are linked together. And it likes excitement. That right emotional system is an adrenaline junkie. It wants to have an experience because it's alive, and it's so excited that it's alive and it wants to do it with its pals. So my character three, I call my character three Pink.

Dave:

And then the fourth one would be the right brain logical?

Jill:

The right brain is right brain thinking, not logical.

Dave:

Oh, thinking, but not logical.

Jill:

Logic assumes a relationship thinking, not logical. Logical is going to be that left character two. But right brain thinking. So think about it. When we're in the womb, we began as a single cell. And that single cell got half its DNA from mom, half of its DNA, and it becomes the zygote cell. And then that zygote cell makes it into the womb and it multiplies its DNA and then repackages the DNA into two cells. And so the cells multiply and divide, multiply and divide, multiply and divide, ultimately at a rate of 250,000 new divisions every second. Every second.

Okay, so what do we have? We have DNA. We have the atoms and the molecules of the DNA directing the structure inside the redevelopment of new cell structure. But the consciousness, if you believe cells have consciousness, which I absolutely do, the consciousness is going to be the shared consciousness of the energy of the environment that fuels that. Which is going to be, if there is a cosmic consciousness, if there is an infinite being, call that God, call that Allah, call that whatever you want to call that based on your left brain systematic religious structure. But it's going to be an energy that fuels that consciousness.

So that consciousness is inside of us. Every ability we have, we have because we have the ability to perform that function. It's dependent on cells. So if I can have mindfulness and I can bring myself into meditation, and I can find through prayer or through meditation or through even enhanced drugs, psilocybin, I have the ability to hook into a circuitry that already exists inside of my brain. Anything that has an impact on me biologically is working a system that I already have biologically.

So I believe that that consciousness of that character four, which is completely as big as the universe, open to all possibility, which was all I had left after that hemorrhage, was that character four consciousness. And it was essentially a consciousness that felt like love. Pure, unconditional, blissful love. And we know that we have the ability to pray to that space. We have the ability to meditate to that space. And we know we have the ability to use other substances that allow us to get to that space. So that's character four.

Dave:

And what's its name for you?

Jill:

For me, my character four is called Queen Toad. Queen because she's as big as the universe, and toad because I'm a tad bit goofy and I live on a lily pad half the year called brainwaves on the water. So for me, I'm Queen Toad. Oh, I didn't tell you my character three name. Can I share that with you?

Dave:

Yeah.

Jill:

Yeah. So my character three, I call Pig Pen. Do you remember the Charles Schultz cartoon where there's Lucy and Charlie Brown and Peanuts the dog? Well, there's a character in there called Pig Pen, and Pig Pen is walking around in a dust storm. And character three is all about the dust storm. It's all about the chaos. It's not about the order. It's about the experience of being in the present moment. It is what it is and it's enthusiastically whatever it is. So I call that one Pig Pen.

So I named these characters so that throughout the day, I can create communication by choice so that each of my characters have relationships with one another. I gave a talk once about what is the relationship like between the character of your left brain, this was before I realized there were four of them, but the character of your left brain with the character of your right brain? Because if the left brain looks at the right brain character in negative judgment, then what kind of a life are you going to have if that character one just wants to dictate who and how you're going to be in the world?

Dave:

If you have that inner critic going on, this is a rampant problem in society right now, is it usually one of those four characters talking to another one of the four? Which is the one doing the inner judgment shaming, and which one is it shaming and judging?

Jill:

Well, character one has the definition of right and wrong and good and bad. But if I'm able to experience the emotions of shame or guilt or embarrassment, because all of these are resentment, these are emotions based on something that I did in the past, if I have the capacity to have those emotions, I receive it as my character two. And it might be the character two who then turns that negative energy internally and I don't feel worthy, I don't feel worthy of love, I'm not good enough, I'm not enough period. Whereby the character one can... Or if it's directing it into the external, I'm going to blame you for why things are not good. I'm going to insult you. I'm going to criticize you. I'm going to be mean to you. I'm going to try to control you. I'm going to have an emotion.

So in answering that question, I will say if it is a thinking directive that is saying A, B, C, D, you don't line up, I'm going to say that your character one, making that criticism. But if it is me being belligerent and emotionally attacking, then that would be character two. But the right hemisphere doesn't look at the world that way because it doesn't look at you as an individual or me as an individual. So post-traumatic, anything that's going to experience the trauma, has to have the trauma from the past. I have to have the circuitry of the left brain in order to be able to have any perception of that at all.

Dave:

It makes so much sense. You said something in there that almost slid under the radar. You said you firmly believe that cells individually have their own consciousness. I fully share that perspective, but it is not the majority perspective. In fact, I think a lot of our behavior is emergent behavior from cells

running old programming, and enough of them in a network make complex things. How do you know or why do you believe that cells have their own consciousness? And what does that mean for neuroscience?

Jill:

Well, I think that if you begin with... First of all, there's no explaining life, right? We can try to explain what is life, but life is this three dimensional thing where thousands of things are happening all at the same time, even inside a single individual cell. So all a cell is, is it is a semipermeable membrane, which means some things can go inside and out of that membrane. And it has a DNA programming that says, I need this, I need that. I'm going to then create waste, and I'm going to interact with the external world with little tiny receptors so that I can detect what is outside of me. It doesn't make any sense to me that we're going to take an inorganic thing, something that does not have life, and have expect it to have a consciousness. Now, of course, AI is trying to do that and is looking all kinds of different ways to do that, but we cannot explain life.

So what is the meaning of life at the cellular level? If I'm a microbe, I'm a single celled organism. I'm really not that different than a human being who's made up of 50 trillion of these beautiful little cells. So for the cell, the meaning of life, I believe, is to detect what is outside and be stimulated by what is outside of me, and to then stimulate to be stimulated by. The cell and this membrane takes the consciousness of the universe and packages it inside of a tiny little vessel that then is separate from and in relationship to the consciousness of the universe. I don't know. Maybe the universe got bored and thought, okay, well, I'd like to...

You have to have two in order to have one and another. And just simply in relationship with another, then we can grow and we can learn all kinds of things. And for some reason, our universe seems to be something that is growing toward higher levels of order. And then it gets all messed up and adds new stuff to it, and then it goes towards higher level of streamline order. So I get that a lot of people can't imagine the consciousness of a cell. I personally cannot imagine a cell without that.

Dave:

There is such a field as subcellular psychobiology. It's not a very big field, but there is a field of study of that. I believe that subcellular components have their own awareness, like a mitochondria or a lysosome operates as its own little awareness that contributes to the cell that then contributes to the cluster of cells around it and all that. Does that jive with your observations as a neuroscientist?

Jill:

Absolutely. What's a virus? Really, if you look at the mitochondria, the history of the mitochondria is probably that that DNA was actually a virus that somehow managed to create enough order to package itself inside of its own membrane and somehow, oh my gosh, build a cell around it. Because we know that there are what? Five major different formats and codes for DNA for humanity. And the maternal DNA that is located inside of the mitochondria is the true DNA of life. So absolutely. How can anybody even fathom that a bunch of atoms and molecules just got packed together and life was created? That's just beyond me. Considering that the energy, we can't forget the energy. Life is not just atoms and molecules and structure. It's function, and the function happens energetically. And every directive that happens by the command of the atoms and molecules making up that DNA or RNA or whatever portion it is, it does it by way of the energy. And so yeah, I'm right there with you. I'm right there with you, Dave. I knew we'd go here. I'm just so excited.

Dave:

It's really cool because the implications for how psychology and all of it work. But you touched some other domains, some of the Upgrade Collective. This is one of our podcasts where the Upgrade Collective members get to be in the live audience. They're saying, so is this holographic? Stan Grof, the first guy to use LSD with a license therapeutically back in the late '50s was on the show when he was in his mid-90s, and talked about some of these things around birth trauma, even, and how that gets set. I sense that some of your work is tied in with that world. Do you look at transpersonal psychology? Do you map your work against that? What do you see?

Jill:

I think that how I think about the brain and the body from... Because I go from that single cell that we began as and the single cell that exists on its own. So that's my world. That's how I think. And as I had to recover, I know where I went, I know what it felt like to be there. I know what I lost, I know what I gained. And I know what it took in order for me to come back and get the cells inside of my brain to either neuroplasticity themselves into new circuitry so that I could regain function or actually grow some new neurons, neurogenesis, in the areas of trauma.

To me, I believed in the ability of my brain to recover itself. I did not go to any external sources and ask, how do I do this? Because first of all, I existed in a society that didn't believe that neuroplasticity... Neuroplasticity, I think, was coined a term in '82 or '86, and this was in '96, and it was not well developed. And neurogenesis didn't even happen until after that. Nobody believed it.

But I was given a tremendous gift. And Dr. Ann Young said to me, "Jill, we have no idea, no idea, what you're going to get back and how you're going to recover. You go away for two years. That's your job is to help yourself recover." And I wasn't put on a short time table of three months or six months or even a year. I was given time to relax into what I had and what I wanted. And I was allowed by my mother to create my own routine and my own pattern. And then she watched me progress step by step by step and ask herself the question, what is the next natural step for her to achieve? And what is standing in the way of that achievement? Sleep was absolutely enormous. Love was absolutely enormous. Support and encouragement.

So when I think about the brain and what did it take, what did I lose, and what did I rebuild? I had to go back to the anatomy. And I didn't realize that... And you know, Dave, I had 300,000 people come to me after that TED Talk. I ended the TED Talk with saying, "We have the power to choose who and how we want to be in the world." And I had 300,000 people write me and say, "You did it because you had a stroke. How do I do it?" And I had no answer to that question because I was going from right to left, and they needed a roadmap to get from left to right.

And then we have all these psychologies and all these philosophies and all these theologies and all these ideas. And it was like, I just had to get out of that and figure out for myself. And I became aware of this roadmap through my perception, not based on what else is going on. But the minute I realized that people think we only have one amygdala and one hippocampus. And what that said to me was people think we only have one emotional system, and we don't. We have two emotional systems. One's in the present moment and one's in the past present future timetable, and that changes everything. And then all of a sudden, everything else unfolded based on the anatomy of the brain.

Dave:

Well, I'm glad that when all those people came to you looking for an answer, you didn't just offer them trepanation or something. Because you sat back and said, "How do I figure this out?"

Jill:

I didn't say psilocybin, in other words. Yeah.

Dave:

Well, what's your take? You mentioned earlier psilocybin.

Jill:

It was my road.

Dave:

I've talked... It was your road? You used psilocybin?

Jill:

No. No. The only reason I keep saying psilocybin is because everybody comes to me and says, "Man, you are describing exactly my psilocybin trip or my LSD trip." And it's like, well, that's because the circuitry isn't there. My trip lasted eight years, and so I think there's a slight difference there. But it's circuitry. That's what I keep coming back to, is these are cells inside of our brain. These are circuits, and certain circuits dominate and inhibit other circuits. So if you cannot find your way to that character three, go out and have fun. Go engage. What does it feel like when you're in a ball game and we're all doing the wave together? There's no boundaries of where I begin and where I end when I'm in the excitement with a pack of other people, we're all dressed in the same color clothes, and we're doing the wave and we're just having a blast. That's that right brain right here, right now, experience.

And then take that a step further and say to yourself, what does it feel like to exist as the fluid energy around me? As opposed to being focused on the solid mass that I perceive myself to be. So what I do is I tend to look at nature. I look out the window and I look at a tree and I see the leaves that are in motion-

Jill:

And I look at a tree and I see the leaves that are in motion and I don't become the tree. I become the energy that is moving that tree. I instantaneously step out of my normal consciousness of my left brain and I become as big as the universe. I become the energy of all that is.

Dave:

Before your stroke and if you'd heard someone say what you just said, what would you have thought about them?

Jill:

I'd like to know how to get there. I would have liked them.

Dave:

You wouldn't have thought they were just completely nuts?

Jill:

No, because I actually grew up more right brained because I was very creative, artistic, musical, physical. I was athletic. I was much more right brain. I did not turn my left brain on for scholastics until I went to college. And my poor mother who was an academic, was just wondering if my left brain was ever going to wake up.

It finally did when I was 19 years old. But prior to that, I was a great underachiever, underperformer. And I didn't care. I was happy. Then I went to college and I fell in love with the subject of anatomy. I was in a cath lab studying anatomy and doing all that. And a medical student came to me and said, "Would you like to see the human remains?" And I thought, "Oh my God, that sounds so beautiful." It was instant fall in love, and that was it for me.

From there on, everything was about the beauty of this masterpiece. And that it's actually organized and structured inside and I can learn it and I can understand it. I can think about it. I can learn the anatomy. I can learn the physiology of how it works. I can understand the biochemistry and break everything down into bits and pieces.

And it was like, "Oh my gosh." And immunology, what happens when it gets ill? I mean, just the whole thing to me, this is this masterpiece of 50 trillion beautiful cells. And I have one, "This is mine. Oh my gosh, I'm alive. I'm alive." I know we all go back to the Frankenstein movie, but it's true. Remembering with a sense of excitement and awe and gratitude that I'm alive at all.

I mean Dave, how can we pass that by? It's like this incredible phenomenon. So yeah. I'm a little odd because of my perceptions, but aren't we all? I just have mine on parade.

Dave:

Oh, yeah.

Jill:

When I lost all that left brain judgment, it was like, "This is peace and we're wired for peace. And if everybody knew that we were wired for peace and that they could find this, if they knew how to get there, oh my gosh, what a different humanity we could be." And it was worth it. The effort, the try, it didn't matter, it unfolded the way it was supposed to unfold.

Dave:

That is just profound, Jill. I love it the way you're describing this. It has some aspects of what Dr. Barry Margolin, who's a grandmaster of [inaudible 00:51:36] oral heritage, who's done a lot of training with me. Has been on the show a couple of times. He talks about connecting to the energy that's around you. Very much similar to the way that you're talking about connecting with the tree, which is really cool.

And it's got some Joe Dispenza sort of thinking in there, who's been on the show as well. It seems like there's a school of people from different experiences, different lineages, Stan Grof for sure, with his holotropic breathing, who are all kind of circling around something. Do you have a name for that thing, they're all circling around?

Jill:

I think it's a consciousness. I think that the energy of this universe has a consciousness that in this physical form feels like love. Overwhelming, beautiful, peaceful, blissful love. And it exists. And from that consciousness comes life. And life is this amazing miracle where somehow, a semipermeable membrane gets developed between a this and a that, stippled with receptors so that it can be stimulated by and interact with, all of a sudden becomes a this and a that, that has life.

I mean, it's just a phenomenal idea. But I think most of us don't think about it. We study it, there's a cell, there's a liver cell, there's a brain cell, they work together. It's like, no, no, no, you're missing the point. You're missing the wonder that the cell exists at all. Much less a single cell. And then that cell could only get so big and have so much surface area, in order to be a single cell, in order to have a single life, that eventually that cell wanted more surface area to have more receptors, so that it could have even more interaction with the external environment.

So it multiplies and divides and becomes a multi-cellular creature. I mean, the phenomenon that we exist at all, it's impossible. It is absolutely impossible for us to conceive that life exists. So to not recognize and honor that phenomenon to me, is the biggest miss of who we are as living beings. We miss the awe and beauty of our life. And if we miss that, we don't live our life with gratitude, for the fact that I have time in this form to be stimulated by and to stimulate others. To me, that's a huge, enormous miss that so many of us have.

Dave:

Did you come back from this eight year journey, with experiences of reincarnation, past lives, other dimensions, aliens, or any other stuff that people talk about? None of the above?

Jill:

I'm sorry. It was just none of the above. I didn't have the white light. I didn't have the typical near death experience. All I had was the experience that I had through the filter of whom I had been before. And that was absolutely, 100% cellular, anatomy based. And in looking at myself as a cellular anatomist, whole body and neuro, at the level of the tissue.

I know what the cells look like. They are beautiful. They're masterpieces. Every one of them. If you ever look at a liver and you see how those beautiful cells all line up to do what they do, it's like, "Oh my gosh, a genius came up with this plan."

Dave:

Yes. Just one thing I've learned from-

Jill:

I just had a major experience.

Dave:

A major experience, I love that. We have a little bit of a lag on the line, which is fine, but I didn't mean to cut you off there. If there's one thing I've learned from biohacking and first recovering and then improving performance, I think that consciousness starts in the cell, is one of the most important things everyone could pick up. Because it gives you so much power and influence.

But then you're talking about patterns and pattern matching, which is a big part of my path as well. Where does the pattern matching happen? Is this a brain thing? Is it a body thing? Is it an individual cell? Is it a network of cells? Do you have a sense for that?

Jill:

I do, of course. When I think about patterning, if you think that I'm a cell and then I want more experience, so I'm going to multiply myself and I'm going to be 50 cells. Then I'm going to look something like a jelly fish, and I'm going to have instead of bones and a nervous system, with separate

neurons, I'm going to have what we call a neural net. And the neural net then has an experience on one side that waves through to the other side. And these are the invertebrates.

And then eventually, neurons become separate entities that are going to have a relationship. And the thing about neurons, Dave, is the more you use them, the stronger the connection in that pattern becomes established. And so the more, I think, a certain thought, the cells that are doing that...

Let's say character two. I see a snake, "Oh my God, I hate snakes. Oh my God, fear, fear, fear." So the more time I spend running that circuit of fear, fear, fear, the more habitual it becomes, the stronger it gets. Now, this is how we make new habits. And we can actually change how we react and how we respond and we can develop new cellular patterns, consciously.

And to me, I guess that's what whole brain living is about. It's about recognizing, character one has a routine pattern of response. Giving it skillsets that end up having a personality or character in the external world that always shows up, holds my body a certain way, does certain things, sounds a certain way, puts in my earrings and gets me to an interview on time. That is a patterned response for that group of cells.

And character two is the same, because character two is a group of cells, it's job is to bring information in about the present moment, look at it all and look for a reason why I want to say, "No, I don't like that. Push it away. That's dangerous." That's a pattern response and it's on automatic. Can I change that automatic or the automaticity of that? Yes. Monks have been shown to be able to even suppress a startle reflex with a gun being shot off behind their head.

How do they do that? They're shifting which groups of cells are responding under which kinds of circumstances. So that's all we are. We are cells in circuitry. I won't say that's all we are, but we are cells in circuitry, and those circuitries run in patterns.

So let's take that to, okay, well, let's say I die. What happens to the energy when my cells are no longer alive? What's the difference between me being organic and alive, or me being an organic mass that is now waste? Then the energy patterns from the body, from the cells, they're an energy pattern that has become related to the density of this life form of all these trillions of cells.

And so, whereas it leaves, does it leave in a single mass? Does it have resonance now and vibration together? Do bits and pieces of me breed off? I have no idea what happens after I die because I didn't go there and I didn't die. But I think from a pattern, energetic response, I think that's an interesting place to... Those are interesting conversations.

Dave:

It starts getting into information field theory and what Lynne McTaggart, who's a friend through Jack Canfield's group, wrote about in her book called The Field. There's some kind of an electrical or field-based thing that's telling some of these cells even where to grow and how to grow. There's a rational, scientific argument that the energy and the pattern has to go somewhere when you die. I'm not saying I know exactly what that is, but to say that it can't go anywhere and it goes poof.

Well, we don't have any evidence that that's true either. It's one of those being curiously scientific and not dogmatic about it. I think there's work to be done scientifically, on what you just said, right?

Jill:

Oh, absolutely. When I think about the scientific method, I love it. If you're trying to use it to explain the external world that is linear by definition, the scientific method is a method. You have to be able to run the method and repeat and get the same kind of results. The left hemisphere by methodology, it can

study left brain things. But things like life, how on earth would anybody even prove that life exists? It's outside of the realm of the method and outside the realm of methodology. So how do we measure and how do we better find other tools? And there's just beautiful people doing amazing work now, that is beyond the box of how the left brain thinks.

Dave:

It's kind of funny. The definition of life from the left brain is a lot like the Supreme court definition of pornography. I can't define it, but I know it when I see it. Because they're saying, "How do you know what the edge of it is?" And they don't really know.

Jill:

I love that. But it's true. It's absolutely true.

Dave:

Now, speaking of pornography, not really. You do talk about these four characters and addiction. But you also talk about them in the context of romantic relationships. I think that would be helpful for our listeners today. You have your own four characters, they all talk to each other and you're having these inner dialogues. But then you're with a partner who has a different four characters, and now all of a sudden you're in this polyamorous eight way relationship that just looks like it's a monogamous, two person relationship. What's the implication for relationships of your work?

Jill:

I've actually been using this on couple therapy with some friends of mine who are a couple therapists. They've asked me to come in and apply it and see how it goes. I have four characters, two emotional, two thinking groups of cells. You have the exact same neuro anatomy. Not exactly the same, but relatively speaking.

I have these four characters that I can learn about. I'm looking now at you and I'm realizing you also have those four characters. Now, I'll give you a great example. A friend of mine is a school teacher and you know what it's been like during the last year for teaching school. She's at school, she's got half her kids on Zoom, half her kids are present. She's got the classroom to organize. She organizes the home. She organizes everything. She's a character one. Strong character one. Likes order, predictable, but she does have a fun character three. I'm sure she's got a two as well.

And then her husband, is now working at home, because of the pandemic. And he's very much a character three. And he's very playful and he's very joyful and he likes to do tennis and he's more in the present moment experience, but he's getting his job done. So my friend now, who's the character one, can call her husband up and say, "Honey, I'm coming home. Now, I'll tell you what, if you can give me 30 minutes of you being a character one with me, and you helped me get my things done we can spend the rest of the evening playing as character threes together."

And he instantly knows what that means. And he's thinking, "Oh man, that's awesome. Half an hour? I'll give you a half an hour of my one. I'll work with you and then we can play the rest of the evening." Now that's a completely different kind of scenario and conversation.

Then she comes home and she comes home as her character one, and he's ready to go play as a character three. And so she comes in and says, "No, no, no, I'm sorry. I got to work for half an hour. I could use your work." And he's goes then into his character two and he says, "Well, I don't want to. I don't want to do that. I want to go play. You're coming home, it's time to go play. I want to go play." And

then she moves into her character two, "Well, I'm not happy either, because I just need you to give me a little bit of consideration and help."

So the way that this language can just go straight to the point and help people really communicate with who's coming home? Who am I being? What's going on? We noticed that when one of us is a two, okay, now I can recognize you're not happy. I can come in as a one and I can be supportive and see if there's something I can do to help fix a problem. Is there a problem?

I can come in as my character four and nurture you and support you and let you know I'm here. I'm happy to hear you. I'm happy to love you. How do I do that? How do I help soothe you? And then maybe you feel nurtured and soothed by my character four. And so then my character three comes out and says, "How about we go get some ice cream?" And then you say, "Yeah, ice cream would be nice."

So what it does is it really cuts through all this... I kind of look at these trees and our thoughts and our emotions and our behavior, are the leaves on that tree. But the roots are really where the issues are. And if we understand the anatomy of what's going on in our emotions and our thoughts and our behavior, oh my gosh, we can really communicate at a core level of, "What's going on with your four characters? What do you need from my four characters?" It's a whole new level of intimate communication.

Dave:

I think there's a lot of applications there and you definitely cover that in your book. So you're listening to the show right now and you're sort of saying, "All right, it's pretty clear that Jill knows a few more things than the average bear," we'll put it that way. And it is well encapsulated in whole brain living. So if you're looking for a book to listen to or read, this one's worth your time. I interview a lot of authors, but there's some incredible wisdom and some unusual stuff in here.

Jill, I want to ask you another question before we go into some questions from our live audience. In chapter 12, you talk about the influence of technology on the brain. You say advancement of technology, not just in the last 20 years, but the last 100 years has had a huge impact on our brains development, bigger than we would think. What do you think technology has done to our brains? And is it good or bad?

Jill:

Well, I think we're life. We are constantly transforming into the next thing. We are ongoing mutation. And that's the beauty of what we are as life. We are adaptable and flexible by nature of that right hemisphere.

But what has happened is that the boomer population, our parents, the GI generation that fought in World War II, we were taught left brain skills of reading, writing, arithmetic, all kinds of skills, through the tools of our left brain. So when I was in school, I learned the multiplication tables. "What's two plus two? Four." I memorized it. I didn't think about it. I memorize it. These became the way that we learned and trained our left brain.

So the left brain becomes very left brain base, based on the tool. The millennials were the first population, so the millennials are technically the children of generally the boomers and some of the generation X, which is right behind the boomers. So the group of millennials, millions and millions, enormous population of children, they were the first population where we actually put a automaton, a little Teddy bear that talk to us and self-soothed us in our crib.

So the millennials, their primary relationship for self-soothing, wasn't with a human, it was with this little Teddy Ruxpin was his name. This was the big thing for the American population of millennials.

On top of that then, the millennials grew up having their own technology. We boomers, we wanted our kids, everybody to have their computer and learn technology and learn all that stuff.

But they learned left brain skills, through their right brain, right brain teaching tools, that were games and different kinds of two plus three, became two chickens and three cows equals five animals. Well, that's very different than just memorizing that timetable or that mathematical table. So the millennials have nurtured their right brain. They have become a primary right brain, living in the world of an establishment developed by left brain dominant people.

And so if you're in the workforce and of course you are, then the relationship, the differences in trying to understand... The boomers are going, "I don't understand the millennials, because they're a collective whole. They like to do things collectively. They like to make decisions in groups." Well, that's because the right brain doesn't focus on the individuality.

And you can't motivate a millennial on the same terms that you could motivate a boomer, because the right brain has completely different values. It cares about the experience. "I want to enjoy my work. I want to enjoy the people I work with. I want to be a part of a collective team. I want you to give me a problem and let me figure out how to do it, because I am creative and open."

And that is very different from the structure of the boomer and the left brain, because it is, "Here's the job, do it. Don't argue with it. You might take 60 or 80 hours, and you're going to wear those dark circles under your eyes as your badges of honor and I'm going to motivate you through materialism. You're going to win this award, or you're going to win this trip to Hawaii." And it worked for the left brain structure that values that.

But the right hemisphere doesn't value any of that stuff. The right hemisphere values the experience of being with others. "What do I care about? How does this influence? How can I use me to influence other things that I care about?" So it makes an enormous amount of difference, based on how technology has influenced the development of generations. Not just a typical generational gap, this is an enormous generational differentiation, in how we learn, how we think and what we value.

Dave:

So it's Teddy Ruxpin's fault. Got it.

Jill:

That little Teddy. And he's got that... Yeah. I mean, it's self-soothing. How do we? But you know-

Jill:

He's got that. Yeah. I mean, it's self-soothing. How do we... But it really... And there are advantages and disadvantages to that because we needed... The boomers, we were the generation that wanted our children to not feel like they failed. And so we would give them participation awards just for showing up.

Dave:

Such a mistake.

Jill:

But what that did was that... It did. It continued to fuel that right hemisphere, but the left hemisphere, character two, the pain where we learn our boundaries. We have to learn our boundaries. And part of the boundary, then, is going to be how do I succeed, how do I not succeed, how do I learn when I'm not succeeding if I have not succeeded, and how do I learn to self-soothe myself? Because if I'm just getting

an award, and I'm not allowed to feel my pain, how can I ever learn how to sooth myself out of that pain into my own peace? And then we're looking at an enormous population of people who have incredible levels of anxiety. And why do I have anxiety? Because I didn't gain some of these skills that are so important for my normal, healthy, mental health development.

Dave:

And adults can learn those skills because of neuroplasticity, right?

Jill:

Yes, absolutely. And to me, that's the beauty of this book and the four characters. If I am struggling to figure out how do I self sooth myself? Well, if I know the part of my brain that is connected to all that is, it allows me to take all that energy that is in my pain and help dissipate it into the other parts of my brain. And to me, the brain is this brain team. My four characters are my team, and I call a brain huddle. And the brain huddle is the term I use when I have all my brain characters come online in a moment. And we're asking the questions... bring my mind to the present moment.

So I use this acronym brain, B-R-A-I-N, of course I do, of course I do. So B is going to be focus on the breath. If I'm feeling any distress, bring my mind to the present moment. We all know that the best way to begin a meditation in order to get into our peaceful circuitry of our brain is to breathe and focus on the breath. We breathe, the first thing we do when we gain life, and the breath is the last thing we do before we have no more life. So it is this consistent thing that fortunately we don't have to remind ourselves to breathe, but we can bring our mind to it, and we can breathe deeply and we can focus ourselves in the present moment. So B stands for breath to the present moment.

R is recognize in this moment which character am I in? Well, I might be at work. I might say, "Hey, I'm right here in my character one," or, "I'm in my emotional pain, and I am in my character two." And it is so powerful, and it takes me over, and it's like, "Oh, how do I get out of this reactivity?" Or I might be playful. I might be out exploring something, or I might be walking in nature or really blending myself into the bigger picture. But recognizing which character am I in.

And A stands for appreciate the fact that whichever character I'm in right in this moment, the other three are always right there available for me to hook into, should I choose to do that.

And then I stands for inquire. Which character do I want to embody in the next moment?

Dave:

Mm-hmm (affirmative).

Jill:

What is the one that I think is going to allow me to live my best life, make my next best step.

And then N stands for navigate moment by moment by moment. And we have this incredible power to do that. Every single one of us, getting to know those characters, creating a huddle, listening to those voices and getting to know those parts of ourselves so that in an instant, if you come in and you're in your two reh, reh, reh, reh, reh, I have a choice. I have a choice. I can come right back in and tit for tat with you, reh, reh, reh, reh, reh, and off we go in a big fight, or I can look at you and recognize with the compassion of my character four, "Oh my gosh, honey, what can I do? What's going on? What do you need? I love you. I'm here. How can I support you?" Or my character one might come in and say, "Honey, what do you need? What can I do to fix the problem? Is there anything, are you in danger? Are you okay?"

Or my character three might come in and say, "I got you. I feel empathy. I have mirror neurons that allow me to adapt to whatever your energetic is, whatever your character is, let me blend with you, and maybe we can shift out and go have some fun and do something different."

But a lot of us, we just really like our reh, reh, reh, reh, reh, and becoming consciously aware of that. I think that what this journey gave me, Dave, was that it gave me... We have that conscious left-brain thinking, and then we think these other parts of ourselves are our unconscious. And it's really the hero's journey. Isn't it?

Dave:

Mm-hmm (affirmative).

Jill:

Isn't life the hero's journey where I am cold, I have a yearning to find peace. And so I have to be willing to put down my ego. I have to put down the monsters of my character, too, that hold me into that position of pain, more pain. No, that's not good. I have to fight it. I have to fight myself. I have to be willing to set that down and step into the present moment. The exploration of the new possibilities and the ultimate goal for the hero's journey is to find my wisdom, my intuitive knowing that I am enough. I am everything that is. I am beautiful beyond measure. And then what do I do with that information when I come back and I pick my ego back up and I become me, the individual, again, knowing that masterpiece of the whole thing. I mean, it's whole-brain living. We are beyond, beyond phenomenally amazing. And I just know we'll have a different world when more of us, one brain at a time, truly embrace that.

Dave:

I'm grateful that you wrote this in a book. It's hard to encompass what you just said there, but I think you did a good job. You ready for some questions from the audience?

Jill:

I would love that. And thank you for your kindness.

Dave:

Oh, you're welcome. Let's bring Tina on. Chris, let's dial her in.

Tina:

Dr. Taylor, thank you so much. Your enthusiasm is absolutely infectious. I really have just been loving this interview. I hope you read your book, because it would be disappointing not to hear that infection come out. And the combination of scientific geekiness and spirituality and enthusiasm is absolutely amazing. So thank you. My question is, "What is your opinion on the use of pharmaceuticals that impact the brain, like SSRIs for mental health or low-dose naltrexone for immunological neuropathies or even addictive behaviors, and how do they affect those four different components of the brain?"

Jill:

Beautiful. Thank you, Tina. And yes, I did read the book. So you will definitely hear this voice if you get that copy of it. I am an advocate for better living through chemistry. Sometimes it is necessary to have that be for a long-term period and sometimes little hits and misses or little hits can make a big

difference in shift of perception. So when I think about the brain, and I think about the cells, and I think about the serotonin, for example, as the antidepressants, if the serotonin system... This is a group of cells, and the cells are communicating with one another with a chemical, and the chemical is serotonin, and there are certain ways that we can naturally increase the amount of serotonin in our brain, for example, by eating something that has tryptophan in it, which is a precursor to turning into serotonin would, but sometimes we need more serotonin.

And the beauty of some of these antidepressants is, what they do is, they block the re-uptake of the serotonin out of that synaptic gap in between those cells so that the serotonin can hang out longer and therefore have more impact on its downstream system. So not all medications are created equally. I'm always an advocate for looking for a natural solution. I'm always looking for a solution that is not a long-term solution, but there are times when we absolutely need the long-term solution, and it's going to look like a pharmaceutical.

So I think every person has their own unique brain chemistry, their own unique circuitry. And paying attention, though, and taking responsibility for paying attention to what is going on... I'm not going to say it's bad. I'm not going to say it's good. What I'm going to say is every brain is unique, and you need to, each one of us needs to, pay attention to how is whatever we're consuming influencing our bigger picture of the anatomy and the circuitry inside of our brain.

And is that enough? Now I have a brother diagnosed with schizophrenia, and his cellular circuitry is physiologically structurally different than normal. So my brother has to take an anti-psychotic medication in order to not be aggressive. Now, these anti-psychotics are not going to make him not psychotic, but it is going to influence him by lowering his level of aggression so that he can become a bit healthier and become a better version of himself in his society. So I'm going to say every brain is different, and just getting to know your own circuitry and, you know, there's so many different options out there. And, Dave, I have certainly learned so much from you about, in your books, about how your different experiences and experimentations influence that cellular circuitry in different ways. We only have one brain. I encourage people to do things that are going to bring more possibility and more health to those cells as opposed to cellular destruction.

Alcohol is... We feel drunk because the cells are drunk, and then they die if they get dehydrated and they burst and they crenate and blah, blah, blah, blah, blah. So I'm going to just say every brain is... be careful. If you're going to do things, aim for health. Aim for things that bring those cells more life instead of less life.

Dave:

Love that. And thank you for your question, Tina. I want to move to Heady. You had an interesting question as well.

Heady:

Thank you so much, Dr. Taylor. I have enjoyed this tremendously. My question came up when you were talking about memory, and I'm wondering how close do you think we might be to designer brains? I'm thinking going to a place like Upgrade Labs with equipment that will manipulate brain tissue to delete memories, help with PTSD, or stimulating areas to enhance neurocognitive function. Where are we with that? Are we looking at that?

Jill:

Yes. And we're doing all kinds of interesting things, and I say do your homework, do your homework. Explore what circuitry in your brain is thriving and what circuitry is problematic. And then look at the

different resources available for how we influence the brain. We can influence the brain chemically. We can influence it electrically. We can influence it in all kinds of ways. So, yes. We can even stick little chips in there and have night vision. I mean, it's phenomenal what kinds of things people are... how they are biohacking the cellular structure. So my advice to you is do your research. There's a lot out there. Look for what has a good success rate. Dave mentioned earlier Dr. Amen. That may be a clinic environment that might give you the kind of information that you want.

I love the philosophy. If I had been an MD, I probably would have done more or less the same kind of thing that he does. I mean, how can we understand the brain if we don't actually go and look at it? So exploring different options, that's what I'm going to say. Explore different options, do your homework. And then you have to follow your own spirit because ultimately it needs to be your diagnosis, your prognosis, your success, your effort, and your willingness to participate in whatever the recovery or re-creation is going to be.

Dave:

And Heady, for neurocognitive function, we do a lot of that at 40 Years of Zen, and I have a bunch of other tech that's not a part of that. So I know we can turn that up, and there's plenty of evidence. I've entered enough people. Yes, you can raise your IQ by more than 10 points. Things like that. When it comes to deleting memories, though, what I've found is that we can easily reprogram your pattern matching so you don't have the emotional response to a memory, but it's probably not in anyone's best interest to actually delete a memory. You just don't want to be reactive to the memory, because if you don't remember how it happened or what it was, you're actually losing something that's important. It's part of learning. So I'm very cautious with those movies or any kind of tech like that. We're going to create blank spots in your memory. I don't think you want to wipe your hard drive. You just want to be non-emotionally reactive to it. Right?

And that those are big philosophical questions. But I would turn that back to you, Jill. Do you agree with what I'm saying there in terms of the deleting memories versus emotional response, or do you have a different perspective?

Jill:

Absolutely. Absolutely. I think that lessons learned we need to hold onto because those are lessons. Look, that's the difference between learning and not learning. And if we deleted, then, wow, what do we... We don't want to have to relearn that. But I think it's all about the reactivity. I think you're absolutely right, Dave.

Dave:

Well, Jill, I feel like I could talk to you for hours and hours, and I am going to chat with my team, and we'll chat with you and see if it might be possible to get you to the upcoming Biohacking Conference one way or another. So we'll see if that's a possibility. And I'd love to have you back on the show sometime when you're done with your media tour for Whole Brain Living. I know it's a busy time as an author because I do it all the time as well whenever you write a new book. I've just got to say for audience listening, two books covering an amazing array with about 10 plus years of going into each one. These are books worth reading, both of Jill's books. I read My Stroke of Insight when I discovered neuroplasticity was a real thing in the early 2000s when I was struggling with my brain. I realized, "Why does no one believe it's real?" And right in the middle of all that around 2007, her book came out, like, this is great. And I started my first blog post in 2011 for creating the field of biohacking and all of that. So it was definitely one of the early books saying, "No, it's real. You can change things." And it was one of

the things that gave me a great hope that my brain could do what I wanted it to do. And it absolutely can. And your model is fascinating and valid in your new book.

So thanks for your work in the world and for sharing it with people and taking the time and energy to write a book about it.

Jill:

Thank you. Thank you. I really appreciate it, Dave. And I would love to come back and chat with you. Right now it's about helping people understand the material, but, boy, am I looking forward to three to six months when people have read it and now I get to listen and learn because, wow, isn't that the next layer of application that comes in for a paradigm that's asking for a slight shift in how we perceive ourselves. But, boy, what a big difference it can make in how we live our lives. So thank you.

Dave:

You're welcome. One thing that we can do is most of the members of the Upgrade Collective, which is my mentorship and membership group of small numbers of them are in the live studio audience. But it's thousands of people. I think most of them are going to read your book, and maybe we can have you do a private talk to that group to get their feedback from what they've learned from the books and have a two-way conversation, if that'd be fun for you. I know it'd be fun for the Upgrade Collective. What do you think guys, would you like that?

Jill:

I would love that.

Dave:

I'm seeing a lot of excitement and thumbs up from the Collective. So, all right, Jill, we're going to make that happen after you've had a chance to rest and recover and all four of your inner... I wrote their names down... Pig Pen, Abby, Queen Toad, and Helen all get to chill a bit after launching your book-

Jill:

And Helen!

Dave:

...and we'll have you in to see what the feedback is. Oh, and Helen, I missed Helen. Oh my goodness. Thank you, Jill.

Jill:

Helen, hell on wheels. She gets it done.

Dave:

Guys, DrJillTaylor.com.

Jill:

Thank you.

Dave:

All right. If you guys enjoyed this episode, read Jill's book. It's worth your time, worth your energy. And I apologize, you spent an hour on Bulletproof Radio and then what? You gave me homework. Yeah, I gave you homework. But that's because you're working on being a more powerful human being, and you want to take the shortcuts, let other people do the work for you. You don't have to have a stroke and spend eight years recovering and then another decade studying how all this stuff comes together. She did it for you. Thank you for listening. I will see you on the next episode and go to ourupgradecollective.com if you want to get in on the inside track to ask questions like this.