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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey.

Dave:

The guest today is a leading philosopher and a consciousness researcher who teaches at Durham University in England. His name is Philip Goff and he teaches people how to integrate consciousness into our scientific worldview and how the general theory of reality must include consciousness to the point that he wrote a book called Galileo's Error: Foundations for a New Science of Consciousness. You have to read this book if you've loved Bulletproof Radio, because he goes all the way back to the foundations of the scientific revolution.

Dave:

By the way, did you notice I did that in my last book when I went back and looked at the Foundations of Modern Science, how they were all looking at natural philosophy and alchemy and stuff like that. So, you to read this. Anyhow, Philip welcome to the show.

Philip:

Thank you very much Dave. Good to be here. Good to chat with you.

Dave:

Did you catch a lot of crap when you said, "We need to rethink what science is to solve the problem of consciousness." Did all the hardcore skeptic science people say, "If you don't believe in my hypothesis, you're a bad person." Did they just come after you?

Philip:

To an extent. But you know, I mean, I think it's amazing how much has changed recently. I mean for a lot of the 20th century you couldn't talk about consciousness. It wasn't seen as a suitable topic for serious science and people couldn't get jobs if they were interested in working on consciousness. I think a lot has changed maybe from the 1990s onwards and now it's broadly agreed that consciousness does pose a serious challenge for science. It's a serious scientific problem. But I think people still thought at this approach, well, we just need to do more neuroscience and we'll crack it.

Philip:

We just need to carry on with our standard methods of investigating the brain. I think what people are seeing more recently and coming to think is that in many ways this isn't just another standard scientific problem and the conventional tools of the scientific method that serve us so well in many contexts are not really ideally suited for this purpose.

Philip:

In fact, as [inaudible 00:03:03] that they weren't designed for this purpose. So, I think, yeah you get a lot of resistance because I think that these questions of science and how we find the truth that people get very passionate about and it's wrapped up in the sense of who they are and all that. But I think there

really is in the last five or 10 years people really taking a different approach to consciousness and its really exciting times.

Dave:

You advocate to something called panpsychism and that on its face just sounds kind of douche. Panpsychism if I was to walk into a bar and say, "Hey guys, what do you got? Panpsychism." Is this some bizarre academic fields sort of he had done a back shelf or is this something that you think is going to change the way we talk about science? Explain what that is.

Philip:

Yeah. Well, this is another thing that's changed so quickly. I mean, I guess 30 years ago panpsychism was just laughed at in so far as it was thought about at all. I was actually, when I first finished my PhD and started looking for academic jobs, well-meaning professors said to me, "Maybe don't mention that panpsychism stuff." But in the last five or 10 years, it's really become taken very, very seriously in academic philosophy, partly because of the rediscovery of certain very important work from the 1920s by the philosopher Bertrand Russell and the scientist Arthur Eddington, who is incidentally the first scientist to confirm Einstein's general theory of relativity after the First World War that made Einstein an overnight celebrity. That work got forgotten about for a long time. I'm inclined to think these guys did in the 1920s for the science of consciousness, what Darwin did in the 19th century for the science of life.

Philip:

It's a real tragedy of history that it got forgotten about for so long, but it's recently been rediscovered in academic philosophy and as you know, it's really causing a lot of excitement. So that's one reason this is getting taken very seriously. Another reason is we can talk about the details there. Another reason in neuroscience, the emergence of the integrated information theory of consciousness, one of leading neuroscientific theories by the neuroscientists Giulio Tononi, which is one of the most respected neuroscientific theories of consciousness but also has some panpsychism implications. So, I think for these two reasons, this view that was just laughed at is people are starting to say there might be something here. I guess also because this has just proven consciousness, such an intractable problem, that people are gradually more open to slightly alternative approaches.

Dave:

Can you define panpsychism in one sentence?

Philip:

Yeah. I can define in one sentence. Consciousness is everywhere.

Dave:

I love that. That is truly distilled down to nothing, but it's the idea and I'm translating my understanding of it, right? You're a professor of philosophy and I'm a bio hacker. So, we're building bridges here. I look at panpsychism as the idea that everything has a consciousness and that it's built in as sort of like, well, at least some things have mass, although some things like waves don't, and that means that in my cup of coffee and a beaker here has consciousness and submolecular particles have consciousness and maybe mitochondria have their own consciousness. How accurate am I in my thinking there? What am I missing?

Philip:

Yeah. Yes and no. I mean the word does literally mean consciousness. Everything has mind pan, everything, psyche mind. But as it's now defended it generally doesn't mean that literally everything has consciousness. The basic commitment is that the fundamental building blocks of reality pups, fundamental particles like electrons and quarks have unimaginably simple forms of experience and that the very complex rich experience of the human or animal brain is somehow derived from or built up from the very simple experience of the brains, most basic parts.

Philip:

So that's the idea that basic building blocks have some kind of very rudimentary conscious experience. But it doesn't mean every random arrangement of those particles of those building blocks is conscious. It doesn't mean that your cup of coffee is conscious. It just means that your cup of coffee is made up of little things that are conscious.

Dave:

Okay. Got it. So, the cup of coffee itself may not, but they are arranged, right? So, if all the atoms and electrons and quarks and neurons in my cup of coffee, each individual have consciousness, this arrangement probably doesn't have very high consciousness, but it's probably higher than the rock outside or no. This is a weird question-

Philip:

It depends on-

Dave:

... to ask on the show, but to understand your belief system that you're saying is going to up in science, I got to know.

Philip:

Yeah. No, no, absolutely. Absolutely and yeah, just one of the things to clarify that what we mean by consciousness here, that's a little bit of an ambiguous word. People often means understand something quite sophisticated by that like awareness of self, awareness of your own existence, right? That's something maybe a sheep doesn't have, never mind an electron. But all we mean by consciousness here is subjective experience, pleasure, pain, visual or auditory experiences and so human experience is incredibly rich and sophisticated. This is the result of millions of years of evolution by natural selection. But horses experience is less complex. A mouse less so experience of a bed bug less so-

Dave:

But there's still some in there, a tiny grain of it-

Philip:

Yeah.

Dave:

... as you go down. Okay.

Philip:

So, the idea is when we get down to the basic building blocks, they have on an almost unimaginably simple forms of experience. So, we're not sitting there thinking the electron is feeling existential angst or something. It's just got some alma... We can't really get a grip on how simple this kind of experience would be. But yeah, that's the position. It depends on your interpretation of panpsychism, to think about the integrated information theory according to this view. You get consciousness at the level at which there's most integrated information (IIT). So, for example, according to IIT, a tree does not itself have consciousness because it's probable that there's more integrated information in the cells of a tree than there is in the tree as a whole.

Philip:

So according to IIT, we should think of a tree as sort of a community of conscious cells rather than a conscious thing in its own right. What is notable about the human brain is that the incredibly mind blowing degrees of integrated information with every neuron, the cells of the brain connected to 10,000 other others yielding trillions of connections and the way the brain stores information is dependent on those, that network of connections.

Philip:

So, coming back to your coffee cup, there's probably more integrated information, I would say, in the molecules making up that coffee than in the cup of coffee itself. So according to IIT, we'd say maybe the molecules are conscious, maybe the parts, but the cup of coffee as a whole is not itself conscious.

Dave:

I'm very disappointed at that answer because I was really hoping you're going to say that my cup of coffee was more conscious than your cup of coffee and we could get into one of those debates. Just kidding. Now when you say IIT, I am trained as a Silicon Valley tech guy. I know all the best CTOs come from IIT, which is the Indian Institute for Technology. So, what's the IIT you're talking about?

Philip:

Oh, yeah. Sorry. I did a terrible thing of using an acronym without defining it. I thought I'd but yeah, the Integrated Information Theory of Consciousness that I mentioned earlier, of Giulio Tononi but this is just one approach to consciousness, but I think what I'm more engaged in is a more general philosophical project that could be applied to many different scientific theories of consciousness. It's more of a broad framework. If you think about by analogy, the idea of evolution by natural selection that Darwin came up with, that's a very general framework of idea about how life emerged.

Philip:

Then of course it takes a century to fill in the details to get DNA. We're still doing it now. So, the kind of this form of panpsychism inspired by Bertrand Russell and Arthur Eddington is a very general framework for bringing together what we know about ourselves from the inside with what science tells us about the body and the brain from the outside to bring them together in a single integrated picture of reality.

Dave:

The [inaudible 00:12:26] is perfect same in it. It is why I wanted to have you on this show. The definition of biohacking that I wrote when I first started popularizing it was the art and science of changing the

environment around you and inside of you so that you have full control of your own biology. You can see the commonalities there where you have to look at what's going on inside to understand what's going on outside because they're playing with each other all the time. At least most branches of science, like to look at things as separate. So, we have even this American radical individualism, but not knowing that you're surrounded by a cloud of you guys are going are going to love this given the pandemic and all the germ phobia that's going around. But I'm quoting Wired Magazine, "We are all surrounded by a cloud of fart and poop bacteria."

Dave:

Two hours after you leave a room, they can identify that you were there just by sequencing the genes of the airborne bacteria and particles. No matter how much hand sanitizer you use, it cannot be changed. So, you are not a radical individual. You're part of a complex system and you can't change it. So, you're recognizing that and that your consciousness is part of that system too. But I mean there's a little bit of ego in there. Like Galileo's Error. This is how this kind of well-respected guy who noticed this is how we screwed up and screwed science. Now before you respond to that, you must have a big ego thing. Bertrand Russell, okay, there's some science behind what you're talking about. But most of what we do is based on assumptions that aren't proven.

Dave:

I think what you're saying is we have a flawed assumption a couple of hundred years back and that we continue down that path. By the way, that statement I just made is a big one. But when you look at where we've ended up with pharmaceutical medicine, we assumed people were chemical instead of electrical, whereas we're both, so we throw out half the solutions because we didn't think about that and you can trace one decision from one human caused that divide. So, tell me about how Galileo is the human who made this decision based on what he knew that threw us on one path and deleted the other path from our consciousness.

Philip:

Yeah, I mean, that's a really nice way of putting it. I think one of the things I'm trying to draw attention to in this book is that there is a philosophy behind science, a philosophy that what wasn't experimentally proven, it was just a philosophical theory created by Galileo as if he was... We think of him as a great experimental scientist, which of course he was, but he was also a great philosopher and he single-handedly created the philosophical foundations of the scientific revolution that science still works with today. But yeah, I mean it's a provocative title, but actually, I've got a huge amount of respect for Galileo and I do think he got a lot better understanding of consciousness than we do now. But yeah, so I think this is a key moment that we have to understand because, well, a key moment in the scientific revolution was Galileo's declaration that mathematics was to be the language of the new science.

Philip:

The new science was to have a purely quantitative vocabulary and this had never been done before, but Galileo knew quite well that you can't capture consciousness in those terms and that's because consciousness is an essentially qualitative quality involving phenomenon. Just if you think about the redness of a red experience or the smell of coffee or the taste of mint, you can't capture these kinds of qualities in the purely quantitative vocabulary of mathematics. You can't capture it in an equation. You know what it's like to see bread. So anyway, well, we can argue about this, but let's just start with Galileo thought. So, Galileo says, right? "Well, if we want a mathematical science, we have to take

consciousness outside of the domain of science." So, he said, "That's in the soul that's outside of the domain of science."

Philip:

So, in his worldview there's this radical division between two domains. There's the quantitative domain of science, the physical world of this mathematical properties and the qualitative domain of consciousness, consciousness with its colors and sounds and smells and tastes, these wonderful qualities and there's a complete division and this is the start of mathematical physics, which has gone incredibly well and produced technology that's transformed our planet.

Philip:

What we forgotten is that it was never intended as a complete description of reality. The whole project was premised on putting consciousness outside of the domain of science. I think, if we now want a science of consciousness, we need to find a way of bringing it back in. Yeah. But that's the basic idea. This qualitative quantitative division. But maybe you're not so sure about that?

Dave:

I'm not that sure about it. But just the idea that, okay, if we're going to study colors and that was all we cared about, you would ignore temperature. Then if your whole universe was color-based like I wonder why sometimes people start smoking and die. It's because you never studied temperature, right? So, you can focus your lens and you can exclude things that you don't know you're excluding. You're saying that Galileo actually knew he excluded consciousness because he was trying to create something, a new lens. I can go with that.

Philip:

Yeah. Yeah. Maybe that was necessary to do that. Maybe that was necessary to set outside consciousness for a period of time so we can just focus on mathematical modeling and what can be captured in mathematics. That was hugely, hugely impressive. But we're now at a point of history. I think where we're so blown away by the success of that, that we're inclined to think, oh, this is everything. This is the truth. Whereas I think the irony is the reason it's been so successful is because it was always focused on such a narrow, as you put it, a kind of lens, a narrow focus task and that task was never designed to deal with consciousness. I think in principle it *can't* wholly deal with consciousness.

Dave:

It sounds like you're onto something that it can't wholly do it. The reason I was pushing back a little bit on that is that I look at ancient Buddhism, [in audible 00:18:50] teachings in China and they were looking for ways to transmit experiences that, like you're saying, you can't just write it down. So, they'd say, go sit on a ledge for a week and don't eat anything and it'll induce this state. Or you go to India, do these weird breathing exercises. Well, drinking only Chai, whatever the specific Ayurvedic thing was. A great portion of people will feel these things. In fact, they will see, and sometimes they'll describe it. You see the Buddha sitting on a pedestal and then they're teaching you focus. So, they're doing all these weird physical and cognitive and focusing tricks to induce a state.

Dave:

What I found through running and starting and doing the work behind 40 years of Zen, this is a neuroscience is where we are quantifying the brain in a way that you couldn't really do 20 years ago.

And then saying, okay, now if I want to transmit a state to another person, you kind of can do it with math. Because what you do is you say sit there and do stuff until the bell goes off. When the bell goes off, you achieve the state. Right now, one of the other companies that I'm working with called Hapbee, H-A-P-B-E-E, they figured out that they could record at a very, very deep level the magnetic resonance. Yes, all things do have magnetic resonance. That's provable using liquid helium and things like that. Of a substance, call it coffee or cannabis, it doesn't really matter.

Dave:

They pick one, figure out what it does and they can play that back with pulsed electromagnetic frequencies on the brain with noticeable effects that also work on animals. Okay. So this is not the woo side of things. This is, we wanted to make sure that it was useful and safe. So, if these effects are happening physiologically in life forms other than humans where you remove placebo. So, both of these are examples. One where I use math to transmit a sensation. This is a sensation of open-heartedness or forgiveness or you know, remapping a brain network because I can't tell you, "Hey, remap your brain networks because this Brodmann's area is off." But I might be able to say, "Make the bell ring." Both of these seem like they're breaking the rules of panpsychism to say I'm using math to describe, in one case the sensation you get after you chug a shot of espresso and the other hand and both of those, well, one can be espresso the other one could be open-heartedness. So how are those not defining categories that oh, this consciousness thing is actually is really is math.

Philip:

No, no. I mean that all sounds super interesting. I certainly don't want to say physical science and neuroscience doesn't have a helluva lot to contribute. It's absolutely crucial to... I'm not a neuroscientist, but I'm absolutely fascinated by neuroscience and collaborate with neuroscientists and... I mean the way I said we've got to realize what neuroscience can do and what it can't. One problem with consciousness, and this is one way of seeing why it's such a unique scientific problem, is that consciousness is not publicly observable. I can't look inside your head and see your feelings and experiences, only you as it work and observe your experiences from the inside. Now science is used to dealing with unobservables, right? Fundamental particles like electrons and quarks can't be directly observed.

Philip:

But there's an important difference. In all of these cases, we postulate fundamental particles to explain what we can observe, right? Barks and electrons are posted as part of the standard model of particle physics, which is wonderful capacity to explain what we can observe. In the unique case of consciousness, the thing we are trying to explain can't be publicly observed and that really constrains our capacity to deal with it scientifically. So, but as you say, quite rightly, we can deal with it scientifically and because we can't observe it, but we can ask people, right? We can ask them what they're feeling, what they're experiencing and we can do this while we scan their brains and after the MRI scanner or EEG and what we can do then we can map correlations so we can see certain kinds of brain activity and certain regions of the brain are correlated with experience of colors say, and that's absolutely crucial data.

Philip:

Any scientific theory or theory of consciousness has to respect. The problem is that in itself is not a theory of consciousness, not a full theory consciousness. Because what we ultimately want is an

explanation of those correlations. That's the big question at the end of the day, why on earth is a certain kinds of brain activity accompanied by feelings and experiences and experience of color and sound and smell. Why do they go together? I don't think an experiment is going to just doing more neuroscience, just gathering more correlations is not going to answer that. I think we have to bring in an element of philosophy. So, I think experiments are important absolutely, but they can't give us the full answer.

Dave:

I had a guy who you referenced in your book I named Anil Seth who came on, it was episode 590. We talked about perception and consciousness and on that episode we talked a little bit about how hard it is to map what goes on in your brain and what you actually experience. So, you might experience someone slapping you in the face and I experienced it and you get incredibly aroused and I get incredibly offended. But it was the same exact thing. I'm just saying that you're British, so the odds of that are high, but just kidding.

Philip:

Crippling the shot.

Dave:

Whatever that is but it's a kind of a dumb example, but the same physical thing and it does correlate, but it's probably not causal because different people have exactly the same physical experience and have very different inner experiences of it. How do we solve that from a scientific basis? I really care about that. My goal and everything I do after the episode, I want you to feel that it was worth your time after you drink a cup of the coffee, you go to my restaurant whenever it reopens [after the pandemic]. I want you to feel like, wow, I have so much energy. I'm trying to orchestrate feelings in people, but people keep feeling different things when I do the same thing. How do you scientifically solve that problem?

Philip:

Yeah, absolutely. Yeah. I know Anil Seth very well and we the polar opposite opinions on this stuff-

Dave:

Sure.

Philip:

... but we have a really nice friendly interaction. We first met each other having a Twitter argument and he wrote a post slagging off panpsychism. Is that an Americanism as well?

Dave:

I know that's [crosstalk 00:25:41] more of a British thing, but I think we'll figure it out a slag.

Philip:

You know what I mean. Then I wrote an angry one back but then we made friends and we realized, but yeah, so I mean there are challenges. You're right there are really serious challenges just to establishing those correlations. What kind of brain activity goes with what kind of experience because consciousness is unobservable, it's really hard to... You're relying on people's testimony about the private inner

experience and it's really hard to map those together. But I think Anil's position is, well, we just need to do more science and I think he thinks eventually the sense of mystery will go away. He compares it to life and we used to worry about life. We did think life was a miracle. We did more science in the sense of mystery went away.

Philip:

But I think that there are real crucial differences in the case of consciousness. In the case of life, what are we trying to explain? We're trying to explain what is publicly observable behavior and science is really good at that. Science is good at explaining what we can observe. In the case of consciousness, we're explaining something that's not publicly observable. In the case of consciousness, we're explaining something; it involves these qualities that we upper hand when we attend to our experience, qualities that just can't be entirely captured in a sort of purely quantitative vocabulary.

Philip:

So, I think there are reasons this is just a fundamentally different problem. So, Anil is doing great work. I'm really looking forward to his book a really great work in correlating what goes on in the brain with consciousness, right. Great. But let's say one day he finishes that, we've still got the question why, why does brain activity go along with a conscious experience? There are different theories. There are different theories. There's a panpsychist has one theory and we could go into more details about that. The two traditional options are the do lists who believes in the soul, the materialist who thinks really it's just about the chemistry of the brain. It's really about electrochemical signaling.

Philip:

All of those theories account for the correlations of neuroscience. People have this mistaken idea that the neuroscience supports materialism, the conventional scientific view. The neuroscience is just neutral. The neuroscience just gives you correlations. Then there's a whole host of different philosophical theories to explain those correlations. Just doing more experiments, will just get as more correlations. We've got to address the philosophical issues. I think that's what people are starting to see now to be honest.

Dave:

I grew up in a very strong Western science, engineering, physical reality family grandparents, PhD scientists and all that. I kind of had the meat robot perspective on humans, right? Even some of the language around biohacking that I created, hack your health. It's very hardware and software-centric and it's actually a good model for thinking about it because most of us understand hardware and software, but it actually isn't very accurate.

Dave:

It's just a good way of thinking about it. The more work I've done, the more I've solved a lot of the hardware problems. When you get into the software, you realize, oh wait this whole materialism thing where we're just meat robots, it doesn't work that well. The part of the problem is different people experience different things.

Dave:

On the neuroscience front, we do know now some of the very advanced mental and spiritual states described by meditators and very advanced practices. They can be programmed and most people will

experience that, but not all, right? Because they have different networks and all that, and no one can explain why. I feel like we're getting there, but there is something that's outside of humans which is why I reject the meat robot to the point where, yes, you're a meat robot. If you give you a cyanide, you'll shut down your power systems and yourselves and you will die. So that's, yes, but there is more. So, you have to at least in where I've ended up so I can more accurately get what I want out of my body and my experience is that you simultaneously are the sum of your parts and something else. But do you have, from a panpsychism perspective, what is that another thing? Where does it live?

Philip:

That's really interesting. Let me get to the core of it. Just to back up your experience, I mean, this stuff's really mess up because I've always loved science. When I studied philosophy, I thought I wanted to be a materialist and I just came to see it just didn't make sense when it comes to consciousness. Then I thought, oh, maybe I can believe in the soul. But I just think that's has such deep problems of a more straightforward scientific nature.

Philip:

So, I came to think that these two conventional options of materialism and dualism were just both completely non-starters. I actually gave up the subject. I thought, I just don't want to think about this anymore. I went left academia, went and did something else, lived in Poland for a bit. It was discovering panpsychism this middle way that sounds a bit wacky, but I think that avoids the deep problems of these more conventional options. That really drew me back into this. But let me answer your question directly.

Philip:

So, the starting point of Russell and Eddington is that physical science doesn't really tell us what matter is. That seems like a really weird claim. It's because you study physics, you learn all these incredible things about space and time and matter. But what Russell and Eddington realized is that for all its richness, physics is confined to telling us about the *behavior* of matter. What it does. Think about what does physics tell us about an electron? It tells us it has negative charge; it has mass and these properties are completely characterized in terms of behavior. Things like attraction, repulsion, resistance to acceleration. It's all about what it does.

Philip:

Physics tells us what the electron does, but not what it is. I must make an analogy with a chess piece. If you have a Bishop on a concrete chess piece on a board, you might want to know what it does. If it's a Bishop, it moves diagonally in any direction. But you might also be interested in the chess piece itself. Is it made of wood? Is it made a plastic? Is it made a metal? Similarly, with an electron, you might be interested in what physics tells us about what it does, but you might also be interested in the electron itself independently of its behavior. What is an electron? Physics just has nothing to say about this. So, it turns out there's actually this huge hole in our standard scientific story of the universe.

Philip:

So, the proposal of Russell and Eddington was to put consciousness in that hole, right? We're looking for a place for consciousness. We've got this hole, let's try and put consciousness in the hole. So, the view is it's a form of panpsychism but not necessarily and I think supernatural or not necessarily anything mystically but the idea that there's just matter particles and fields, but matter can be described from

two perspectives. Physical science describes it from the outside in terms of its behavior. All great stuff but matter from the inside is made up of consciousness.

Philip:

So, it's this, it's this beautiful, simple, elegant way of bringing together the facts of natural science and the reality of consciousness into a single story. This is radically non-dualistic people when they first hear about panpsychism they think, oh, the electron is supposed to have its physical properties like mass spin and charge and also these consciousness properties.

Philip:

That would be a kind of dualism and it would lead to many problems that the physicists are being... [Sabine] Hossenfelder has written a blog post slagging off criticizing panpsychism on this basis, but she's interpreting it in this dualistic way. That's not the view. The view is that mass spin and charge are forms of consciousness. Physics tells us what they do, but it doesn't tell us what they are, what they are forms of consciousness. So, what I love about this is it leaves science unchanged. The worry you would dualism is that you're going to interfere with science as we understand that it just has the physical world exactly as science tells us. But the reality underlying that structure, the physics tells us about is experience. Anyway, that's the story. That was a bit, I went on a bit and then I got carried away.

Dave:

It makes a lot of sense. And that was just your particles doing that with their own will. It wasn't, you don't worry.

Philip:

Yeah. Yeah. That's what I tell my lawyer.

Dave:

It is true though, that panpsychism is having a bit of a moment as you say, because there've been four big books that came out in 2019 about it. So if you're a listener of the show for a while, you probably have seen these come across your feeds because the AI systems that are our overlords, our robot overlords, as we like to say, they're going to filter these to you because you're probably someone who pays attention to stuff like that. But there's all these things about the feeling of life itself. Your book, Galileo's Error, the case against reality which made its circles and these are all panpsychism books sort of saying there's something missing.

Dave:

Now, do you think that this huge, I'm going to call it, break-in and almost reality that's induced when, Oh, everyone stay home for a few months and disrupt everything you do? Is that going to cause people to think more about this or less about this?

Philip:

That's a good quote. I mean, who knows this such strange times we're living in are going to end up. But yeah, I mean there's definitely something going on. Actually, me and Christoph Cox's book, The Feeling of Life Itself. We're currently doing a thing where we're reviewing other's books for an issue of American Journal of Psychology, which I'm really late with. I need to get on with that.

Dave:

The life of a writer.

Philip:

Yeah. But I'm engaging with all these people and I've talked a lot to Annika Harris, her book *Conscious* came out as well. Yeah, I mean, I've got disagreements and agreements with all that, but there's something emerging here and who knows who's right. I don't know if my view is right. I think you just need to put ideas on the table and interact and work through it and it might come to nothing who knows, who knows what the truth is. But I tried to, when I press this, I think people are in this, the hardest narrative to get over. I think people think, look how successful science has been our conventional scientific method in explaining so much of the universe producing such incredible technology.

Philip:

Of course, it will one day explain consciousness. I think that's how Anil Seth thinks, and that's very understandable. But I just think there's a different way of thinking about the history of science. Yes, it's been incredibly successful, but it's been incredibly successful because it was focused on something quite specific that was never designed to expect. Now, if Galileo time traveled to the present day and heard about this problem of explaining consciousness in the terms of physical science, you'd say, of course you can't do that. I designed physical science to deal with observable quantitative mathematical stuff, not subjective unobservable qualities. He was much more clued up. I think we're just getting carried away with the success of this wonderful thing, but which was designed for a specific task.

Dave:

The scientific dogma has become, if it isn't measurable, it doesn't exist and is worthy of disrespect. That is usually a problem of not having the right measurement tools or maybe it doesn't exist, or maybe in the nature of consciousness, maybe it can't be measured with physical tools, but it can be measured because do two people know they're in love with each other, just ask them like there's a measurement. Was that a direct observation? Oh, no. So that's been the fundamental learning for me along the way.

Dave:

It is, is just that look acupuncture was complete nonsense in the family where I grew up and no one would ever do that unless they wanted to be conned. Then when we had absorbable tools that could figure out there were very minor electron flows on the skin. Like, Oh yeah, so maybe it's not.

Dave:

What I realized is that I had grown up computer science degree, all that with the capital S form of science where it is a religion and it's a religion where your hypothesis is right and everyone else's is wrong and you have to go to war against them and you can have Holy crusades. Right? Whereas the lowercase S form of scientism is, I'm really curious and I might be wrong and I sure hope I'm not, but I'm willing to consider the fact and I'm not going to you know, insult a little or attempt to destroy the careers of people who disagree with me. So healthy debate is good. But this, you know, I'm going to put laws in place to prevent people from speaking what disagrees with me, which is what's happening today. Or better yet just put algorithms into our social media feeds and then suddenly the debate never happens and then we end up with a very boring and inaccurate world. I'm sorry, I appreciate you're not contributing to that.

Philip:

Yeah. Yeah. I mean, it's understandable. I think it makes people nervous when you can't settle something with an experiment but the fact is we tried scientism in the early part of the 20th century. It was the view logical positivism. We tried to make sense of this idea that the only meaningful questions are scientific questions. Everything else is meaningless, gibberish and it didn't work out and hardly any philosophers of science would defend that view nowadays. We saw the deep sort of contradictions inherent in it. But I guess, I mean, I guess it's, people don't really understand what philosophy is. There's a similar issue in quantum mechanics I think. Quantum mechanics is one of our most successful scientific theories in terms of prediction.

Philip:

Almost all of our technology is based on it from smart phones, the GPS or whatever. The problem is no one knows what the hell that theory is telling us about reality. We have these different interpretations and people are interested, some scientists are interested and which of those interpretations is right, which is the reality. There's a big taboo. The physicist Sean Carroll talks about this a lot on his podcast. There was a taboo to dealing with this because you can't settle it with an experiment. So, it's not real science. So sometimes called the shut up and calculate approach just it works, the equations work, get on with it. But I think that's not good enough. Natural science isn't just about making things that work.

Philip:

Building bridges, curing disease important as they are. It's about the natural human curiosity to understand the universe we live in and our place within it. Especially with consciousness. I think consciousness is at the root of human identity. It's arguably the basis of everything that's important in human existence. Yet I believe our official scientific worldview doesn't have a place for consciousness and I think that can lead to a deep sense of alienation. I think we; we know we have feelings and experiences, but our official scientific worldview tells us this just electrochemical signaling up in our heads. I think we know intuitively that's not the same thing. So, I think what panpsychism offers is a picture of the universe where we can understand our place within it. This is the potential not only to address one of the deepest challenges of contemporary science, but also I think to transform in a positive way, our understanding of what it means to be a human being. So yes, I think this stuff matters. We can't just pretend it doesn't exist just because it can't be fully addressed in a conventional scientific way.

Dave:

I'm glad you brought up quantum physics because we know at this point that a huge number of things happening inside ourselves, inside our brains are quantum. In fact, anytime you're using an enzyme, there's a little bit of a quantum biological effect, and this is hardcore quantum biology, not the woo side of quantum. Not rejecting that outright, but just saying, this is biological things. Oh, this tunnels through that in order to make a faster chemical reaction, sort of quantum behaviors.

Dave:

We also though have a pretty good provability on the observer effect. If you're saying consciousness is woven into everything and there's some consciousness in the particles because of my cup of coffee there, why couldn't the particles in my cup of coffee observe the electron going through the slit and then determine where it goes?

Philip:

That's a good question. So yeah, well, I would say the idea that consciousness plays a role in what's called collapsing the wave function. I mean, I would say that's one interpretation of quantum mechanics. Actually, it's been explored recently by the philosopher David Chalmers in the context of a dualist philosophy. David Chalmers is a dualist. He thinks consciousness is nonphysical but he's a complete atheist secularist and he wants to bring nonphysical consciousness into the domain of science. In that context he's been exploring this old idea that consciousness collapses the wave function. And it's sometimes marked. It's been there since the start and it's in some sense quantum mechanics seems to suggest it... But he's thinking, well, let's just rigorously work it out, rigorously work out the details with his colleague, the philosopher physicist, Calvin McQueen and see how the ferry shapes up.

Philip:

This is perhaps one of the most rigorous workings out of this theory. And he comes up with some of the problems and some of the advantages, he's not saying this is the correct view. There's some really interesting work there. There's going to be an Oxford University Press volume on quantum mechanics and consciousness-

Dave:

Very cool.

Philip:

... that that's going to come out in and I've got something contributed to that as well. But you quite rightly say you've hit the nail on the head there that this doesn't work for panpsychism because panpsychism consciousness is everywhere. So, the wave function would always be collapsed. Whereas what we want is this contrast between, if you put it in terms of shirring his cat, the box is closed, the cat is alive and dead.

Philip:

The box is opened. The cat is definitely alive or definitely dead. In David Chalmers view, it's the role of the nonphysical consciousness interacting the system. But if consciousness is everywhere, you'd never get those what are called super positions where the cat is both alive and dead. But I think there are other interpretations of quantum mechanics where consciousness doesn't play a role. So, for example, probably among philosophers of physics, the most popular interpretation of quantum mechanics is the many worlds interpretation.

Philip:

That seems kind of extravagant and wacky. You know, you've got all these branching universes. But the reason kind of hard-nosed philosophers of physics like that is because you don't get collapse of the wave function because you don't get a situation of going from a superposition of numerous possibilities to just one possibility because the superposition represents these branches of the wave of the branching possibility space.

Philip:

So, in that interpretation. Physicist Sean Carroll for example, who's, not in my kind of like panpsychist what you see easy, hard-nosed material is scientist, but he likes the many worlds interpretation because you don't have to collapse the way you function. You don't need consciousness doing spooky things.

Dave:

Oh, got it.

Philip:

I myself, and this is my contribution to the quantum mechanics and consciousness volume. I don't like that view. I don't think you can really make sense of consciousness in that view for various reasons. I prefer the bohemian interpretation where you have the wave function and you have particles and a wave function kind of guides the particles. Anyway, I think that view fits better with how I think about consciousness. But anyway, that view doesn't have consciousness collapsing the wave function either. So, you're right, you can't go for the kind of interpretation of quantum mechanics where consciousness collapses the way you function. But fortunately, there are other interpretations.

Dave:

The Chalmers work with multiple realities and all that. It really makes for Dr. Who, it makes for sliders. I know all the good TV shows require alternate universe is, I mean heck, even Avengers requires that. So, we would lose so much art if we don't at least-

Philip:

Absolutely.

Dave:

... pretend that, that might be real.

Philip:

Yeah. Let's get to the point where the science is weird and the fiction, but yeah.

Dave:

Let's say a listener of the show right now saying, I think I want to call myself a panpsychist. I believe that, wow, this dualism where I can only believe in the meat robot thing. I burst that bubble there. What would the impact on their life actually be? Would they just walk around more confused than they were before?

Philip:

That's a good question. Yeah. Well, I mean, I'd say two things to that. One thing is part of what we're doing is trying to find the truth, trying to have our best guess, who knows what the truth is, but try and have our best guess at what reality is like, we're not interested. Ultimately we shouldn't be interested in which view we'd like to be true, but which view is most likely to be true? I think there's a good case that panpsychism is for the probable truth of panpsychism on the basis that it's the best count humans have come up with, for how to fit to consciousness into our scientific story. So that's one thing, if it's the truth, it's the truth and we should try and have our best guess at that.

Philip:

But I also do think it's it independently, and this is what I explore in actually the final chapter in my book. The first four chapters are just the kind of coldblooded philosophical and scientific case. But then the final chapter, I explore the sort of implications for human existence. I do think this is a picture of reality, which is maybe slightly more consonant with human, mental and spiritual wellbeing. I mean, materialism is pretty bleak. You've got sort of a mechanistic picture of nature and the cold immensity of empty space, whereas in panpsychism worldview, we are conscious creatures in a conscious universe. It's a sort of picture of the world. We sort of feel a little bit more at home and there's a lot of crazy stuff going on at the moment.

Philip:

I think there are lots of reasons for this economic and political, but I wonder whether some of it is what was once called the disenchantment of nature, this sense that we don't fit into the universe. I wonder whether the attraction of nationalism or even fascism is trying to find how you fit into the world. I think in some ways panpsychism is a little bit more of a picture of the universe we fit in with. I also think it might buy better relations with the environment. In a materialist worldview, a tree is kind of a mechanism and what is the value of a tree? If it's a mechanism, it's sort of what it can do for us or looking pretty. But if you think a tree is a conscious organism in its own right, then it's a focus of moral value in its own right.

Philip:

These terrible forest fires in Brazil, we're all horrified by... But if you see that as burning of conscious organisms or be it very alien once to human beings and I think it adds an extra moral dimension. So, I explore a little bit the idea of if a child was raised in a panpsychist conception of the world, it could be a slightly enriching, although my child is comfortable with this.

Dave:

Of course.

Philip:

I said, trees have feelings. We've got a Madagascan dragon tree over here with Susan, maybe you can see-

Dave:

I love it.

Philip:

She said trees don't have feelings. So, she's nauseated.

Dave:

[inaudible 00:50:55] there we go- So-

Philip:

I've got time.

Dave:

... you've got time. Well, it's interesting because a lot the traditional shamanic and just older druidic in fact, almost all of the ancient stuff from any culture I've ever studied teaches some kind of animism and that there is a consciousness in the rock and that you can put your consciousness in other things. I've done training with Shamans who still do that sort of stuff today. My kids are in a Waldorf School and they definitely teach both views, and hey, let's figure out what filum that goes in and how to categorize it and listen for the forest fairies and they both exist and kids don't seem to have a hard time with that.

Dave:

Oh, let's switch into peace, nature, hippie mode. Then let's switch into, I want to learn HTML daddy mode. They don't seem to have a problem. I think it's a healthier way of interacting with the world to be perfectly honest. Because it gives you permission to be curious about an experiment on your own consciousness. But if you believe your consciousness doesn't exist or doesn't matter, it actually suppresses one of the things that makes you human and that might be the biggest gift of panpsychism as something to at least consider.

Philip:

Absolutely. Independently of my stuff, what I explore in the book is just the straightforward empirical study that's now discovered people like Monica Gagliano, the intelligence and sophistication of plants and animals far transcends what we previously realized that... Monica Gagliano has actually managed to do conditioned learning to pea plants. She can teach them to associate the sound of a computer fan with the source of food. So eventually they follow the computer fun even when the food isn't planned. What's her name now, Susanna [Simmer 00:52:47] is that its trees are connected under the ground. They're very complex whether-

Dave:

The secret life of trees is scary. If you read that, I mean it it's also beautiful, but...

Philip:

I think maybe we had this kind of cultural revolution in the '60s, but maybe then there wasn't the intellectual framework to underpin that. I think that's maybe something that's emerging a lot more now. But I mean, I still think things are shot down. I think in some ways terms like new age function as sort of racist terms in a way, like a racist term picks out an ethnic group, but it sort of associates them with some negative connotations. I think that new age picks out certain philosophical or scientific views but implies that they're garbage and of course there's a lot of non-rigorous thinking in this area, but there is in any area and we shouldn't shut down options with the way we... Just because of the cultural associations we should judge a view on its explanatory power, not its cultural associations.

Philip:

I wonder, there's something political here I think about shutting down the cultural revolution of the 60s with these kinds of terms like mocking hippies and stuff and yeah, so I think the spirit of the enlightenment is taking the hypothesis on its own merits, looking at the evidence, looking at the arguments, maintaining an open mind.

Dave:

Now I have to ask you, now that you opened that door, if I take acid, will I understand panpsychism better?

Philip:

That's a good question.

Dave:

Or mushrooms or whatever, insert name of psychedelic substance here.

Philip:

Kind of two fold answer. I think, first as I always want to emphasize, a lot of people defending panpsychism despite its connotations. People like David Chalmers or Luke Roelofs' complete atheist secularists, no kind of spiritual leanings. They're just not believing in anything necessarily spiritual, they're just believing in feelings, pain, pleasure. These things are undeniable and they just want to find a way of explaining that perfectly natural phenomena.

Philip:

However, I guess if you are in a panpsychism world view, I suppose it does fit better if for independent reasons you have certain spiritual convictions perhaps through taking hallucinogens. So, people in all cultures have had these experiences, perhaps on hallucinogens or after prolonged meditation that there's some kind of universal consciousness underlying all things. If you're a materialist, you probably have to think that's a delusion, something funny going on in your brain.

Philip:

But if you're a panpsychist and you already think the fundamental nature of reality is made of a consciousness, it's not much of a step to take those kinds of experiences seriously. The really good... I mean I come out of a very dry, what's called analytic philosophy, a tradition that's very dry, scientific, logic-based but just come out of that tradition. People like wonderful Australian philosopher, Miri Albahari who defends something like that kind of mystical view, but in a very dry, rigorous, plain working out the epistemology on the basis of treating meditators are sort of experts of consciousness.

Philip:

I just think it's wonderful to have this... It gets a bit scary because you wonder are we going to get lost, are we just diluting ourselves? But you've just got to... we've got academia and we've got peer review journals and you've just got to trust the institutions. That's what more than ever the importance of institutions to be able to distinguish the woo woo and the crap from serious rigorous study.

Dave:

If you ignore all the woo woo, you'll never figure out which of it was actually crap and which of it had some merit and that's a problem that's going on right now. I've spent a lot of time, looking at that and rejecting most of it and sometimes going, "Wait a minute, there's a long lineage here and it's provable or it has an effect that I can feel that's way more than placebo. When you get to that, and not just me, but others, you get to say, "Hey, there's something here. I have no idea why." Just to accept that that's the hacking perspective.

Dave:

The Western science perspective is, if I don't have an explainable mechanism, it doesn't work. But I can prove it works. I just can't prove why yet. I've ended a couple of debates with people that way and they go, "Well, if there's no effect, if there's zero mechanism, it doesn't work." I go, "Great, the mechanism is leprechauns," and they go, "Why? That's ridiculous." And it's like, "Well, okay, if you needed one..." Because the mechanism that we've believed for most of the things throughout history of science, the mechanism was wrong because there was another layer underneath that we didn't understand. We had a full explanation for biological chemical mechanisms that didn't understand quantum tunneling, but still it worked.

Dave:

So, you could believe in it if you had a story. So, let me give you a story and one that's provably stupid. But who knows? Maybe it is leprechauns you haven't just proven that. So that mindset, I think Penn's like, "It just took you at least have to look at the woo and when you're setting consciousness there's a whole lot of woo in there and it's okay that it's in there and that's why I'm attracted to the field and the fact that there's people scientifically sitting out there with a variety of opinions saying, "Consciousness matters."

Dave:

Thank you for being one of those people and thank you for being on Bulletproof Radio. It's been fascinating to delve into the mind of a philosopher.

Philip:

Thanks very much Dave. This is great. This is a really enjoyable chat. I've learned a lot actually.

Dave:

I think I've learned a lot more than you. Unless were talking about coffee, in which case I'm now sad to have learned that my coffee is not independently conscious. I thought it was hacking this whole time. Your book, Galileo's Error is available now and it is a very worthwhile read. So, like I was saying earlier on the show, if you're interested in consciousness and if you want to upgrade yourself, well, you just want to be a wall of abs? Okay, that's fine if that's the upper limit of what you want, but you probably want to be a wall of abs with a highly functioning, happy, healthy, impactful person tied to it.

Dave:

I believe that looking at consciousness is necessary and I've had the highest return on investment for my own things after I got my basic energy systems working was going straight to my consciousness and working on that. There's so many tools available to do that. Some of those are in episodes for you. Some of those you'll find just by reading a book, like Galileo's Error, but it just always is be curious is the most important thing.

Dave:

Now, speaking of being curious, I appreciate that you listened to this episode and I'm curious and I'd be grateful if you would share your thoughts about it with a rating and a review on iTunes. I actually read them. I take them seriously. It's how I measure the consciousness of my show. Well, at least the appeal

of it and whether it's making a difference. The goal for me is I want you to walk away from the show saying, "I got more value in the hour I just invested than the value of the time I put in."

Dave:

So, the ROI for you has to be positive. Otherwise you really should unsubscribe and find something that's higher ROI for you. So that's the bar. If you think this episode did it or any other one, I'd say, subscribe. Go onto your favorite podcast platform. I'm going to keep bringing you innovative scientists, thinkers, thought leaders, philosophers, bio-hackers, and other people who do game-changing things. See you next Tuesday or next Thursday.