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SPEAKERS

Freddy Drabble, David Lorimer

D David Lorimer 00:00

If we now have a completely evolutionary universe, then with the Big Bang and their whole process, and following on from that, then it isn't it possible. He's really asking the question, that the laws of nature could also evolve and resemble more habits than actual laws.

F Freddy Drabble 00:24

Hello, everybody, and welcome back to chasing consciousness. So today we're going to be examining the assumptions of Western science. All science is based on assumptions. In order to isolate the systems and experiments and standardize measurements of the target data. Other variables quite simply need to be pinned down so scientists can form precise mathematical models that can then be repeated accurately in the peer review process. Today, we're going to look at these assumptions and establish if they indeed have become standard, fixed and unquestioned, as some critics claim. One of those critics is Cambridge educated biologist Rupert Sheldrake, who gave a TED talk in 2013 about the assumptions of Western science, which was then banned by Ted's anonymous board of scientific advisors for not being a fair description of scientific assumptions. Far from calming the controversy, the ban caused an outcry of censorship. And the video was seen by millions of people on YouTube, probably many times more than a had it been left to stand as one scientists opinion. Today, I want to examine just how unfair his description was. So Sheldrake starts by identifying a conflict between science as a method of inquiry based on reason, evidence, hypothesis, and collective investigation, and science is a belief system or worldview. He argues that the belief system part when it reaches evidence that contradicts its beliefs, rejects that evidence, rather than updating its beliefs. Sheldrake argues that this goes against the very objective of free inquiry and scientific endeavor, which is the search for truth, and it tends towards an imposed dogma, something we tend to associate more with a religious worldview. So the main subject of today's conversation is going to be shall Greg's book about all of this science set free, provocatively called the Science delusion by his UK publisher, which has, despite doubling sales, sadly put off many professional scientists who would otherwise have supported many of his points. In it, he

lists 10 examples of assumptions of Western science, which most of us with scientific secular indications, wouldn't even question and he turns them into questions to scrutinize scientifically. Dr. Sheldrake won't be joining us today for this episode, but will hopefully be with us in series to talk about his controversial theory of morphic resonance, and his research into psychic phenomena. So to help us examine his claims, is one of Rupert's old friends and supporters, author and program director of the scientific and medical network, David Lorimer. He's also president of the rekan Trust, Chief Consultant of character education Scotland. He's a former president of the Swedenborg society, and vice president of the International Association for near death studies. Originally a merchant banker, and then a teacher of philosophy and Modern Languages at Winchester College. He is the author and editor of over a dozen books, most recently, the protein crunch with Jason Drew, and a new renaissance. And out this year, his new book a quest for wisdom. He is the originator of the Inspire Aspire values poster programs, which this year involved over 25,000 young people. So this is going to be crunchy, it's going to be controversial. But I love walking that tightrope right at the edge of, of science. So without further ado, let's go. Hello, everybody, and welcome to David Lorimer, thank you so much for coming on the show, David.

D David Lorimer 04:21

It's a pleasure to be here.

F Freddy Drabble 04:23

David, I'm always deeply curious to ask my guests. What were the big questions that fascinated them, and maybe even troubled them a little when they first started their conscious experience, the first big questions that you started to think about and may have maybe gone on to sort of motivate your career choices. For you. What were the questions that were just too big to ignore that may have led to your interest in philosophy and science?

D David Lorimer 04:51

Well, I suppose there are sort of two angles I could take on that one. The first is to say that when I was at St Andrews in the 70s And during an arts degree, it was compulsory to do a year of philosophy, and had been since the 18th. For in 17th century. And because this idea of being informed by logic and moral philosophy was logic and metaphysics on the one hand, and moral philosophy, on the other, was thought to be an integral part of a Scottish person's education. And so this was still the case in the 1970s. Sadly, it no longer is. And so I was forced to do this year of philosophy, where there were two courses that I did, which were a particular interest, one was called theories of human nature. And the other was called was on existentialism, which is quite unusual, because British philosophers don't really pay any attention to existentialism, it's a kind of continental eccentricity. And this then related to the study I was doing at the time, as well of French 20th century authors particularly start from cameo. And so there was there was a nice feeling of synergy there. And that's when you're asking ourselves these questions, you know, what is it all about? And when you have these conversations, sort of wind fueled conversations into the night as undergraduates talking about life, the universe and everything? So that's one answer. The second answer is death. And so I asked myself a question. What happens? Physical death? Does nothing happened? Is it the end? Or is there some form of

transition to another form of consciousness? So those are the those are the two areas. So one is more existential, about how one lives and taking responsibility for one's choices. And the other is more metaphysical. You know, what is what is consciousness? What is the relationship between consciousness in the brain? What is the nature of death?

F Freddy Drabble 06:56

Yeah, big, big questions. And you mentioned that this idea of philosophy being part of the sciences, and you know, I love the fact that physics used to be called Natural Philosophy, you know, this idea, the deep nature of things. Thank you for that. So, David, before we come on to your books, and your life's work promoting a post materialist worldview, I want to pull apart some of the claims of Rupert's book, perhaps trying to play a little devil's advocate, to try and put ourselves in the position of a huge majority of the general public that have this materialist worldview to better understand the deep resistance to post materialist science in the mainstream. And perhaps even knowing Rupert's work so well. And many of the peer reviewed studies that support his views, you can expand a little on each claim and give some examples, we won't be covering all of them, not least because we're not specialists, but also because there are so many, and I'll do my best to sort of throw back the skeptical arguments for us to discuss. First I'm just going to read them out. So people can get a sort of sense of this, of the things that were presented in, in Rupert's book and also in his TED Talk. So nature is mechanical and machine like is the first second is matter is unconscious, the universe is unconscious. The third the nature, the laws of nature are fixed, and they haven't changed at all since the beginning of time. For the total amount of matter and energy has always been the same. Except to the moment of the Big Bang. Fifth, nature is purposeless, and evolutionary appropriate process has no purpose or direction other than self perpetuation. Six biological heredity is material. Seven, memories are stored inside your brain as material traces. Eight, your mind is inside your head, your consciousness is correlated to the activity in your brain. Nine, psychic phenomena and telepathy are impossible. And 10. Mechanistic medicine is the only kind that really works. Now, let's jump straight in with the first one David. Nature is mechanical, a machine like plants or animals or like machines. And we are lumbering robots, as Richard Dawkins puts it, and that our brains are like genetically programmed computers. What do you think of this machine analogy? Do you think it's an accurate assumption?

D David Lorimer 09:36

Well, the thing is that you've just said it yourself. It is an analogy. It is a metaphor. And so if you look back to the hermetic Renaissance, because all of this is historically conditioned, if you look back to the time of Bruno, for instance, around 1600 Then one of the one of the important aspects there was Some, the idea of the Anima Mundi, the Soul of the World, so this this was this is in contradiction to the machine view that everything is unconscious that there was something animate, which animated the whole world. This is why it's called the Anima Mundi the Soul of the World. And this This was also resisted by the church at the same time as the rise of the mechanical philosophy in the 17th century. And there was a fascination in that time with mechanical contrivances. And so during the 18th century, and Voltaire talked about it, in ironic terms, he said, one of the wonders the French achievement was is the, the shitting duck, he said, So, this was a mechanical duck that that you could put food in and it had wheels and things going on inside, so that he could crank something else out at the other end. And so, people were fascinated by automata by simulation by something that could be mistaken, I

mean, not obviously, by today's standards, but to be mistaken for for a machine, then then, and set the set and then the second point, which is an important one, generally as well is that there was a distinction made by Galileo, Descartes, and others between primary and secondary qualities, to a primary quality was defined as something that you could weigh, see, touch measure, in other words, quantitative and physical in that sense, and the secondary quality was all the subjective aspect of the human being, there are terms of taste or smell, qualia, if you like, what the the qualitative sense of consciousness and being alive. And we

F Freddy Drabble 11:55

really study psychology, for example, without dipping a hat to that can we

D David Lorimer 12:01

No, but I think the, the important thing is, is primacy, you see that, that if you call some aspect of nature primary and another secondary, and then what you're going to tend to do is to explain the second in terms of the first. So in this case, the, the idea is that mind then said, the matter gives rise to mind, we'll come on to that in more detail in a moment. And then what you were also trying to do was to remove the human being from the equation. So if you, if you look, for instance, at the very classical mechanical experiments, by Galileo dropping weights off the side of the Leaning Tower of Pisa, then you've got something which is just reproducible anywhere by anybody. And there's no, there's no personal, there's no subject development that could kind of get in the way of the laws and mechanics and acceleration and motion, and so on. And then with gradually over the next 200 years, you get the development of more and more sophisticated machines, and calculating machines in the first place. And then further mechanical contrivances, the whole industrial revolution, mechanism mechanization, and then the computer, which is obviously a key analogy. I mean, 100 years ago, people were talking about telephone exchanges. And so that was the main metaphor that was used. It's still a bit of a sort of mechanistic metaphor. And so now we're using machines machine analogy to explain the human and Rupert calls this, he says it's not anthropomorphic, it's Meccano, morphic. In other words, you're, you're you're explaining the human in terms of something that the human that humans themselves have invented. And so it's, it's proved a very powerful metaphor. And

F Freddy Drabble 14:02

we tend to forget, don't we, that's the thing is, when it becomes so embedded in society, we forget that it's a metaphor at all. You know, for example, the software hardware, you know, separation for what you were just talking about, about sort of the, the, you know, the solid physical, and then the subjective mental. I think that's a brilliant analogy is really, really helpful to think of software and hardware, but it is an analogy.

D David Lorimer 14:29

It is an analogy. And in fact, the thing is that if you go deeper into this, and you you can't think without ideas and analogies. And so this is the way we actually understand things. And if you if you if you dig down into this, well, you think well, what is a concept? Well, a concept in

etymologically is something that you grasp with, so it's literally capillary means to grasp them, see grasp with and And a percept is something you grasp through. So that whole idea of perception is grasping through. And the other analogy that we use a lot is seeing, I see what you mean. So a theory, literally, if you look at the etymology of theory, and it means to see, it's a way of seeing. So I think we need to drill down into the meaning of some of these words, even as well as the analogies we use. And the language itself. Yeah, yeah, that everything is that we're trading in language and metaphors, as ways of grasping what we can't quite grasp. And

F Freddy Drabble 15:47

this idea, which I think is originally a Buddhist idea of the mental construct, that the thing in my head is not the same as the thing that I'm trying to grasp. But we need to make sure that it's very, very clear that those aren't the same thing. And I think we forget,

D David Lorimer 16:01

indeed, because by using these means all the time, and when we're using language, we're using ideas, we're using concepts. And we have, we have a common stock of, of concepts. And the meaning of these concepts is different depending on the culture you're in. And so if you take a very trivial example, bread is not the same as path. In French path, you think, well, it's a long stick, whereas you say, bread, it's something different. And so you immediately got these cultural connotations. And so the same applies to scientific concepts, in terms of their reach, and use within a larger metaphorical context.

F Freddy Drabble 16:45

And how's this analogy going to develop? I mean, we're on the brink of a transhumanist revolution that's going to take us out of the computer era into a sort of biotechnological era, do you think that the analogy will change, and we'll start to talk about things in a sort of biotech logical way?

D David Lorimer 17:03

Well, I think this is a really critical issue. Because what it what it addresses is, is the basic nature of a human being. So as you've been, you've been saying that the if you if you view the human beings as a biological machine, fundamentally, because you are using and extending this analogy, the machine or, or a biochemical machine or a biotechnological machine, and then the machine can then be the functions of the machine can be enhanced by various means, which is what the plan is in terms of enhancement. And, and that then takes you down a particular route, which is very much the World Economic Forum route, as you're probably aware, and it's the it's the route that is envisaged by Ray Kurtzweil. With his singularity coming up in 25 years time, but then you have to ask yourself, the question, Is this actually, and is the metaphor of the biological machine? completely adequate? I mean, obviously, you can say you could see that up to a certain point. As with any analogy, and metaphorical system, it's useful, it's very useful, it actually illuminates things, but then every idea has its own limitation. And so, in the same way, that it illuminates something, it also obscures other aspects. And so, and the

aspect that is obscured for me is precisely this subject, and depth and qualitative aspect of the human being, which you can't actually quantify. And so, so the analogy, the danger of that we get, we run away, we allowed that analogy to run away with us. And we forget our humanity. And you know, what, what is the essence of a human? That's the question that I think we have to ask ourselves very profoundly and have no extensive debate about this.

F Freddy Drabble 19:11

And that brings us directly on to the second point, which is this idea that matter is unconscious and that the universe is unconscious. What are your I mean, the starting point for me here, I think, is this wonderful quotes from people like Max Planck, and Schrodinger from the early 20th century where they just they came across this data and they just were like, when we can't get past this just consciousness is utterly ondemand integrated in this system of measurement, and we have no way of getting behind it and trying to understand the physical world without talking about consciousness. What are your thoughts on this? Can we separate the two I think it's absurd to Try.

D David Lorimer 20:01

Yes. Well, again, this is a very deep question to look into. I mean that let's just go back for a moment to this, this primary and secondary qualities. Because I think that's the root of the way that people are now thinking about these things, is that it matter gives rise to mind and brains give rise to consciousness in men, which isn't it? Yes, nature is effectively matter is unconscious, because you can't, you can't actually get one out of the other. Or else you have to come up with another view, which is that somehow, like, as th Huxley said, it's like steam coming out of a kettle, there is a byproduct, which is consciousness, but then you then you then you, you have to dispense with agency and freewill. And that becomes a philosophically problematic, we might get onto that in a moment. But I think what's happening at the what's happening now is actually very interesting, because there are some philosophers like Philip Goff, for instance, and also Christoph Kok, who've moved away from a hard physicalism materialism. And I analyzed a lot of these positions in my original book, survival in the first part. And they're realizing rather along the lines that you've been talking about, with, plank, that there's something irreducible about consciousness. And in fact, if you if you just take the example of our conversation, now, obviously, we have to be both be conscious, in order for any conversation to take part. And also we are trying to convey structural messages, no vitam, but by language and concepts, in terms of conveying understanding and understanding each other understanding questions, and then then understanding the answers and building the dialogue. And so in that sense, then the consciousness becomes the prerequisite for any knowing. And I think that's, it's the means of knowing and fat. And so I, so that's what I think I've been thinking about this recently. And that's why I think, plank was getting out when he said, you can't get behind consciousness. And so I, so I think that there's a lot of shifting and redefining going on here. No, within philosophy, quite actually, apart from relationship to our lived experience is just conceptual, that so Galen Strawson is another example of somebody who's moved in this direction. And he says that there will look back on the idea that consciousness was illusionary with amazement, when when we sort of learned fifth 20 3050 years time writing up the history of the last 100 years. Well, I love his point about this sort of the real issue that we have, you know, because we're so steeped in this idea of evolution, that we have this idea of sort of very simple building blocks of the universe, slowly developing and complexity. But Strawson sort of

says, there's this, there's this moment where suddenly consciousness comes out of non consciousness that that moment still needs to be accounted for. And I think the pan psychist approach that says, Listen, there was some part of those original building blocks that had some seed of consciousness, even in a very, very simple form, that could then evolve into a more complex country that makes more sense than just saying, magically, you know, basically by saying that it's emerged out of nothing. You're basically saying magic is real. What's your take on strawsons argument? I think it's very solid. Yes, well, I suppose there's an irreducible mystery. And at the bottom of this, whichever way you look at it, because in a sense, you you take your there's one one mystery is replaced by another. And in terms of sentience, and stones, then sentience. And I think I'm probably go more with Whitehead, here, because what Whitehead whiteheads idea was was encompassed in what he called pan experiential ism. And he was writing about the same time as Planck gave that famous interview. So process and reality came out in 1928. And the observer interview that was 1931. And Whitehead was one of the people who, as a philosopher and mathematician and he, he understood With the implications of the emerging physics, both in relativity and quantum theory. And so his his take was that that's where we have to start from, we have to start from experience rather than starting from, as it were matter or mind. It's the wrong starting point, he says, And he, he writes science and modern world, which is more lectures he gave in Cambridge in mid 1920s, came out in 1935. And the point I wanted to arrive at here, is that what way Whitehead looks at evil evolution in relation to God. Then he says that there are two aspects, and there is a transcendent aspect, which is recognizable in theology and no theological tradition, and that God is beyond everything. And then there's the imminent aspect, which is the God is within. And it's the imminent aspect, which is, which we're looking at, in terms of emergence and evolution. But so he would say that the transcendent aspect of existence is always there, underlying the emergent process of evolution, that's a slightly different framing of the same, same idea that perhaps less controversial, the the pan psychism approach, because it's slightly less calling on a transcendent concept. What do you think of integrated information theory, which is trying to actually give her a mathematical basis for all of this? Do you think that trying to put math into this equation is is just foolish? It's a is it naive? Or do you think that they're onto something to Noni? And the well, I don't, you don't actually know much about that field. But But I think it's an extension of the of the scientific method. And when Galileo said, the language of nature is mathematics. And so mathematics and science, obviously go very closely together, but you're still talking about the quantitative aspect of existence. Yeah, I still thought that it is the right approach. And there's another one for man Hoffman, who will I'm hoping to, to interview who alongside some physicists working on entanglement are they are looking to create a mathematical mathematical theory of consciousness as well. And I think, in a way, for me personally, just the fact that they're trying to do this, and the fact that they're using it as a support for Pan psychist views, I think, as you said, it's a sort of normalization of these theories of consciousness is trying to encourage the scientific community to see this as a nuts and bolts possibility rather than some woowoo, transcendent reality. Right. Is that actually explaining that? That would be? That would be my question, because I can see that in terms of a formalism and a structure and a way of seeing and understanding, it could be incredibly useful. But in terms of lived experience, and I can't see that that's going to add very much to the quality of our lives. Well, absolutely. But I think, you know, for me, what is important is that there this idea of the presence of the seeds of consciousness within, you know, testable, physical reality, I think, is, is a great step in the right direction. So, you know, I'm always open to these, these approaches. Do you think that it's, it's, it's still trying to build up the hole from the parts? Because obviously, again, there are two, there are two ways that holism and reductionism, in my view are complementary. That one, one doesn't get a whole understanding of things or a complete understanding without actually going, coming from the top down and going from the bottom up?

F Freddy Drabble 29:02

Well, this is a very good point, if you don't have access to all of the information in you know, of every single element and dimension of existence, you can't actually do that. We're always working from relativize point of view, and we'll come back to that because obviously, there is the another of the assumptions later on. Okay, next one, David, the laws of nature are fixed. They haven't changed since the beginning of time. The constants of nature are also fixed, hence the name. Constance, do you have any thoughts on this? Well,

D David Lorimer 29:34

that's not that's not so much my area. But I think there's one point I'd like to to all make at this point, because I have discussed this with Rupert. And that is that, I think is his argument is that if we now have a completely evolutionary universe, than with the Big Bang, and that their whole process, following on from Add, and then it, isn't it possible, he's really asking the question, then that the laws of nature could also evolve and resemble more habits than actual laws. So again, you see, the law of nature is another metaphor. And so we have to remember, and that originally came from the law like attributes of God that were discussed by theologians. And what you're really talking about here are regularities in nature. And so a law of nature is a description of irregularity. Whereas a law in terms of a statute is something that lays lays down a rule, or lays something out, in which you're meant to obey. And so there is a bit of one Eastern again, drill down bit into that how the term law is used there. And in historically, again, it tended to be associated with with determinism. And so we're going back to this mechanistic idea. And then the Laplace idea, which has been overtaken by complexity, in my view, so Oh, linear mechanical causality of one thing following on another, which is normally obviously a simplification. And so that so that the law again, the point is, that notion of law isn't as another metaphor. And yet, there's a rather nice extension of that metaphor, which is, of course, that our laws change over time, you know, we, we adapt our laws based on discovering whether they're working well, and whether they're actually being satisfied or not interesting to some of the pushback. On Rupert, for example, from physicist Sean Carroll, who's a proponent of the, the theory of the many worlds interpretation, from from quantum physics, he pushed back on reapit here and said, well, actually, you know, many respectable scientists who study the possibility that physical parameters vary with time, both theoretically and experimentally. So he's saying, Actually, scientists are a bit more open than you're giving them credit for. And of course, there is a lot of experimental physics out there looking into this. And that there are margins of error. And that, obviously, experimental techniques are updating every you know, every year, I bet Rupert refers to the speed of light being measured differently sometime in the 1930s, and 1940s. And those measurements have been sort of conveniently brushed under the carpet in order to try and make out that it is a constant. But Sean Carroll's pushing back on that say, Listen, we are very much aware that there are margins forever. But maybe this is more of a conceptual question, because actually, this is a mathematical problem that we need to establish those as constants. Because otherwise, we struggle to measure those, the data that we're actually looking to explore in the experiment, it's like you can't have too many variables, or otherwise the experiment isn't a closed system. And we we get into, we can't actually make any conclusions. Maybe we just have to accept that we need to make a few assumptions and pretend that a few things are constant, at least, to a sort of estimation, in order to get any decent data. What do you think about that? Is this just par for the course we just have to accept that that we need to make a few estimations? Well, I think there are two different points there.

One, one is that if you look at the the variations in the measurement of the speed of light, they're infinitesimally small as a percentage. And so for practical purposes, I don't think it's going to make a huge amount of difference. And the other the other more general point, and this is really explained in great detail by the work of Nicholas Maxwell. And is that you, you can't actually, and RG Collingwood, we might come on to but you can't do anything in terms of an intellectual pursuit without assumptions. And so, for instance, one basic assumption that Nicolas talks about is, is unity. And it's you infer that everything, everything is a unity, and therefore, you can assume that. And first of all, again, for all practical purposes, that's absolutely correct. And one doesn't need to revisit it. But the point is, there's a whole architecture here, which underlies the way that people go about, you know, particular disciplines. In science there has to be, I mean, there's a correction there are correct experimental procedures, and there are correct setups and all of this and so, so I think It's largely a question of remaining aware of the larger context in which you are operating, which is a social context, a historical context, scientific context, there are all sorts of artists guilty of, of perhaps overstating their case and not being enough aware of that, or do you think there is a bit of humbleness about? Well, I think the I think the structural issue, which is actually an educational one, is that science is not taught alongside philosophy of science in history of science. And so majority of scientists actually don't know very much about this, the history and philosophy of science, which actually contextualize is their work. And so this is one of many, if you look at the influence of Karl Popper, and then Thomas Kuhn, and the Structure of Scientific Revolutions, what they were trying to do is to make scientists more aware of the underpinnings of what they were doing. And and so I do think that that's something which obviously we're looking at in some detail in the Galileo commission, and with the Galileo commission report. Tell us a bit about that. Because that's a fascinating new project of yours. Yes, indeed, well, the reason why it's called the Galileo commission, is that it's an invitation to look through the telescope, at the large evidence base in what Dean Radin calls advanced science of consciousness and novices slightly controversial way of putting it, and in the same way that they're the professor of philosophy at Padua refused to look through Galileo's telescope, because he already knew that it was impossible, what was being claimed by Galileo? Because why? How did he know that on authority, whose authority Aristotle, and so so you've then got this question of authority, and respectability, and credibility and acceptability, coming in, which is the whole social context of, of science and indeed, the whole social context of us as human beings, we, we, we have two complementary modes, if you like, we want to stand out and we want to fit in. And to the extent we stand out, we won't be original and somewhat fitting in. And we need to have our peer group accept and approve us. Identity is right at the center of this as well, isn't it because if we, if our if our beliefs are challenged by new data, actually, we have to also redefine our identity because we define our identity or based on our beliefs, and I think this could be a lot of the source of the resistance in that while people do go and check out the Galileo commission, it has already published its first report, and there is some extraordinary evidence in there from real solid, repeatable science, that will certainly put a few things in stark contrast with what we were taught at school as it were. Coming back to the fixed nature of constants, I just wanted to also mention, first of all, theory of relativity, which, as we know, completely revolutionized cosmology and and sciences, we know it, because it was clear that space and time are not linear. And we're going to be covering this on the show. And I think I wanted to get your opinion on this, that I just think that the implications of that have not yet been absorbed into our everyday society where, to all intents and purposes, our senses tell us that space and time are constant and straight and linear. And so we don't really worry about the scientific implications of that for our worldview. What's your take on this? Well, I think that's true of physics in general. And, and it's as true of quantum theory as it is a relativity. Absolutely, I was just going one at a time for the culture to catch up with the implications that are revolutionary implications of scientific and other other discoveries. And in some, some

things can come they are accepted much more quickly. I mean, an example recently would be epigenetics. So it's just in the last 10 or 15 years that the importance of epigenetics has has emerged. And that is an unmodulated, the sort of neuro genetic determinism idea that everything is already pre wired, rather than the expression of genes depending on your lifestyle, your decisions, and outer outer conditions. So the whole I think the general direction of travel is towards a more complex and subtle understanding of things, but is there's a kind of time lag there. That is Uh, we know, we need in some ways I think we need to catch up quite quickly with because one of the crucial insights for me, and is, is that if there is a unity and underpinning, you know, both in physics and ecology and consciousness, and then that overcomes the idea that we're fundamentally separate from each other. And we should be pursuing our own interests at the expense of others, whether nationally or individually, when the challenges of the planet are such that our interconnectedness, not interdependence, then has to become primary. And I see this as a very strong message from, particularly from quantum theory. Absolutely. And that's something we're covering on the show where we're really going into, you know, the non duality suggested by entanglement as a phenomena. Do check out our show on entanglement with Chris fields for that. And I think, again, the way those implications sort of trickle down, is very individual, each of us has our own personal reaction to that and chasten consciousness listeners is really hoping to be sending that out. So please do share these shows if you feel that this is a valuable message for friends who like us maybe sort of on the fence looking for rational explanations, but feeling that something's missing from this purely separate, physical, non conscious way of understanding the world. Just before we move on, I just wanted to quickly mention another sort of relative idea, color Valley physicist, is releasing a new book about about the relative nature of things. And basically, as far as I understand, he's talking about the fact that we we really can't talk about anything, except by talking about something else. But that, that thing's reality is only in relation to another thing. So all things exist in relation to each other, but nothing exists in and of itself. That would be one of the implications of the theory of relativity, that, if I understand correctly, is what Carlos book is about. It's coming about just just just this year in 2020. But for me, when I heard this from his publisher, I was like, wait a minute, this is the Buddhist theory of dependent origination, that you cannot speak about one thing causing another without a philosophical, eternal regress back to everything else that is interconnected with it. So it comes back to your point of interconnectedness. And it's something we're going to be really going into depth on the show anything to add on that, David? Yes, absolutely. I recently had a trialogue with appeal at Colorado and Leroy, LITTLE BEAR, who are both my imaginal inspirations, and also from the scientific medical network. And they said that the fundamental postulate of indigenous science is that reality is real is relational, not relative, but relational. What's the difference? Well, everything is related to everything else, rather than everything being relative. And so you've got this web of life, that's another as another analogy of the this Indras. net, the web of life, these that you can't make an adjustment in one or impact in one area were resonating through the whole system. And that's that, to me is, is what we need to understand as a species as a sort of evolutionary jump. So that we can we can actually address these things together. But in a systems way, not in a way that's going to result in, in the domination of one set of people over over others. Hmm, interesting. Wow, we'll definitely be linking to your new podcast in the in the show notes. So do go and check that out. Can you just repeat those names because they're so beautiful, who were those two people? Oh, a peeler, Colorado who founded the worldwide indigenous science network. That's wi s n.org. And Leroy, LITTLE BEAR, who's a professor in a Canadian university. I've loved those those indigenous names. Right, moving on, the total amount of energy and matter has always been the same. Except at the moment of the Big Bang, when it all magically sprang into existence from nothing. In a single instant. There was quite a giggle in the audience. When Rupert suggested this idea at the TED Talk. It does sound a bit absurd when you put it like that just suddenly sprang into existence in an instant

and then remained exactly the same quantity of matter and energy for the rest of time. What do you think about I think you really need to get the sort of physicist Cosmo Just to comment on that one, that's, that's not really something that I can really add any constructive comment about? Well, thank you for your humility there, David. I, myself feel totally unqualified to talk about this. But we are speaking about this with all of our interviews with physicists, trying to get a sense of really what is the correct interpretation of what we're getting through this experimental data. However, I did just want to add here, that it's becoming very mainstream now to talk about dimensions in physics. I think some physicists are now talking of around nine and potentially even up to 12 other dimensions, and it struck me that if we're looking at the universe as a single dimension, this idea that that dimension might be expanding or contracting, or that dimension may also have bleeds between each other. I don't see any reason why we would assume that those dimensions are completely watertight as it were. What Why should we assume that there isn't a bleed between them in some shape or form? But of course, that's pure speculation. Can I just come in with a renewal, just just an observation, and that's that, my friend Bernard Carr, who's a cosmologists, and he's president of the scientific and medical network, and he has developed what he calls a hyperspatial model, which integrates physics, cosmology and consciousness. And so the general point I wanted to make is that it seems to be quite kosher, to, to expand the number of dimensions in physics. But if you start saying, well, let's we need to expand the number of dimensions in relation to consciousness. And that's a no go area. I think that the notion of dimensions because a dimension is something against measurable, in principle, that's how they, that's the origin of the world. But I think we just need a little bit of expansion there to question whether we also need to be looking not just dimensions of space time, within space, time, but also dimensions of consciousness. And we know from our own experience, that our state of consciousness and will influence how we understand things, and I'm sure you'd agree, David, that luckily, this huge resurgence in consciousness studies that we've been seeing since the late 90s, has really opened up that discussion. And now it's far less controversial for physicists to start speaking about these, as you said, the sort of mental imagined dimensions or consciousness based dimensions, moving on. Nature is purposeless, the evolutionary purpose process has no purpose or direction other than self perpetuation. Why do you think? Well, here's another big metaphysical one. Because again, the context of this arising is, Western science arose from the Greek heritage, Greek philosophy and science, and Plato, Aristotle, but also from, from Christianity. And, and so, so it the idea of purpose and purposelessness is something that that is particular to, to Western Western ways of thinking, now, that what the root of this is, then the kind of contraction of Aristotle's ideas of causality. And so he he had, he had what we call final cause. So there's a tell us there's a goal towards which things are unfolding. So, you can see this in terms of acorn and oak tree, that that's that the unfolding of the acorn, the purpose of that inverted commas is to turn into an oak tree and produce more acorns, which is the self perpetuation idea. And then there was a goal within the Christian cause of cosmology of, of getting to heaven. So that was the purpose it was was so with, with with, with evolution. And you then got this idea of humans being part of the natural world, and this was the big impact of Darwin and Huxley in the 19th century, but one also has to remember that there was an alternative view even then, put forward by Alfred Russel Wallace, who was the co founder of natural selection. And so the, the paper the original paper given in 1858 at the Linnaean society, was a joint paper by an Darwin and Wallace Wallace was in Sumatra. So he couldn't sort of fly in as one word these days. Yeah. So Wallace Wallace believed in spiritual evolution as well as physical evolution. And then this comes to the question is, is the whole process purposeless and has no direction? Well, I don't think so. I share Ervin Laszlo has view and view quite a number of other people who say that there is an evolution towards complexity and consciousness. And that, that I think makes sense in terms of the, the the overall evolutionary story, you could still, you could still try to maintain that, well, that doesn't really amount to

anything, in terms of a purpose. And but but I think that it also means that our, our understanding of life, and where we are in reality, is becoming more complex and subtle, and deep. And that itself says there is a purpose in knowledge, if you, if you like, by the enhancement of understanding, and this applies in our own lives through an evolution of the complexity and depth and unifying capacity of our own consciousness. So I think it's a metaphysical statement, as it were, I think it's, I think it's a way of making sure you keep God firmly out of the way. When you know that this is a very good reason why the I think it was, it's the national society that the the Royal Society basically excluded Wallace, from the whole achievement of the theory of evolution was possibly for this slightly difficult to manage, transformation or element that he wanted to introduce into the theory. But the it's definitely, I think, without spending too much time on this because of a difficulty of finding any scientific nature, I think it is, it is a massive assumption. We cannot say much more than what we see in the physical world. That yes, self perpetuation, you know, the continuation of one species is very clearly visible as a purpose. And we can't establish for sure anything else, and it's very personal. It's part of the subjective experience of the individual what that purpose may be. But I think to assume that that's it. Just because it's scientifically convenient, seems to me a little bit reductionist. Okay, moving through the rest of these assumptions, biological heredity is material, everything you inherit in your genes, is in your genes or an epigenetic modifications, or in cytoplasmic inheritance. It's material. Obviously, we're referring here, Rupert's referring here to his extremely controversial theory of morphic resonance, which sort of takes the possibility of change beyond your material genes and epigenetic changes. We're going to be talking to Rupert about that in detail. Is there something you'd like to mention quickly, David, that might throw this into contrast? I think it's a big conversation. Yes. Well, I think it also relates to sunk to the memory question, which is, which is the next one, which I might just treat with them? At the same time, memories are stored inside your brain as material traces, modified nerve endings? phosphorylated proteins, we don't know how it works, but everyone assumes it must be in the brain. These two do come slightly together. Yeah. So. So I think the I mean, I think, to all intents and purposes, there, the first assumption is, is broadly true. I mean, but the question is, whether whether it's 90% True, or, or 85%. But that the evidence that I think it's the most interesting evidence, and it's, it's robust in the sense that there is physical evidence for for it is the work of Ian Stevenson, and Jim Tucker at the University of Virginia, the Division of Perceptual Studies. And this comes from No, two and a half 1000 Plus cases analyzed in great detail. And the point here is that there's a correlation between memories and birthmarks. And this This is, this is really interesting and intriguing. And so it's really good to raise it for intriguing purposes and say, Well, what does this actually what does this say or what might it say? So, they just give you just give you a case history, illustrative case history. So a man a child remembers a life where they dark man died through gunshot wound through the head. And the there was a corresponding birthmark with the entry and exit wound on the side of the head. And the memories of this event and indeed have quite a number of events, life events, were able to be verified by Stevenson but in particular, the man, there was the hospital records of the man with exact illustrations of where the bullet had gone in and out. And, and so this means is there's a factual basis, which links the memory with the birthmark. So the question is what might be the the mechanism for such a development. And this is where you come back to Aristotle's idea of the soul as a field. And so this is where this is obviously relates to work Rupert's work on morphogenetic fields and morphic fields, generally, so that if you want to try and make any kind of rational connection between the mode of death and the birthmark, which statistically if you if you map all the in sort of, you know, two centimeter square pieces, and you you then work out the probability of it being at precisely those points, which correspond to the entry and exit wound of the bullet. And this is quite famous in the Tibetan tradition, isn't it because they, they go off and find the new Lama, then you die Lama based on the idea of reincarnation. And in fact, there is actually quite a robust field of

reincarnation studies, which certainly, maybe not right away, but in the in the third, or the fourth series of chasing consciousness as we'll be getting on to this. So anybody who's interested, and we'll definitely be linking this in the show notes as well. So if you can furnish us with this research, department, Perceptual Studies, University of Virginia, and wearing in close touch with with the researchers there, and it's been continued by Professor Jim Tucker. So, point of departure for reflection, just wondering what the implications of this might be. And, and the implications of I mean, one of the works that bit bits of work that Rupert looked at was the was Dryships. Experiments, which I was actually just reading about, again, last night in a book by Michael Polanyi. of the self regenerating body parts in in certain animals, but not obviously, so much in humans. And so what what is it that enables that to happen? And so is it? Can it whole thing be explained by genes? Or do we also need a field? No, that's really the electric body theory. Yeah, I'm really, really different. I think it's a very open, open question. And one that I can't really say much more about. It just that it is a compelling idea, isn't it, especially now that we, with quantum theory, there's, there's this speak this talk of a sort of, of a quantum field, it seems to be entering more into the scientific pioneer, this understanding that a field may be more feasible as an explanation for actual physical reality? Okay, well, I think that even goes right back to the, the 19th century, because I've just been reviewing a book called Einstein on Einstein. And part of the discussion was about 19th century mechanics, and how the mechanics idea mutated into the field and how the field has then become a hugely important conceptual tool and to order our knowledge on so I think that there may well be fields that we don't yet know enough about, that could have explanatory power. Absolutely. It's certainly a very, very useful way of thinking about things, isn't it? Okay, memories, anything to mention about this? I mean, obviously, that is something we're going to be covering the neuroscience of, because there's a lot of very, very contrasting theories on this. And then you'd like to mention about the way memories work. Well, if you just reflect on the Stephenson research, and even Carl Sagan said that this needs to be taken seriously. Sagan shaken admitted this was a real phenomena. He said, This is a kind of cloud on the materialistic horizon, if you like that. Usually he was he was, he was quite, quite against all of this was no I know, it's very robust. So that the question is with these children remember previous lives. And what you can certainly say is that these memories are not in the brain of the child who remembers them. Because they can't have been they can't have been laid down and the way that we might know and logically think about memories in our own case, and so that they obviously they must be getting the memories from somewhere and retrieving the memories from somewhere else. I think this is all very open. I just think that, that we need to expand our ideas. And in order to accommodate this kind of evidence, and I don't know the answer, I didn't know what the ultimate theory of memory might be. But I mean, also relates to any any kind of communications from other dimensions, but I know we don't want to go into at the moment, but so that I think the advantage of the Stevenson work is that it's very rigorously analyzed. Yeah. And and all it says students, you could say that this isn't actually any proof of reincarnation as such, or rebirth. It's actually a proof and survival of these memories in some other form. Absolutely. Again, we don't know enough to, to be able to draw any firm conclusions. But what we do what we can infer from this isn't there's more to memory than brain traces. Absolutely. Your mind is inside your head. Number eight, your consciousness is correlated to your brain activity. Now, obviously, this is something we're covering in detail on the show. We're looking at equally, we're looking at very, very reductive theories, including that freewill is a complete illusion that this is all brain chemistry, right up to extended consciousness theories. what's your what's your position on this, David? Well, Rupert uses the phrase extended mind, which I think is quite a good one. So the the non extended mind is would be the idea that it's all inside the brain. And the extended mind is that somehow that the mind extends beyond which is one of the reasons why he's doing he's interested in telepathy, animal telepathy, and staring experiments, but because these these provide some traction, if you like

to in terms of what you can look at the, the ideas, but I suppose the fundamental point here is that if you go back to William James's Ingersol lecture on immortality, which was published in 1898, and he and an Oxford philosophy, Don, called FCS Schiller, and Henri Bergson, were all looking at the idea that the brain was a kind of filter, or transducer of consciousness. And James put the put the matter very, very clearly. And Ian McGilchrist is writing about this at the moment. He said that there are we know that there's a relationship between consciousness and the brain. But we don't know the relation that the nature of that relationship is assumed and still is that the brain produces in general generates consciousness, hence the hard problem, how does the brain generate consciousness, which contains that presupposition in it, but equally, you can explain the evidence by presupposing that the brain in some way, act as a filter or transducer, or permettere, or transmitter of consciousness. And this this philosophical argument along with the, the evidence has been developed in detail by the University of Virginia books, which are irreducible mind beyond physicalism. And then coming out in April, this year, consciousness Unbound, which is the third in the series. And these are the most rigorous, available texts that showing that James and Myers as well, Frederick Myers, because he had similar ideas, we're probably onto something. But we've got kind of diverted down this, this path, which for for most purposes, is extremely productive of the assumption the brain generates consciousness. But there's too much other evidence, or what you might call evidence based spirituality. There's a big evidence base, which calls that into question, which is really what the Galileo report is raising, why we are asking people to look through the telescope. And I do encourage listeners to check our episode within the grills pressed about all of this, where we'll be going into all of this and talking about his new book. But also, David, thank you for drawing our attention to the University of Virginia's work on this and these important books. We'll definitely be linking all of that and I'll be trying to get Get some of these people, these researchers onto the show. I'm aware we're coming up to the hour deep. So I just want to come through, there's more to say on all of these points isn't there, they're all juicy conversations in and of themselves. But let's just get through these last few points. Now. Number nine psychic phenomena, as you mentioned, something that Rupert has has done a lot of research on psychic phenomena like telepathy are impossible. Your thoughts and intentions cannot have any effects at a distance because your mind is in your head, referring, of course, to the previous assumption, therefore, all the apparent evidence for such phenomena is illusory. people believing such things either don't understand statistics, or are deceived by coincidences or a victims of wishful thinking. How do you explain in the light of the, in my opinion, I mean, I'm very new to this field ever. But there really is an enormous body of scientific research from I think probably the more solid, repeatable stuff is in the last sort of 6070 years. Although the field does spread right back to the beginning of the 20th century, in the end of the 1800s. I think this goes a long way to explain the resistance to this doesn't take the this idea that really we just can't imagine the implications of of the fact that this might be outside that might be able to stretch outside of our heads. Yes, I agree that the assumption we're talking about now is direct logical consequence of the previous one, that that the mind is in the brain, and the brain produces consciousness, therefore, consciousness can't be non local. So any kind of non local effects that seem to be happening, like telepathy, and so on, are, are impossible in principle? So I think the one exchange that's gone on recently is that in 2018, there's a paper from Sal Khan, Dania from lunch University, which is a sort of meta analysis overview of the whole, yes, ESP side research of last 70 years, including the meta analysis. And then this was, I'm sorry, just for listeners new to this field. What do you mean by meta analysis? Well, this is where you This is where you, you aggregate and studies, and to work out the overall probability of in relation to the whole collection of studies or point of the scientific collective approaches that we aggregate all of these studies to get a consensus approach. Yeah. Yeah, exactly. So. So what what then happened was that there was a so called rebuttal of this by Rayburn Allcock, which is published by the editor of this psychological journal, I can't exactly remember like, I

can let you know the reference. And then the matter was left to rest there, in spite of that, so Cardinia objecting to that rather inadequate response and that it comes back to the point you made, which is that because these, these things are impossible, these phenomena are impossible, we don't actually need to pay any attention to them. Now, what I like to do here is actually make rather an important distinction, because if you go back to 1882, and the foundation of the Society for Psychical Research, this was known as Psychical Research. So you were you were researching into the psyche, you were searching into consciousness in what we now call consciousness researchers and wider consciousness research. And this was based on on people's experiences. And so for instance, in 1886, there was a phenomenal book came out called phantasms in the living by Bernie Meyers and Podmore, which I read a long time ago, 1200 pages, and these are people who were fellows to Trinity College, Cambridge, and are stupid, who know, they looked into these phenomena in great detail. So the first question is, are such experiences possible? Now you actually have to answer an emphatic yes, because people report them all the time. And so you can't have an impossible experience. I mean, let's let's just take deathbed apparition, somebody has an apparition of somebody and it coincides, more or less exactly to the time of death of that person. That's something they looked at in 1886. Now, the second question is can these experiences or can this faculty or phenomena, these phenomena be reproduced in the laboratory? That's a different question. And so what what the skeptics often say is that because this is unsatisfactory in the laboratory, you can then say what side doesn't exist? People do not have these experiences. And so I think one needs to distinguish sharply between these two areas. One, you can't deny that people have extraordinary experiences. But you can say, well, these are very difficult to reproduce in the lab near death experiences are not universally acknowledged to happen. But can you? Can you get verifiable proof of the out of body component? We don't know. Absolutely. And that's something we'll be going into in depth in the in further series of chasing consciousness is just to see if we can actually glean any scientifically valid data from from these investigations. There's another point here as well, which is about the limits of science. And we're going to be coming back in part two to really talk about that, particularly with regard to the scientific and medical network, which is looking to bridge these areas, sort of perhaps bridging across an area of verifiable scientific fact. But there's another point I wanted to bring up here, which is this thing that it seems so completely against scientific endeavor, like the whole point of scientific endeavor is, we must, we must look at the data and we must go into detail of what is being observed by the public that will then call scientists in to look into more rigorous detail. And if that data contradicts our previous beliefs and theories of reality, we are obliged as good scientists to update our worldview. I, I feel that this what you mentioned with the Galileo committee, you know that he refused to look through the telescope, a lot of the rebuttals we're seeing again, I'm totally new to this field. I, I myself was one of the many sexually educated people who presumed that it was nonsense, because it hasn't been covered in the mainstream press, that it was make believe. But when I went to look at it, like some scientists, some physicists, particularly that I've interviewed, on this podcast, they came kicking and screaming, that was the phrase this lovely physicist uses. I came kicking and screaming to this data. And I actually he took it straight back into the lab was like, right, I'm going to prove this wrong. And right, prove things wrong. And he couldn't. He said, I had to after five years of literally being in an existential crisis as a physicist, I had to open my own silo because it was, I couldn't do this. I couldn't falsify this evidence. So I respect for that kind of scientist who is willing to abandon 3040 years of worldview 3040 years and based on hundreds of years of the history of science, forced to reestablish to reevaluate their worldview. For me, this is honorable, it is humble, and it's downright necessary for us to practice science. I mean, I know I'm sorry, if I sound a little over passionate about this, but no, well, I know how much pushback we're gonna. Yeah, I share that sentiment talking about this on the podcast, we're gonna get so much pushback, I'm gonna get insulted by all of my friends. You know, saying, Freddie Don't be such a pseudo

scientific hippie, you know, how can you you know, diddle with this, this make believe, and I am, I'm just I just feel an absolute obligation as a rationally minded person who's willing to take onboard new data, and face the difficult situation of having to completely re address my identity because I have to change my beliefs. I just think it is it is a moral and ethical responsibility. Well, what what we're what we're trying to do in the Gallo commission is really to expand the acceptable evidence base, and the resistance to the evidence base comes from the assumptions that we talked about earlier on. And then therefore, the limitations of what is possible in terms of those assumptions. And the late Larry, the Shan worked, wrote about this, and he said that there are no impossible experiences. And so if your theory is unable to account for the experiences, then so much the worst of your theory, you need to change your theory. And so that, really what what we're talking about here is how to balance open mindedness and rigor. And so the scientists that true scientists should, should have a delicate balance between these these two aspects, being open minded but also being critic rigorous in terms of the assessment of whatever evidence it is they're looking at. But you shouldn't say as a scientist, that such evidence is impossible in principle, how can you make progress in science? If you dismiss evidence, in principle, dogmatic that is tackling? Absolutely. Let me tell you a story. And so John Polkinghorne, who's, who is a physicist, he was professor of physics at Cambridge. And then he became an Anglican priest, and he was master of Queens College, Cambridge. I don't know him that well now, but I used to know him quite well. And he came to a seminar in the late 90s. And We gave him a copy of Dean radianz book, The conscious universe, which is his first major book, because we had a spare copy of it. And after a few weeks, I had another conversation with him. And he said, well, the evidence was much better than I thought it would be. And that said that that was a there was a significant, here's a major scientist Fellow at the Royal Society, would he would he go on the record to say that, that's the real situation for scientists, and I have absolute respect for any scientists trying to make their living, and trying to maintain a respectable reputation in a paradigm that quite simply has blocked with all of its force, the reality of this phenomenon and the science that is exploring it. And I have to say, with great humility, you know, I don't want to attack any of those people. Because I myself, until very, very recently, when I started to read this data, would have said the same thing. So I think it's really important just to wrap it up, because we're coming up to the end of part one, you know, I, I feel great compassion for anybody who is in a position that they really must just stick to these assumptions, because that is the paradigm in which they're working. That is the paradigm in which they're receiving the funding that allows them to, you know, look after their families, I have total respect for that. But I believe that people like us, David, who are potentially slightly less vested, in that worldview, we do have a bit of a duty to help the public to slowly open up this reality, because the implications are so so important. And we're going to come back to that, in part to talk more about some of that. I think a lot of people out there and maybe people who are listening to us who are scientists who are academics, find themselves in this invidious position where they have had an experience that goes beyond what can be understood and explained in purely materialistic terms. But they feel their colleagues would be incredibly skeptical, and they'd lose their credibility, if they were to talk about the experience they can maybe talk about around the dinner table, but certainly not at the faculty meeting. And so we've got this strange situation of contradiction between lived experience, and the situation in which the social and scientific situation which people find themselves and so how can we, how can we close that public private gap, and as it were come out. Now, there's a tipping point isn't there in things in all of these things, there's, there's pressure, there's pressure, there's research, there's publicity, and it just slowly builds pressure, and eventually, there's a tipping point, and it becomes permitted to start opening up. And the same thing happened with consciousness studies, you know, in the 80s, consciousness studies was pariet stuff, it was like you know, you, you would never be recommended by a tutor to go into that in the 80s. And suddenly, in the 90s, with David Chalmers. And that conference that

he set up in the mid 90s, suddenly, it became extremely fashionable and actually quite respectable. So perhaps we're looking at that kind of change, David, I'd like to wrap up part one, because we're going to take a short break. And we're going to come back in part two, we're going to talk about your new books, your old books, we're going to talk about the limits of science. So really, what it's better not to, to include science in as a conversation. And what we're not expecting science to try and tackle because it's literally beyond its scope. We're going to try and work out if there's a little bit of a limit there. We're going to talk about your organization, the scientific and medical network that has been exploring and bridging these two worlds for such a long time. We're going to potentially try and work out some of the problems that we're seeing at the moment in New Age, society, New Age, the New Age community, the wellness community, where they're drawing on scientific concepts without potentially You have good solid, solid base, we're gonna see if there's some problems there. And we're going to talk about David's new book, The quest for wisdom, a quest for wisdom, then thank you very much. We'll be back in a minute. Don't go away. Listen, thank you hello, everybody, and welcome back to chasing consciousness. This is part two of our episode about the assumptions of Western science, with David Lorimer, author and director of the scientific and medical network. So in the first part, listeners do please go back, we went into detail, perhaps slightly more from the philosophical point of view rather than as practicing scientists, because David is more more on the philosophy of science and the history of science side, we discussed all of these quite understandable assumptions of Western science. And we gave our point of view about why we think there needs to be potentially a little bit more flexibility and a little bit more open mindedness, but above all, that to assume, without looking at any data just because it's inadmissible because it's impossible, seems a little bit unscientific. Now, in the second part, this is part two of the of that I want to go a little bit more into David's work. He's written many, many books, and also to the work of the scientific and medical network. David, welcome back. Thank you. Let's move on to your 2001 book, thinking beyond the brain. The consensus view in science in general is that is at best that consciousness emerges from our brain chemistry. But at worst is a complete illusion. Our job in this first series is to sort of bring the public up to date on other research new data that potentially bites into that a little bit, what arguments does your book present that can support this call for a sort of wider science of consciousness beyond the reductive physicalist view? Well, let me let me just sort of back up a bit in terms of that whole development of the field because as you mentioned, in the at the end of part one, and the consciousness studies took off, as it were in the 1990s, with the establishment in 1994, for instance, of the Journal of consciousness studies. Then Peter Fenech, who's the emeritus president of the scientific and medical network, and a neuroscientist and neuro psychiatrist when he was at Cambridge in 1950s. He said you couldn't use the word, you could only use awareness, you couldn't use consciousness, because that it wasn't, literally wasn't on the radar. And so in the, in the 90s, this was beginning to be looked at more seriously. And in 1995, I founded with the Institute of Noetic Sciences, a conference series, then which has been going on ever since now, we're doing it every year called Beyond the brain, which is beyond the brain.org. That phrase comes from a book from Stan Grof, the Stanislav Grof, psychiatrist and pioneer in many different types of, of consciousness research. And so what we try to look do in our beyond the brain conferences is to look at the latest evidence in the field, then, which points towards this wider science of consciousness of wider and deeper science of consciousness. And so, the, the 2001 book, brought together papers from the first three conferences, which are 9597, and 99, which we held John's College, Cambridge, and attended by a capacity audience of 300. People, with with many of the leading thinkers in the field. So really, what what we what we are looking at, is what we call the further reaches of consciousness research, which is the exploration if you like, of inner space. And so we're looking at at the phenomena, some of which we've already mentioned, and what is the nature of the near death experience? Is there evidence for survival of consciousness? And what what

sort of what's the status of this research into children remember previous lives, Apparitions out of body experiences? So in other words, the experiences that people have, and also know to some extent, the laboratory studies so we had we had a whole workshop with Dean Raiden on Jamaica in 1999. And And meditation is another area of interest. So we have Jim Austin who Who's the author present and the brain? So we've had a lot of prominent researchers delivering lectures at our conferences. And so the book, the book release, presents some of these, these arguments. And I think we come back to this this question that we were looking at in the first part, which is the relationship of brain and consciousness, and what the nature of that relationship is, and whether we need to think beyond the brain in order to understand the whole field. And so the argument of the volume and the argument of the series, is that we do need to extend our ideas of consciousness beyond the brain. And David, given the fact that this is a popular science podcast, and most of our listeners will be keen to read, physical evidence, clear cut, proof for the existence of these phenomena as more than mere illusions of the mind. Which of those things you've just mentioned, do you think stands up best in actual lab tests? You mentioned Dean Reagan's work at the Institute of Noetic Sciences. But there are there are there are site labs all over the world, which do you think stands up best? I mean, I always think of Schmidt to work on the random number generators as some of the most robust but but perhaps you've got some other other ones dimension? Well, there's there's the that means there's a whole Princeton experimental anomalies research unit with Bob, John and Brenda done. And been that that that is that I think, is very interesting work. But it's basically quantitative and statistical, to see whether intention can have an effect on the outcome of random number generators. And so I think that's the effects. That's really the statistical, it's a statistical result, but I don't think it has the same human interest. As for instance, the field of near death experiences or even after death communications. So there's only there's only a limited areas that you can actually bring into the lab for repeatable experiments on their telepathy, clairvoyance, remote viewing. I mean, there's there's a, there's a stack of, of papers written in each of these areas in books written. And I think the just, just recently, the most watched hasn't come out yet. This is Bruce Grayson, and he's appeared, some of your listeners may have seen this, on the latest Netflix series on surviving death as this the first episode, which is very good, it's on on near death experiences. Well, I think you keep coming back to David, we need to find a way within the scientific context to really take seriously and validate subjective experiences. And I think that I was hugely encouraged speaking with Joseph Ledoux, you know, materialist neuroscientists, when he said that his great mission was to try and help the field understand that, that, you know, the emotion is not the same as the physiological process. And that actually, we need to when we're treating those kinds of problems, whether let's take anxiety as a problem, that he said that there needs to be two things being treated there, you're treating the physiological symptom, but you're also treating that state of mind, and they need to be treated separately. And his mentor, Mike izannah, in my interview with him was saying, look, listen, the hard problem is, is the wrong question to be asking. I mean, of course, the subjective experiences are real. And you keep coming back to this point as well. We really need to find a way for science to take this kind of data more seriously in a way don't we? Well, I think it's also a matter for the philosophy of science. I'm just reading at the moment, the last book written by the chemist and philosopher of science further our society, Michael Polanyi. On what he calls the tacit dimension, and the tacit dimension is our is our immediate understanding which Ian McGilchrist who say is mediated by the right hemisphere. And as a result of which are on top of which are within which we can then add this analytical dimension. And but until you've got something to analyze, you can't really get started on that process. And so he, he, he shows quite logically that unless and this is also the, the feeling side, and we also have to remember that we are everything we, we say and perceive is not only through consciousness, but also through the body. And so, so I'm speaking as it were from my body, and you are, you are the same and so, so that, that everything that everything that we

processed through that, and then this is Donald Hoffman's point of his new book is in fact an interpretation and bodily interpretation, interpretation in relation to a particular frequency band, which we are able to perceive. And so So I think when we were moving, Tesla would have said this as well, I think we're, we're perhaps we're moving more in the direction of a vibrational frequency model, rather than a matter of hard matter. As such, well, I think that's a very easy concept to be hijacked by the New Age, community and potentially distorted. And I think it's really, really useful to think about quantum theory here that talks about the you know, this is neither a particle nor a wavelength, it's, it's, it's a quantum field, it's something in between. And I think if we look at that that's very much accepted in mainstream physics, we have a much better chance of sort of getting away from some of these, I feel, and we'll come back to this in a minute, slightly unclear ideas that have been appropriated by the new age. But that's potentially something we you may differ from me on. Can I just come back on that for a second? Because I think another useful analogy from from quantum complementarity would be that there is a there is a particle aspect of the self, which is that sort of separation and distinctiveness. There's also a wave aspect, which connects us to the whole field. So you can't reduce one to the other up to them. And so again, we need it's really, it's always a case of, of contradicting things or reducing one thing to the other, but expanding your understanding to take in what might look on the face of it to be opposites. And the cognitive neuroscience field led by Mike Gazzaniga that I just mentioned, sees these as just different layers. And you know, the way in which those layers interact can only be dealt with by adjacent layers, you know, you cannot make the jump between two completely separate layers without a lot of very detailed information, which we just quite simply don't have at the moment. Well, also there are there are organizing principles at different levels. Another point made by Palantir, in his in his book in his chapter on emergence, that if you if you look at making a speech, as one of his examples, and then you've got the words, the concepts, the sentences, and the style, and the sort of effect of impact, and each each lather has its own organizing principles, and the organizing principle for word is not the same as that of the speech as a whole, that you can't reduce the speech to individual words, it wouldn't make any sense. Absolutely. Makes this point about music. Yeah. He does. I mean, so you've got to get the right level of analysis. When you're looking at these questions. Tell us about the scientific and medical network. What's the scope of this organization? It's it's been around for a long time, hasn't it? It has. The network was was founded in 1973. By four distinguished as it has it happened at the time they were men. George Blaker, a former civil servant in India and also worked in the Department of Education science at the time. Peter leggett, who was a mathematician and Vice Chancellor of sorry, university, the Kelvin Spencer, who is former chief scientist at the Ministry of power, and Dr. Patrick Shackleton, who was the Dean of postgraduate studies at Southampton Medical School. And in fact, George and Patrick were brought together by a Polish priest called Andrew Gazecki. Who, who knew both of them. And so the impulse impulse for the network was really the same one we've been talking about to widen and deepen science and to separate out the superstructure or ideology or belief system of scientism, and which is a belief that all questions can be adequately responded to and answered by a reductive approach. And the physicalist approach, and and the scientific method of testing experimentation, and splitting off if you like, the the assumptions, informing science from the method and science itself. So it's amazing that those professionals in the field as long ago as 40 years ago saw exactly the same issues that we're talking about today. Well, indeed, and you see the, what they wanted to do, which is still true in our work is to provide a safe space in which people could draw on the intuitive and the rational side of knowing and and see how these could be reconciled. And so what happened was that they had, they had a meeting, initial meeting at the University of Exeter, where Kelvin Spencer had a senior position. And out of this came the idea that they would write all about dozen people at the regional meeting, they would, they would all write to a few practicing scientists and doctors, and a few other disciplines, but mainly practicing science and doctor to

see whether they will be interested in joining an informal network. And one has to remember that in those days, the word network was not used at all. No, it's absolutely commonplace. And so, the scientific and medical network was actually one of the first organizations to call itself a network, because it implies a flat hierarchy of exchange between equals. And then they started organizing conferences, and smaller meetings and working groups, you know, from the mid 70s onwards, and I became involved sort of what what give us give us an example of the breadth of the of the program. Well, some of the some of the some of the some of the medical sciences looking into the healing mechanisms, for instance. And then then there was also an interest in in spirituality and spiritual and mystical experience, which the founders all had, otherwise they had had a flip, as Jeff Tripel would call it, a flip from an outside in perspective to an inside out perspective. And, and then that there was a there was, in fact, a conference held at the University of Surrey in 1974, on evidence for reincarnation, which we been talking about, and Peter leggett and Max Payne, who was an early member as well actually wrote a book about this. And Peter also wrote another book about the environment. And so that's, that's been another area. And we had a close connection with Emerson College, which was founded on Steiner principles, and John Davey was then principle of it, who was also a Guardian newspaper columnist, okay, and keep listing the thing. And I'm really just trying to get a sense of everything, you know, all of the different areas that have been connected, well, and more we had, we then had, as as things develop, we had smaller groups meeting these different interfaces. So we had a group on science and consciousness, a group on science and spirituality, a group on science and esotericism, looking at the philosophical interface, for instance, or the Anthroposophical interface. And then we teamed up with the Wrekin Trust, which I was president and it was closed down to start up the mystics and scientists conferences. So I've already mentioned beyond the brain conferences, the mystics and scientists conference was first held in in 1978. And so a long time ago, and this year, last year, 2020, we had to cancel it. And so we're hoping to have the live event as before, in in later in this year. 2021. And so that's, that's been a series again, looking at this complementarity between. I'm talking about rigorous mysticism here, I'm not talking about you know, that sort of what people know disparagingly called woowoo. This is these are experiences of unitive nature of going beyond the separate consciousness and a very good example of someone who actually embodies both of these aspects is Ravi Ravindra. So Ravi Ravindra is is emeritus professor of physics and comparative religion at Dalhousie. Investing in Canada, but he is also studied deeply with regenda Saltzman who was the successor of girge f. And also Krishna Murthy. David Boehm also had these dialogues with, with Krishna Murthy. And so, so Ravi is someone who, who writes, for instance, about yoga and physics. And he says in yoga, you're taking a disciplined approach to the inner world, and spiritual training as it were, and in science, you're taking a disciplined approach to the outer world. So he sees these, he sees that one can apply equal rigor in both fields, and you've got this with contemplative neuroscience now, I can't help imagining the listeners, a good portion of the listeners squirming in their seats now that the mention of yoga in the same sentence as physics, it brings me on to an important question that we really want to cover in depth from chasing consciousness, which is about the limits of science. And, and and, you know, you mentioned scientism, which is these the idea that literally everything can be explained in those reductive sense and everything else is inadmissible. There's a really distinct issue emerging at the moment, sadly, becoming quite heavily politicized as well, but let's just keep it to the science here. It's it's happening in the new age in the wellness community where the appropriation of scientific discoveries to form somewhat flimsy argumentations for MS, mystical non physical realities beyond our own. A good example of this might be someone like Dr. Deepak Chopra, talking about quantum consciousness, without necessarily referring to a specific scientific theory or papers about, you know, what exactly quantum consciousness is, or even if it's a real thing. And that's not to say that there might not be something to what he's saying, on the contrary, it's to say, Surely, if we

want to bring the wellness community, the spiritual community, the New Age community into a place of reasonable, rational, evidence based knowledge, surely we need to elaborate these ideas. Well, and this is, it, it's a twofold issue, because there's a risk that the important implications from the data of coming from, let's just take an example entanglement, which is something we're going to be going into a lot of detail on, because I think it's one of the key bridges between these, these two worlds. And I'm sure you're looking into it, the scientific medical network as well. There's a risk that they're looked at as pseudo scientific, and therefore not fundable for serious research, not qualified for realistic philosophical argumentation, and actually not even a subject that you could expect a famous scientist to speak about publicly. But secondly, it also risks the public who, like me, for example, sitting on the fence, waiting for good evidence to confirm their logical view, I have a way to be switched off from these concepts altogether, basically, that that concept, loses credibility in the public field. Because, basically, it's been it's been put out there in an uncredible, and badly explained way. So with that backdrop, I'm going to split this question into, first of all, where do you personally believe that the limits of science are? And do you think that we are foolish to, to expect a post material science to find a place in this? In this kind of, in this kind of question, I think where the appropriation of metaphors, so quantum is a good example of that. And Donna zohore, has used it used it in a sort of wide sense as well. And I think there's, I mean, maybe the publishers have got something to be responsible for here because they want to come up with their with a good title. And, and say that authors don't always like the titles that they come up with, but sometimes you have to go along with them. Anyway. And so, so, to the extent that analogy is used loosely, and not properly explained, then you know, that's damaging, to the, to the as it were the field but looking at Deepak is contribution, and he's written a lot of serious books and material as well. And what he basically defends, in a philosophical sense, is idealism. And he has and this again is something we talked about earlier that that idealism is becoming more important, in other words, the primacy of consciousness and argument and, and everything derived from this primacy of consciousness is so So that's that's really the first point. The second point is, what are the limits of science. And I've actually, I got one of the first books, written, popular books written on this by Sir Peter Medawar, called the limits of science, who was a Nobel Prize winner in physiology. And what the, the way that science is developed, is that it's tended to, you know, look exclusively from this third person angle, the outside detached observer, the mechanical, the measurable, the primary qualities that we were talking about in the first part, and say, well, that is science. And to, to the extent that you can define that, and of course, there are very many different sciences, it's difficult to talk about science in general, then you could say that it's, its method, generally speaking, is looking from the outside in. But of course, the problem with that is that you have, you have to assume the inside aspect in order to get the outside in the first place, which goes back to this point made by by Max Planck. And so then the question is, and this is Mary Midgley did a lot of work on this and her last two books, what is philosophy for? And are you in illusion, now address these ideas very robustly. Her second book was published when she was 99. And then she died when she was 99. But she takes these, she takes these philosophers and scientists on, and particularly Peter Atkins is a good example of someone who believes in what he calls the Omni competence of science. And so the idea is that if we haven't yet explained things in physical material terms, that includes consciousness, it's only a matter of time, before we do it. I don't think that's the case. And I think that we need justice, we have a science outside in we need to apply. You know, the same kind of systematic approach to the inner world, which was Alister Hardy started doing with his classifications of different types of experience, but doesn't tick method break down in some way, at least in the way we've been using it up until now, what I was going to what I was going to mention, and which again, it's this complementarity is the gutter and developed an approach which is then taken forward by Rudolf Steiner and now by what's called Gaussian science, and that's what Brian Goodwin who is a evolutionary systems biologist, he called her a science of

qualities. And he said that the what we understand now, as science is a science of quantities, but there is a complimentary science of qualities which is which itself has its own form of rigorous method, which Gertler actually elaborated in considerable detail and already bought afterwards is one of the people are for science. There's a whole literature, of gutters, approach to science, which is I say, I see as complementarity. So I think there's a limit to physical science. And I think that the limit that we're coming up against here, is precisely in the area of consciousness studies. Because as somebody said, consciousness is not an object, it consciousness is the ultimate subject. So how do we get around it? Like, do we need to develop a new a new method to deal with these qualities? Well, you could say, and this is what's so interesting about the Mind and Life Institute. And what's this conversation between Buddhism and science, that someone like ALAN WALLACE is a very good example. And with his with his work, he's both a PhD in physics and a Buddhist monk. And he would, he would say, that the, the introspection and those spiritual training methods that have been applied in Buddhism over two and a half 1000 years are a form of inner science and you have to remember that science actually means knowledge. Cntr means knowledge. And, and so we there are different kinds of knowledge, different, different levels of knowledge. And even in the Western tradition, there is, there is a knowledge which comes through the senses, which is primarily what science talks about, then there's the knowledge of reasoning logic. Then there's a third kind of deeper knowledge which which is now esus. In Greek, Plato talks about this in the Republic, which is Gnosis which is knowledge by identification, where you are the knower or not an objective observer. You are a part of As a painter, you are that knowledge yourself, the knower and the known and not separate. And so I think we need to go into a deeper ontology and epistemology here to try and look at how this deepened form of knowledge can be mapped on to the concepts we already use. And I wonder if we be able to bring the scientists with us, I mean, this is my great, great hope is that with the tipping point, we mentioned in part one, where perhaps the fact that it's less controversial to start talking about consciousness research now, you know, and that will slowly just begin to open up. I'm gonna be playing devil's advocate for a moment, there's a potential criticism of organizations like the scientific and medical network, but I wanted to get your view on your program regularly, as you just mentioned, features spiritual and mystical subjects alongside empirical science, like quantum physics, including words like sort of divine. I was personally quite surprised when I saw this on the website, because I was keen, I had been drawn to the scientific name of your organization. My theory is that any sort of post materials organization that engages with the scientific community, or calls on scientific methodology methodology needs to sort of remain in that field alone. Or they risk just being branded as as a pseudo scientific and therefore being completely thrown out with the with, you know, the baby thrown out with the bathwater, on the other hand, just preaching to the choir, so you're not actually really reaching anymore on the fences. What do you think about the idea that maybe now later in the lifespan of the scientific and medical network, that the name should perhaps reflect a little bit more the two sides that you're trying to bridge? Because if you are bridging these two worlds, that's the attempt, isn't it? Yeah. Well, you won't be surprised to hear that over the years, we have debated and discussed the name of the scientific and medical network on more than one occasion. So I'm not the first person to, to level this criticism. Oh, it's an observation in the sense, rather than a criticism. The, the origins of why it was called the scientific and medical network was, was really to try and give a certain amount of credibility to the events we were putting on and actually engaging, you know, serious scientists, scientists, and medics. And there is one level that there used to be a distinction between full members and associate members. And actually, to my regret, this was voted off, I would rather have actually kept that distinction. And in a way that the professional affiliates and advisors, the Gallo commission are now if you like, the serious scientific and medical aspect of the network bound or under another name. And so it was all this question of acceptability, respectability, and credibility, totally credible, you have to be respectable, in

order to be respectable, you have to be acceptable. And and it's the nature of the network that we actually operate at the frontiers of acceptability, credibility, and respectability, which is actually interesting way of putting it but we could, I mean, my daughter also made this observation, why is it called the scientific and medical network? Shouldn't you be called the scientific and spirituality network? Or the science and spirituality network? For instance, which will be a good description? Or should it just be called the network? No, without any kind of scientific and medical? So I think we will probably will, we might well revisit this but I'm just explaining the, the origins. And there was a specific reason why it was scientific and medical. And we were never going to be restricting ourselves totally to these areas, but rather the interface between science, consciousness and spirituality. So it's these interfaces that we're really interested in. And the bridge I see my meat you know, myself when I think about my, my, my callings as it were, I really feel the need to bridge that, you know, and I think that there is a lot of gray area in the middle, between these areas of what lies beyond scientism, in the realm of the mystical or the psychic or the psychical I should say, you know that that to do with the mind that literally is beyond the scope of the method, and I just wonder, you know, referring back a little bit to that problem I just spoke about With the new age and the wellness community, and the huge amount of criticism that they are coming under from the more secular scientistic community that because there's so much polarity in our modern world and the main more need for bridges between those two than ever before, I just wonder if it's not important for us to do what it says on the tin as it were more than ever, in order to avoid just being sort of thrown out as pseudo scientific. However, another point about pseudoscience is that the consensus is, is always, as you said, there's a lag on consensus consensus is is is the agreement made, after many years of assessing new data. So perhaps in a way, the the original meaning of pseudoscience being new science, you know, it's like, we haven't yet integrated that, or it's in contrast with the consensus, and therefore, it's not surprising that, you know, scientists, such as Rupert are not even listed on Wikipedia as scientists, only as authors and I, maybe we just have to accept that that's just the reality of being on the frontier. Well, the thing is, a lot of these terms are weaponized. And so so the the, the term pseudo science is it is a weaponized term, which is used rhetorically, more generally than it is strictly as a definition of what is or isn't pseudo science. And there's really a cultural war going on than what Craig Wyler calls cyberwar. And this is absolutely upfront in TED. And particularly in Wikipedia, because the, the so called guerrilla skeptics organized by Susan garbage, they curate all the parasitology pages, and all the complimentary medicine pages to make them sound a skeptical and credulous as possible. And if you try and change these entries, like something on Rupert's biography, biography page, it immediately gets changed back and you're then threatened with being banned for life from any editing Wikipedia. And these are 20 Something year olds in the main who are doing this work. And so there's, it's like there's a kind of cultural policing going on. And it's not surprising if given this, this part of the skeptical movement, that that scientists who are on the fence, don't want to go into dangerous, forbidden areas, in case they get attacked as well. Absolutely. I think this is serious. It's a serious problem. Because what, what for me, and this applies to what people call conspiracy theories as well. Everything should be assessed in terms of claims and evidence, what are your claims? And what's your evidence for your claim? And to use these weaponized terms as a way of ways of closing down the discussion? Doesn't seem to me philosophically respectable, nor nor very progressive? I mean, you know, surely surely, you know, if we are talking about an evolved society, and and, you know, making sure that everything's back based and empirical, surely, we need to look at the facts or either look at the data. Anyway, David, just because we're coming up to the end, I feel it really important that we talk about your new book, a quest for wisdom, which is come coming out this year. And we'll be out by the time this airs. Tell us all about your new book, David, what is the objective the book and how do you take the reader there? Well, it was, I might, my friend Andrew Powell was the founder of the Royal College of

Psychiatrists spirituality and psychiatry group. And he published some essays and talks, then, which I reviewed, and I enjoyed that. And so I approached the publishers, his publishers eon, and said, What would you like? Would you like a volume of mine, which would bring together 25 essays I've written the first one goes back to 1978. And then the most recent one is last five years. And that they are and what I do there is I, I describe what what I call a formative background. In other words, how How did my thinking and my reading and my understanding evolve. And then then I have a section on philosophy, meaning and spirituality, then consciousness, death and transformation. And then the final one is called taking responsibility, ethics and society. And so it's actually a very wide ranging book, which which reflect is like a diamond in a sense, it reflects a number of different facets, and of, of my interest and, and my quest which is involved, not only those spiritual practice Test, but also, a vast amount of reading, which continues is, as you're probably aware, because I review about over 150 books a year, wow, you must check out David's website listeners, there are an extraordinary range. And I think this is one of the most wonderful things not only about you, David, but also about the scientific and medical network is, is that you're not afraid to include it's very inclusive, it's very open. And as you said before, it's considering things on merit, and not having any a priori judgments about them. Go on about a quest for wisdom. Yeah, so. So that's so that, really, I suppose if I, if I look, if I look at the how these things evolved for me, and I suppose when I was, I started in the merchant bank, which is the kind of conventional Etonian thing to do. And then I realized very soon, this just wasn't me. But I still spent two years in the bank, and then I called them ejected out of it. And I took four boxes of books abroad to France, where I resumed a job guiding people around the champagne cellars. And so I spent half a day reading and half the day entertaining visitors. And that that worked very well, because I read those four boxes of books, then during the that following year. And that's really formed the basis of the essays in the book, but also all my subsequent development, I was lucky enough to be able to take that year, that formative year, if you like, to lay the foundations of this quest is going on going on ever since and which still continues well, and and I wonder if how much it may map onto other life and truth seekers. Experience of discovery as they go through their lives reading, reflecting, thinking, looking at the huge range of of points of view on all of these things and coming to their own conclusions, which, which is a very beautiful and quite universal story. So listeners, you must go out and take a look at that if you are interested in any of the deep questions we've been discussing today. David, thank you so much for your generosity with your time. And for I think, I'd like to say humility, in terms of having what I think is absolutely crucial in this time of polarity, and judgmentalism and defensiveness, I feel a genuine humility and openness and tolerance and an acceptance of the fact that we all have different points of view, there's and they're all valid, and we can all be hurt. And I think that these are important values in the scientific field. And it's really important that we break through a lot of the polemic that we're seeing at the moment based on the sort of social media, AI engines and the echo chambers. And, and really, we just get back to looking at, you know, good old, empirical fact and argumentation. So thank you so much, David. I don't think I've ever heard so many authors referenced in such a short time. So David, if you don't mind, I would be hugely grateful if you could furnish me in the listeners with a list of the authors you've spoken about today. Obviously, you've mentioned so many, I don't expect you to remember them all. And I shall be feeding that back to you and asking for some, some links to some of this research and to these books, because it's just an absolute wealth as a reading list of a lifetime just just there. And I can only imagine how many books you've read in all of your life. So, David, thank you. It has been utterly illuminating. I really appreciate it. Well, thank you so much. And just as a parting shot, Schopenhauer said that in the 19th century, if only when one bought a book, one could buy the time to read it in. Oh, goodness, don't don't that is our problem. Now. We have so little time, but the fundamentals of life remain the same. And for me, it's really about the practice of love and the pursuit of wisdom. That's my my bottom line.