Beyond the Physical: A Panel Discussion on the Nature of the Mind

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Announcer:

Greetings and welcome to Mind Matters News. Many proponents of artificial intelligence operate from an assumption that our own minds and conscious experience can be solely attributed to our physical brains.

But is this assumption true? This question is the key focus of the book Minding the Brain, edited by our guests, Angus Menuge, Brian Krouse, and Robert J. Marks. Joining them to discuss this volume is today's host, Pat Flynn. Enjoy.

Pat Flynn:

Okay, everybody, welcome to the podcast. This is your host today. My name is Pat Flynn, and I am joined by three wonderful, very intelligent gentlemen. We're going to discuss a new volume today, a new volume out from the Discovery Institute. It relates to philosophy of mind.

It's called Minding the Brain: Models of the Mind, Information, and Empirical Science, edited by Angus Menuge, Brian Krouse, and Robert J. Marks. I'm delighted to say I have all three of them joining me today for a panel discussion on the origin of this book and some of the contents therein. So gentlemen, thank you so much for taking the time to be here and discuss some of what's going on in philosophy of mind with me. I'm very excited.

Robert J. Marks:

Great.

Angus Menuge:

Yeah, thanks for having me.

Brian Krouse:

Yeah, glad to be here.

Pat Flynn:

Yeah. Yeah, really wonderful. And this is the first time we've all gotten together for a conversation, and panel discussions are always fun. We'll try to keep it at least fairly organized, but I'm always open to some improvisation as well.

But before we get into this book and some of the really cool stuff in it, let's just do some brief introductions. Bob, if you wouldn't mind, why don't we start with you, and we'll just sort of just go right down the line of editors here? A little bit of background, I think, would be helpful to listeners. Yeah, whatever you want to say.

Robert J. Marks:

Yeah, that's great. My name is Robert J. Marks. I am a distinguished professor. Somebody said, "Don't say a distinguished professor." They said, "Say you are distinguished professor." So I'm going to say that. I'm distinguished Professor of Electrical and Computer Engineering at Baylor University.

I'm the director of the Walter Bradley Center for Natural and Artificial Intelligence at the Discovery Institute. And I also often host the podcast Mind Matters News at Mindmatters.ai. And by the way, politicians say, repeat it three times. So Mindmatters.ai, Mindmatters.ai. Now, it's fused into everybody's mind.

Pat Flynn:

Great. Thanks, Bob. And real quick, if people have not heard our previous discussion on artificial intelligence, I would encourage them to do so. They can find that on my podcast Philosophy for the People. So, thanks, Bob. Great to chat with you again. Angus, if you wouldn't mind, a little introduction.

Angus Menuge:

Yeah, I'm Angus Menuge. I am a chair of the Philosophy Department at Concordia University Wisconsin. My area of specialization in philosophy is philosophy of mind. That's what I did my Ph.D. on, and my books and academic articles have focused in that area.

I did Agents Under Fire in 2004 and with J.P. Moreland and Jonathan Loose. I edited The Blackwell Companion to Substance Dualism that came out in 2018. I was very excited to be involved in this interdisciplinary project.

Pat Flynn:

Wonderful. And Brian, if you wouldn't mind an introduction of yourself, please?

Brian Krouse:

Yes, sir. My name is Brian Krouse. Unlike these two, I'm not a professor, more of a interested generalist. I have a... professionally have a software engineering background in management. I worked at GoDaddy from... was one of the early employees there. This is the domain name registration and the hosting company.

You might've heard of them. I was there for about 15 years. And my educational background, I've got an undergraduate degree in physics and math and then a Master's in Computer Science with a focus on machine learning and AI. And then more recently I earned a Master's in Applied Math from University of Washington Seattle with a focus on computational neuroscience.

Pat Flynn:

Brian, that's great. And I am familiar with GoDaddy. They've gotten a fair bit of my money throughout the years, so.

Brian Krouse:

Good deal. Well, thank you for your support.

Pat Flynn:

Yeah, thank you for being here. Gentlemen, there's a lot to discuss. This is an excellent volume. I've spent a lot of time with it. So far, I haven't been able to finish it because there's so much in it, but I'm excited to finish it. So the first question I have is really about the origins of this volume.

And Bob, maybe we could start with you. What do you think you're trying to advance in the conversation with this volume? Why did you think that this volume was important to put together? Just give us a little bit of backstory around what sort of prompted this project and the different contributors that you got to sign on for it.

Robert J. Marks:

Well, I think the genesis of this was Brian Krouse.

Angus Menuge:

Yeah.

Robert J. Marks:

He wanted to do this book and recruited Angus and me eventually to do it. And the reason for this book is the question of whether the mind is more than just the brain. Are we computers made out of meat or is there something beyond the brain? And there is a great divide in this. I think if you're a materialist, you have to believe that we are computers made out of meat.

And that's the reason that some... there are some proponents of people that say artificial intelligence is began... going to become smarter than we are because if we are computers made out of meat, then AI should be able to equal and indeed surpass us. But if you're a dualist if you believe that the mind is greater than the brain, this can't be done. We are more than algorithms. We are more than computer programs.

And so that is, in my mind, with a background in artificial intelligence, the overarching aim of this is to discuss this discrepancy, and it's basically in the old war between materialism and theism. And so that's my story. I'm sure that Brian and Angus have different perspectives on this. I'm an engineer. They come from it more in the area of philosophy.

Pat Flynn:

Yeah. Brian, is there anything you'd like to add to that?

Brian Krouse:

Yeah. Well, yeah, so answering your question about the origin story. So this is a topic that, I think, I know I've been interested in a long time as a generalist. And I think it has some appeal to a lot of people from a number of different angles, from philosophical angles, from all the discussion about AI that is in the popular press these days. Over the last 10, 15 years, there's been a lot of popular press with neuroscience too, where a lot of people talk about the way that we can really understand who we are most deeply by going to neuroscience, for example, and understanding the nature of the brain.

And so when we started this book, we wanted to explore that general topic of the mind and the brain. But as I, as a generalist, dove into some of the philosophy I found in particular that there is a lot of jargon in philosophy of mind, and it's for the uninitiated to get going in that. And so one of the goals of this book is actually to try to bring a lot of the... to sort of clear the path of all the technical jargon to try to make these really interesting conversations and philosophy of mind accessible to the non-philosopher of mind.

And the other thing we discovered as we started diving into this is that while a lot of this, these scientific topics, neuroscience, and computer science, have a lot to say on this, a lot of experts in those fields aren't themselves experts in philosophy of mind. And so there's not a lot of cross-dialogue between the scientists and the philosophers. And so that was one of the big goals that took shape with this book is we wanted to really facilitate a cross-pollination of ideas and discussion between the scientists and the philosophers.

Pat Flynn:

Wonderful. Well, I think you've so far done an excellent job from what I've read. And in fact, that's where I want to start because I was spending some time with Dr. Menuge's chapter, and I thought this is such a great summary of what's going on in contemporary philosophy of mind.

The terrain is mapped really well. It's very accessible. So why don't we start there before we start getting into some of the more technical aspects of the debate. Dr. Menuge, maybe you can just start to sort of explain philosophy of mind to us like we're five years old. What are the different positions?

How do people... What are some of the problems that people are thinking about? What are some of the proposed solutions to these problems? Perhaps we start from the materialist or physical side, and then we can maybe map the terrain on the dual spectrum, if you don't mind, however you think would be best to present it.

Angus Menuge:

Yeah. So though, in history, many great philosophers have been dualists and, in fact, have defended the soul. Throughout the 20th century, the main agenda was to try to show that human beings are simply an ordinary part of the natural world and that they would succumb to the same kind of materialistic approach to science that was applied to the world around us. So physicalism was really an attempt to naturalize human beings to show that there was nothing fundamentally different about human beings, that about other objects around us.

And so, early on, with a scientific paradigm in mind, they suggested that perhaps we could understand us just in terms of our behavior. And that idea, in the end, was discredited. And so, they suggested maybe we could say that the mind simply is the brain, and that also ran into problems. But one of the things that we wanted to get across in this book is that through the history of this, physicalism has proposed many, many alternatives, behaviorism, identity theory, functionalism, and so on.

And yet they have met with persistent failure when it comes to really understanding the fundamental characteristics of the mind, in particular subjectivity, what it is like to have an experience, and also intentionality, the ability of our thoughts to be directed beyond us onto other objects. So that you can think right now about the Eiffel Tower. You can think about the past and the present. You can even think about fictional objects like elves and hobbits.

And so what's happened, interestingly, is that physicalism has really broadened out so that more and more physicalists are really offering weak versions of their view, which have to take our mental life more seriously. So something, which we wanted to do with this book, is to get across to people working in neuroscience and other areas of science that physicalism is not this impregnable fortress that they might've been led to believe.

I think that it's been baked into the way that many scientists have been trained. But as a matter of fact, right now, the truth of the matter is that physicalism is in decline because of persistent problems, and there are a whole bunch of alternatives that are being put forward, various forms of dualism and even idealism. And so it's really becoming a wide-open conversation again.

Pat Flynn:

Yeah. So I guess one of the aspects of your chapter that I like is you present this dilemma for the physicalist, and it's essentially this. You say, "Look, when it comes to these different accounts of the mind for physicalists, it seems you can go one of two ways.

You can either propose an account that is obviously physicalist, but also just obviously false." And I agree with that. "Or you can propose an account that might not be obviously false but it's obviously not physicalist." Right. Explain that a little bit further, maybe develop it a little bit, and then we can just go around the panel here and get everyone's thoughts on some of these issues.

Angus Menuge:

Yeah. So, for example, if you look at the clearly physicalist accounts that deal with third-person descriptions of people, you have behaviorism, for example, that says you can understand pain in terms of the characteristic behavior it produces. Well, the problem is it isn't true. You can be in pain and produce no pain behavior and you can produce pain behavior and not be in pain. What's missing? Well, of course, what defines pain is the nature that what it's like to be in pain. That subjective state is simply ignored.

You get the same problem with identity theory if you say that we're just going to say that pain is a particular brain state. The problem is that all of our scientific accounts of the brain state do not imply that there's anything it's like to be in pain. But there is. And again, with functionalism, which is a very sophisticated account that says that, "No, we should understand pain in terms of a very complex causal role and all the ways it interacts, right." But nonetheless, at the end of the day, you could realize all of those causal roles in a robot that is not feeling pain at all.

So those very clearly physicalist accounts, their problem is that they leave out really what the mental state is. On the other hand, right now, we have more attention to the subjects. So physicalists have tried to give accounts of the first-person perspective and how it arises and accounts of how our mental states emerge. Now, these accounts seem quite plausible because they do take our mental life seriously, but the problem is that they're not grounded in anything obviously physical anymore. And so, in fact, they seem to be slouching towards dualism.

Pat Flynn:

Yeah, that's stated very articulately. So maybe just to simplify, but hopefully not make it simplistic, the problem just a little bit, is it seems given the kind of core commitments of physicalism, really we have a twofold problem. We have a problem of trying to understand how the subjective, what it is likeness experiences would emerge from a purely mindless physical base.

That's problem number one. Problem number two is, even if they could emerge, we don't... I don't think we have a really good account of why they would, especially since they don't seem to play any particular functional role. So if you know there's the function of me pulling my hand away from the pin, what is my feeling doing there? And I think from the physicalist perspective, it's nothing, right. And if it's not doing anything, then why is it even there to begin with from the physicalist perspective?

And I think part of the issue of trying to understand the problems here is thinking consistently within the actual inner logic of physicalism. I think most people kind of just think in a dualist way sort of intuitively, so they don't see these deeper problems of causal exclusion and stuff like that. Any of you guys want to take that thread up and develop it further, please do.

Angus Menuge:

Yeah, I just mentioned on that the consistent forms of physicalism, as Jaegwon Kim has argued, tend to fall into epiphenomenalism, which is the idea that your subjective mental states don't actually cause any behavior. So when you're in pain, what's happening is your brain cause you to be in pain, and your brain also causes your hand to move, but your being in pain doesn't cause your hand to move at all.

It has no causal power. And so epiphenomenalism seems to be the consistent position. And if on the other hand, they say that pain really does do something, then they seem to violate what's called the causal closure of the physical because now they're allowing that physical events can have mental causes.

Pat Flynn:

So what is... And I think most people, when they hear this they, I think, intuitively see that there's some serious problems here. So the question is, what is the primary motivation behind physicalism?

I think that that's an important thing to gain some clarity on because once you enter in, I think to the more technical aspects of this debate, it seems like physicalism is so riddled with holes that it almost becomes completely unbelievable. Yet, a lot of people take physicalism very seriously.

Help us understand some of the philosophical motivations behind physicalism of why people hold this view in the first place. In spite of all, I think these very serious problems, explanatory problems that it currently faces.

Angus Menuge:

I think Bob will have something to say on this from a point of view of artificial intelligence. But my perception is is that it's the idea that we want everything to be explicable from within the same paradigm that's been successful in physics and chemistry.

And since that's worked so well for explaining planetary orbits and chemical reactions and things of that kind, is the idea that, well, gosh, in the end, the mind must succumb to the same kind of paradigm. There can't be anything special about it.

Robert J. Marks:

Yeah, I guess I can pop in here. One of the things, my background is in the area of artificial intelligence, and the big move now is towards artificial intelligence towards artificial general intelligence. That assumes that general intelligence, that is intelligence which duplicates, not mimics, but duplicates the human behavior is algorithmic. All computer programs are algorithmic. They are step-by-step procedures in which... by which you do something. Alan Turing showed back in the 1930s that there were things which are non-algorithmic. In other words, there were things which you could not do by a step-by-step procedure.

It appears that human beings have abilities beyond the algorithmic. I would talk about simple emotions such as love and compassion and empathy, but I would also include some more complicated advanced sort of operations, such as understanding, creativity. Sentience, for example, are things which are not able to be generated algorithmically in a physical sort of sense. One of my favorite examples is talking about biting into a lemon. You bite into a lemon, and you have this experience, and that's the experience of the taste of the lemon.

As you bite down and all the juices pop in your mouth, and you taste the sourness, and you literally have an experience, which I've learned is called qualia. So you have this qualia experience. Now, try to explain that experience and duplicate that experience in a person who has been void of the sense of smell and taste since birth. You can explain things like the color of the orange, you can explain chemistry, you can

explain the mechanics of biting, et cetera. But actually duplicating that experience in the person is simply not possible.

And I think that that's kind of intuitively obvious. So if that indeed is the case, how are you going to write an algorithm? How are you going to write artificial intelligence to duplicate that non-algorithmic experience in a computer? It's simply not possible. And carrying on with that understanding is also something which is non-algorithmic. Creativity when properly defined is also non-algorithmic. So there are these things which are not physical, which cannot be duplicated by a computer. And I think that that's evidence that we are more than, as I said, meat computers and that we are more than simple algorithms.

Pat Flynn:

That's great. I definitely want to turn and focus a little bit more on artificial intelligence as we move along. But first, Brian, we've put a lot on the table. Do you have any thoughts or opinions on anything stated so far?

Brian Krouse:

Yeah, so maybe let me pipe in as sort of from the generalist perspective here. I've got a list in front of me of a few... five properties of mind that J.P. Morland has put together that he has noted that resist a physicalist explanation. And one thing I like about this is this really... there seems to be just something categorically different about the nature of the mental that oftentimes just going through life we don't really think about too much, but it's just a categorically different set of properties than the mental has than the physical has. And you've talked about a few of these.

This qualia that what it is like experience is one of them. Another is the fact that our mental states have often intentionality or propositional content, sort of a directedness towards something. You have thoughts of an object, and that's not really something that we think a physical object has. If a physical object is representing information about something else, that's something that our minds are interpreting within the physical object. But the physical object itself, we don't really think that has intentionality.

We have the property of mental states that they're inner and private and immediate, whereas if you think about the physical sciences, it's all this emphasis on third-party accessible facts. But the mental is fundamentally first person. So there is this categorical difference between the two. And then we also have the property of the mental that it requires a subjective ontology so that our mental states are necessarily... they have an owner. There's a first-person subject that owns these mental experiences.

So you don't really have a pain state without a person having that pain. And again, that just seems categorically different than physicalist explanations. And then, of course, mental states have some properties that... or lack some properties that physical explanation has. So when we think of physical objects, we think they have spatial extension or location and things like this, but not really so with mental. And so you have this big... this categorical gap.

And maybe one other point here, and let you jump back in, Pat, is what's interesting about this to me is how... I don't... I couldn't speak to the precise historical motivation for how physicalism came about, but if I were to just kind of imagine, so physics obviously has had a lot of success in describing the external world. We're all aware there's an external world that is not something that we control directly. It's a reality that we interact with. And physics and mathematics have been remarkably successful in describing how that works.

And so with the success of that, it can start... perhaps it could start to feel like that that itself is the fundamental reality, that's what's most real and we need to describe everything in those terms. But one thing we oftentimes forget is that the way we got to understand these physical models is by collecting information through our senses, through our mind, and then using our rational faculties of our mind to build these models about the nature of reality. And so, in a sense, the mental is actually... it's there much more prominently and primarily than the physical is, but we sort of seem to lose sight of that somehow in our modern world.

Pat Flynn:

Yeah, that's great, Brian. So let me try and simplify things again, and then we can dive in a little bit further to some of the other chapters in this book. But it seems to me that there's something of a fundamental construction problem for the physicalist, and while some constructions might seem improbable, other constructions seem actually impossible. So here's a common example that's sometimes used.

If I have an enormous number of white blocks, maybe even an infinite amount of them, and an infinite amount of time, it doesn't seem like I'll ever be able to construct a purple tower. And that seems perfectly clear to reason. It doesn't matter how many blocks I have. It doesn't matter how much time I have to tinker around with them. There is a qualitative chasm that cannot be crossed in principle if those are the only materials that I have available, right.

And I think there's an analogy here with some of these constructions for the physicalist, that for the physicalist, everything seems to need to be reducible, or at least not obviously repugnant to its physical-mechanical base. Yet we're told that everything sort of at the root of physicalism is effectively everything that consciousness is not, right. There's no subjectivity, there's no intentionality, there's no even determinant formal content.

One of the major aspects of thinking is that we have exact conceptual content, that we think about things in an extremely precise way to exclude other possibilities. But everything physical is sort of fuzzy and indeterminate in a sense, right. So what we have is not just one instance of this immense sort of leap as if by magic across a category, but many different categories.

We're supposed to think that somehow this stuff that has no intentionality or directedness or aboutness, or any subjectivity or qualia or formal content whatsoever, somehow through sufficient complex arrangements, just flipped or inverted into its complete qualitative opposite. And to me, that just sounds like magic, right. And I think...

Brian Krouse:

Yeah.

Pat Flynn:

And I think am not the first one to say this, but I think when you look at a lot of philosophy of mind and you find certain terms like emergence, maybe a good test is to see if you could replace that term with the word magic, and if you lose anything by way of explanation, right. So I want to turn this back to Angus. Angus, clean up anything that I just said there or offer any clarifications, but maybe we should talk about specifically strong emergence and how this does seem more or less synonymous with magic in many instances and why that's a problem for physicalism.

Because if it is the case that something is not reducible to this physicalist space and that we have to be open to a wider sort of range or mode of explanations, it seems like physicalism is just, where's the

motivation anymore? Now, I think that there's other issues with scientism and physicalism in general, but I think you kind of see that the issue I'm trying to gesture at.

So, Angus, I'd like you to take it up from there. Maybe talk to us a little bit more about these radical forms of emergence because I think this is where a lot of physicalists are led is to this idea of strong emergence and why that, in particular, is a problem, even if we think that emergence has happened, which I think is obvious why that is a problem for the physicalist, if that makes sense.

Angus Menuge:

Yeah. So the stronger forms of emergence want to say that it's not just that the mental is determined by the physical, which is what supervenience would say, but that you now have these novel properties, properties that come into the world which are not determined or base really in anything physical. And so it does appear rather like magic because if we have new causal powers, then we have a whole different kind of property.

And it seems intellectually sort of irresponsible to say that, "While we get to keep those as somehow belonging to the physical realm when they're utterly unlike any of the physical properties that we can study in any physical science, it seems as if they belong somewhere else." And this can be strengthened by the fact that when we look at physical objects in particular, they're always made of separable parts so that they retain their identity, whether they're in a system or not.

You can take a neuron out of a brain, and it will exist just fine outside of it. You can put it in somebody else's brain. It'll be just fine. But you can't take a thought outside of somebody's mind and expect it to be the same thought. It can't exist outside of a mind, and it can't exist in anyone else's mind.

And so you have such a radical break between these two sets of properties, it seems a perfectly reasonable thing to ask. Well, perhaps it's because they belong to fundamentally different kinds of objects. After all, how is it that we distinguish objects by their different properties, by their different causal powers?

Pat Flynn:

Yeah. Excellent. Here's one more question related to the physicalist theories of mind, and I'll let all of you take this and offer your own response if you want. Just to do a little bit of steel-manning, the opposite of straw-manning. That's a popular term. What do each of you think is the most model in philosophy of mind for the physicalist right now? Maybe it's functionalism. Maybe it's something else. And what do you think is still fundamentally wrong with it?

Angus Menuge:

Well, that's a difficult question because they proliferate so many options. I think that the most-

Pat Flynn:

It's true. Yeah.

Angus Menuge:

Yeah. The most prominent option is some variety of functionalism. And it does address one side of the issues quite well. David Chalmers puts this quite beautifully where he says, "Well, the easy problem of consciousness is what consciousness does." And you can probably come up with a functional model that provides quite a good account of some of the things that consciousness enables us to do. The problem is it doesn't in any way address what consciousness is.

Because, at the end of the day, you can take any of these functionalist accounts that define mental states in terms of their causal role, and you can have a robot or other artificial system that will embody that causal role perfectly. There's no problem at all creating a robot that will retract its robot hand if it detects heat, for example, and act in every way as if it were in pain. And it can be programmed to say, "Ow, and I'm in pain," and so on. But there's no reason whatsoever to think that the robot is in pain.

I am also somewhat sympathetic with sort of the constitutionalist views of people like Lynne Rudder Baker in that she at least has a very strong sense of the first-person perspective, and we need to capture that notion in the account. It's just that I happen to think that at the end of the day, the first-person perspective assumes the existence of a mental person. And so that in the end, her account will turn out to be a dualist account and not really one that's compatible with physicalism.

Pat Flynn:

Yeah. Great. Bob and or Brian, anything that you two would like to add to this?

Brian Krouse:

Yeah, I guess I...

Robert J. Marks:

The way I...

Brian Krouse:

No, go ahead, Bob. You first.

Robert J. Marks:

No, you first.

Brian Krouse:

Okay. All right.

Robert J. Marks:

Beauty before age, I guess.

Brian Krouse:

Right. Right. I think I would agree with Angus there with some variety of functionalism. Any philosophy of mind that tries to acknowledge the reality of these mental features rather than ignore them is better than one that basically tries to ignore them, like some form of eliminativism. But maybe more, I would say, is that a lot of the physicalist science obviously has a lot to offer.

We're just at the beginning, as we talk about in some of our neuroscience chapters, of trying to understand exactly how the brain works. If the brain is interacting for sake of argument with some kind of immaterial soul in some sense, then there would be a lot of room to try to figure out the mechanics of how the brain is involved. And then, of course, artificial intelligence.

One way I think of that, as basically it's sort of trying to externalize our ability to... our human ability to compute, externalize and build on that. So starting from calculators that can externalize arithmetic to

artificial intelligence today, that's externalizing these more generalized pattern-finding algorithms. Obviously, that that's very productive.

Pat Flynn:

Yeah. Good. Bob?

Robert J. Marks:

Yeah, I was just going to return to the idea of emergence. This is a big thing in artificial intelligence that if you get artificial intelligence if you get computers smart enough, there's going to be this emergence of super intellect. George Gilder has a great name for this. It's kind of a religious feeling. He calls it rapture of the nerds.

Pat Flynn:

Wow.

Robert J. Marks:

And he believes, and I agree with him, that there is this feeling that eventually if... Well, it gets back to your example, Pat. If you have a horse and you exercise this horse and you get it to do more and more things that, eventually, it will magically turn into a tractor, and that's simply not going to happen.

And it turns out that emergence was looked at in an area called artificial life, and there was actually this great program called Tiara that tried to look at emergence and duplicate super intelligence just by computer programming. It was a total failure. And in all of these cases, if you look back at the original program, sometimes you get some surprising results.

I've done some work in swarm intelligence where I get a result, and I say, "Wow, I didn't expect this." But surprise does not equate to creativity because we were always able to look back at the code, and we're able to say, "You know what? This is something that we allowed, and it happened. We didn't expect it. But indeed, here it is." So it was not original. It was not beyond the intent of the original programmer. It was not creative. And emergence and as far as getting more than you started-

And emergence as far as getting more than you started with is just a pipe dream, and as Gilder said, rapture of the nerds.

PART 1 OF 4 ENDS [00:35:04]

Pat Flynn:

Yeah, I love that, that phrase. So there's two things I'd like to explore related to everything that was just said. One is that I don't actually have a particular issue with emergence. I think emergence is something that does happen in the world. So the question is not really whether emergence occurs, but how it occurs. How can emergence occur? So even if there were these instances-

Robert J. Marks:

Can I challenge you, Pat?

Pat Flynn:

Yeah, sure.

Robert J. Marks:

Where do you think emergence occurs?

Pat Flynn:

Well, I guess, I'm sort of in Aristotelian in the sense that I think that once certain conditions are met, we do have novel substances that emerge, that have systems-level properties that are over and above the power of their... what we think are their constitutive parts. And I think this happens at the level of water, for example. I don't think we even have to get into philosophy of mind with it. Angus, I'm sorry, did you want to chime in there too?

Angus Menuge:

Yeah, I'd like to comment on that. That kind of emergence does happen. So for example, a solitary H_2O molecule does not exhibit liquidity, but enough of them in the right temperature range will. And likewise, you've got various famous wheel that you can have individual molecules that can't roll, but if they're configured into a wheel, then they can.

However, in all of those examples, you can analyze the new property in terms of external relations. There's structural properties that arise when you configure things in a certain way.

Precisely why that's a problem for understanding the mind is that it doesn't seem to be a system of parts. This is because every experience and thought that we have seems to refer back to this one same subject. And this is why thoughts and experiences don't seem to be separable from that unified subject in the way that those molecules are separable from one another.

So there's a difference between structural properties like the ability to roll as a wheel that can emerge based on external properties and properties that inherently refer to one single subject. I don't think that the unity of consciousness can arise simply from configuring external parts in different ways, doesn't matter how complex the brain is.

Robert J. Marks:

Is there a difference between emergence and design? Isn't designed and other explanation for the examples that you've given?

Pat Flynn:

So I'll let Angus clarify, but one of my follow-up thoughts to what he said is even though you could bring something like liquidity down, you can't bring something like wetness down, if that makes sense.

One of those relates to the qualitative dimension, whereas the other one sort of reducible in a sense that I think that most physicalists, and I think everybody should obviously be open to.

My general point is that I don't think that the notion of emergence should at all, at least generally be an issue for people who are of a dualist stripe because I think they can give an account a more robust account of emergence.

I think that the general problem is that if you're committed to emergence, especially strong forms of emergence as a physicalist, that is where you've really run out of explanatory due.

So my position is not to just set emergence off the table completely, but to say that if you do have an idea of emergence and/or if you're committed to various forms of especially strong emergence, that's just reason not to be a physicalist, if that makes sense.

Robert J. Marks:

Okay. I guess, I would propose from the point of a computer program that there is no emergence that anything that you look at, which looks like emergence, emergence is a product of the design of the computer program.

Pat Flynn:

Angus did you have any follow up to any thoughts on those fronts?

Angus Menuge:

Well, I mean, even without design, if it just so happens that if enough water molecules get together, liquidity emerges. And even without design, if it should just chance that molecules are configured in a certain way so they're like a wheel, they can roll.

So I don't have a problem with that kind of structural emergence. I just think that it's irrelevant to the unity of consciousness because that reveals that our thoughts and experiences belong to this one simple subject.

And that's exactly why there is a difference between liquidity and wetness because as soon as you talk about wetness, you are including the subjective experience of what it's like to experience a liquid, right? It's inherently a phenomenological property and so it can't exist without a subject and that subject does not emerge from liquidity or any other structural property. It requires a different kind of subject.

Brian Krouse:

Yeah, just jump in briefly there too, pat. I think with the water liquidity example, I think what we're saying there by invoking this word emergence is that if you were to just look at an individual water molecule, you probably wouldn't predict the qualities of liquidity. But knowing what happens when you have a collection of these water molecules, you can look back and explain liquidity in terms of the properties of the water molecules.

So you see the path of physical explanation in terms of the microstructures of the water molecule as they're grouped together. But the problem with applying that same concept to the mental is just it gets back to this categorical gap. We've got really no way of seeing how the physical type explanations could suddenly bridge the gap to explain something so categorically different as these mental properties.

Pat Flynn:

Well stated, Brian. If we could highlight two positions that I think that from my mind are within the naturalist paradigm, broadly speaking, and to be clear, not all naturalists are physicalists even if we think all physicalists are naturalists, I don't know... I'll say that on Twitter, and then somebody will come out and be the most exotic naturalist I've ever seen in my life. So I learn to be not so sweeping in what I claim.

But generally that's the case are the positions of Panpsychism and eliminativism, which Angus already brought up. And the reason I like both of these positions is I think people in both of these camps see the fundamental issues very clearly that we're talking about. They just go in two different directions.

So the eliminativist sort of realizes, "Hey, everything that we're talking about here is right. If we're starting from a physicalist based, we're just not going to get that qualitative dimension."

And so the stronger eliminativists who aren't just saying, "We can remove talk of the qualitative dimension from our theories of physics," but are actually saying there just is no consciousness, right,

there is just no... It's all an illusion or however they talk about it, I think that position is absurd. I think its statement is its own refutation, but they seem to be at least consistent or as consistent as one can be within that paradigm.

Whereas the panpsychist, well, I think also realizes that this is a serious issue, but what they do is they go the other direction and try and put consciousness or subjectivity down back at the root.

But then I think this is where we see the dilemma that Angus brought up is, okay, where the eliminativist is, I suppose, still very much within the physicalist paradigm, the theory itself just seems entirely unbelievable.

Whereas the Panpsychist is, "Okay, maybe we have something that we can at least start to work with." I think Panpsychism faces its own problems. It's hard to see how this really fits within a physicalist framework anymore.

Do you guys think that's a fair characterization of the maybe the two of the extremes here that I think highlight the general issue that are admitted by many people that would consider themselves naturalists?

Angus Menuge:

Yeah, I think that does a good job. The eliminativist position, people like Paul and Patricia Churchland is just ruthlessly physical and it concludes that, "Well, since intentionality and subjectivity are such real problems, they just must not exist," and then it'll pay the very heavy cost of denying them.

Whereas for a while, Chalmers has toyed with panpsychism and panprotopsychism. He's basically concluded, "Well, the mental properties can't simply arise from arrangements of physical parts, therefore they must somehow be incipient or implicit within the physical itself." But of course, that means that you are loading up reality with a different kind of property, and so you're really just moving dualism to the building blocks.

Pat Flynn:

So to recap, we covered a lot in part one, but we mostly focused on mapping the terrain of physicalism in philosophy of mind and highlighting what we think are some serious, if not insuperable problems with many of the models that we find there.

What I'd like to begin this conversation with is to sort of map the terrain of the alternatives. Okay, maybe physicalism isn't doing it for us. What are the other options that we have? Are there any new ideas or perhaps old ideas that we're considering a new?

So yeah, Austin, since you have the initial chapter in this volume where you do spend a lot of time mapping the different positions, perhaps we could begin with you, what are some of these alternatives that you think are most viable today when it comes to looking for something aside from physicalism?

Robert J. Marks:

I think you said Austin.

Pat Flynn:

I am sorry. It's not Austin, it's Angus. As soon a... I felt like a kid who didn't study for an exam. Yeah, sorry, I'm I'm looking at Austin-

Brian Krouse:

Austin go.

Pat Flynn:

We should keep that. By the way... I'm not completely... There is an Austin in here, right? So yes, Angus, Dr. Menuge... Let me just rewind the tape. Okay.

So Dr. Menuge, let's begin with you. Since you have a chapter where you very wonderfully outlined a different positions in philosophy of mind, begin to tell us a little about some of these alternatives to physicalism.

Angus Menuge:

Yeah. So there are a variety of dualist options that one can select from. The weakest form would be some form of property dualism that wants to say that although fundamentally human beings are physical, there are just these two different kinds of properties: mental and physical properties.

And then there are various forms of substance dualism. Some of them want to see that the mind is its own kind of substance in the Cartesian variety, and it has fundamentally different properties for Descartes. The mind is not located in space and doesn't take up space, and it's fundamentally different from anything that's physical.

But there are others Augarcinin and Kant took the view that you could locate the soul or the mind where the body is, wherever there is sensation, it's just that it's present in a different way. So with anything physical, we can only say that a part of it is present in any of its parts, of course. But then with the mind it would seem that somehow it's present everywhere in the body where there is sensation.

And then there are others who want to say that there is a kind of emergent subject dualism. You've got positions like William Hasker, for example, who thinks that the mind is a different substance, but it emerges from the brain.

And you also have going back to Aristotle and also Aquinas, you have the hylomorphists who want to say that the whole human person is the combination of matter and form and that the form of the human being, what makes us say rational human being, also includes an immaterial dimension to it.

This view is quite sophisticated because it makes a distinction between sensory motor systems, which can be manipulated physically and on the other hand are abstract reason and free will, which seems to enjoy a certain kind of independence from anything physical.

And finally, there's been a resurgence of outright idealism and idealism makes the audacious claim that material objects don't really exist. In fact, the world is composed of minds and the contents of minds.

In, of course, Bishop Berkeley's most famous formulation. You have God's mind. Then you have finite spirits like you and I, and their contents ideas. And from that you can develop an account of reality that recognizes that there are things outside of the human mind, but they are located in God's mind. So that's just a quick overview, but you can see that there's a very large range of alternatives to physicalism which are out there.

Pat Flynn:

Yes. And this obviously can be a little bit intimidating for people just getting into philosophy of mind and wanting to explore these different debates. But again, your chapter does a wonderful job of just mapping the territory and simply explaining the different positions.

So my immediate follow-up question to that is one of sort of carving up the territory. So which of those positions, if any, do you think is still something that can kind of comport well with or even just broadly

fit into a naturalistic world view? And which of those positions do you think either commit you to or at least incline you towards a more theistic worldview?

Angus Menuge:

Yeah. That's difficult because you get disagreement among the proponents of these positions. So you'll get some people who will want to say that it's just a natural fact that there are these minds which are different than the physical. So they're sometimes called broad naturalists, and they might accept the idea that the mind is something more than matter, but still say that it belongs within nature.

On the other hand, it's not difficult to see that some positions tend to point toward theism because if our soul is something which is its own thing and does not simply derive from anything physical, it might lead one to the belief that it's been especially and separately created by God.

And of course, the theistic implications of idealism are fairly obvious because at least in those following Berkeley's position, the divine mind is kind of an essential part of the system.

Pat Flynn:

Yes, good. So one of the things that interests me about debates that go on in philosophy of mind, again, is how important it is to think in terms of systems and paradigms and how one should be consistent within the paradigm.

To my mind, and please, any of you who wants to either elaborate or challenge this, please do. Is that the moment something is obviously we don't have a reductive account is the moment I think that we lose one of the primary motivations for naturalism.

To my mind, the reason or one of the strongest, if not one of the strongest reasons to be a naturalist is because, in cliché, form science has got this, and we ought not to go beyond the science. But as soon as we have to sort of go beyond the science in making sense of certain features of reality, particularly the qualitative dimension, it seems to me that we've... maybe this doesn't prove theism, but we've lost one of the, if not the strongest motivations to adopt naturalism in the first point.

Now, I will concede that perhaps somebody is a naturalist for other reasons. Maybe they're a naturalist, not because they're committed to a broad scientism, but I don't know, maybe the problem of evil or something like this.

So I don't think it's super easy to adjudicate these larger debates. And I guess one of my questions for all of you is, do you agree with that framing and is part of the project of this book to advance or at least lend more credibility to theism, or are you mostly just interested with showing the deficiencies of mainstream physicalism? Sorry, a lot there. So take it in whatever order you guys want.

Angus Menuge:

Well, I'll make one comment here. I think that the biggest goal of the book is just to offer working scientists different alternatives to materialism because it can lead you to falsify things that you're trying to explain that may or may not in the end lead someone to embrace theism.

But I think the main goal is just for people to not feel that being a scientist means that you must work with this one paradigm, even if there are things that it's clearly not explaining, which are important to you as a scientist.

And the second point I would make is that the real issue I think is put well by J.P. Moreland, he calls it the location problem. When we're looking at a phenomenon with an open mind, the real question is: is it at home in a particular worldview or not? And if the phenomenon is so radically new and different

from anything that our worldview officially permits, then it doesn't seem to be at home there. And if therefore you can propose another worldview where it would be a natural thing to exist, then it clearly does belong there.

So I think that downstream from this is a big conversation about theism versus naturalism because clearly there are properties of the mind which seem much more at harm in a mind-first world. That is, if in the beginning God and then matter, then it's not surprising that we have other minds with these remarkable properties.

But if we have a matter first paradigm, in the beginning matter and their mind emerges, then we have a real problem because the properties that emerge don't seem to be at home in that material world.

Pat Flynn:

Yes. Good. Before I turn to more specific accounts of dualism, Bob or Brian, any thoughts on anything that has just come up?

Robert J. Marks:

Sure. I think that probably this could fall in the area of apologetics. I think that there's lots of explanations, for example, of the fine-tuning of the universe, the Big Bang, et cetera, that are explanations from science that don't relate directly to theism, but certainly they are consistent with theism and a theistic worldview.

Insofar as different models of the brain, I, of course, look at this whole thing through the lens of computer science and computer engineering. And the thing that really strikes me as a proof against dualism is the... not as a proof for dualism, I should say, is the ability of us to do meta sort of analysis.

I'm going to show you a joke from the greatest humorists in the 20th century, a guy named Emo Philips. He said the following... And we're going to do this, then we're going to laugh, and then I'm going to explain you the deeper meaning of it.

He said, "I used to think that the brain was the most wonderful organ in the body. Then I realized who was telling me this." Now, the concept there is that Emo Philips is putting himself in an abstract meta position to actually look at his brain. And this is something that computer science and computer programs are not going to be able to do.

We as human beings, we understand understanding. We know about the unknowable. We have abstract thoughts, abstract concepts such as the ideal triangle or even the idea of infinity, things which don't exist, but we can hold those in our minds.

And I think these meta-abilities are really proof of the idea of duality; that is that the mind is greater than the brain and the brain is greater. Well, I think that the brain probably is a computer, but the mind is something above and beyond the brain.

Angus Menuge:

Yeah, I follow up that if the mind were the brain, you have this difficulty that's been known for a while, that there are non-computable functions. And so if we think of the brain as just a very complicated computer, there are going to be functions which are not computable by it. But it seems that if one is a mathematician, one can follow through with the proof and come to the conclusion that this non-computable function exists. And so the ability of the mind to recognize truth seems to outstrip the power of the brain to do computations.

Pat Flynn:

Brian, any thoughts from you on this before we move to the next subject?

Brian Krouse:

Yeah. One of the things I think motivated isn't the background of this book is that sometimes when scientists are just deep within their science, there's not a lot of thought that's given towards the metaphysical models that might be operating in the background.

And you might think, "Okay, science is in this realm of neutrality where we just observe things and then we come up with models and someone comes up with a better model. We've got this gradual approximation towards the description of the truth."

But I think what's maybe not recognized is how these philosophical frames, whether it's materialism or dualism or idealism, could be operating in the background and constraining the possible explanations that are allowed.

And we have an article at the beginning of the book on this, actually. It's in chapter four by Robert Larmour that talks about this... this assumption oftentimes people have in science that you have to take a methodological naturalism approach in the sciences.

But very briefly, his conclusion is that, "Well, you have to be careful there because really what we're after in this project of trying to describe the world with science is describing the world as it is." But if you make metaphysical assumptions that constrain your possibilities and those happen to eliminate the best options, then we have a methodological problem which we don't really want.

So it seems that the better thing to do is to try to consider, "Okay, what are the range of metaphysical options and their strengths and weaknesses as we're considering the empirical evidence?" And try to consider both of these in tandem and how they interact with each other.

And maybe one other comment on this is that J.P. Moreland has stated elsewhere this idea of elucidating, this idea of how the philosophy could interact with the science in general, is this idea that especially in the sort of the atmosphere of the last couple of decades where sort of in the water, this idea that the more we understand the brain, neuroscience is going to be the key to really understanding our true natures of our mind without really wanting to step back and consider the philosophical models that we're operating within.

J.P. has this idea of empirically equivalent theories, which is this idea that you could have some empirical data from neuroscience that could actually be equivalent with two different metaphysical models.

And so in this sense, the data itself is not going to help you pick the best metaphysical model, in which case we have to go to the philosophy. And so all that said, I think is just one of our main motivations of this book is to just realize, "Okay, we all should be doing philosophy as well as the science," and we'd really like to see the two interacting more rigorously.

Robert J. Marks:

Yeah. One of the interesting chapters in the book is by Selmer Bringsjord from Rensselaer, and this is in the concept of abstract thought and abstract concepts. Abstract concepts are beyond physicalism.

We can understand, for example, what infinity does, although David Hilbert, the famous mathematician says, "Infinity has no place in reality. It's just a mathematical concept." We can conceive of the abstract thought of a line, zero width and length, or even a triangle, an ideal triangle. An ideal triangle doesn't exist in reality because all lines are going to have some finite width in all lines that we draw on a piece of paper or anywhere are going to have finite width.

So these abstractions are able to exist in our mind. And Bringsjord says, "Look, if we are able to capture these abstract thoughts, there must be an abstract component to who we are and therefore we're beyond the materialist."

Pat Flynn:

Yeah, really good. And one of my favorite thinkers on this front, as I expressed to you gentlemen before we started recording is James Ross. So I was really excited to see a development of what I think is one of the more convincing and provocative arguments for the immaterial aspect of not just thought, but the human person as well. So I'm definitely going to encourage people to read that chapter of the book along with of course, the rest of it.

But I want to return now back to the science because what Brian brought up was a really important point that I want to explore a little bit more. And so far as I can tell when it comes to debates and philosophy of mind, the science isn't really in dispute. The dualists and the hylomorphists and the physicalists, they all sort of agree on the scientific data.

I don't see people really arguing about that too much. The argument is just really how to either interpret the data or whether the data actually leans in favor of one theory rather than another.

So if you wouldn't mind, I'd just like to hear each of your thoughts on where you think the scientific data... actually, where you think it points, if it points towards any particular theory?

And of course when we talk about scientific data, we're often thinking of the modern discoveries of neuroscience, but obviously physics and stuff plays a role as well. So Angus, why don't we start with you on this one and we'll kind of go around the table here.

Angus Menuge:

Yeah. So at a fundamental level, if one we're looking for proof, we can say that the empirical evidence under-determines the metaphysics, which means that you can interpret that evidence from a variety of metaphysical positions and it won't give you a knockdown refutation of one in favor another.

That said, though I am inclined to the view that there's plenty of evidence which is better explained by certain metaphysical models than others. For example, there are cognitive therapies where it appears that conscious attention on an alternative behavior for patients with phobias or obsessive compulsive disorder or they're dealing with depression and so on, that that conscious attention interacts with the brain through neuroplasticity.

And in the end leads to different pathways in the brain so that with OCD, you can remove this brain lock that makes you want to constantly check if a door that you know is locked is locked or constantly check an oven that you switched off and you know it's off is off and so on. And there you see the power of the mind over the brain.

This has also been explored in the field of psychoneuroimmunology, where it's very clear that patients that develop a calm attitude towards their illness recover more quickly than those who experience stress. And there are many other cases like this.

Penfield found in his experiments when he was stimulating the brain with electrodes that one thing that he couldn't do when he made somebody move, he couldn't make the patient think that he did it. He was quite convinced that this was the scientist making him move and not a choice of his own.

And another whole thing that's explored in our book that's really, really difficult for any materialist theory to explain what called veridical near-death experiences where people can report from a time at which there was no detectable brain function, what appeared to be experiences, except that they

cannot have been ordinary experiences through their physical senses because they were unconscious at the time.

And this kind of experience, which this strong evidence for, does not seem to have a physical explanation. So I think what one can say is that there are data which favor non-physicalist theories, whether one be a substance dualist, a hylomorphist, or an idealist, they're going to fit better with an alternative to physicalism.

Pat Flynn:

Yeah, good. Real quick, just to follow up on that, because I guess there's two common complaints or areas of pushback that the physicalist will likely make when it comes to the science. One of them is not particularly interesting because it's not particularly new, and that is that if you start messing with our physical body, particularly the head or the brain, you start messing with our experiences.

But again, we didn't really need modern neuroscience for this. Everybody throughout history knew if you start clonking somebody over the head, they're going to feel things, it's going to go fuzzy, and at some point it's going to go black. So most people were quite well aware of that there's at least some tight connection or relationship between the experiential and the physical dimension.

But nevertheless, you hear it repeated even today, especially on the popular level, that this is a problem for dualists in some sense. So I'd like to hear you guys maybe explore that. Is that a problem for dualists, is sort of obvious connection between the physical and mental, or do you think that dualism broadly can considered, can accommodate this data well?

Angus Menuge:

Well, just briefly, and I let the others chime in, but that there's an interaction between the physical and the mental isn't a problem at all because that's something that dualism predicts.

Now, it is true that there are particular cognitive abilities that can be impaired by particular deficits. So if you damage broker region of the brain, for example, then that has an effect on your linguistic abilities.

So it certainly is true that the brain, if you like, is rather like a computer, which you need in order to carry out certain tasks. But that of course does not show that there are no abilities which are distinctively mental. It just shows that you need to have some apparatus in order to carry out certain functions.

Robert J. Marks:

Yeah. If I could continue on this and go back to some of the other topics that were raised by Agnes. Near-death experiences, there's a great chapter in the book by Gary Habermas, who talks about this near-death experiences.

I tell you, I used to think near-death experiences... I would kind of poo-poo them, and I would think, "Well, I'm not really sure about that." But having read about it, this is really compelling stuff.

There was a great book by Bruce Greyson called After. He was a psychiatrist that spent his entire life on near-death experiences, and he was not a theist either, and his results were simply remarkable.

I talked to Tononi, who is the father of integrated information theory at the University of Wisconsin, and we were talking about near-death experiences. And the thing is that people come out of near-death experiences and they think that their experience is totally real. It isn't like a dream. It is totally real. It is something that they've experienced.

And Tononi says, "Well, I can give them some peyote mushrooms or some LSD and make them think that they had this." But it doesn't explain some of the incredible things that happened with near-death experiences as outlined in the scientific literature and in recurrent international conferences on the topic.

How, for example, can a girl who was blind since birth in her near-death experiences see? That to me was really compelling and there is more than one incident of this. How can they have their out-of-body experiences where they can look in the operating room and they can see the color of the shoes that the physician is wearing or details that happen in another room? These are things which are not induced by peyote mushrooms and other things.

Pat Flynn:

Right. Because they're veridical experiences where they're reporting features of the actual world that are verified by independent researchers. This clearly isn't just the realm of hallucination. Right?

Robert J. Marks:

Exactly. Exactly. And that's the point. I think that near-death experiences are beyond hallucinations, if you will. He also mentioned, Wilder Penfield's cortical stimulation experiments, and Benjamin Libet's study of the brain activity before decision-making. There's a great chapter in the book by Christie Cooper... And these, again, we're building some of the scientific evidence.

... Cooper and these, again, were building some of the scientific evidence for dualism, if you will, and she wrote in her chapter, Free Will, Free Won't, and what the Libet Experiments don't tell us. It's fascinating that we have indications in our brains what we want to do before we know that we're supposed to do them. So there's a little signal in the brain and then you all of a sudden realize that, "Well, I want to do something." I think the best explanation of this is back when I smoked cigarettes and when I smoked cigarettes, there was a little signal in my brain that says, "Bob, you want to have another cigarette." And then a few milliseconds later, I said, "Ooh, I want a cigarette," from that signal in the brain. But what Libet's experiment showed, fascinatingly, is that yes, we have these experiences and we have something though called free won't. In order to quit smoking, I had to take those impulses that came from signals in my brain and I had to say, "No, I'm not going to do that." That is an exercise, if you will, of free won't.

And that according to the neuroplasticity, rewires your brain into doing different things. So that I think is fascinating. And according to Egnor, who is a brain surgeon, and he also has a chapter in the book called Neuroscience and Dualism. According to Egnor, there is as of yet no research into signals in the brain, which cause free won't. This is not saying that this won't happen in the future, but currently there isn't. It's just interesting speculation.

Another piece of scientific evidence for dualism is the so-called split-brain patients, which were pioneered by a brain surgeon called Roger Sperry. What he did is he goes into the brain and he cuts it in two, right down the middle and you say, "Oh my gosh, that's a terrible thing to do," but maybe it isn't a terrible thing to do because the reason he did it was to help epileptics because epileptics had a signal on one side of their brain, which was communicated to the other side that gave them a seizure. And by disrupting this path, by cutting the brain into two pieces, all of a sudden this communication is disrupted. Now if dualism is not true, it turns out that if you have a brain, you should have an equivalent mind. In other words, a mind goes with every brain. Well, if you split the brain in two, it's like you have two brains, but the people emerge from the operation and they are still the same person. They are not a person with two minds, they don't have a split personality, they emerge as the same person.

So we are starting to accumulate evidence scientifically for dualism through things such as the split-brain research, through what Agnes mentioned, the cortical stimulation experiments, through Benjamin

Libet's study of brain activity before decision-making. All of these things are accumulating scientific evidence that dualism is indeed true.

PART 2 OF 4 ENDS [01:10:04]

Pat Flynn:

That's really great, Bob, and you covered one of the topics I wanted to hit anyway, so thank you for that, which was, of course, really the infamous Libet experiment. In fact, I remember not too long ago, 2019, I think it was, Scientific American even had a piece up where it said how a flawed experiment "proved that free will doesn't exist," and of course, they argued that it did no such thing. And I think that's right, but yet that sort of myth, if you will, persists, but I think you did a great job explaining why that isn't the case.

So what I'm hearing so far is that at worst for the dualists anyways is the data is sort of neutral, but I think all of you want to be a little bit stronger than that where we say, "Okay, maybe there isn't a definitive scientific case to prove dualism, but there's a lot of scientific evidence that seems to fit better with, be better anticipated by or predicted by dualism broadly considered," and I think that's definitely right. And some of the evidence I think is mild, some of it I actually think is really strong.

Bob, I'm with you for many years. I heard of these near-death experiences. I thought, "Oh, that's interesting, but they sound a little woo-woo to me." But then I started to seriously read them and indeed seriously read the scientific literature on them, which is really impressive-

Robert J. Marks:

Yes.

Pat Flynn:

Really impressive, especially considering these accounts of people who are congenitally blind, seeing for the first time and the veridical experiences. And okay, is that a knockdown proof for dualism or against physicalism? I don't know, but empirically it comes pretty close, right? As a physicalist, you have to radically alter your theory and start getting really ad-hoc to try and make sense of things like that.

Robert J. Marks:

Yeah, let me comment on that. Stephen Hawking in his book, A Brief History of Time said something which really opened my eyes. He said, "Nothing in physics is ever proven, we just accumulate evidence." So therefore if I drop a pencil, that's further evidence for gravity. And I think what we're doing here is we're accumulating evidence and maybe we'll never prove it, just like Stephen Hawking said that we haven't proved physics totally, we are accumulating evidence.

Brian Krouse:

If I could pipe in a bit on this question you asked a little ways back about this argument against dualism that as we identify specific places in the brain that are involved in certain mental processes, is this making the case against dualism. And I think we might be slipping in a little bit of materialist metaphysics here without really being aware. There's this idea that what we're doing is we're locating these functions in specific spots within the brain and therefore what else is going to be left to be done in the soul, for instance. But I think a trick here is, when you get back to consider these philosophical issues that we've talked about before, you run into the problems of trying to account for these mental

functions in terms of a reductive physical explanation. So while you could make the case that what we're doing is identifying some kind of a fine-grained dependency, I don't think that is reducing the case for dualism because it's not truly explaining or accounting for these mental qualities strictly in terms of the physicality. We're just identifying a correlation.

So that's one point I wanted to make. Another point, which is covered in a chapter by Dr. Green, which is actually a pseudonym for someone who wanted to remain anonymous, but he's a computational neuroscientist post-doctor and he talks, about amongst other things in his chapter, so he gives us a little bit of an understanding of the current state of neuroscience. As we identify parts of the brain that are involved in certain things, I think it's easy to think that we're further along in understanding how the brain works than we are.

One of the things that really, I love this example 'cause it really sheds light on where we are in our understanding of connecting the neurons to the whole brain function, is our study of this little nematode. It's sort of an example organism that's studied a lot called C. Elegans. This is a little nematode, it's a little worm and it's great for studying in a number of different scientific fields because it's so small and so simple. It's behaviorally simple. All it does is kind of move, wiggle forward a little bit, wiggle left, wiggle right, eat. And at this point, we know everything about the structure of this, the biological structure, well, not everything, but we know so much about the structure of this creature.

We know, for instance, it has something in the order of 312 neurons. I may have that off by 10 or something like that, but a very manageable number of neurons and we're able to monitor the neurological activity in every one of these neurons as the organism is moving about. And yet, we do not understand, like what you'd imagine we would be able to do to explain is have a complete circuit explained from the sensory input that the organism feels in order to then somehow its internal processing to make its decisions to then driving its motor output to drive the movement. But we have nothing like that. It is my understanding, I think that's even true to today. I don't think anything recently has been done to close that loop. And so this is remarkable because this is with a small simple organism of 312 neurons, but the human brain is what, 10 billion neurons, I believe, with trillions of connections.

And truly, we do not understand these circuit dynamics in the human brain at all. So really empirically, we've just got a long road ahead of us in terms of understanding how the brain does work, and we'll just have to see. I'm sure there will be interesting metaphysical implications about what we find, but it's just so young, so we shouldn't get ahead of ourselves, I guess is the lesson from all that.

Pat Flynn:

Yeah, that's great, Brian. I think one related point to that that I want to pick all of your brains on, no pun intended, is this notion that you sometimes, it's an objection usually more towards theism, but I think you find it within philosophy mind as well is that, hey, once you guys start positing this spooky stuff, this immaterial realm, it sounds like you're just going to be a science topper, right? You're going to kind of give up on the hunt for naturalist explanation and then you're going to miss something really important. Do you think this concern is legitimate or bogus? I think I know the answer, but I want to hear it from your mouth, and if you do think it's bogus, in what way do you think taking one of these alternative dualist frameworks, and I'm saying dualist, dualism broadly considered that it could encompass even hylomorphism or substance dualism, which in what ways do you think that that might actually facilitate better scientific research? I'd love to hear from each of you on that.

Angus Menuge:

Yeah, I'd make this first comment. Anybody can be guilty of an argument from ignorance and that includes the materialist as well as the dualist or the idealist. In other words, it's a bad argument to say

we don't know what's going on, therefore God did it or the soul did it or something like that. However, it's also the case that any of the positions can try to work within its paradigm to produce an illuminating explanation. And my view as a dualist, for example, is that I think it's important for us to build out from dualism to understanding how information works. So when Brad was talking about the C. Elegans case, the fact of the matter is that knowing lots about the neurons in this little creature is not the same as understanding how the information flows. And if dualism can develop models, which illuminate how information flows when we make decisions and then our bodies enact them, or when we stub our toe and then we have a pain quail in our mind, then it can become interesting to scientists because it gives them a research paradigm.

So I think that there's a kind of a bridge between pure metaphysics and something which is fruitful scientifically because it gives you a research paradigm framework that a working scientist can use to develop more particular theories in. But I see no reason at all why dualists can't contribute to that just as much as materialists have. And then, it should just be a competition to see who has the best explanation of the particular phenomena that they're looking at.

Robert J. Marks:

One of the things I think we have to be careful about is the assumption that truth is explainable by science. I mean that's what the materialists say, all truth can be proved by science. The interesting thing, of course, is that this is a self-refuting proposition because the claim that all truth can be explained by science cannot itself be explained by science, so maybe it isn't a truth. I think we also have to go back to fundamentals that there are some things, which might always remain a mystery. This goes back to the 1930s and the proof of the incompleteness theorem by Kurt Gödel, who said no matter what assumptions you have, there are going to be truths outside of the bubble of suppositions and proofs that you can make out of those theorems that are true.

And the greatest example of that is work by a genius, Gregory Chaitin who came up with Chaitin's number and Chaitin's number is a number, which if we knew, it would solve many of the open problems in mathematics, many of them that have million-dollar prizes. This is astonishing and when you hear it, you go, "Okay, that can't be true," but it is true. It is a single number that would solve all of these open problems in mathematics, but you can also prove that Chaitin's number is unknowable. And so from Gödel's theorem exemplified by Chaitin's number, it could be that there are things which are outside of the reach of explanation by science and we have to recognize that.

Pat Flynn:

So I think this is a really good and a very important reminder also about the potential scientific fruitfulness of paradigm outside of physicalism. I think it's also just important to remind people that a lot of these cartoons you hear about the God of the Gaps of the argument from ignorance or whatever are really just that. It's not like people in the olden days didn't look for natural explanations. Of course, they did, they did it all the time. Now, as we learn through science, a lot of their natural explanations were not entirely correct or needed a refinement, but they weren't just appealing to divine or supernatural mystery on things, right? And of course, it was from a generally theistic and larger Christian worldview that I think set the conditions for the emergence and extreme fruitfulness of science. So I love what Dr. Menuge said about let it be a competition. I agree, competition is great. Let the best scientists and meta-physicians and everybody win out.

Boy, we have covered a lot of territory so far. We covered many of the difficult, if not insuperable, problems facing physicalist models of the mind. We began to explore alternative ranges of options, and

we discussed where we believe the best empirical data leans in which direction, which is the broadly dualist direction.

So what I want to do in part three is begin to explore in a little bit more detail some of these other options, dualism and hylomorphism and idealism. Obviously, we're not going to be able to cover them all, but I'd like to give people a good idea of what is being proposed and some of the motivations for at least some of them. And then, of course, I would like to talk a little bit more about artificial intelligence. This is all the rage these days. People have lots of questions about AI, so trying to get some conceptual clarity around AI and what sort of predictions we think we might be able to make depending on what position we hold in philosophy of mind.

So if you wouldn't mind, Dr. Menuge, we'll start again with you. You obviously have identified yourself as something of a dualist, but of course dualism comes in different flavors. I'd be curious just to hear a little bit more about the position that you find most tenable and some of the problems you think that it might be able to solve related to contemporary philosophy of mind. And we'll just go from there.

Angus Menuge:

Yeah, I suppose I would describe myself as an Augustinian dualist if I was asked to be specific about it. And that's because although I find some of Descartes' arguments persuasive, I do think it's reasonable to say that the soul or the mind is located where the body is, in the sense that it is always present wherever there is sensation throughout the body. It's just that the mind is located in a different way than physical objects are located. So only part of the body can be present in any of its parts, but it seems that the mind is wholly present anywhere that there is sensation. And I think that the primary reasons for being a dualist in that sort of sense that we find in introspection that there is a unity of consciousness, that all of our experiences and thoughts belong to one subject, and that we also need to assume that unity at and over a time in order to account for rationality itself, in particular the rational activities of a scientist.

So for example, if I have a hypothesis I wish to test, and so then I design an experiment and I look at the results to see if they show that my prediction is true or false, I have presupposed in that whole activity that I'm the same person who had the hypothesis and who designed the experiment, who survives long enough to actually determine the results of that experiment. For that to make sense, it seems to me that we have to have a subject, which persists over time so that with the very same person, who made the prediction, who later on finds out whether that prediction is true or false.

And in general, I think the reason this is so overlooked, as I argued in my earlier book, Agents Under Fire, is because of course scientists spend most of their time focusing on their objects and don't tend to think very much about what they themselves as scientists are doing. And there seem to be presuppositions that one makes in doing science, and among those that you are a conscious subject who persists over time in the work of your scientific discovery. And so I see dualism really as not a foe, but a friend of science. It's there in the background to make sense of the rationality of science itself.

Pat Flynn:

Yeah, that's a really great point, Dr. Menuge, and something we weren't able to fully discuss in the previous episodes, but I think it's at least worth bringing up now. It is not just the unity of the subject, which is very difficult if you're coming from a physicalist's perspective, to describe how we achieve such unity from such a base of disparate, unintentional entities, but also the binding issue of how that unity is maintained over time, especially when it seems like a lot of our material parts are being swapped in and swapped out. Do you think that those issues are something that can be covered by all the alternatives equally well in terms of substance dualism, hylomorphism and idealism and is just a problem for

physicalism or do you think that some of those positions are theoretically more advantageous than others for, call it, the binding in the unity problems?

Angus Menuge:

Yeah, so what I would say is that there are some issues where I think that sort of traditional substance dualism, hylomorphism and idealism can do an equally good job of accounting for them. And then there are some other issues where there might be a reason to prefer one option to another. So for example, when I look at hylomorphism, I think it does a really good job of explaining this boundary between those aspects of our cognition that can be easily manipulated because they have to do with the sensorimotor system and on the other hand, the apparent independence of abstract thought and free will, going back to Aristotle. He recognized that in reason we contact universals, which we have never experienced and therefore, that reason must in some sense enjoy a degree of autonomy from our physical senses and brain. And he also believed that individuals have the power of self-movement and free will and recognized that that as well was not something that simply emerges from matter. So I think that that position does very well there.

A little bit of a challenge to the hylomorphic position though would actually be the near-death experiences because in that case, it's difficult to understand how people are having what appear to be sensory qualia, which are not using their physical senses. That doesn't mean the hylomorphists could not come up with an explanation of it, but that's the kind of challenge that one has. And likewise with idealism, I think their strongest suit is to point out that maybe all of us are operating with out-of-date physics.

So their big complaint is that it's not just the physicalists, but even some dualists who tend to think of physical matter in terms of easily locatable stuff. But when we get to the quantum realm and you have all these complex superpositions of states and we can't determine the position, the momentum of a particle at the same time and all these kinds of problems, we begin to lose a clear sense that we know what a material object is. And idealists capitalize on this problem to suggest that maybe what's really going on is fundamentally transfers of information between minds and that the old idea of a physical object is actually redundant. That's kind of a very exciting idea. I'm not a proponent of it myself, but I'm very eager for it to be given a fair hearing.

Robert J. Marks:

In fact, one of the chapters in the book by Bill Dembski, I think deals with this, if I get things right. Dembski describes informational realism as the belief that the defining characteristic of reality is the ability to exchange information.

Pat Flynn:

Yes, yeah.

Robert J. Marks:

So that's his chapter, how informational realism dissolves the mind-body problem.

Pat Flynn:

Yeah. One thing I love about this book is how you are giving a platform for these different positions to get a strong initial hearing so people can go in and read the different accounts and see what ultimately convinces them or starts to lean them in a certain direction. Real quick, again about the binding

problem, I just want to come back to this. I think it's pretty obvious there's a distinction between us and the modes of us. So for example, I have my thoughts, I have my motions, but what binds all those together? What are they ultimately grounded in through time? The answer is me, right? It's me.

Robert J. Marks:

Yeah.

Pat Flynn:

And we need to theoretically make sense of that and that's where I think something like hylomorphism does a really nice job with the principles of matter and form. And if people want a further explanation of that, I'll encourage them to see my interview with Dr. Jim Madden, who contributed the chapter to this volume on hylomorphism for some of the more details and background. But I agree with you, Angus, near-death experiences are sort of an initial uncomfortable fit within that worldview.

And even though I'm quite partial to hylomorphism myself, I've gone back and forth with many other mere hylomorphs, if you will, saying, "Hey, this is something we need to be able to accommodate and think about." I think it can be done, but I agree that it's one of those initial data points that might more comfortably fit in, say, a substance dualism or something like that. And it's always good to just be honest about the limits and range of predictions for each theory. It doesn't mean that the theory is immediately falsified, but it might cause you to have to rethink certain aspects or expand it in some ways. And that's always fruitful, isn't it?

Angus Menuge:

Yeah, and I think you're right. The whole goal of the book is to give a really fair expansive hearing of these positions by their best proponents and without any predators. Obviously as editors, we have our own opinions, but we didn't let that get in the way of making sure that the reader just gets the best versions of these options from their own proponents.

Pat Flynn:

Yeah, and I think you've done an excellent job of that and how needed volumes like these are. So Bob and Brian, if you wouldn't mind, I'd like to hear now some of your perspectives or the positions that each of you lean toward in philosophy of mind, and if so, would like to hear some of your thoughts and motivations behind that.

Brian Krouse:

Yeah. Oh, I guess I could jump in. So I'm a bit hesitant to pick a favorite, to be honest. I think it's kind of like when my kids ask me what my favorite ice cream flavor is and there's so much to like about the different flavors, I have a hard time picking. But I probably have a leaning towards substance dualism or at least I could say what substance dualism going forward is when we approach it through the philosophical problems, the category differences that we find between the mental and the physical, in very brief terms, it really seems that we need the mental to be rooted somehow in a nonphysical substance. And this, it seems to me, substance dualism emphasizes and gets right, or at least to me it seems right and some of the objections, like the interaction problem, that seems to me like they have good answers, they don't put it down.

Pat Flynn:

Well, if you wouldn't mind, I wanted to get there 'cause that was an aspect that I wanted to cover, so we might as well go into it right now, is of course one of the major issues with dualism, and it's not just towards substantialism, but this will be directed at hylomorphists, I'll just call them hylomorphs, as well is this famous interaction problem. So if you wouldn't mind just steering in that direction, just briefly explaining what that is and some of the solutions on offer for it.

Brian Krouse:

I think Angus could do a far better job at that than I could, so let me actually defer to Angus maybe. Do you want to try to cover what the interaction problem is and some of the responses to that?

Angus Menuge:

Yeah, so the main interaction problem is just how can substances of two fundamentally different kinds interact without a shared medium. And so it arises because it seems that physical causation is unproblematic. If one billiard ball runs into another one, we can see how that happens because they share the medium of space. But if mind is somehow not spatial, then how does it interact with the physical? Well, of course, one thing, as I indicated, it's open to the dualist to in fact say the mind is located in space, but in a different way.

Another thing though is to go back and ask how strong an understanding do we really have of causal relations to begin with? David Hume pointed out that in fact, all we observe is one event followed by another one and we never actually observe a necessary connection. That's something that we assume is there, but that's a metaphysical notion, not something that we really derive from our experience. But that said, I think that it's fair for physicalists to challenge dualists to come up with some sort of explanation of what's known as the pairing problem and that's the why is it that one particular mind is paired with one body rather than another? And so why is it that when I want to raise my arm, my arm goes up and not Robert Mark's arm, and why is it that when I stub my toe, I feel in pain and not Robert Mark and so on?

Robert J. Marks:

Ouch. Okay.

Angus Menuge:

Okay. Yeah, well played. All right. So what I've tried to develop in my own thinking about this is an account of the flow of information. And I think this is promising because information is something which we are aware of existing in both mental and physical formats. Every day we have ideas and we say we write them down, which means that we make physical marks, which with certain conventions, we can interpret as words that express the thought that we had. Every day we read books and after looking at those physical marks, we have ideas in our mind. It seems that memory works a bit that way, that when we remember things, there are engrams stored in our brain, and it seems that when we decide to move our limbs, somehow our volition activates a motor control program that moves our bodies.

So I think the way to think of this is that we need to have an intermediary that is common between the mental and physical realms. And I argue that some form of information is just the right thing to do that and that may help us to illuminate it. So I'm not one of those philosophers who is content to sweep the mind body problem under the rug. It can be framed as a serious problem that needs a serious answer, but I'm not convinced that the dualist has got no responses available.

Pat Flynn:

Okay. So obviously dualists have thought about the interaction problem, and there are actually many different proposed solutions out there, we've heard just one plausible model. I know obviously thinkers like Richard Swinburne have their own. So I think again, it's important that people actually look into this and they just don't take this comment of objection as by any means decisive. This is something that very smart people have thought about and I think come up with some very clever responses. So apologies for that diversion, but the interaction problem is so commonly brought up that I'm really glad we actually got to talk about that.

So just going back to you, Brian, please continue your line of thought. Is there anything else you want to say about what inclines you towards substance dualism?

Brian Krouse:

I'll move on to just give a couple of thoughts on how I'm wrestling with hylomorphism. I find hylomorphism is actually a particularly tricky model to understand because it's situated within a metaphysical framework, Aristotle's metaphysics that uses a lot of terminology. It sounds very similar to something that it's not, uses words like form and matter, and they don't exactly, aren't meant to invoke the same concepts that might pop up in my mind or the mind of someone on the street.

Pat Flynn:

Yeah, yeah, right. Just to give an example, when Aristotle's thinking of matter, he's really thinking of a principle of individualization, right?

Brian Krouse:

Yeah, right.

Pat Flynn:

Not necessarily something that has anything to do with modern physics. It's not completely disassociated, but it's not the way that many modern people think of the term matter. That's a really good point, right?

Brian Krouse:

Yes. And I think I remember reading, your friend Dr. Madden is, I think, just a wonderfully clear exponent of all of this stuff. But he, I think if I remember right, in one of his book, a larger book on this subject, he talked about how in the hylomorphist view that this matter, which is, as I understand it, it's like pure matter, is pure potentiality. It could become anything. And that's not to be equated with the matter as we think of it as just physical stuff or particles or impersonal things, that it could in potential have, I guess, would you put like nascent mental properties within it as well. I don't know if I've got that right or not, so correct me if I'm wrong, but...

Pat Flynn:

Right. Yeah. Well, if you want to think of something conceptually difficult, try to think of prime matter. And from an Aristotelian perspective, it's very difficult, but does it relate to modern science? I will, for people who really want to go into this, 'cause this is obviously tall grass metaphysics, which is fun to do, but one of the principle proponents of modern hylomorphism is Dr. David Oderberg, and he's got an article 2021, I think, asking as prime matter energy. So he tests the hypothesis of whether we think we can equate these two, and he doesn't come down definitively on one particular side, but it's worth

seeing the plausibility of that hypothesis, to see the compatibility or at least converges between traditional Aristotelian line of thought and modern physics.

Brian Krouse:

Interesting. Interesting. Well, okay. So as is pretty well known, I think the term soul in hylomorphism is used to not only describe the form of humans, but it describes other living things have a soul too, so plants and animals, just with different capabilities or qualities. And as I understand, the emphasis on hylomorphism with what's distinctively human about the human soul is the rational capability.

Pat Flynn:

Right.

Brian Krouse:

And when you pull on this thread, you get into the ability to comprehend abstract truths and whatnot. And this is the piece that when they pull on this thread, that's what they lead to saying there's something immaterial, something that could survive the death of the body in a human, which I think is very interesting. And it has a lot of overlap with some of the arguments you get from idealists and substance dualists. But one of the things about the hylomorphists that I've puzzled over a bit and not quite sure how to connect the dots with what the substance dualists might talk about when they're addressing the issue of qualia or some of these other seemingly categorically distinct properties of the mental, the fact that it seems to imply, I mean, that you have to have a...

Fact that it seems to imply, I mean, that you have to have a subject and then you've got these things also seem, as we've talked about, have a real poor fit with material, with the physical. And so I don't understand why there's not more focus on that in the Hylomorphic system, but it opens up some interesting questions because I guess the sensory aspect actually pops up in animals. So I look at my dog, he looks like he's having some quality in there. I don't know for sure. And so how does this fit in? I'm sure there's good explanation for that, but that's one place in which I tend to go towards substance dualism explanations.

PART 3 OF 4 ENDS [01:45:04]

Pat Flynn:

Yeah, Brian, those are really good considerations and they obviously extend beyond I think what we can cover in this podcast. But it does bring up a general point, and that is that people often talk across purposes because they haven't clearly defined terms. It's true that many Hylomorphs, especially somebody like Thomas Aquinas. For him, the thing that is most relevant to our immaterial aspect is not quality. He never thought of quality in the way we think of today, but he would say that that is a material operation, but his understanding of matter is way more expansive than the contemporary understanding. For him, it's rationality. It's our rational aspect, our ability to engage in formal thinking that proves and demonstrates, not that we're two substances, but we have an immaterial aspect to one substance, for example.

And then if you want to talk about how you survive bodily death, that's a very complicated topic for Hylomorphs. And there's many different models out there, including notions of incomplete substances until the resurrection and getting your body back in a whole other topic. But I think the general point is yes, there's often a lot, there's too much ambiguity, that sometimes you think that positions might be at

odds when actually when you gain conceptual clarity, they're not really so different or as much at odds as you may initially think, at least within the broad camp of dualism.

That's why before we started to record Brian, I said I don't know how to classify hylomorphism of whether or not it's dualism because so much of that depends on these conceptual refinements that just often take a lot of time to work through, if that makes sense. Dr. Menuge may have some thoughts on this as well. I'd love to hear them.

Brian Krouse:

Seems like there might be some different opinions within the Hylomorphist camp too.

Pat Flynn:

Oh yeah. There's not just one position in there. Dr. Menuge I love your thoughts on any of all that too. And same with you, Bob.

Angus Menuge:

I would certainly agree with that. As I listened to Hylomorphists, they do seem to have several different positions. Some of them actually almost sound as if they are very close to being materialists. It's just that they have a richer notion of matter. So that doesn't mean that they're materialists in the same sense that Daniel Dennett or Richard Dawkins is. On the other hand, some of them are very close to being substance dualist, those who have sort of a modified Thomistic account because they so much emphasize what is distinctive and independent in the ability engage in abstract reasoning. And so I think that it's fair to say that there's a spectrum of positions there.

And that's another thing about this book. We're trying to open people's mind to the fact that there's lots of options here that need to be thought out and we really want to open the conversation with this book.

Brian Krouse:

Yes, absolutely.

Pat Flynn:

Yeah, that's great. So the reason I'm asking you about your personal perspective is really just so we can explore some of these options. So Bob, I'd love to hear from you now. Coming from the computer science perspective, is there any position that you're currently leaning towards or you feel is worth exploring more?

Robert J. Marks:

Well, working with these philosophers, I've had to learn a lot of terms. I've had to learn a lot of terminology like Hylomorphic and substance dualism, binding. Epiphenomenalism, my gosh, that's a word with seven syllables. People like me don't like words more than three or four syllables and idealism.

What I can comment on is things which are going on in engineering now, which are attempting to measure something, consciousness, for example. How is the computer world trying to establish what consciousness is? This doesn't directly address the theme that we're talking about, but is parallel. I'm aware of six different models that people are trying to do in order to model consciousness. First of all, I'm not even sure there's a good definition of consciousness. We mentioned panpsychism, which is that every material however small, has an element of individual consciousness. So I'm sitting here with a

book in front of me. My book is a little bit conscious, and we have been the lucky recipients of lots of consciousness, so good for us.

There's emergence, which we've also talked about. That's number two. And this has been investigated, I think in terms of computers for numbers of years most famously by a guy named Thomas Ray who came up with this model of Tierra who was going to try to do emergence. There was a whole field called artificial life, and their entire purpose was to show intelligence through emergence and basically that field has been abandoned. There has been, well, yeah, the emergence is we talked about is this idea that if you exercise a horse enough, it'll turn into a tractor. There is integrated information theory. This is a theory which has been developed by Tononi and University of Wisconsin. All of these, by the way, are materialistic. They're trying to explain things through materialistic models.

And he concludes the consciousness is measured by the degree of complexity of a system. And the more complex you get, the greater that it can be conscious. There's a great chapter, by the way, in the book, by Selmer Bringsjord, that explores integrated information theory and the flaws of integrated information theory. So that's a great read.

There's the Sims theory, and this is, I don't think something which has made it deep into philosophy. This is the idea that we're all simulations, and if we're simulations, then we are being controlled by some higher entity by this major computer program, which allows us. Elon Musk is a big proponent of this, by the way, and I don't know if it's an urban myth or not, but he has set out teams to try to prove his theory of the Sims theory, the fact that we are simulations.

Pat Flynn:

Yeah. Well, the simulation hypothesis actually has gained a considerable amount of traction in certain circles to be sure, right?

Robert J. Marks:

Oh, so I'm so sorry. That really just kicks the can down the road, doesn't it?

Pat Flynn:

Yes, it does. Yeah.

Robert J. Marks:

Because that means that there's greater simulations than we are, and then the questions are they simulated.

Pat Flynn:

Well, I mean, we brought up Dr. David Chalmers. One of his latest works is reality plus, the notion of virtual worlds and the problems of philosophy. So yeah, it's in philosophy for sure.

Robert J. Marks:

It's in philosophy. I'm sorry to hear that. It reminds me of turtles all the way down. We have simulation theory, who does the simulation. There's another one and there's a chapter in the book by Bruce Gordon on Quantum Consciousness. And this looks at a very interesting aspect of the quantum world upon consciousness. Now, Roger Penrose, who wrote the great book, The Emperor's New Mind, he said that we are not algorithmic and therefore, because we are not algorithmic beings that we cannot, I'm sorry, the computers can't be creative and can't create qualia and don't understand what they're going

to do. But he looked around and he says, "Well, that's because we're not algorithmic. What in the world can be non-algorithmic?" And the only answer that he came up with is quantum collapse. Quantum collapse is not algorithmic. And so therefore he said, "The answer must lie here."

And he worked with an anesthesiologist and they came up with this thing called the Orch OR theory. But there's been really no research into quantum consciousness that I'm aware of. And those are five different models of consciousness that are being looked at from, I guess a computer science, a scientific point of view.

And then the last ones is dualism and the type of substance dualism that we're talking about here. And this is of course one that is embraced by theists and it seems to me that a lot of these things are silly. I think the Sims theory is silly. I think that panpsychism is kind of silly. The Sims theory though, if you look at the Christian religion, we are computer programs that are generated by a higher entity. Well, according to Christianity, we are entities created by a greater God. So does that make us simulations? We're created in His image? I don't know. Maybe some parallels could be made there. So that's my input.

Pat Flynn:

Yeah. Well, that's really great news and I think that opens up a few potential paths to getting towards artificial intelligence. But I want to just hit a few of those points all along the way, especially concerning the simulation hypothesis. Now I'm with you, Bob. I think it's silly, but silly ideas are often seriously entertained by even very intelligent philosophers. I think it's worth maybe saying a few more things about. Now, I personally think that there's good metaphysical and epistemological arguments against this thesis, but I'd be interested to hear from any of you, particularly you Dr. Menuge if you've thought much about this, of if there's any particular launch point or basis in philosophy of mind against a thesis like the one that Chalmers is proposing or other philosophers, or even I guess just owners of social media companies who hop onto the simulation hypothesis.

Robert J. Marks:

By the way, Chalmers came out and he said ChatGPT probably will probably be 20% sentient. So I don't know where he comes up with this idea of sentience and what model he's using, but we throw these terms around without really defining them. I'm big into definitions and we really haven't even defined what sentience and consciousness is.

Pat Flynn:

Yeah.

Angus Menuge:

Yeah. I'm inclined to say I'm not really comfortable in saying too much about Chalmers' specific hypothesis, but the worry is that because of the scientism in our culture, when we have a difficult intractable phenomenon, we tend to redefine it in terms that a particular science can measure. And as a result, we can spend a lot of time trying to capture some correlated phenomenon, but we're not really understanding the thing itself. And so I don't really see what simulation has to do with the understanding of what it's like to be conscious itself.

After all, we can certainly produce now machines that will act as if they are conscious, but that doesn't mean that they are. And I'm worried that in many fields when they talk about consciousness, actually what they're doing is simply substituting something that they can measure. So they're finding a neurological correlates or they're finding some computation. And it might be true that there is, for

example, in the IAT, that there is this correlation between a certain kind of complexity and consciousness, but that still doesn't really explain what it's like to be conscious. It changes the subject to something that we can more easily measure.

Robert J. Marks:

The thing with Sims theory that I find interesting is that indeed, if we do have non-algorithmic properties, if we have properties which cannot be generated by computer programs, then whoever is our creator in this Sims world, must have the ability to do a computer program for non-algorithmic things and that to me seems to be a paradox. Unless they have some sort of super duper intelligence, I don't know.

Pat Flynn:

Yeah. Well, one thing I think just as a general point is that if you're going to kind of entertain seriously this Sim hypothesis, you really do need something like a computational theory of mind. And if you have reasons to think that that's inadequate, then you have reasons to reject that particular perspective and of course a lot of what we've covered in discussion would be exactly that.

So let us now consider at last artificial intelligence. Obviously this is something that has sort of exploded on the scene in the past few years, especially with the emergence, if you will, of things like ChatGPT and Midjourney and what have you. And what I would like to discuss is not just whether or not we think that ChatGPT is 20% sentient, which is an interesting question, I guess we should cover that as well. But what we think or what we should predict concerning the future of AI and what limitations we think it might have or will encounter from the perspectives that each of us hold, particularly that each of you hold in philosophy of mind. Do you think we can get some fairly confident predictions along that front?

Bob, I know this is an area that you obviously have a lot of relevant expertise. Maybe we start with you on this one.

Robert J. Marks:

Sure, yeah, I'd be happy to. This is a thesis in my book, Noncomputable You. There's also chapters on this in the book that we're talking about, Minding the Brain, a wonderful chapter by Winston Ewert, which totally debunks the idea of super duper intelligence. And there's a number of things which are brick walls that artificial intelligence will go through. One I think is understanding AI will never understand what it is doing, computer programs won't. They can add the number 16 and 14, but they don't know what the number 16 and 14 are. The greatest explanation of the lack of understanding goes back to what I'm sure you guys would know in philosophy, the philosopher John Searle and the Searle's Chinese Room. He said that he doesn't know Chinese, can't read Chinese, doesn't understand any Chinese, so lock him in a room.

There's a room with a number of file cabinets and somebody slips a note through the door that's written in Chinese. Searle looks at the note, it's in Chinese. He starts going through a number of file cabinets in the room until he finds a match to the question, slip through the door in Chinese, which he can't read. Well, it turns out on the slip of paper that he finds in the file cabinet that matches the question, which is submitted is the answer to the question. So he jots down the question and then he goes and he slips it out the door after refiling the card in the file cabinet so it is in its place for the next time.

Now external to the Chinese Room, it sure looks whatever happens inside of there is something that understands Chinese. Although Searle doesn't understand Chinese, he doesn't speak it, doesn't read it, yet it sure looks like it. And I think this is a smack down of the idea that AI will understand. AI will never understand.

Now, what happens in AI with large language models like ChatGPT and other things is that they're doing algorithms which are much more complex than simple table look up. But nevertheless, it's a big number crunching machine. So the modern part of Searle's Chinese Room is a slip through the door of a question in Chinese. Searle puts it into this big number crunching machine. He turns the handle, out spits an answer, he takes that answer and slips it out the door. He doesn't understand what's going on so I think this is really important.

The other thing that is a brick wall that artificial intelligence will never go through is creativity. This was wonderfully defined by Selmer Bringsjord who has two chapters in our book. And this is the so-called Lovelace test. Now, the Turing test, by the way, for those familiar with it, has been passed by ChatGPT. I don't think there's any question about that. The Lovelace test does something different though. Most tests just look at the output of the artificial intelligence and try to determine the consciousness or whatever the intelligence of the underlying AI by just looking at the output. The Lovelace test by Bringsjord looks under the hood. He doesn't judge the book by its cover. He looks inside the book, so he raises the hood.

And the requirement for creativity, according to the Lovelace test, is that AI will be creative if it does something that is beyond the explanation or the intent of the original programmer or programmers and this has not been achieved yet. Every AI program which is generated, has been generated because of the intent and the intellect and the creativity of the computer program. The AI itself has never generated anything which is creative.

We talked offline a little bit about a recent paper, really exciting paper, that what happens if you take a large language model like ChatGPT and you train it with all of Wikipedia and everything in the web, and you take this large language model and then you use the output from it and only the output from it to train an other large language model. And then you use the output from that second large language model to train a third large language model. What eventually happens? Do we have artificial general intelligence? Does it become smarter? No, it suffers from something with the authors of this paper called, they call it model collapse, and the model actually collapses, and pretty soon the ChatGPT a few generations down the road sounds like a babbling idiot. So no, this is not going to happen.

In fact, I mentioned this to Pat and he says, "Wow," before I gave him the answer, he says, "Wow, this might have some implications for AGI." And I said, "Yes indeed." And it shows that AGI isn't going to work, that these large language models just become babbling idiots after a while.

Pat Flynn:

Yeah. Real quick, for people unfamiliar with the AGI thesis, can you explain that for us, Bob?

Robert J. Marks:

Sure. AGI is artificial general intelligence, sometimes called strong intelligence. And this was hypothesized by a Google engineer named Ray Kurzweil who said we're going to reach the singularity. And the singularity occurs when artificial intelligence duplicates the intelligence of a human being. And then AI will go on to be a super intelligence at some point. So AGI is artificial general intelligence where the intelligence generated by artificial intelligence is equal to, not simulates but equal to that of a human being. That has not yet happened. And artificial intelligences, I've explained, will never understand what it's doing. It'll never be creative. And then I think as we talked about in the previous podcast, it'll never be taught to be sentient. So these are brick walls that AI will never go through.

One might ask, "Well, what about super duper computers of the future?" They're going to be able to crunch numbers. Well, there's something called the Church-Turing thesis that basically says anything we do on a supercomputer today can be done on Turing's original 1930s computer. Now, it might take a

billion or a trillion years to do, but computationally they're equivalent. But just because computers get more and more sophisticated, they will be still be subject to this Church-Turing thesis. And these arguments against understanding creativity and sentience are still not going to be breached. It's just not possible.

Pat Flynn:

Right. That's really helpful, Bob. Thank you for all that. Angus and Brian, any further thoughts on anything concerning artificial intelligence or where you see it's headed in the future?

Angus Menuge:

Well, I'll just say that in terms of practical problem solving, the latest artificial intelligence can seem very impressive. And that's because it's producing intelligent output in this sense. It's output that it would require intelligence for human beings to generate. And so if you want to create a website very, very quickly, then ChatGPT can do it probably more quickly than human designers can.

Robert J. Marks:

And certainly, I don't want to diminish the power of ChatGPT. It is incredible, and I use it periodically to help me do stuff. It is astonishing. And by the way, it's recently been tied in, I believe with Wolfram who does Mathematica. So if you want to ask ChatGPT to do a mathematical problem, and I've ask it to do some pretty sophisticated mathematical problems, it does it pretty well. It'll actually write out equations for you. It is astonishing, but it doesn't understand what it's doing. It's not creative. It's only regurgitating what has been trained to do.

Angus Menuge:

Right. And so in terms of the output, it's impressive. It can do quite well on computer programming tests, for example. It can create computer programs, which is impressive. But of course, the real issue is not the behavior, it's what intelligence is. And going back to Turing's Imitation Game, the problem with the test that he designed is it's behaviorist. You're counted as intelligent if you pass as a human as often as a human does. But that of course is just behavior and we know that there's no direct correlation. After all, I can listen to a humble radio and be impressed by the intelligence of the voice, but that doesn't mean that the radio is intelligent. It's simply a conduit of intelligence. And with its sophisticated algorithms and its ability to troll the internet, of course, ChatGPT and similar programs can troll all kinds of data and put it together in impressive ways, but they're not really the origin of the creativity.

And so what we really need to pass Lady Lovelace's test is that the machine actually generates some novel information, which it understands. And of course, the metaphysical issue is that despite its great complexity, there really isn't any reason to think that these AI systems are subjects. They're just very complex aggregates of parts. All these switches ultimately are just on or off, and it's a very sophisticated physical system. But there is nothing which credibly could be called the subject of its states and which could be credited with understanding or reasoning or any of these higher cognitive functions. So it appears intelligent, but I don't see any good reason to say that it really is.

Robert J. Marks:

Well, fundamentally, Noam Chomsky has called these large language models or just generative AI in general digital plagiarism. In fact, right now, there's a number of lawsuits going on. One for example is Getty Images is suing, Getty Images has a library of millions of photographs that have been used to train generative artificial intelligence. So they are suing these people because they said they have violated

copyright laws. We're also seeing computer programmers saying that people, that these generative AI programs have stolen their intellectually protected software. So it's going to be interesting to see how the courts play out in terms of this digital plagiarism and copyright law.

Pat Flynn:

Yeah, obviously there's a huge range of issues that aren't immediately related to the questions that are interesting us on this podcast. But I mean, certainly I have many friends that are musicians and artists that are terrified of what the future is going to look like for them on this front.

Robert J. Marks:

Oh, here's something you can tell them. Remember the ChatGPT generating worse and worse and become blabbering idiots. In the same paper, they said this would also happen with music.

Pat Flynn:

Oh, interesting.

Robert J. Marks:

If you use music to train music to train music.

Pat Flynn:

So you'll need real musicians to come back in at some point, right? Yeah.

Robert J. Marks:

Exactly. In fact, the paper concludes that in order to keep fresh, that human intelligence is required to update these generative models.

Angus Menuge:

That's really interesting because a sign of, as it were, digital entropy. And what we know is that human beings can generate new, coherent information when they design a new piece of technology, or they write a novel or compose a symphony so we're a source of coherence. But that evidence suggests that there's a kind of law of information entropy that these systems left of themselves, if they only interact with each other, that information will degrade and ultimately become nonsense.

Pat Flynn:

So here's where I would like to, this has been a really fascinating and rich conversation. I want to thank you all for everything that's been contributed here. I'd like to ask you each one final question that is, what is your favorite aspect about this volume? What really stands out about this work to you, either in particular as a whole? Anything else that you're excited that people discover in the volume? I'd like to hear from each of you on that. And of course, Bob, if you wouldn't at the end, let people know the best place to get it as well.

Robert J. Marks:

Okay, great.

Angus Menuge:

I just comment that what I think is perhaps unique about it is that it is fully interdisciplinary. It brings together disciplines that are related to the mind-brain issue that often don't talk to each other. And secondly, that it tries to be very fair in canvassing all of the options to try and show what are the alternatives to physicalism. It's fair enough to say that physicalism has got plenty of exposure. And so what we want to do is just to open up people's minds to the possibilities and track it all the way down to what difference could it make for how I look at neuroscience or computer science or some other empirical field.

Brian Krouse:

Yeah.

Pat Flynn:

Excellent. Brian, how about you? Yeah.

Brian Krouse:

Yeah. I'll just add to that. I agree with everything Angus said there. Add to that is that we targeted within this book to try to make, targeting as we thought of as a broadly academic audience. So it doesn't mean that all the chapters are easy, maybe popular level book reads, it might take a little bit of concentration. But what we wanted to do was to be able to have a neuroscientist who might be interested in these philosophical models, to be able to read the philosophy chapters and not run into a bunch of jargon that they have to go outside the book to try to understand, make them self-contained, but still robust and cutting edge and current and vice versa with the scientific topics. So that I think is unique and hopefully we accomplish that.

Pat Flynn:

Excellent. And Bob, how about you?

Robert J. Marks:

Yeah, well, I guess I would echo what Angus said. We have 25 different people that have contributed to this book, and usually many of us work in our own silos as Angus said. We have people, and I made a list, and this is kind of cool. We have people with expertise in computer science, philosophy of mind, philosophy of science, biology, neurobiology, cognitive science, neuroscience, business, neurosurgery, theology, computer engineering, machine learning, and psychology. So we have contributions from all of these fields in the book and I have learned so much outside of my silo from this. And we hope that the impact will be that other people will be able to look at this book and learn about the mind-body problem from over a very broad spectrum of expertise.

Pat Flynn:

I certainly agree, and again, I want to emphasize how impressed I've been by this volume. And don't let it intimidate you, gentle listeners, even if you're new to this, everything is laid out in a remarkably accessible way. Yes, you'll be challenged, but that challenge will be very productive, I assure you. The book, once again is called Minding the Brain: Models of the Mind, Information, and Empirical Science. And Bob, if you wouldn't mind, where is the best place for people to grab a copy of this?

Robert J. Marks:

Well, the book itself has a site on Discovery, and it's called discovery.org/b/Minding-the-brain with hyphens between it. So that's discovery.org/b/Minding-the-brain with dashes. Like everything else in the world, it's available on Amazon.com. So that's a good place to go to purchase the book or any other places that you buy books.

Brian Krouse:

And Bob, I believe if you just go directly to www.mindingthebrain.org, that will get you there too.

Robert J. Marks:

Oh, thank you, mindingthebrain.org. Okay. Thank you, mindingthebrain.org. Remember, mention the website three times, mindingthebrain.org. I learned that from a politician said that you have to do that in order to get it into people's brains.

Pat Flynn:

Yes. Well, it's definitely effective. Gentlemen, I want to thank all of you for taking the time to have this discussion. It has been extremely enriching. I really hope we can have the opportunity to do this again some time. Thank you all.

Announcer:

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PART 4 OF 4 ENDS [02:16:49]