Minding the Brain: Why Science and Philosophy Need Each Other

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Pat Flynn:

Okay, everybody, welcome back to the podcast. I'm your host, Pat Flynn, and today we are continuing our discussion on this wonderful new volume called Minding the Brain: Models of the Mind, Information and Empirical Science edited by the three guests joining me today, Angus Menuge, Brian Krouse, and Robert Marks. Gentlemen, I'm very happy to be continuing this conversation with you, so thanks for joining me again.

Angus Menuge:

Thanks.

Robert J. Marks:

Great.

Brian Krouse:

Absolutely.

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 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 anew? 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?

Angus Menuge:

I think you said Austin.

Pat Flynn:

I am sorry, it's not Austin. It's Angus. Your name is Angus.

Brian Krouse:

I felt like a kid who didn't study for an exam.

Pat Flynn:

Sorry, I'm looking at Austin. We should keep that... By the way I'm not completely ignorant, 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 the 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, Augustine and Descartes 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 hylomorphis 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 a rational human being also includes an immaterial dimension to it. That this view is quite sophisticated because it makes a distinction between kind of a sensory motor systems which can be manipulated physically and on the other hand our 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 Barkley's most famous formulation. You have God's mind and 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 carving up the territory. So which of those positions, if any, do you think is still something that can comport well with or even just broadly fit into a naturalistic worldview? 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 physicals. 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 Barclay's position, that 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 kind of 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 challenges 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 cliche form, science has got this and that 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 lost, 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's 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 sort 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 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 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 then 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 we 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. In so far 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 share with 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 is in 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 Larmer that talks about... This assumption oftentimes people have in the 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 sciences, 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 of their

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 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 and 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 are 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 in my mind, the science isn't really in dispute. Like the dualists and the hylomorphis and the physicists, 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:

So at a fundamental level, if when 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 of another. That said though, I'm 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 is locked is locked or constantly check if an oven that you switched off and you know it's 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 that 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 is called 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 could not have been ordinary experiences through their physical senses because they were unconscious at the time. And this kind of experience, which there's 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 clunking 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 dualist in some sense. So I'd like to hear you guys maybe explore that. Is that a problem for dualist as sort of obvious connection between the physical and mental, or do you think that dualism broadly considered can accommodate this data well?

Angus Menuge:

Just briefly and I'll let the others chime in, but that there's an interaction between the physical and the mental. It 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 paired by particular deficits. So if you damage the Broca region of the brain for example, then that has an effect on your linguistic abilities. So it's certainly is true that the brain 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:

If I could continue on this and go back to some of the other topics that were raised by Angus. 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 happen 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. And that's the point I think that near-death experiences are beyond hallucinations, if you will. He also mentioned Wilder Penfield 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 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, oh, 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, a free won't. And that according to the neuroplasticity, kind of 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 kind of like you have two brains, right? 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 Angus 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.

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 argue it did no such thing. And I think that's right. But yet that sort of myth if you will persist, 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 dualist 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 that 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. Okay, is that a knockdown proof for dualism or against physicalism? I don't know, but empirically it comes pretty close, right? I mean, as a physicalist you have to sort of 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're 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 places, 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, is 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 grain dependency, I don't think that is reducing the case for dualism because it's not truly explainer 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 postdoctorate and he talks about, amongst other things in this chapter... So it 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.

And one of the things that really... I love this example because 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 is studied a lot called C. elegans. And 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 wiggle forward a little bit, wiggle left, wiggle right, eat. And we know 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... There's something on the order of like 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 from what you'd imagine we would be able to do to explain is sort of 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. In my understanding, I think that's even true 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 there's just... I mean, 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 stopper, 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, and what way do you think taking one of these alternative

dualist frameworks, and I'm saying dualism broadly considered that it could encompass even high amorphism 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'll 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. 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 Brian 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 follows 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. 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 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 just 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 or 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 learned 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 metaphysicians and everybody win out.

So there's two more things I really want to explore with you gentlemen here, in addition to anything else you think might be worth covering from the book. But you know what? Maybe it would be best if we save that for part three, because we've been going for about another 40 minutes and should probably give the gentle listeners a little rest. So I'll say stay tuned for next time, because we're going to talk a little bit more about some of the arguments within the dualist camp for the different positions, helping to better understand substance dualism and hylomorphism and idealism and some of the motivations there. And then I finally want to get around to talking about artificial intelligence, trying to understand exactly what's going on in the current landscape of AI. And again, returning to predictions of what we should think are the inherent limits, if there are any, concerning what AI might eventually be able to produce. So we will consider all that next time. Please stay tuned for part three.

Announcer:

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