Exploring the Immaterial Mind: Insights from Neuroscience and Thomistic Philosophy

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Announcer:

Greetings and welcome to Mind Matters News. Debate continues on the nature of the mind. Are our minds purely material comprised only of our physical brains? Does idealism ring true with its views of physical experiences arising solely from a non-physical mind? Or is a dualist position with aspects of both an accurate view? Joining us today to talk about this and his contribution to the book, Minding the Brain, is Dr. Michael Egnor. Now, here's your host for today, Pat Flynn.

Pat Flynn:

Okay, everybody. Welcome back to the podcast. My name is Pat Flynn. I am happy to be hosting a conversation with Dr. Michael Egnor, and we are going to be talking about all things mind, brain, dualism, the nature of the human person, neuroscience, and the soul. I'm sure it's going to be an absolutely fascinating conversation. Mike, I'm delighted to be here with you. This is our first time having the chance to converse with one another. I'm very excited, so thanks for making the time to be here.

Michael Egnor:

Thank you, Pat. It's a privilege to be here. I'm so happy as well.

Pat Flynn:

So you have a very impressive resume, Mike. If you wouldn't mind, I'd like to begin with just a little bit of your personal history, whatever you think is relevant. I'd be particularly interested in hearing about what got you interested in the philosophical debates, particularly in philosophy of mind, the nature of the human person, the nature of mind, and how that has connected to your background in neuroscience.

Michael Egnor:

Yeah, sure. It's a very, very interesting thing. I started out as a kid. I knew I wanted to be a surgeon of some sort. I was kind of oriented towards that kind of work. I was very interested in the brain and how the brain worked. And I got into medical school and I became just enthralled with neuroscience and neuroanatomy. There was a big textbook of neuroanatomy that made it relatively easy to learn. It was like a program text. And I just dived into this.

And I had this wonderful feeling of discovery that somehow I was going to understand my soul and understand what it meant to be human if I knew enough about how the brain worked. That all the mysteries of life were going to fall out of how the brain worked. So I studied a lot and I decided to go into neurosurgery because I felt like that was the most direct way to understand how the brain worked is to actually operate on it and see people before and after and learn.

And what I found as I began practicing neurosurgery was that there's a whole lot of stuff out there in the real world that really doesn't fit the textbooks. The textbooks are written by and large by people who have never seen a living human brain and have never seen or treated a person who has a brain problem where you can actually understand. These are basic scientists.

These are people who work with lab animals and they have all kinds of book knowledge. But the real world doesn't always match up. A good example was a little girl that I take care of. I'll call her Cindy. That's not her real name. But she was born with a twin sister and she was born with very little brain tissue in her head. Probably 80% of her brain was missing. The rest was just water.

And her twin sister was normal and I counseled her family that she probably was going to be profoundly developmentally delayed. It was going to be really bad. But she was a newborn, and newborns, you can't really tell a lot about their brains because they're simple little creatures anyway. And as the months and years went by, she grew up just fine. And we had her sister who was normal to compare, and she was even more advanced than her sister.

And she ended up on the honor roll in high school. And I still follow her. She's in her 20s. She's a very smart young lady. Her mom says she's too smart for her own good. And probably 80% of what's inside her head is water. And there's nothing in any of my textbooks that explain that or that even predicted that. And I've got scores of patients with these strange stories.

And that doesn't mean that missing a big part of your brain is good for you. And there are plenty of people who are missing parts of their brain who are pretty disabled because of it, but not everyone. So I began to look first into neuroscience and then into philosophy to try to understand this because it was very clear to me just in my everyday work life that the books didn't get this right.

There was something else going on. And of course, also I started out my life as an atheist and a materialist, and somewhat at the same time and kind of a similar process became a Christian. So I started to look at human beings differently than I looked at them before.

Pat Flynn:

Yeah. Well, that's absolutely fascinating. And what I'd like to do is divide this conversation in three parts. The first part I want to focus on the neuroscience because I would say there's still a general impression among probably most people that neuroscience is going to complete the materialist project. It's going to clean up those remaining questions, particularly about human mind and consciousness and all that. And you have some strong challenges to that that I want to cover.

And then there's lots of frequently asked questions that you get, Mike, related to neuroscience and the soul that I think we should also tackle in part two. And then part three, maybe we could nerd out on the philosophical position that you think is most fruitful, which I am also very sympathetic to, which is Thomistic or Thomistic Dualism. So that's how this conversation is going to proceed. So why don't we begin at the, well, the best place, which is the beginning, the first part. Mike, help us to understand what the science is actually telling us.

One of the things that struck me as really interesting about your contribution to minding the brain is that you do claim, and I think this is right, that the science, the neuroscience, actually does have something to say about the different metaphysical proposals on offer when it comes to the nature of the human mind, that the science can give us various degrees of confirmation or disconfirmation of these broad metaphysical accounts of the human mind.

I think that's fascinating. I think that's interesting. I think it's worth talking about. So in fact, maybe we should just discuss what those metaphysical proposals are. You list three in the chapter, Mike. So if you wouldn't mind, if you think that's a good place to start, why don't we take it up there?

Michael Egnor:

Sure. First, just in defense of the general principle that science and metaphysics have to agree, I think that's true, meaning people tend to think sometimes a philosophy as like this abstract thing that's

separated from reality and then there's the cold, hard science. But the reality is that metaphysics is the study of being. It's a study of what it means to exist.

And science is the study of what things do exist, and they've got to be the same. The Venn diagrams have to overlap. If they don't overlap, then either science or metaphysics or both are wrong. So there's nothing wrong with applying metaphysics and philosophy to scientific work. In fact, you kind of have to.

Pat Flynn:

Yeah. And not only that, I'll just add that philosophers are often very scientific in their metaphysical theories. They go out there in the literature and they say, "Here's my metaphysical theory, and here's what I would anticipate from it. Here's what it predicts. And here's why I think that this is a good theory or a bad theory." And even very traditionally, you have all sorts of... Sometimes you have objections to God or Christianity that assume this.

For example, the problem of evil is assuming that theism, the metaphysical theory that God exists, is inconsistent with the data of suffering or evil or something like that. Right now I don't think that that's ultimately correct, but people do operate with this assumption anyways. But it's interesting to see people who think or sometimes claim that these two disciplines, metaphysics and science, have nothing to say to one another. I'm with you, Mike. I think that that's incorrect.

Michael Egnor:

Yeah. And rather interestingly, there's a profound ignorance of science on the part of most philosophers of the mind, really a deep ignorance. And there's a profound ignorance of philosophy on the part of most neuroscientists. Most neuroscientists know probably nothing about philosophy. So it's astonishing the separate worlds in which these people live and they need to get together on this. And they need to get together objectively with no preconceived notions.

Pat Flynn:

Yeah, I agree. So yeah, let's try and make that conversation happen. All right, so what are the three theories of mind on offer here? And then we can discuss what they are and what predictions we think they make.

Michael Egnor:

The three theories of mind, roughly speaking, the first is materialist. And that's the theory that the mind is entirely generated by the matter of the brain. That is that however the mind and brain relate, and there are various different ways of looking at that, idealism and behaviorism, eliminative materialism is a whole bunch of things, but the idea that the mind and the brain are either the same thing or that at least every aspect of the mind comes from the brain. Basically, it's all about matter.

The second viewpoint is idealism, which is a view that the only thing that really exists is mind and matter is an aspect of mental experience. I've quite a bit of sympathy for idealism, but I don't think it's the best way to look at the mind. I think it is the best way to look at physics actually, particularly quantum physics. But the third way to look at it, which is a way that goes all the way back to Aristotle, is dualism, which is that there are some aspects of the mind that are very tightly linked to the brain, and no one doubts that.

I mean, obviously your brain has quite a bit to do with your mind. But dualism proposes that there are aspects of the mind that are not really generated by the brain. You might call those spiritual aspects, which I think is a pretty good word for it, actually. So the dualist is in the middle. It says there's some

material things in the mind, but there's some immaterial things as well. And it's dualism that I will defend here.

Pat Flynn:

Yeah. I always like to point out, it's almost an obvious point, but I think it's worth mentioning, that we didn't really need modern or contemporary neuroscience to know that the brain had something to do with the mind. I mean, everybody knew that you got hit over the head, things change, right? Phenomenal experience.

Michael Egnor:

...figure that one out. Yeah, right, right.

Pat Flynn:

All right, very good. All right. So we've got our theories on offer and these theories give us certain anticipations, don't they, Mike, or make certain predictions about what we might expect, at least under certain conditions or from certain experiments. Help us map that terrain and then maybe we can talk about what we actually find when we run those experiments. This should be fun.

Michael Egnor:

Well, there's a very interesting way to look at it. The materialist says that everything in the mind can be traced to the brain in some direct way. And the dualist says that, well, some things in the mind can be traced to the brain and some things can't. The first organized body of research that I think really challenged the materialist way of looking at things was that of Wilder Penfield, who was a neurosurgeon who worked back in the early and mid 20th century.

And Penfield was probably the greatest neuroscientist in the neurosurgical profession. And he really invented, so to speak, the field of epilepsy surgery, of operating on people for seizures. So he devoted his whole career to figuring out epilepsy. And the first thing he did was he began a systematic study of what we knew about epilepsy. This was back in the 1920s and '30s. Just everything that was ever published and written, this whole knowledge.

And he noticed something that struck him as very odd. And I should point out, he started out as a materialist. So he came at this thinking everything in the mind is from the brain and I'm going to figure out epilepsy and it's all going to make sense. What he noticed in his review of all of human knowledge about epilepsy, and this remains true to this day, is that when a person has a seizure, certain things can be evoked from the brain.

A seizure is like a random electrical discharge, like a spark that comes out of nowhere randomly in parts of the brain. And certain things happen when you have a seizure. And he said there really are only four things that happen when people have seizures. One thing that can happen is that your muscles can jerk. So you can have movements. When people have a generalized seizure, they fall down on the floor.

They shake. So the second thing that can happen is that people can have odd perceptions. They can have a tingling in the skin or see flashes of light or smell funny smells. He said the third thing that can happen is they can have powerful emotions. There are some seizures, they're relatively rare, but they happen, where people will have this just incredible sense of doom, dread.

And there's one kind of seizure, which I think is fascinating, is called gelastic seizures, where people think everything is funny. They just laugh constantly, like everything is funny. And the fourth thing that

people can get in a seizure is they can have memories. You can have all of a sudden a memory of your mother's face or a memory of when you were in school and things like that.

But Penfield said, "That's where it ends. That is that there's no other mental content that ever appears in a seizure." He said, "For example, you never have a mathematic seizure. You never have a seizure where you can't stop doing calculus. You never have a logic seizure. You never have a philosophy seizure. You never have a music seizure. You never have a literature seizure."

This whole range of abstract thought, things that kind of make us human, are never a part of a seizure. And Penfield said, "Why not? If random electrical discharges in the brain will spark off a thought, why aren't the thoughts ever abstract? Why aren't they ever about math?" So he said, "Then maybe the mind isn't entirely from the brain. Maybe there are aspects of the mind that are spiritual and not material."

Pat Flynn:

Yeah, I was really fascinated to read that. Neuroscience is not my specialty by any stretch. That struck me because I mean, that cuts right across the classic to mystic divide of perceptual ideas and conceptual ideas.

Michael Egnor:

Right.

Pat Flynn:

So I think this would be a great example where, hey, there's something in the science that seems to be leaning towards or confirming this very traditional Aristotelian or Thomistic understanding of the mind where it wasn't substance dualism, and we can talk about that later, but it was the idea that there are certain powers that we have that are immaterial. Power is really related to intellect and will. And so this research is fascinating because I think it's giving some confirmation to this traditional division. Do you think that's right?

Michael Egnor:

Oh, absolutely. Absolutely. And the thing is that this has been around in neuroscience circles since the early to mid 20th century. And Penfield wrote a book on it actually called Mystery of the Mind. It's been in his published literature and it gained no traction, meaning that neuroscientists would read this and just went on their happy materialist way, just ignoring Penfield's observation.

The second thing he noticed, which is absolutely fascinating, is he then went on to the operative treatment of seizures. So he would do awake brain surgery. And what that means is that he had to stimulate the surface of the brain and the deeper parts of the brain sometimes in people who had epilepsy to make a map of the brain so he could determine when he found the spot where the seizures were coming from, if he removed that spot, would that cause damage?

So he didn't want to remove a spot that was in your speech area or that was in your motor area because you'd be unable to speak or paralyzed. But if the spot was in one of the large areas of the brain that doesn't seem to have an irreplaceable function, you could remove that safely. It was 1,100 patients, 1,100 patients had awake brain surgery by him over his career.

And during those operations, there were hundreds of stimulations and things that he would do to map the surface of their brain. So there were hundreds of thousands of mappings going on. And Penfield found exactly the same thing that he had found in his review of epilepsy. That is that when he

stimulated the brain, he could stimulate people to move their limbs. He could stimulate people to have perceptions like flashes of light or feelings on the skin.

He could stimulate emotions by stimulating certain parts of the brain and he could stimulate memories, but he could never stimulate abstract thought. He could never stimulate mathematics. No matter where he touched the brain, you didn't start saying one plus one is two. And so he said exactly the same thing that he had found in his study of epilepsy, he found in the study of brain stimulation, that the only four things.

So he said, it looks like what he called the mind, which was what you or I would call the intellect, the will, didn't come from the brain. Now, it undoubtedly is true, and Penfield would say the same thing. Undoubtedly, it's true that to properly exercise your intellect or your will, you have to have a brain that's working okay. So the brain is in some sense necessary for intellect and will, but it's not sufficient.

Pat Flynn:

But not sufficient. Right. Yeah.

Michael Egnor:

Penfield's work is fascinating. He also made a fascinating discovery about free will, which we can talk about shortly. The next bunch of experiments that are utterly fascinating, and to me, there's an aspect of these other experiments that gives me chills, absolutely gives me chills, is split-brain surgery. There's a kind of a seizure where the epilepsy begins on one side of the brain as a little tiny focus, like a tiny spark, and it doesn't cause much of a problem.

Sometimes patient is even aware of it, but it can spread across the middle of the brain to the other hemisphere. And when it spreads, it becomes a generalized seizure, a terrible seizure, where you fall down and shake and lose consciousness. And what it spreads through is something called the corpus callosum, which is this massive bundle of nerve fibers that connect the two hemispheres.

It's like a bridge that goes from the right hemisphere to the left hemisphere and vice versa. It's about the size of the palm of your hand. So it's a huge bunch of fibers. And it was recognized in the 1940s that if that fiber bundle could be safely cut in surgery, that you might be able to stop these terrible seizures. And they didn't have really good medications then for seizures.

I mean, their patients would have 30 seizures a day. So they tried it in animals and it worked. And the animals seemed okay, even though they literally were cutting their brain in half. The right and left hemispheres were disconnected, but the animals seemed okay and their seizures stopped. So they started doing it in people in really 1950s and '60s, but we still do it today. It's still a part of the neurosurgical repertoire.

And it works very well. It really can help people with seizures a lot. And Roger Sperry was a neuroscientist who worked in the mid 20th century, maybe a generation after Penfield. And Sperry realized that, wow, we have this whole bunch of people who've had their brains cut in half. And while they seem to be perfectly okay after cutting their brains in half, which itself is very odd, they would be interested to study what each half of the brain does separately.

So he devised a whole series of very clever experiments, beautiful experiments. And he found all kinds of neat things. The left side of the brain usually controls speech, right side of the brain usually controls spatial orientation. It's all kinds of interesting stuff he found. And he won the Nobel Prize for it. But I think that the most remarkable thing that Sperry found was that you could cut the brain in half and practically nothing happens.

The only thing that happens takes Nobel Laureate level research to detect. The analogy I've used for that is imagine you've bought this neat new computer. And you take a chainsaw and you cut the computer in half with a chainsaw and it still works just fine. There's nothing wrong with it. That's a pretty odd computer. And it would imply that there's something about that computer that you don't quite understand yet.

Pat Flynn:

That's right. That's right.

Michael Egnor:

And so you can cut the brain in half and not much happens. And Sperry did note that that was odd, but that wasn't the focus of his research. The person who began to take that seriously, the first person was Justine Sergent. And she was a neuroscientist who worked at McGill in Canada back in the 1980s. And Sergent did what I think is the most brilliant work in this stuff, and what she did was there are ways that you could present a picture, like an image, to the right hemisphere and a picture, an image, to the left hemisphere.

And if you're a split-brain patient, these hemispheres can't talk to one another. They don't communicate. So what she did was she would present, for example, an arrow like pointing up to the right hemisphere, and she would present an arrow like pointing sideways to the left hemisphere. And she would ask the person who had the split-brain surgery, "Are the arrows pointing in the same direction or different directions?"

And the split-brain patients almost always got it right. They almost always could tell. They could compare something that the right hemisphere sees with something that the left hemisphere sees. The problem is that there was no part of their brain that saw both things.

Pat Flynn:

Right.

Michael Egnor:

And so how did they know? How do you compare things when no part of your brain sees both things? So that just gives me chills. I mean, it's like there is the human spirit.

Pat Flynn:

Right, right. And I think that one of the major implications of that is that is not what you would expect from a materialist paradigm, is it, Mike?

Michael Egnor:

Absolutely. It's utterly inexplicable from any kind of materialist perspective. Now, there are two provisos here that Sergent being a very good scientist addressed and other people have addressed as well. And that is, is it possible that there are other pathways, that is the corpus callosum is the big guy. There are tiny pathways that you may be able to short circuit and get around where the hemispheres might communicate.

And what she and others have done with that is that we know the length of time it takes for the nerve impulse to travel through those short circuit areas. And it's immeasurable hundreds of milliseconds. It's not instantaneous. And she looked at response times of people and that effect never showed up, that is

that there was no evidence that anything was cheating going on inside. And furthermore, certain things were split, certain perceptual things were definitely split.

For example, the right hemisphere usually doesn't have language. So if you present a word to the right hemisphere, the left hemisphere is where language comes from. In split-brain patients, they know what the word means, but they can't say it. So that still worked, but there was a part of the person's mind that could compare two images that no part of the brain could see.

The best work done on that is recent work by a guy named Yaïr Pinto, who's a neuroscientist from the Netherlands, who has extended Sperry's and Sergent's work. He's replicated a lot of what Sergent did, and he's gone a little further. And what he likes to do is he'll pick a story in pictures and he'll present one part of the story to one hemisphere. The other part of the story...

... present one part of the story to one hemisphere, the other part of the story to the other hemisphere, but the story only makes sense if you understand both. So an example, if you present to the right hemisphere a picture of a broken window and to the left hemisphere a picture of a baseball and you ask the split-brain patient, "What is this story telling?" most split-brain patients will get it right. They'll say, "The baseball broke the window." But no part of their brain sees both the baseball and the window. So how can they put the story together? So what Pinto said, he said that, "We've misunderstood the split-brain phenomenon in the past, thinking of it as two separate people. It's not two separate people." He said that consciousness is united, although perception can be divided, but there's still something that is united in the human being despite splitting the brain in half.

PART 1 OF 4 ENDS [00:25:04]

Pat Flynn:

Yeah. And that's fascinating because, again, that's intention, to say the least, with the materialist paradigm. And I think it's important that when it comes to looking at the scientific research, one should be confident in what it says but you don't even have to say that this strictly disproves materialism. You can just say, "Hey. No. This is the sort of thing that is far more likely if materialism is false if, say, dualism is true." Because dualism holds that there are... At least optimistic one, as you pointed out in your chapter, Mike, that there are aspects of the human person, the human mind, that are divisible, but there is other aspects that are not. And that seems to be what we're seeing in these split-brain experiments. Is that right?

Michael Egnor:

Yeah. I wouldn't be so.... Yeah. Yes. Definitely. But I wouldn't quite be so generous with materialists.

Pat Flynn:

Oh, I like. You're going to be even punchier.

Michael Egnor:

Oh, yeah. Oh, yeah. The fact is that this research as it stands utterly disproves materialism.

Pat Flynn:

Yeah. Wow.

Michael Egnor:

Now, it may very well be that in the future new evidence will come out that gives materialism a way out of this, but right now there is no way out of it, that is that materialism is disproven simply by this research. Again, maybe there's new research, but the evidence that we have in hand right now, materialism is wrong.

Pat Flynn:

Yeah. I'm trying to think of how a materialist could even try to contrive their hypothesis to save it, but nothing off the top of my mind.

Michael Egnor:

No. What they would have to do is to show that there is some other way that the hemispheres communicate, and physical way, material way. And so far, all the evidence is that there is no other way. And if they can show it, hey, I'm wide open to evidence, but...

Pat Flynn:

But the best evidence right now is no?

Michael Egnor:

Yeah. It's not probabilistic. It's not that there's an 80% chance that dualism is right. This research says dualism is right. And if new evidence arises, then we can look at that, but materialism in this view is contradicted by the science in a very obvious way.

Pat Flynn:

Yeah. It's funny because sometimes you do hear from materialists, you get this promissory note, like, "Hey. Someday neuroscience is going to clean all this up," but what you're saying, Mike, is, "Actually if we go with the best of what neuroscience has right now, it confirms dualism. So we don't need the promissory note. We can just go with the best science that we have right now." Right?

Michael Egnor:

Right. Right. Right. Absolutely. And right. I mean, and the funny thing is that materialists are often the most empathetic proponents of science. Except that science doesn't support their ideology. There's another experiment that Penfield did, that also gives materialism a real problem on free will, which is very interesting. Penfield was... He actually had been a philosophy major in his undergraduate years and was very interested in the question of free will. So when he would map the brain, these 1,100 patients, he would also identify if he was in that region of the brain the motor script, which is an area of the cortex that controls movement on the opposite side of the body. The brain has no sensation of its own. That is you can stimulate the brain and the brain doesn't feel anything. And the patients who were having the surgery were under surgical drapes, so they couldn't see what he was doing.

So he had a very clever experiment. He would ask the patients. He'd say, "Every once in a while during the surgery I want you to raise you right arm under the drapes. And every once in a while, I will stimulate the arm of your brain and I'll make your right arm raise. And so whenever you see your right arm raising, I want you to tell me, did you do it or did I do it." And every time he did or every time the patient did it, the patient got it right. Nobody was confused as to whether they moved their arm or Penfield moved their arm. And Penfield said he couldn't find anywhere in the brain where he could trick somebody into thinking that they voluntarily moved their arm when they didn't. And he said, "So that

means free is real and that free will isn't in the brain," said, "because there's no area of the brain where you can stimulate and simulate free will." But the most interesting research on free will came from Benjamin Libet-

Pat Flynn:

That's right.

Michael Egnor:

Who was a neuroscientist in the mid 20th century. I think Libet should have won the Nobel Prize. And I think probably the reason he didn't was because the stuff he had was so fascinating and cutting edge that they were a little skittish. It's like they couldn't make sure it was real. But turns out it is real, at least... I mean, there's been a lot of follow-up on it, but he did beautiful work. His obsession was with what he called mind time. And what he meant by that is he wanted to know exactly what's happening inside your brain at the moment you have a thought. Most of the studies that have been done on brain waves and thinking and so on, they don't link time and thinking in a way that allows you much resolution. That is they can't say, "Well, at this moment down to the 10 millisecond mark, I was thinking of this and this thing was happening my brain."

So he wanted to know at exact moment what does your brain do. So he devised an experiment on free will, it's become rather famous, where he took normal people. This is not split-brain people. They're just normal volunteers. He put electrodes on their scalp to measure their brain waves. He sat them at a table. And he put a button in front of them. And he asked them to just, "Go ahead and push the button whenever you felt like it. Just say, 'Oh, I'm sitting here. I'm enjoying. It's a nice day out. I think I'll push the button.' You just push the button."

He had an oscilloscope, which was an old thing, looked like a clock, in front of these people. And he asked them, "When you decide to push the button, just glance at the exact moment you made that decision on the oscilloscope and just let me know what that time was." And they could get it down to... It's like the, I don't know, like the 20 millisecond level. And he did hundreds of trials on each person. And so he could tell within like 20 milliseconds when the person made the decision to push the button. And he had brain waves being monitored constantly during this and he had monitoring of when the button was actually pushed. So what he found was that around half a second before you consciously make a decision to push the button, there's a spike in brain wave activity in your brain, and that brain wave activity happens before you consciously decide. And then you consciously decide half second later. And then maybe two-tenths of a second later you push the button.

So he said at first glance it looked like you didn't really freely choose to push the button. It looks like your brain kind of fired and then suddenly you think, "Oh, wow. I've just decided to push the button," but no. Your brain made you do it. But being a really good scientist he took the research one step further and he asked people who were doing this, "When you decide to push the button, every once in a while veto your decision. So when you say, 'I'm going to push the button,' say immediately, "Oh, no, I'm not. I'm not going to push the button.'" And he looked to see what the brain waves looked like when he pulled it back. And what he found was the brain waves didn't do anything new. There was no new brain wave to the veto.

So he concluded from all of this that what was happening was that the brain in a sense was giving you temptations, the brain was kind of pre-conscious saying, "Hey. Why don't you push the button?" And you would go ahead and start to push the button but you have to accept or reject that unconsciously. And your acceptance and rejection isn't from the brain. It's free. It's spiritual of sorts.

Pat Flynn:

Yeah. Now isn't that fascinating, Mike? Because again it's commonly heard that this science refuted free will but it seems like when you actually look at it, exactly the opposite is the case. How did things get so distorted around this?

Michael Egnor:

Because scientists aren't honest. I mean...

Pat Flynn:

I see.

Michael Egnor:

I don't want to beat around the bush, the why.

Pat Flynn:

Yeah. Appreciate it. Yeah.

Michael Egnor:

And they're either deliberately lying in the sense of they know what he found or just as likely is that they just don't enough about the research and they're just listening to what is kind of commonly said. But when you read Libet's work's, Libet very much believed in free will. He was a property dualist. And he actually said very a funny line which has become famous. He said he wouldn't really say that he proved free will but he proved free won't, that prove that you can freely veto things that you do. And he pointed out this remarkably confirms traditional religious understandings of temptation and sin. He says you're being bombarded with these pre-conscious desires but you retain the free ability to accept or reject them.

Pat Flynn:

Right. The true voluntary action. And I think most people can see that this is phenomenally accurate, just in daily experience. Yeah.

Michael Egnor:

You would ask a fascinating question, Pat, about why would scientists misrepresent this work, because you're quite right. It's widely misrepresented. You ask 100 neuroscientists about Libet's work-

Pat Flynn:

They say, "Oh, the guy that disproved free will, right? Yeah."

Michael Egnor:

95% will say he disproved free will but he did exactly the opposite. And I think part of the reason is just ignorance. They actually probably haven't read what he did.

Pat Flynn:

Sure.

Michael Egnor:

The second thing, which is very real, is that science is a very... There's a lot of herd instinct in science. And the reason is that your entire profession survival depends on approval by other scientists.

Pat Flynn:

Ah, indeed.

Michael Egnor:

I mean, I had a friend actually, have a friend, who's one of the leading biologists in the world. He's a very, very accomplished guy. And I was at a meeting with him and he knows I've been involved in the intelligent design movement. And he came up to me at one point and he said, "I know what you're doing in intelligent design movement and I think you're exactly right." He says, "But I can't say a word about it. I can't say a freaking word." He said, "If I were to every make a public statement that I agreed with that, I would..."

Pat Flynn:

Career suicide.

Michael Egnor:

"I'd never see another grant." He said, "Literally I would lose my family's health insurance." He said, "Mike, I would have to work in McDonald's." Said, "I would be completely black balled." So scientists, there is a viciousness in the way scientists approach this. Any scientist who comes out with a dualist perspective is toast.

Pat Flynn:

Yeah. Yeah. And of course one sees the same thing in philosophical circles, right?

Michael Egnor:

Precisely. Precisely.

Pat Flynn:

Of certain ideas. There's bully pressures to conform and to confirm those ideas or at least just keep silent if you have criticisms about those ideas, right?

Michael Egnor:

Right. Right. And being a clinical doctor has made my life a lot easier because I kind of have a day job and so it doesn't really affect me, but if I were a basic scientist and I relied on grants to live, I'd be toast.

Pat Flynn:

Yeah. Yeah. What a shame. Of course it's a fascinating conversation for another episode which I would certainly love to have, but do you think.... One more point on that. Are you optimistic for the future about that, Mike? Do you think the culture is starting to shift in a more positive direction? Do you think the material script is waning? Or what's your pulse on that?

Michael Egnor:

It's a very good question. Materialism is dying and it's dying a justified death, but I see materialism as a doorway and I believe in intelligent design but I believe that intelligent design exists in the affairs of humanity and not merely in biology and in cosmology. That is I think... I'm a very spiritual person. I believe in Satan, like I believe in God. And there is a satanic movement afoot that is profoundly ugly. So I think that atheism and materialism, which kind of go together, that's not an ultimate way to look at the world. Some people have called it his county it's bookless. And what they mean by bookless is that it is such a boring, stultifying way of seeing life that it's never going to get anywhere. You're never going to have somebody writing profound books, like Aristotle's work or Thomas Aquinas's work or Bonaventure's work, all these beautiful people that have writing these fantastic things... That will never happen in materialism. Materialism and atheism are cheap, stupid ideas that will never get anywhere. But they do have a purpose and they have a very important purpose. Their purpose was to discredit Christianity.

Pat Flynn:

Sure.

Michael Egnor:

Their purpose was to make people think that Christianity was ridiculous. The natural religion of mankind is paganism. It's not atheism or materialism. And there's a lot of spiritualty out there, but it's very wrong, evil spiritualty. So I see materialism, I see the new atheist movement as just a way to open the door to paganism.

Pat Flynn:

Yeah. And it seems to have been exactly what has resulted from it.

Michael Egnor:

Yeah. Yeah. We are rapidly paganising. And so actually I think dualism will probably have quite a resurgence and I think the pagans will drive the materialists out.

Pat Flynn:

Yeah. Interesting.

Michael Egnor:

But the dualism that will come in the future will not be intelligent dualism. It will be kind of an eerie, weird dualism. So I'm not the least bit optimistic.

Pat Flynn:

Yeah. So optimistic in the waning of materialism but not necessarily what will be replacing it. So very good and very fair. This has been a fascinating part one, Mike. We'll hit Pause here for the listeners and when we come back, we're going to keep the conversation going.

Mike, you mentioned that you had a few more shots to take towards the materialist worldview. And I want to make sure you get all of them out before we move on. So yeah, please.

Michael Egnor:

Yeah. It's a deep well. So another fascinating set of experiments that I think really cast great doubt on materialism is research that started with a guy name Adrian Owen, who is neuropsychologist originally from Cambridge, England, who now is actually in the US. And he's a great scientist. And in 2006, he wrote and article in The New England Journal of Medicine called Detecting Awareness in the Vegetative State. And it was a landmark article, really shook the medical world. And the story behind it was there is a condition called persistent vegetative state. Persistent vegetative state is a horrible coma and is the deepest level of coma, just one step above being brain dead. And it means that your brain had been almost completely demolished. Ad the assumption was made that your brain damage is so profound that there's no mental state, that is that you're vegetable, that is that you don't have any thoughts, don't have anything. You're just a vegetable. And it's tragic and it happens to people. For example, Terri Schiavo, people who-

Pat Flynn:

I remember. Yeah.

Michael Egnor:

All that was in persistent vegetative state. And I've treated scores of patients in persistent vegetative state. So Owen asked the question, "Are we so sure that they don't have a mind? How do we know?" And part of that is that when your brain is damaged that badly, you can't communicate well. You're partially or totally paralyzed. You can't speak. So how could you tell if somebody really had a mental state? They can't communicate it to you.

So Owen did some fascinating research. He took a young woman, she was in her 30s, who had had a car accident several years before with massive brain damage and was diagnosed as persistent vegetative state by very reliable doctors. And he put her in a MRI machine and he did a kind of an MRI on her call functional MRI imaging. And functional MRI imaging looks at blood flow in areas of the brain that correspond to brain activity. So you get these little areas that light up that tell you that the brain is working in certain areas, certain patterns. And she didn't have much of a brain, but the brain she had, which was massively damaged, you could function MRI imaging on it.

So he put her in the machine. He put headphones on her. And he asked her while he was doing the MRI, "Imagine that you're playing tennis, or think about walking across the room. Think about your family." And he found that her brain kind of lit up, kind of pattern. It was kind of interesting. So he took a bunch of normal volunteers, I think 15 of them, and asked exactly the same questions. And their brains lit up in exactly the same way, the same patterns. So he said, "Wow. It seems like this woman understood what I was saying to her." So because he's a good scientist he realized that there's a scientific flaw in that, and the flaw is that it may be that she and the volunteers were just hearing sounds and it was the sound that was making the brain light up, not any actual understanding.

Pat Flynn:

Understanding. Sure. Right.

Michael Egnor:

So he was very clever. So he put her back in the machine and he asked the same questions but he scrambled the words. So the words didn't make any sense. So instead of saying, "Imagine you're walking across a room," he would say, "Room, walking, imagine, you're, across." It was just nonsense. And her brain was silent. Her brain only lit up when the questions made sense.

Pat Flynn:

When they're intelligible.

Michael Egnor:

Yes. And the volunteers had the same thing. So his research has been extended by a lot of people. And people are finding the same thing. It's now possible with about 40% of people in presumably persistent vegetative state, the deepest level of coma, just one step above brain death, to converse with them using functional MRI imaging. And there have been people who, for example, you could ask them yes or no questions. "Is your brother's name Philip? Do you like pizza?" and they get the right answers. So what that implies is that there's a disconnect, no complete, but significant, between the mind, particularly the capacity for abstract thought, and the brain itself. These are people whose brains are practically destroyed, but they can answer questions about their brother. So the other line of research that is absolutely fascinating and that we could do 12 hours on, is near-death experiences.

Pat Flynn:

I was hoping we would get to this. Yeah. Very excited to hear your take on NDEs.

Michael Egnor:

Yeah. Near-death experiences are... First of all, they're very common. There's a estimated, at least in modern times, 10s of millions of people who have had near-death experiences. Surprisingly common. And there's quite a lot of literature on it. There's several scientific journals that are devoted entirely to it. The most famous near-death experience in modern times was a woman named Pam Reynolds. And Reynolds was a woman in her 30s who had a aneurysm, a weak spot in a blood vessel at the base of her brain, that was about to rupture. And she was getting headaches, not feeling well. Went to the doctor. They found the aneurysm. The problem is that where the aneurysm was located was too critical a part of the brain to treat surgically. This was back in the early 1990s. We've made a lot of advances since then and nowadays we can treat aneurysms like hers pretty easily. But back then we couldn't.

So the only hope she had was there was a neurosurgeon in Phoenix named Bob Spetzler, who was really the best aneurysm in the world. And he had developed a technique for difficult, complex aneurysms where he could take a patient, he would put the under anesthesia, he would open their head, he would then drive their body temperature down to about 50 degrees Fahrenheit, and then he would them on a heart lung machine and stop their heart. So their blood flow as completely stopped. They were semi-frozen so they could be with blood for longer without brain damage. And then he would tip the operating table up, drain the blood out of their brain and then go in and fix the aneurysm. And then when the aneurysm was fixed, would take him like 30 minutes of sewing and fixing, then he would start the blood flow again and warm them up and bring them back to life. So it allowed him to do the work on the aneurysm that he couldn't have done if the blood was circulating in the brain.

Pat Flynn:

Sure.

Michael Egnor:

So she went into surgery. And surgery went well, took like six hours. In the recovery room, Spetzler, who I know, he's a great neurosurgeon, went in to see her and he asked her how she was doing. She said, "Fine." And she said, "I watched the whole operation." So he thought she was joking. And she said, "No.

I saw the surgery." And then she started describing what she saw. And she saw the real thing and she saw the instruments that he was using. She knew the conversations that he was having during the surgery. She knew the music that was playing on the radio in the operating room. She knew the people in the room that she had no other way of knowing.

So she said what happened was that as soon as her heart stopped, she felt that she popped out of her body and she floated up to the ceiling and she had a view of the whole room. She said it was beautiful actually. It was fascinating. She wasn't frightened. And she could watch them work. And she said she was looking down on herself on the operating table. And then she said she saw a tunnel, the proverbial tunnel, and she felt that she was being drawn down the tunnel towards a beautiful light. She came the other side and she saw this beautiful, beautiful world, beautiful light. And she saw some dead relatives, like dead uncle and dead aunts or something. And she wanted to stay in this beautiful place on the other end of the tunnel and they said, "No. You still have things that you need to do. Sorry. You need to go back in your body." So she went back and she said it was like diving into an ice bucket because her body temperature was 50 degrees.

Pat Flynn:

So cold. Yeah.

Michael Egnor:

So she actually felt the cold. And so her near-death experience became very famous. It is the most carefully monitored because she was unquestionably brain dead, meaning there was no brain activity. They had electrical tests of her brain. She had things in her ears that prevented her from hearing anything in the room in the normal way. So it's the most clearly, unequivocally documented near-death experience that exists. But there have been thousands upon-

... that exists. But there have been thousands upon thousands of near-death experiences. And there's no question that if you look at them rationally, the only reasonable explanation for them is that many of them are true.

PART 2 OF 4 ENDS [00:50:04]

Pat Flynn:

Yes.

Michael Egnor:

And what fascinates me, something that I think is just a slam dunk, just slam dunk, is that as far as I know, all near-death experiences when they encounter dead relatives or friends, they're only dead relatives or friends. That is, they never encounter living people at the other end of the tunnel. And there have been a number of instances in which they encountered dead people at the other end of the tunnel, and they did not know they were dead. There was a very famous case of a young woman who had surgery, like for ruptured appendix or something. And she coded, her heart stopped during the surgery, and she had a near-death experience. And she recovered from this and was talking with her father at the bedside, like 12 hours after the surgery. And she said, "Dad, I went down this tunnel, and I saw my brother at the other end." And the father said, "Did you mean like dead?" And she said, "Yeah." And then the father got a phone call that he had just been killed in a car accident.

Pat Flynn:

Wow.

Michael Egnor:

That he was dead when she had her near-death experience, but no one knew it in the family. So, near-death experiences, again, if people took an objective look at the evidence, science would accept near-death experiences. That doesn't mean every single one of them is verifiable, but there are at least hundreds that are very verifiable.

Pat Flynn:

Where you have the veridical experiences-

Michael Egnor:

Absolutely. Absolutely.

Pat Flynn:

... that just do not seem susceptible to any sort of materialist explanation. And I guess my question here, mostly rhetorical, is how much evidence from contemporary neuroscience do you need? I mean, between everything we discussed last time with the epilepsy research, split-brain experiments, near death experiences.

Michael Egnor:

Well, but it's not about the evidence. That is that I really believe very, very much so that you've heard of the Lysenko phenomenon in Russia or in Soviet-

Pat Flynn:

No, I actually have not. Yeah. Yeah.

Michael Egnor:

There's a scientist named Lysenko. He was a biologist in the Soviet Union back during Stalin's time. And he believed in the acquisition of heritable traits by organisms just by their life, that is that if an organism had something happen to it during its life, that could be inherited and then given to offspring. And this is, of course, contrary to genetics and to what was known about biology. And however, it fit nicely in the Marxist paradigm, the idea that you could change society and that change would be real and would be something that would go on for eternity. So Lysenko, who he was a junk scientist, he was a totally incompetent scientist, got his ideas so entrenched in Soviet science that biologists who disagreed with him were sent to gulags, and some were executed.

So for a number of decades in the Soviet Union, if you were a biologist, you had to agree with Lysenko ,or you were toast. And it held Soviet biological science back decades. There were famines because Lysenko's ideas were wrong and crops... You couldn't grow crops that way, but Lysenko would insist you could. And the Lysenko phenomenon goes on here as well. If scientists speak outside of the materialist paradigm, they just get run over. And it has nothing to do with the evidence any more than what Lysenko was saying it had anything to do with evidence. It's about politics, and it's about ideology, and you better toe the line or they just destroy you.

Pat Flynn:

Yeah. Yeah. Because when you get down to the level of detail, and that's where all the good stuff is, Mike, I mean, it really seems like there's really no more breathing room for a materialist account of the human person, right? Yeah.

Michael Egnor:

Precisely. Precisely.

Pat Flynn:

So are there any other shots against materialism that you want to take before we turn to the frequently asked questions?

Michael Egnor:

No, I think this is a pretty good overview, and the frequently asked questions are pretty interesting.

Pat Flynn:

Yeah. So I am utterly curious because you're somebody who, obviously, with your background in neuroscience, but your expertise in philosophy of mind, I am sure you get all sorts of fascinating questions on a regular basis. So please, if you wouldn't mind sharing some of the more common, I think our listeners will find that to be particularly helpful.

Michael Egnor:

Sure, sure. And you're quite right. These questions come up a lot, and they're a good question. One of the questions relates to modern theories of how consciousness works. And there's a number of different modern theories as to how consciousness works. Virtually all of them, with very few exceptions, involve information processing in the cerebral cortex. That is that consciousness is the notion that you have all these sensory inputs, vision and hearing and smell, and taste coming in, and then your cortex kind of processes them like some computer, and that's what makes you conscious.

Pat Flynn:

Sure.

Michael Egnor:

The problem with that theory, and to give you an idea about how ridiculous neuroscience can be, the problem with that theory is that there are a group of people who have no cerebral cortex who are completely conscious, and this is very well documented. The condition is called hydranencephaly. And hydranencephaly is a tragic condition. It happens to children who have massive strokes in the brain during intrauterine life. So when they're born, their brain hemispheres are basically missing.

And they have the brain stem and the more basic functions, and they're severely disabled. It's like severe cerebral palsy, but they're fully conscious. I mean, I've had a number of these kids, and they laugh, they cry. They don't speak really, but they're very conscious, and they love their mothers and they're just... You see them, they're sort of cute babies, and they grow up, and I've had some grow up into later childhood. So consciousness is obviously not a matter of cortical processing. If you have tens of thousands of people in the world who have no cortex yet are fully conscious, and if you ask the average neuroscientist who's pushing one of their cortical processing theories of consciousness, they'll look at you like you're from Mars.

But there have been a few neuroscientists who have noted this. Mark Solms is one of them. S-O-L-M-S is his last name. He's a neuroscientist from South Africa; he's a very, very good neuroscientist. And he and I have some different perspectives on how consciousness works, but Mark has noted that it's not cortical. It's not on the surface of the brain because of people with hydranencephaly that they're fully conscious; they don't have a cortex. The second question that I get a lot of, almost always when I speak on this, is about Phineas Gage. Phineas Gage was a railway worker back in the mid-19th century who was injured in an explosion, and the explosion drove an iron spike through his brain...

Pat Flynn:

Yes. Yeah. Famous incident, right?

Michael Egnor:

Absolutely. And before the accident, he was a Bible-reading, God-fearing man. And after the accident, he was a little looser. Well, it wasn't that bad actually, but he'd hit the bars occasionally. And so people say, "Hey, doesn't that prove that the mind comes entirely from the brain? You get a spike driven through it, you're a different person." And of course, that's nonsense. I mean, everybody knows that getting whacked in the head with an iron spike or otherwise can change you. It can change you quite a bit.

Pat Flynn:

A couple drinks can change you, right?

Michael Egnor:

That doesn't mean that all the mind comes from the brain any more than just to use kind of a rough analogy. If I take my cell phone and I accidentally crush it so it stops working right, that doesn't mean that the voice in my cell phone was in the cell phone. That the person I'm talking to was located in the cell phone just because it stops working. That is that there are more complex issues of causation involved. So no dualist would deny that getting a spike through the brain might change, for example, your emotional tone, which Penfield would say, "Yeah, right, you're more impulsive, you have a different set of emotional approaches to things." But we acknowledge that. There's no question.

Pat Flynn:

And that fits well with the Thomistic dualism that you endorse. Right.

Michael Egnor:

Sure. Absolutely. In Thomistic dualism, emotions are what St. Thomas would call a sensitive appetite, meaning that they're the same thing that dogs have, for example. My dog gets extremely emotional around dinnertime.

Pat Flynn:

They're bodily, right?

Michael Egnor:

Yeah, right. It's a bodily aspect of the mind, which is very real, but it's different from free will, which is a very different thing. The third question that we get a lot is the mind a kind of computation? That is, is

the mind like a computer? And a very popular way of looking at the relationship between the mind and the brain is that the brain is hardware and the mind is software. Basically, the mind runs on the brain like a software program runs on a computer, and that's not the case. That is that the mind is not a kind of computation at all.

The reason is fairly straightforward. A computation, by definition, is the matching of an input to an output according to an algorithm. That is that you have a certain pattern of input coming into a system, and you have a certain pattern of output coming out of the system, and there's an algorithm, which is a set of rules within the system that does the matching. So an algorithm completely lacks meaning, and what I mean by that is, say for example, you have a computer program that is a word processor like Microsoft Word. I type things into Microsoft Word on my keyboard, and letters appear on my screen, on my computer. So that's a nice computation. The input is my typing.

The algorithm is the word processing program, and the output is the letters on my screen. The thing is that the program is blind to meaning. That is, I can type, I believe global warming is true, and it pops up on my screen. I can then type, I believe global warming is false, and that pops up on my screen. Microsoft Word doesn't care about the opinion that I express using it. Microsoft Word lacks any reference to meaning. You can type any essay you want, and it would put it out just fine. So computation lacks meaning. It's a mechanical process of taking a signal, making it into a different signal according to rules that has nothing to do with meaning and the mind always has meaning.

Every thought is what philosophers have called intentional, meaning that every thought is directed at something; it has a meaning. When you say, "I'm thinking," you always mean you're thinking about something. There's always an aboutness to it, and computation never has an aboutness. Your word processor is not about anything. It's just a word processor. It matches a keystroke to a letter on a screen. So not only is the mind not a computer, it's the opposite of a computer.

Pat Flynn:

Yeah. And it's what makes computers possible. It's funny, we sort of impose the analogy of the mind onto the computer at first, then we forgot we imposed that analogy, then we imposed the analogy of a computer on us, right?

Michael Egnor:

Sure. And actually, if you think about it, if computation had meaning, because what that would mean was that every different meaning you'd want to type into a word processor would need a different set of software.

Pat Flynn:

Sure.

Michael Egnor:

So what makes computers so useful is that they're blank slates. They don't have meaning. Now, the question, though, is the brain a computer. And for dualists, the mind is not the same thing as the brain. So is the brain a computer? Well, you could say that. I mean, that at least to one level of insight that we have inputs, perceptions, and so on, and then we have outputs like emotions or speech or something. And you say, "Well, yeah, maybe it's like a computer." But you have to be careful about that. The reason is that one of my favorite quotes in science, this is a brilliant insight by Werner Heisenberg, who Nobel Laureate was a pioneer in quantum mechanics back in the 1930s and 40s.

And Heisenberg at one point commented looking at all the strange things in quantum mechanics, he said, "What we observe is not nature itself, but nature exposed to our method of questioning." So that if you study the brain as if it were a computer, well, by golly, it'll seem like a computer. It's an artifact of how you're studying it. So it doesn't mean the brain is a computer. It means that, yeah, if you use a computational framework-

Pat Flynn:

Lens, yeah.

Michael Egnor:

... to do neuroscience, and hey, computational neuroscience is a big deal. I mean, there's a lot of neuroscience is computational. If you use a computational framework, lo and behold, it'll seem like the brain's a computer. It doesn't mean it's really a computer. It's kind of interesting that thousands of years ago, some of the early philosophers thought that the brain was like fire because it was hot. The head is warm, relatively speaking. So they thought the brain was like a radiator and generated heat. And then back in the early modern era, when machines first became widely available, people thought that the brain was like a machine, and now we think it's like a computer. So every era tries to make the brain seem like what they know something about.

Pat Flynn:

That's right.

Michael Egnor:

Fire, machines, computers. But as Heisenberg said, "What we observe in our science is not nature itself, but nature exposed to our method of questioning."

Pat Flynn:

Yeah, that is a great quote. So, as a fully fruitful theory of mind, the computational theory leaves a lot to be desired, right?

Michael Egnor:

Yeah, yeah. I mean, it's one way of studying it, and I have a lot of respect for that. I mean, frankly, my own area of research is computational study of brain blood flow. And hey, it's great, but I don't think brain blood flow is a computer, but it's a method. It's like if you're studying astronomy using a telescope, you wouldn't come to the conclusion that stars were little bits of light that come through curved glass.

Pat Flynn:

Yes. Yeah. Good point.

Michael Egnor:

You shouldn't confuse your instrument with the thing you're studying.

Pat Flynn:

Yeah. Or don't turn your method into a metaphysics.

Michael Egnor:

Precisely, precisely. And so the instrument that people use is computational models, which are very, very interesting models, but that doesn't mean the brain is a computer.

Pat Flynn:

Yeah. Excellent.

Michael Egnor:

And then you get into the question of artificial general intelligence.

Pat Flynn:

Yes. The hot one today, right? Yeah.

Michael Egnor:

That's a hot one. And as you can imagine, I have very strong feelings about AI. The first feeling I have is that, of course, AI is not conscious and can never be conscious. The only thing that can be conscious is a living thing with a soul, and AI is not a living thing. It doesn't have a soul. So it's not conscious. It's just silly. It's what St. Thomas would call an artifact.

Pat Flynn:

It's an artifact. Right.

Michael Egnor:

It's something we've constructed. So AI is not conscious in the same way that your watch doesn't know what time it is. I mean, you can tell time using your watch. It's a nice tool. It's a good instrument, but the watch itself doesn't know what time it is. It doesn't know anything. It's just a piece of memo. So a computer, no matter how complex it is, doesn't know anything. It's just a physical object that we've constructed. It can seem like it knows things because we can construct it in ways that are very clever, but everything that comes out of it is what we've put into it.

The problem is that we don't always understand what we put in. So what comes out of it seems like it has a life of its own, but it doesn't and I think AI is going to be an extremely important and extremely dangerous thing in part because we will come... It will outrun its creators. It will outrun its creators in the sense that it will do things that we don't understand and that we will attribute to it when these are really us. The meme that I use for that is that AI is us, and it's us in a very complex, labyrinthine, processed way, but it's still just us. And people who understand that can use AI to manipulate us, and they will, and they are.

Pat Flynn:

Yeah, certainly. Yeah, it's a powerful tool. In many ways, it's a useful tool, but it is one that has raised much concern among many people, including myself.

Michael Egnor:

I think of AI, frankly, as an idol.

Pat Flynn:

Oh, yeah. Sure.

Michael Egnor:

AI is something that mankind has created and ultimately will worship. There's an old joke that gets to this, actually, about a mad scientist who is a brilliant guy, and he decides he's going to create the world's smartest computer that can answer any question. So he makes this incredible computer that just processes incredibly fast, and oh, it's wonderful. And he asks it all kinds of questions about theory of relativity and blah blah blah. And it's all great. So finally he says, "I'm going to ask the ultimate question of this computer." So he asked the computer, "Is there a God?" And the computer answers, "There is now." And that's our problem is that we will ultimately ask AI, is there a God and it will tell us there is now, and we will end up worshiping it. And it's the ultimate idol. And it's no coincidence that the first usable personal computer was what? It was an Apple.

Pat Flynn:

Ah, yeah. Right. Yeah.

Michael Egnor:

And I don't think that's a coincidence.

Pat Flynn:

No, no, I don't-

Michael Egnor:

We've taken a bite out of a new kind of Apple.

Pat Flynn:

Yeah. Yeah. Really fascinating. I appreciate these sort of wider cultural predictions, Mike. I share many of the same sorts of feelings. And as somebody who does make regular use of the various AI software programs, including ChatGPT, if you spend enough time with those things, and especially if you're working with various complex concepts, it doesn't take long for you to realize that this is not a thinking thing, honestly but-

Michael Egnor:

Yeah, exactly. It's plastered together.

Pat Flynn:

Yeah. But great. For people who want more on AI, this podcast has an enormous amount of material and conversations on that, but it's always great just to have your perspective on that, Mike. Do you have another common question or two for us before we wrap this segment up? Yeah.

Michael Egnor:

Yeah. There's one more that's pretty common and is, I think, a very interesting question is, did the mind evolve? And Darwinian ideas about how life came to be what it is obviously play a very big role in our

society and science. And I'm very much an anti-Darwinist. I think Darwinism is junk science, but many people will ask, "Well, did the mind evolve?" And whether or not the body can evolve is a whole separate question, but the mind, by its very nature, cannot evolve, and the reason is quite simple. The mind has immaterial powers. It has spiritual powers.

And that's what Penfield found, what Sperry found, what all these researchers have found is that there's an immaterial spiritual aspect of the human mind. And of course, you can't evolve something spiritual by Darwinian mechanisms. Natural selection and heritable variation only work on things like genes and DNA. They don't work on ideas. They don't work on abstract thought, and so the mind could not evolve, which corresponds very nicely to the traditional Catholic teaching on the nature of the human soul, that whatever one believes about Darwinian evolution for the body, the human soul is created at the moment of conception by God.

Pat Flynn:

That's right. Yeah. Yeah. Every single individual.

Michael Egnor:

Souls don't evolve and they can't evolve.

Pat Flynn:

Yeah. So people can take whatever position they want on Darwinism, but the nature of the mind itself is not something that is susceptible to that. Right. Yeah.

Michael Egnor:

And I think that the church is far too friendly to Darwinism. As I said, I think Darwinism is utter garbage, but that's a whole separate discussion, but when it comes to the mind, Darwinian mechanisms have no traction whatsoever on the mind.

Pat Flynn:

Yeah. Yeah. And it's good to have at least those firm lines, both philosophical and theological. We've been having just a fascinating conversation, largely focused on neuroscience and the soul. Of course, much of what we are discussing can be found in his recent contribution to Minding the Brain. I want to encourage everybody to grab a copy of that volume. It's truly magnificent. And one thing I like about that volume, Mike, is that while there's a general challenge presented to the materialist worldview, the different contributors of the volume hold different perspectives ultimately. You have idealists there, you have dualists of various stripes, and in fact, you would fall into the latter camp as somebody who very much like me, endorses Thomistic dualism. So I thought it might be fun just to finish our conversation with a little chat about that. What is Thomistic dualism? I mean, right off the bat, even just calling the Thomistic or recitilian position dualist is a little controversial.

I'm okay with it, but sometimes it gets conflated for substance dualism, which it is not. So maybe we should just start off by just, yeah, ground zero. Let's not assume that anybody is familiar with this position. I'd like to hear how you explain it to people, Mike, and really, I would love to hear how you ultimately came to endorse this position yourself and your own sort of philosophical investigations.

Michael Egnor:

Well, we've been talking here about the soul of sorts, and you can ask that, so what is the soul? I mean, we use the term as a way to organize our thought on the mind and so on. And the idea of soul that I think makes the most sense, particularly with respect to neuroscience, is Aristotle's idea of the soul, which was developed in its most complete form, I think, by Thomas Aquinas. And Aristotle, just to backtrack slightly, asked a fundamental question, and in Aristotelian metaphysics, is such a fascinating thing and such a beautiful thing, and it's so relevant to modern science. But Aristotle asked what things exist, that is, how can we describe what he calls substances in the world? He said, "To know-

... substances in the world. He said to know a substance is to know two things about it. The first thing he said was that there's a principle of intelligibility, meaning that you know something about it, that is if there's a substance out there like a tree or a rock or something, you can say things about it. It's 30 feet high, it weighs 10 pounds, whatever. There are things that you can know about it. The second thing he said is that you can distinguish one substance from another substance. He called that a principle of individuation.

So he said that if you know the principle of intelligibility and the principle of individuation about something, then you know it. Then you know that thing and that thing is a substance, it's something that exists. So he said that living things have this principle... Oh, and he said that principle of intelligibility he called form and principle of individuation he called matter. So everything is this composite of form and matter. The composite of something that's intelligible and something that's individuated. And then he said, well, what about living things? Form and matter is fine with a rock or a statue or something like that, but what about something that was living? He said, well, the form of a living thing is just its soul. And he said that if you imagine when a living thing dies, let's say you look at a human being a second before he's dead and then a second after he's dead and say it's a sudden death.

A second before he's dead, the human being has certain attributes, certain intelligible things that differs from what the human being has the second after he's dead. And Aristotle said, that's the soul. That is, the soul is the difference between a living body and a dead body. And so the soul is what makes a living thing a living thing.

And he noted, and again, Thomas Aquinas basically follows Aristotle's framework on this. He kind of baptized Aristotle. He put Aristotle's ideas in a Christian framework. What Aristotle said is that if you look at living things, there seem to be three basic kinds of souls. First of all, everything that's alive has a soul. So a plant has a soul. A human being has a soul, a dog has a soul. In plants, he called that a vegetable soul or a vegetative soul. And he meant that it's a soul that carries on the basic processes of life, growth, nutrition, reproduction, things like that. So the animals have sensitive souls, which means that they have all the basic stuff, just like plants do. But on top of that, they have movement, they can run around, and they have sensations. They can see and hear and smell and so on. And human beings have all the soul stuff that plants and animals have, but on top of that, we have intellect and will.

That is that we have the capacity to think about things that don't have material instantiation. For example, my dog thinks about food a lot. She loves to have her dinner, but she does not think about nutrition. So she'll think about the bowl of food. She never thinks about how many calories are in it.

Only human beings think abstractly. And Aristotle described a human being as a rational animal. We are obviously animals in some sense. We have bodies and there's an animal part to us, but we're rational. We have the ability to think abstractly, to think of mathematics and logic and philosophy and God and things like that. And so human beings differ from animals and from plants in that our souls are rational and that we have free will. And free will differs from ... There are two kinds of appetites in the Aristotelian way of looking at things. There's sensitive appetites and rational appetites. Sensitive appetites are, hey, I'm hungry.

Our sensitive appetite is a desire for sex or is a desire for warmth or desire for all sorts of physical things. Rational appetite is a desire for truth or actually it's a desire for goodness in the Thomistic way. You're looking for things that are abstractly good, not good just in the sense they feel good, but that are good, like honesty and truth and things like that. So the human soul is the rational form of a human being.

So then the question is, how does that fit into what we know about neuroscience, about the things that we've been talking about? Aristotle's viewpoint, and then to St. Thomas's as well, is that the intellect and will, the rational parts of a human being are not from the body. They're not physical. They're spiritual. Aristotle didn't use the word spiritual, but he kind of meant that and St. Thomas explicitly used it.

That the intellect and will are immaterial spiritual aspects of a human soul, of a human being. And what hooked me on Thomistic metaphysics was when I learned that, I then looked back at the neuroscience and said, that makes perfect sense. That is that Wilder Penfield, that he found that there are certain things that come out of the brain in seizures, movement, perception, memory, emotions. But there are certain parts of the mind that never come out of the brain, like abstract thought.

Well, the abstract thought is the intellect and that's not from the brain. It's not material. So all these different experiments, they seem kind of different and out there until you look at it from a perspective of Thomistic metaphysics.

And then it's like St. Thomas had this nailed or Aristotle had this nailed 2000 years ago.

PART 3 OF 4 ENDS [01:15:04]

Pat Flynn:

And it just picks up all that empirical confirmation, which is fascinating. And for people who missed part one, be sure to listen to that because we went through that in significant detail. Now Mike, like you, I guess I was sort of, well, not like you, because I was sort of the opposite in the sense that I was interested in metaphysics. So you brought up kind of the problem with the one and the many. Hey, there are things that seem similar yet different. So we need principles to account for them and we need principles to also account for how things persist through change and time. So whatever the principle of similarity is, call it this, form, whatever the principle of difference is, call it that. But the point being is that it just seemed like a really fruitful ontology for solving those perennial philosophical issues. And then only later, once I started peeking into philosophy of mind, that I see that it was extremely useful there because it wasn't really like Aristotle or even Thomas Aquinas who were dealing with the hard problem of consciousness.

That really wasn't on their mind. But now as it happens, their way of looking at things, their metaphysical system is actually extremely useful and fruitful for dealing with these kind of contemporary mind, body problems and stuff like that. So yeah, just wanted to throw that out there and get your comments on it.

Michael Egnor:

I totally agree. And there's something that Ed Feser, and I recommend to listeners who want to learn a lot about this, ed Feser, F-E-S-E-R is his last name. Edward is his first name, is a philosopher from California who's written a number of books on Thomas Aquinas, on Philosophy of Mind, and now has a new book out on Philosophy of Mind. And he's a wonderful expositor of this. He's a very good philosopher. When I first tried to read Aquinas, it must have been about 20 years ago, I couldn't make heads or tales of it. I mean, if you've ever actually looked at like the Summa or something, unless you've had an introduction into metaphysics, it's Greek, literally.

Pat Flynn:

And so is Aristotle's physics, right? Good luck with that.

Michael Egnor:

But Feser opened that up for me because he explained what it all meant. And then you can go back and see what St. Thomas is talking about. So if you really want to get this stuff, Ed Feser's work is indispensable. So what Feser pointed out is that just from the scientific standpoint, if you look at Aristotle's four causes, it's a wonderful paradigm for science, for neuroscience in particular. Aristotle posited that if you want to understand the cause for something being the way it is, like let's say you have an object sitting in front of you and you say, "What caused the object to be this object? How did it get here? In a broad way. And Aristotle said, well, there are four causes that you need to understand to really thoroughly understand something. The first thing is its material cause. It is what it's actually made of, made of marble or made of wires or whatever. The second cause is its formal cause, which means what is its structure? What's sort of the intelligible way it's put together?

The third cause is its efficient cause or moving cause, some people called it, which is how did it get to be this way? How is it constructed? With marble, this sculpture went in there and worked with a chisel and made it the way it is. And the fourth cause is its final cause. And the final cause is its purpose. For example, a statue. What's the purpose of the statute? Is the statute to be decorative? Was the purpose just to make an object that the sculpture could sell and get money for?

And Aristotle said that the causes work in groups like material and formal causes work together and efficient and final causes work together. And he said the final cause is the most important cause, that is the purpose for things, tells you what they are. And we use that all the time in biology, that is that try describing the heart without talking about its purpose to pump the blood.

You couldn't make heads or tails of the heart unless you understood its purpose first. If you understand the purpose, then it all makes sense. So if you use Aristotle's four causes in neuroscience, it unifies neuroscience in a beautiful way. Let's say that I decide that I'm going to write a sentence using my right hand. Neuroscience can study that. The material cause of my writing that sentence is the protoplasm in my brain and my nerves and my muscles and so on, all of that, all of the actual matter. And you can study that doing histology as a scientist. You can study the matter. That's fine. And people do that their entire career. The efficient cause is the physiology. It's how the action potentials move down the axons. It's how the neurotransmitters work. It's all that complex stuff. The formal cause is the anatomy, how this is all put together in a kind of a comprehensive, understandable pattern.

And the final cause is what I plan to write, that is the sentence I'm writing, like the purpose for writing it. I'm writing a letter, I'm filling out a form, I'm signing a check. So you can look at neuroscience in terms of material, efficient, formal and final causes, and you don't have to do all four. You can be a physiologist who's just interested in the actual potential part, the efficient cause part, or you can be an anatomist who's looking at the formal cause, the structure of things, or you can be a psychologist and look at the purposes involved. So it's a beautiful way of integrating neuroscience.

Pat Flynn:

Yeah. For people who might not be totally familiar with the Aristotelian system or Thomas Aquinas', which again, the way I think of Aquinas is he's that great synthesizer. Sometimes he's described as the first great medieval philosopher. I sometimes like to think of him as the last great classical philosopher who brought together the best thought of Aristotelianism and Neoplatonism, but it really is common sense philosophy with robust intellectual machinery beneath it to support it. The four causes are all just

answering a sort of basic question. What is it? What is it made of? Who or what made it and what is it for?

The sorts of questions that we would naturally ask to just kind of, yeah, soak up all the intelligibility that we presume something has to offer to us. And it is very cool to see, you talked about purposes, this sort of resurgence of teleology, even in biology and systems level thinking and stuff like that. So I'd be curious your thoughts again on whether they're optimistic or pessimistic, the future of that sort of thinking when it comes to the sciences in general.

Do you think we'll see a return towards a more Aristotelian paradigm? Do you think that that will prove itself more fruitful over time and kind of win out in the Battle of Ideas? So I don't know the science as well, but in philosophy, we are seeing a strong Aristotelian resurgence for sure and in philosophy of science as well. But yeah, more in your area, I'd just be curious your thoughts on all of that.

Michael Egnor:

Yeah, I think we are going to see a resurgence there. I tend to be a peptimist. Yeah, pessimist. I also get dyspeptic over it, but I tend to be a pessimist and just in the sense that I think humanity is pretty screwed up in a lot of ways. And what may at first seem like a glimmer of hope, like new atheism seems to be on its deathbed, which is, hey, that's a glimmer of hope. Materialism is on its deathbed. That's a glimmer of hope, but paganism is following, which is...

Pat Flynn:

Yeah, right, exactly.

Michael Egnor:

But I think that the Aristotelian way of looking at things is so profound and so true and so obviously true that I mean you can't do good science without it. You can either do it implicitly or explicitly. And I think a lot of people are realizing that explicit might be better. So yeah, I think there is an Aristotelian resurgence and that's a very good thing. I mean, I certainly see it. And I should point out that some of the great modern scientists were Aristotelians. So Warner Heisenberg was a passionate Aristotelian. And he pointed out, which I think is fascinating. There are two really neat Aristotelian links in modern science. One is Heisenberg wrote rather extensively on this, that when you look at the collapse of the quantum wave form, that is that Schrodinger's equation in quantum mechanics is basically an assembly of possibilities of potential states and the measurement of a system reduces these potential states to a single actual state.

That's the famous measurement problem in quantum mechanics. And Heisenberg said, "That's just Aristotle's potency and act."

That is that things exist in a potential way until you observe them and then they collapse into an actual way. And that was how Aristotle described change in nature. So there was a famous scientist, I've actually forgot what his name was, but this is back like 50 years ago, who said that if they were giving out Nobel Prizes to dead people, they'd have to give Aristotle a Nobel Prize in science because he figured all this stuff out.

Pat Flynn:

The one thing that I would just want to continue to emphasize for people who are interested in this is that I sometimes use Thomistic and Aristotelian interchangeably. They're not exactly the same thing, but Aquinas, of course, is that sort of development of Aristotelian thought is again, it's usefulness across so

many different problems in so many different areas. It's just really cool to see for me how useful it was in philosophy of mind once I got there and how empirically confirmed it is. And again, I'll point people back to the first segment we did where Mike just went through all these different experiments and findings in neuroscience with epilepsy research and split brain experiments that really seemed to confirm this Thomistic theory, not just over materialism, which of course is kind of the primary target of the Minding the brain volume, but even seems to favor Thomism over idealism as well.

And like you, Mike, I share many sympathies with an idealist worldview. Certainly I'd go for that any day over materialism, but it does seem like a Thomistic account is able to make better sense of certain empirical findings, even more so than idealism. I don't know if you want to speak about that at all.

Michael Egnor:

Well, it's a very interesting question. The most profound person I've spoken to about idealism is Bruce Gordon.

Pat Flynn:

Oh yeah, great thinker.

Michael Egnor:

Bruce is just a brilliant guy and a dear friend. And Bruce has actually been converting me over time to becoming an idealist, and he has a lot of good points. And one thing I think that is important is to remember back to Plato, the original archetypal idealist is Plato. And Aristotle was a Platonist, meaning Aristotle was Plato's student and Aristotle refined in his own idiosyncratic way a lot of what Plato did, and I think did a lot of good things, but the notion that Aristotle and Plato are opposites, like that famous fresco of Plato pointing up and Aristotle pointing down in the Vatican, I think is a misunderstanding. I mean, Aristotle was very much a Platonist.

Pat Flynn:

Right. Yeah. As Lloyd Gerson, one of the great scholars will tell you, Aristotle and other Platonists, right?

Michael Egnor:

Right. And so I have a little quip that I use that I think one of the deepest, most profound and beautiful metaphysical insights there is was something that a number of people have proposed, Saint Augustine, particularly champion this, is that all of reality, including us, are thoughts in God's mind.

Pat Flynn:

That's where I was going to go. At some level, we all... if you're a theist are idealists, right? Yeah.

Michael Egnor:

Yeah. Yeah. There were thoughts in God's mind. So I kind of joke that idealism is true in the sense that all of reality is a thought in God's mind, but God is a Thomist.

Pat Flynn:

Yeah, there you go. That's a great way to build a friendly bridge between these two perspectives. So that's great. Yeah.

Michael Egnor:

I think of idealism as being the fundamental truth of reality, but the structure of reality is better given by...

Pat Flynn:

Is hylomorphic. Yeah. Yeah. Excellent. Yeah. Fascinating. Well, again, I want to point everybody to your contribution in the volume minding the brain if they want to read more on particularly the neuroscience perspective, which it was a great chapter. I learned a ton. I was really excited to have this conversation. I was not disappointed. This has been a ton of fun, but before we go, Mike, please tell us, what are you working on next? Do you have any new projects you'd like to tease or announce what's coming up and how can people keep up with what you're doing? Yeah.

Michael Egnor:

Sure, sure. Well, these ideas have fascinated me so much. I have recently collaborated with my dear friend, Denise O'Leary, who is a journalist, has worked for many, many years with the Discovery Institute. And we have a book coming out probably in about a year from Hachette Worthy that the running title is The Immortal Mind, a neurosurgeon's case for the soul. And basically it's these ideas developed in more depth. And the book is pretty much written. It's in the editing process, and I think it'll be fascinating for people who really love this stuff, I think it'll be a lot of good insight.

Pat Flynn:

Wow. Well, we'll have to make the time to have another conversation once that book nears released. That's fascinating. I'm excited to read it. And Mike, how about, for keeping up with you? What's the best way for people? Are you on social media these days or website or anything like that?

Michael Egnor:

I'm actually not. I avoid those.

Pat Flynn:

It's for the best. I'm always hesitant.

Michael Egnor:

I took a Myers-Briggs test, one of these psychology tests years ago. And it said I was kind of an introvert. And so I'm out there in public, but the idea of having a Facebook page just gives me chills, but I may have to do it at some point. But no, I blogged a lot on Evolution News and Views and Mind Matters News at the Discovery Institute. So readers who want to read more, I have like a thousand blog posts there and I try to blog as much as I can, but I have a day job that kind of keeps me going too. But yeah, so most of what we've talked about, I've written about on Mind Matters News and Evolution News and Views, which are both blogs from the Discovery Institute.

Pat Flynn:

Yeah. Excellent. Well, I'm sure all of the relevant links will be provided in the show notes. Again, this has been a fascinating conversation. Everybody should be sure to check out the excellent Minding the Brain Volume if you haven't already. And Mike, thank you so much for taking the time to be here. I really enjoyed it.

Michael Egnor:

Thank you, Pat. It's been a wonderful conversation. I'm very grateful.

Announcer:

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