Mirror Neurons, Consciousness, and the Bearer Question

https://mindmatters.ai/podcast/ep317

Robert J. Marks:

Greetings and welcome to Mind Matters News. I'm your bearer co-host, Robert J. Marks. We'll find out what that means in a little bit. To me, consciousness is a squishy sort of thing to talk about. It's a hard thing to define, but all of us have an idea of what consciousness is. And that idea that we share is enough for us to talk about it. And along with mirror neurons, that's what we're going to talk about today with our guest Dr. Mihretu Guta.

Mind Matters News. And this podcast is a product of the Walter Bradley Center for Natural and Artificial Intelligence at Discovery Institute. A new podcast of Mind Matters News is dropped every Thursday except the last Thursday of the month. Last Thursday of the month, we post what we call a binge cast, where multiple-episode interviews from the past are fused into a single podcast. So welcome to Mind Matters News, and thank you for listening. My co-host today is Brian Krouse, who is a bagpipe playing co-editor of the book Minding the Brain. Hey, Brian.

Brian K. Krouse:

Hey, Bob. It's good to be here. I didn't bring my bagpipes.

Robert J. Marks:

You didn't bring your bagpipes? I was going to ask Brian his favorite bagpipe joke, but he didn't think bagpipes were funny.

Brian K. Krouse:

It's very serious business.

Robert J. Marks:

It's very serious. Okay. I have a bagpipe joke. A gentleman is somebody who knows how to play the bagpipes, but doesn't. What do you think? Is that pretty good?

Brian K. Krouse:

Well, I laughed, so I guess it worked.

Robert J. Marks:

Okay. Yeah. It was, yeah. But it was a polite laugh. It wasn't a deep belly laugh. But yeah, that was okay. Look, at Mind Matters News we've been interviewing authors featured in the book Minding the Brain, edited by Angus Menoge, Brian Krouse and myself. The book delves into the age-old question, is the mind more than the brain? This debate spans centuries. What was once solely a philosophical and metaphysical discussion has attracted the attention of science and is a much more serious area of study. For more information about this book, visit mindingthebrain.org. That's mindingthebrain.org. Our guest today is Dr. Mihretu Guta, who wrote the chapter in Minding the Brain entitled Mirror Neurons, Consciousness, and the Bearer Question.

Now, if you're like me before you read the chapter, you have no idea what a mirror neuron is. You have no idea what the bearer question is. But we're going to find out as we talk to Dr. Guta. Dr. Guta teaches analytic philosophy at Biola University and Azusa Pacific University. He's an Associate Fellow at the Center for Bioethics and Human Dignity at Trinity International University. He got his PhD in philosophy from Durham University, and he's the co-editor of some books. One of them is titled Selfhood, Autism and Thought Insertion. And he's the editor of another book called Consciousness in the Ontology of Properties. We're going to provide links to those books for those interested in the podcast notes. Dr. Guta, welcome.

Mihretu Guta:

Thank you so much. It's good to be here.

Robert J. Marks:

Okay. It's great. It's great to have you back. Angus and I did a great interview with Dr. Guta on another one of his chapters. He contributed two chapters to Minding the Brain. So I've been talking a long time. So let me turn the floor over to my co-host, Brian Krouse. Brian?

Brian K. Krouse:

Yes, sir. All right. I'm looking forward to talking to you about this topic today, Mihretu. I know we've had plenty of conversations about this before and it's pretty fascinating. Before we get going, let me just give the listeners a quick overview to position where your chapter fits in our anthology as a whole. In case you haven't heard much about the book as a whole, we are talking about this issue of the mind and the brain, but we're trying to talk about it from a philosophical perspective, specifically considering several different non-materialist, non-matter-based models of mind.

And then, in the latter half of the book, especially, we consider how the philosophy of these non-materialist models of mind interact with different empirical sciences, whether it's neuroscience or computer science or psychology and several others. And this chapter is right in the middle of the book and it deals with both the philosophy and the neuroscience very directly. And that's one of the things I really like about this chapter is that you have expertise in both areas. Given that overview, let's just dive into it. Could you help us Dr. Guta understand, first, what is a mirror neuron?

Mihretu Guta:

So a mirror neuron has really nothing but a brain cell, and we can use it in this plural form. So we've got at the least 100 billion neurons in our brain. Our brain weighs about three pounds, and each neuron actually makes at least 10,000 connections with other neurons. And the number of synapses in your brain, in my brain, exceed 100 trillion. So the network is breathtaking, and it's extremely fascinating. There's a lot going on in our brain, and the mirror neurons are somehow cordoned off, so to speak. It's special kind of brain cells, because they behave in a distinctive way. And as I've argued in my chapter, there are two properties that researchers have identified based on their experimental work. One would be something that has to do with what we call action execution. So when I, for example, pick up something from the ground, the so-called brain, this spatial space called mirror neurons get activated.

And if I see someone doing the same thing, which is in the context of observation, they also get activated. But, researchers do not directly use mirror neurons in relation to humans. And as I've argued in this chapter, they would rather prefer to use the phrase "mirror system." They talk in terms of "system language," as opposed to "mirror neuron language." So basically these are literally brain cells. They just get activated, but in this chapter, I do not necessarily assume that mirror neurons actually do

exist. I do not also assume that they do not exist. But, in this chapter, assuming that they exist, if we grant that premise, what should follow? What should be in place to make sense of these kinds of brain cells? That's exactly what I'm arguing in this chapter. But, I think in a nutshell, these are just ordinary neurons with some unique properties.

Robert J. Marks:

Dr. Guta, if I could ask you? This is my interpretation, as somebody who is not a philosopher. If I see somebody sitting next to me and they're slicing cucumbers and they cut their finger. And I look at that and it gives me a chill, and I feel, "Oh my gosh, I feel that in my finger where he cut it," that's my mirror neurons reacting. Is that right? Am I getting it correctly?

Mihretu Guta:

So yeah. The analogy could be disputed, but I think that's precisely what's happening, according to researchers. So they say that these kinds of cells, brain cells respond or fire, for example, when you reach out to something yourself, or when you observe someone doing the same thing. So when someone is doing the same thing while you're observing, these brain cells will be activated in your brain. And when you, yourself, do the same thing, they would also get activated. So they actually use, as I've argued in this chapter, action execution and observation or action understanding. So later on we'll discuss about how these cells are taken to play distinctive roles when it comes to such phenomena like empathy, or in the case of associative learning, imitation and so on. Yeah. I think the analogy, Bob, might be disputed in some context, but the gist of what you said is accurate in terms of describing the role of these kinds of brain cells.

Robert J. Marks:

Okay. Thank you. Yeah. In other words, you relate to what other people are doing.

Mihretu Guta:

Yeah. Exactly. When it comes to empathy, for example, the notion of empathy is literally taking someone's perspective. You try to place yourself in someone's shoes and try to do your best to understand and see that particular thing from that person's perspective, which means you're taking the second-person perspective, not the first-person perspective, not the third-person perspective, but the second-person perspective. So the second-person perspective is somehow taken to be a unique kind of perspective, relative to the first and the third. The second one helps you to be part of, so to speak, what that person is experiencing. So, if you are trying to sympathize with someone, emotionally you are engaged. And so the emotion is going to give you a unique, raw perspective as to what that person is undergoing at any given time.

So this is very, very much familiar to all of us. For example, consider these hypothetical parents. They lost their son in a car accident. And also think of real parents who literally lost their son through accident and so on. So the hypothetical parents can understand what the real parents are undergoing, going through, because of this extremely heartbreaking grief and so on. But, if a person has never experienced anything, a person can have a head knowledge, theoretical knowledge about something. But, it will be incredibly difficult for that person to imagine and emotionally engage and someone's pain and see things from that person's perspective. So empathy, which is what psychologists say, the second person's perspective on someone's experience, helps you to participate in what that person is actually going through. It feels as though you yourself is going through that kind of experience.

But, I have some skepticism about the second-person, third-person perspectives. In fact, I am reductionist about these perspectives, because I don't believe, to be honest with you guys, second and third-person perspectives actually exist. They exist in grammar, but they do not exist in metaphysics or ontology. In other words, they do not have a metaphysical basis whatsoever. The only perspective that exists is first-person perspective. So when you participate in someone's, let's say, pain experience, when you try to imagine what it would be like for that person to be in that kind of situation, when you are trying to imagine that, you are doing that from your own first-person perspective. There's no unique perspective where you can pick it up and replace it by first-person perspective. There's just one perspective. You try to imagine from your own perspective, but technically speaking, grammatically speaking, you can say the second-person perspective. But, these perspectives do not exist. The only perspective that exists is that just the first-person perspective.

Brian K. Krouse:

Yeah. Yeah. So wrapping my mind around what's so interesting about these mirror neurons. So we don't need neuroscience to tell us that, as humans, we know how to empathize with other people's experience, because we all do that. Or even to learn from someone else's behavior by watching them. We all do that. So is what's exciting about this mirror neurons idea to the proponents of mirror neurons, ... Is it that they've identified specific networks of neurons that fire and have some kind of activation patterns while someone is ... I guess if you're talking in the human case ... Or, they also study in monkeys, right? That's the other place they've studied this. But, if they see that these neurons firing in networks, while those empathetic or action observation cognitive processes are going on, if that's an exciting thing, I suppose for the proponents, because they're saying, "Hey, look at this physical thing doing something, while this mental operation is going on of this particular kind,"?

Mihretu Guta:

Yeah. Historically, just to paint a perspective, this research was done first on macaque monkeys in Italy. A group of neuroscientists in Parma Italy in 1980s and '90s. They carried out this research and they claimed to have observed unique brain cells behaving in a very distinctive manner when certain things happen. In other words, when monkeys observed experimenters picking up, let's say, a very tiny object from the ground at the same time, concurrently, they buried already micro electrodes in their brain. And cells actually reacted in a certain way. And when monkeys were trained to do the same thing, and at the same time when experimenters observed what was happening in the brains of these monkeys, these cells also get activated. So the research was actually done first on macaque monkeys, not on human beings. Now, inference was made actually, what was true in the case of monkeys might also be true in the case of human beings.

But, the research on human beings actually takes so many things for granted, because you can't, for example, play with human brain as you would play with monkey's brain. You can actually record single neurons in monkey's brain, but you can't do that in human brain, because it's very gruesome. And for obvious reasons, you can't really treat human being as if a kind of a laboratory Guinea piggy. It's just rat. So there are so many hurdles, legal, moral and so on. So the inference was completely made. Okay. These are things that we've observed, and the brains of monkeys probably the same thing is true when it comes to human brains. In the case of human, humans, researchers have used brain imaging techniques, for example, TMS transcranial magnetic stimulation method, where you can actually specifically activate or poke certain regions in your brain.

And then you can makes a person to twitch his or her fingers against his or her will. And you can use pet scan, for example, positron emission tomography. You can use FMRI, functional magnetic resonance

imaging and so on. So in the case of humans, brain imaging techniques have been used actually to see in real time what was happening in the subject's brains. When subjects, for example, observe other people doing, like let's say, motor-engaged in motor activities, picking things up from the ground or do different kinds of motor-engaging activities. And also when they themselves have been given an opportunity as to do different kinds of motor-engaging activities, these cells get activated.

The conundrum in the case of human beings, these brain cells are distributed throughout human brain and they occupy different regions, and you can't cordon them off just as you would do in the case of monkey's brains. You can't do that. So researchers have said, "Okay. Let's use the term "mirror system," as opposed to "mirror neurons" and so on. So, yes. So we moved from monkeys to humans. We started on monkeys. We think the same thing is true of human brains. I think there are so many things that you can raise with questions whether that would justify or not, but we're simply assuming here, "If this is true, then okay. What should be in place? What would it take to accept this argument seriously?"

Brian K. Krouse:

Right. Right. Because I know you move on. You're not really trying to settle this question of whether this mirror neuron theory is correct. You're more analyzing how are they proceeding in their research? Or what's the unspoken assumptions that they're bringing, while they're trying to do their research? How are they going to draw their conclusions? But before we get into that, though, I'm just curious, what is the state of this research today? Is this a controversial proposition that these mirror neuron systems exist? Or is it widely accepted? Why are people excited about it? How are they applying it? This kind of thing.

Mihretu Guta:

I think I can generally say there is a parallel argument that you can make as to the popularity of how popular the cells are. Most neuroscientists really think that such cells actually exist, and there are not too strong objections against them. But, there is a neuroscientist whose work I actually interacted with, Gregory Hickok. He actually published a book-length argument against mirror neurons. In fact, his book is entitled The Myth of Mirror Neurons. He thinks that both of those two properties that I mentioned earlier in our talk, let's say, action execution or observation, these two things actually are not true of the so-called mirror neuron cells. And he raises so many counter examples in his book. He actually argues from the standpoint of view of his own research. He is not critiquing philosophically, he is not treating these cells in the way that I'm critiquing.

But, what he is saying is, "I have a lab. I have done research myself as a neuroscientist. I have not gotten the kind of result that defenders of mirror neurons are actually touting when it comes to these cells." So he raised a very, very serious objection. In fact, a number of objections. His entire book is premised upon the fact that most of the things that we've been told about mirror neurons, in fact, those things are not true of mirror neurons. So he is, no apologies being asked. So I think his work is the only work that I come across by way of a book-length objection against these kinds of cells and thinks that other neuroscientists actually associate with these cells. He mentions more than 29 different things that are said that mirror neurons are responsible for, including what political parties that you favor, for example.

So it comes down to, some of the things that he lists are a bit laughable. So if you favor Democratic Party or Republican Party, so mirror neurons have played some sort of role. Let's suppose, if I'm Democratic Party defender, if you are a Republican Party defender, how can we justify that Brain cells literally are behind that kind of decision? It comes down to, it trivializes the whole thing. But people go to that extent, to that extent, actually. So here's what I can say, Brian. They are still very, very popular things. But, there are very minority skeptics out there.

Brian K. Krouse:

Okay. And it sounds like maybe in the popularization, maybe some people are running with it maybe a little bit beyond what the evidence would support, to linking it to things like your political attitude.

Robert J. Marks:

Just really quickly, how did they dismiss the biological results on the monkeys? And the discovery of mirror neurons in the monkeys?

Brian K. Krouse:

How does Gregory Hickok do that?

Mihretu Guta:

Hickok, what he does in his book is, he comes up with this counter examples when it comes to human beings. He says, there's no experimental, empirical evidence that shows, as far as he's concerned that when you observe someone doing something, or when you yourself do something, he says, there's no such phenomena that's unique that can be observed in your brain. So he brings up so many counter examples. You can actually do something without understanding. And you can also execute things without what mirror neuron theorists are telling you would happen in your brain when you do such and such.

So what he is doing is like, "No. There's no empirical evidence that shows us that action execution and observation somehow would activate certain kinds of brain cells in our brain," or something like that. Sometimes there's nothing happening there, but while you are doing something, while you're observing someone doing something and something like that. So he is saying there's a serious exaggeration here and inconsistencies. And it's overblown, and there's no good reason for us to take what the so-called experts are saying about these mirror neurons to the extent that they are actually preaching their uniqueness to us.

Brian K. Krouse:

Mm. Mm. Interesting. So now getting back to what you mentioned earlier Mihretu, your interest in this chapter is not so much to settle this active neuroscience research topic one way or the other, but to come alongside the people thinking about this and point out that, hey, you might not be thinking about this in a robust way. There might be some philosophical challenges with how you're approaching this problem in total. And in your chapter, you introduce three problems. You call them the easy problem, the hard problem and the hardest problem. Could you tell us what these observations are about, what your critique is of how they're going about trying to sort out this question of mirror neurons?

Mihretu Guta:

Exactly. So the easy problem, the hard problem, the hardest problem is directly related to what I have introduced earlier, with respect to the question of neural correlates of the functional properties of mirror neurons. So there is correlation involved in it. So let's suppose mirror neurons exist and their job is being activated, which means whatever that you associate with those cells, when they are activated, while you are doing a certain kind of task, it's nothing more than correlation. So that's number one. No one is talking about that. When mirror neuron theorists talk about mirror neurons, they literally treat them as if they are conscious, like they are knowing. It sounds like they are saying, "Oh, these cells

actually know these sales actually are empathizing with you," or something like that. There's no metaphysical infrastructure in place. There's no ontological infrastructure in place.

There's a very serious conceptual confusion as well. So how am I supposed to understand when they say that action execution and observation activates these cells. And who's doing the knowing, by the way? Who's doing the realizing? There's no explanation in the research. If you read the literature, it's all about touting how these cells are unique and they are magical, they are miracle, and so on, so forth. So my job is, okay. Let's hold our horses a little bit here. Let's calm down. Let's work through this conceptual, metaphysical, ontological and empirical infrastructure first. Let's make this clear first. Let's clear this bush a little bit, so there's no exit. I don't know how to exit into this territory. So one, let's talk about correlation.

And then after correlation, we need to also be clear with the question of a causal profile. Do these nerve cells actually cause anything? When, for example, you observe someone doing something, they get activated. Does that mean that they are causing something to happen? Do they have any causal profile? Can we attribute any role of causation being played by these kinds of roles? So the first one is correlation, causal profile, and the third one is, whether or not the very existence of these kinds of properties require consciousness in the bearer. So when it comes to correlation, I call that easy problem, because you can easily run empirical experiment.

Brian K. Krouse:

Can I interject real quick, Mihretu, just to make sure I'm tracking here. So when you're talking about correlation, you're talking about, okay, they're in the lab, they're watching, let's say, someone else do a task. So they know they're thinking about that other person doing a task. And they're trying to correlate that thinking of someone else doing a task with this particular firing of neurons?

Mihretu Guta:

Exactly. Yes.

Brian K. Krouse:

Whatever tool? Okay. So then they're trying to make that correlation between these particular neurons and this cognitive thing? Those are happening at exactly the same time.

Mihretu Guta:

Yes. So I call that relatively easy problem, because you can do that. So is what neuroscientists actually do all the time.

Brian K. Krouse:

Okay.

Mihretu Guta:

They have their subjects, they give them a set of instructions. Their subjects are supposed to follow those instructions strictly, to the best of their abilities, and then you observe what's happening concurrently in those subjects brains. And then you come up with your own interpretation of what the implications of those phenomena are. So you have to interpret that.

Brian K. Krouse:

Is it like when these mirror neurons researchers see that correlation, and then they tend to make this conclusion maybe too quickly, or not carefully enough, where they say, "Hey, there's this correlation that means these neurons are causing this cognitive process."? Or, "These mirror neurons themselves are observing,"? And they attribute the consciousness to the neurons themselves. And that's what you're objecting to?

Mihretu Guta:

Exactly. So there's lack of clarity, by the way. They don't really distinguish, "Oh, we are correlating here. We're not assuming causation." And that language you can hardly find. They're not saying that. It's so vague, it's all over the place. So now you ask yourself, what exactly is happening here? So many things have been attributed to these kinds of cells. So, what are they exactly talking about? So I raised three questions. One, correlation as you say it. The second one is a causal profile, and the third one is consciousness and its bearer. So I call the correlation easy problem, and the causal profile stuff, the hard problem, as I'll explain this later on. And then the consciousness and the better questions, the hardest problem, because it's literally the hardest one. So in this chapter, eventually I'll answer why I said easy problem, why I said hard problem and hardest problem.

Brian K. Krouse:

Okay. Okay.

Mihretu Guta:

Because the intensity of difficulty increases from the easy, all the way up to the hardest.

Brian K. Krouse:

I see. I see. And so, when you're talking about the easy problem, this is the problem of correlation. So now are you saying that you're seeing issues in the way they're going about this correlative study?

Mihretu Guta:

Yes. One problem that I'm noticing there is, often correlation is just, it's a bit vague. So sometimes it seems like they are blending it with, lumping it with causation. Sometimes it seems like they are vaguely aware of, they're not about causation when they talk about correlation. But, the entire gamut of what they say for the most part doesn't give you clarity at all. So you are entitled to understand them to be saying, "Well, when they talk about correlation, at the same time, giving you implications that they are also talking about causation." The problem here is the two notions are completely distinct. Correlation has nothing to do with causation. For the most part, causation and correlations are two different things. They play two different roles, so we can't lump them. So that's one problem that I've noticed in the literature.

Brian K. Krouse:

Okay. Okay. That makes sense. So there's an idea that you introduced in the chapter that I thought was very interesting, but I just want to make sure that I understand it. Maybe you can explain it to me. So it had a fancy name, Leibniz's Law of the Indiscernibity of Identicals. What is that? And how does that come into play with any of this?

Mihretu Guta:

Right. So I raised this stuff where I talk about psychoneural correlations. Philosophers of mind, who defend the view called physicalism,. Human beings are nothing but physical beings. Brain states are the same thing as mental states. Mental states are the same thing as brain states. There are no ontological distinctions between mental states and brain states. We're really using two different descriptions to talk about the same property, which is a physical property. So Leibniz's law of Indiscernibity of Identicals is one of the laws associated with the 17th century philosopher, German philosopher by the name Gottfried Leibniz. Simply helps you as a test to show whether a strict numerical identity obtains or not, between two given things. Let me explain this. Suppose, for example, you have two identical cups, exactly identical cups. They have been manufactured at the same place. They have the same color, they have the same shape, they have the same size. Every single thing is exactly like each other.

So you have two cups. How many cups actually do you have here? So in terms of quality, one-to-one, you can match one quality with another quality one-to-one. But how many cups do you have? You might say sometimes, "Well, I have two cups." Some philosophers would say, "You have only one cup, because all the properties, all the qualities match one-to-one with each other. Therefore you don't have two cups," and so on. Well, let's apply this rule called Indiscernibity of Identicals. This rule can be stated as follows, "For all A and for all Y, if X is identical to Y, then there is a property P, such that, X has P if and only if Y has P."

This might sound very mouthful expression, but let me unpack it in a way anyone can understand. So the two cups that we've talked about, if you say the shape of one cup is exactly like the shape of the other cup. The color of one cup is exactly like the color of the other cup. But, in terms of the space that the two cups are occupied, there is a distinction. So at the least you can say one thing about each one of these cups that you cannot say about both of them at the same time. So you can say cap one occupied space A. Cap B occupied space B at the least. Now, they are not entirely identical, regardless of how similar to each other in all other respects. So you can invoke these law and say, "Okay. What is true of cop A that occupied location A? That fact is not true of cup B, because cup B occupied location B, not location A." So at least you have one fundamental difference when it comes to a spatial relation. Therefore, identity doesn't hold between through these cups, regardless of other similarities.

Brian K. Krouse:

They're not the same cup? Okay.

Mihretu Guta:

Yes. So therefore, one thing is true of one thing that's not true of other thing. In this case, the location B is not the same thing as location A. Therefore, that fact is only true of B, because B is only occupying location B. A is occupying location A. At least you can mention one fact that's not true of each one of these cups. Therefore, they are not identical. If you had not been able to do that, then you would have been in a position to say that you were only talking about one object.

Brian K. Krouse:

Okay. That makes sense in terms of ... But, how do we apply this to this topic of the mirror neurons?

Mihretu Guta:

Excellent. So the mirror neurons are functional properties, as I've described them, functional properties. By functional properties., I'm not also confusing them with the functionalist view of mind. So there's a similar name. The functionalist view of human mind is a view according to which, mental states do not have intrinsic values. The job of mental states is just simply to play the input/output role. If you take

pain, pain is not an elemental property. It doesn't have its own intrinsic nature such as painfulness. But, what pain does to you is, when you experience it, it really forces you to react in a certain way. You might say you "Ouch." You might scream or you might remove your hand from the hot stove or something like that. All there is for pain is literally the way you just acted. In other words, you got the input, the input being whatever that caused that pain. And then you remove your hand very violently and just forcefully. That's the output. That's it. Interesting. What is pain input and output interaction? It has no other kind of unique intrinsic nature.

So when you take mirror neurons, remember that neuroscientists have attributed action, execution and observation and so on, so forth. So the properties are not physical. The properties associated with mirror neurons are non-physical properties. They are mental properties or cognitive properties. Therefore, the Leibniz law directly applies to that. For example, take again, pain. Pain is not only pain. I have inner awareness of how painful my headache experience is. So I know the qualitative nature of a headache experience. I know that from my own first-person perspective. So I have an inward insight into how awful that pain experience is. But, I do not have any insight whatsoever into my neuronal fabrics. If you ask me now, which part of my brain is lighting up? Where oxygen flow is increasing? Where my brain is consuming glucose so much because that part is very active? I have no idea, but I can introspect, let's say, into my headache sensation. I can introspect a host of other mental-related phenomena. So I have insight into those things. I can tell you what it feels like to have that headache sensation and so on and so forth.

But, I cannot be in a position, and I had never been in a position to have any insight into my brain states, neurons fire action, potential builds. There are very complicated chemical and electrical processes that really happen at the physiological level inside your brain for action potentials to develop, and also neurotransmitters to also build themselves and so on. But, look. We don't have insight. So I'm not applying indirectly Leibniz' indiscernibility of identical flow. So one thing is true of mentalists, such as their qualitative nature, my own awareness of those kind of qualities and the ability to even have my own story to tell you what those qualities felt like to me, in the case of a very nasty headache that I often get when I don't drink, for example, coffee.

You ask me the same thing about my action potential, I have no idea. Ask me about my dopamine level, or serotonin, or other neuro-modulators or mainstream neurotransmitters and so on, I have no insight whatsoever. So therefore, chemical processes, electrical processes are not the same thing as mental states, because mental states have their own unique equalities. However, the two work in sync, in harmony, because the reason why I'm having headache is because at the physiological level, something is happening inside my brain, so there is a contribution. But at the same time, there's an enigmatic feature to it, an enigmatic aspect to it, because I don't have insight into the physical, physiological process,. But I do have insight somehow in a very clear, provable sense, what it feels like for me to have that kind of mental phenomena of a different kind. So then, therefore, the two cannot be the same.

Brian K. Krouse:

Yeah. Yeah. I think I'm tracking. So if I'm tracking, we're talking about the mirror neurons' researchers doing this correlative work, and it seems that maybe they're not very conscious of this whole discussion. But, they might have a tendency with the language to want to try to identify ... When they see the correlation, they might have a tendency to want to identify the mirror neurons' cognitive mental functions like the empathy or the recognizing another action. They want to identify that with these specific neurons firing. And you're saying, "No. If we're more careful about this concept of identifying two things, we can say, 'Hey, there are properties that these two things don't share,'" specifically in your example of pain, the feeling of pain on one side. Or the chemical attributes of the neurons on the other side. And so these things aren't identical. Even if they're correlated, they're not identical.

Mihretu Guta:

Absolutely. So you mentioned a very good point, Brian, because correlation is neither causation nor identity. So I mentioned that specifically in my own chapter. So that's exactly why the literature on mirror neurons supremely confusing if you approach it from philosophical, metaphysical, and ontological standpoint. And neuroscientists sometimes are not all, but some are cynical, when it comes to metaphysics and ontology and philosophy and so on. They think that these disciplines have nothing to contribute and so on. So the outcome is a perfect confusion. This is why we need to take philosophy very, very seriously, because in the absence of a careful philosophical analysis and a careful philosophical application, what you'll be left with is utter confusion. For example, here's one, a very, very concrete example. Suppose, for example, if I peer into your brain and let's say look at the visual motor activities.

So usually mirror neurons are associated with something that's you see and motor activities and so on. They're often associated with those kinds of things, because observation necessitates the visual apparatus to work very well, because you're perceiving and seeing. And then the movement has to activate motor cortex in your brain and so on. So let's suppose I peer into your brain using brain imaging techniques, for example. Magnetic resonance imaging or PET scan or know positron emission tomography and so on. Okay, I'm watching. I'm not interacting with you. What conclusion can I draw about what's happening inside your brain? Are you empathizing with someone? What can I say, literally?

I'm seeing all this physiological interesting activities, blood flow, dependent oxygenation dependency level and the rest. Okay. I'm observing all of that in real time. But, if I don't engage with you as a researcher, if I don't ask you what is happening, what are you thinking about? How is this appearing to you? And so on. What can you do on your own? You without engaging with me? So the physiological data wouldn't reveal a thing to you when it comes to what it feels like for me to have this experience, as opposed to that experience. Or what's happening at that particular time in my, let's say, mind. So this is exactly why I am very, very skeptical.

Brian K. Krouse:

Yeah. The only insight you have into what's going on in their mind is what they're telling you about in their mind. You don't have that direct access to their first-person experience.

Mihretu Guta:

That is literally aspect of experience that we have, that is almost ... That should be taken as a black hole, in my view, or a black box. Let me use a softer kind of term here. A black box. Okay. So the black box is a black box, which means it's not accessible to the third-person party. You can't observe, peer into my brain and assume that this is literally what's happening in this person's mind. You can't say that. You have to engage with the person. The person is the one who has got the key to unlock, at least to let you know, "This is exactly what's happening currently in my mind," and the person has an ability to introspect the person's own inner mental life.

This is a very controversial suggestion, and so many people are cynical about this. They're cynical about this, because they are coming from the physicalist view standpoint. They are physicalists. They think that science has to unravel. Science has to unlock. Science has to reveal this mystery somehow, and outside of this science stuff, we shouldn't really take any help, let's say, from disciplines like philosophy or metaphysics or ontology. We have to crack this nut, somehow. It might take time, but we'll get there. Well, good luck. That's where the problem is.

Brian K. Krouse:

Yeah. Yeah. So you're saying they come in almost assuming that they're going to find this identity between the nervous system activity and the mental functions, or they'll find that causation. And so they're less bothered by the fact that someone has to report subjectively what's going on, because they expect they're going to see that in there. It has to be in there, on their assumptions. Is that what you're saying?

Mihretu Guta:

There are books. I teach Philosophy of Neuroscience, and I have used one book published by Oxford University. In that book, there is a chapter where one author was arguing that before you accept the reality of your own pain, you have to consult with experts. Experts should tell you whether you are having that kind of pain or not. What does that mean? Your doctor is not expert on your subjective experience or experiences. Your doctor cannot correct you when it comes to your subjective experiences.

Robert J. Marks:

This is a great conversation. I think maybe now is a good time to take a break and maybe continue this in a subsequent chat. So everybody, Brian Krouse and I have been talking to Dr. Mihretu Guta, who teaches analytic philosophy at Biola University. We've been talking about his chapter Mirror Neurons, Consciousness in the Bearer Question in Minding the Brain. We still have some things to go about, for example, the bearer question. For more information about the book and to read Dr. Guta's chapter, visit mindingthebrain.org. That's mindingthebrain.org. I'm your co-host, Robert J. Marks. Until next time, be of good cheer.

Announcer:

This has been Mind Matters News, with your host Robert J. Marks. Explore More at mindmatters.ai. That's mindmatters.ai. Mind Matters News is directed and edited by Austin Egbert. The opinions expressed on this program are solely those of the speakers. Mind Matters News is produced and copyrighted by the Walter Bradley Center for Natural and Artificial Intelligence at Discovery Institute.