

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Episode 3: What Does it Mean to be Human? Reflections on Neuroscience, Artificial Intelligence and the Soul

Dr. Aasim Padela:

Welcome back everyone. You're tuned in to another episode of *Big Questions About the Human Being: Bioscience and Islam in Dialogue*. This podcast series brings together scientists, philosophers, educators and theologians to bridge Islamic and bioscientific perspectives on the human being: what we are, how we came to be, and who we might become. I'm Dr. Asim Padela, your tour guide as we continue winding our way through some of the deepest questions at the intersection of science and faith. At this, our third stop on the journey, we take on the question that's as old as humanity itself: What makes us human? And in asking it, we'll delve into neuroscience, artificial intelligence and the most elusive of concepts, the human soul. But before we dive in, a word of caution, you may leave this episode with more questions than answers. Then again, what fun would it be if there were a ready-made answer to what makes us human? So let's begin. So what do today's panelists think it is that makes us human?

Montage of different voices

Thought. Imagination. Language. Consciousness. The ability to see very big patterns. Priorities. Responsive to value. Capacity to derive meaning from the world.

Dr. Aasim Padela:

Those are a lot of ideas and we will unpack them shortly and take a deep dive into the mysteries of consciousness in a couple of minutes. First, as we've been doing throughout the series, let's start with a practical case that will make our exploration a bit more real.

Dr. Raudah Yunus:

The state health ministry is crafting a bill to mandate that insurance companies reimburse families for robotic care assistants who assist with caring for relatives with dementia. The state's nursing associations are vehemently against the plan. They argue that remuneration should be limited to human caregivers. You have been asked to weigh in on the issue in front of a panel of state senators. What will your testimony consist of?

Dr. Aasim Padela:

While you consider whether and to what extent robotic caregivers are similar to human ones, let's hear how science approaches essential human nature. [Augustin Fuentes](#), Professor of Anthropology at Princeton University starts us off.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Professor Augustin Fuentes:

If you ask yourself what makes us human, I think you already know the answer. The ability to ask that question, the diverse suite of resources that you bring to bear in that reflection and basically the fact that you live your life from a day-to-day basis interacting with other humans. So the wonderful thing about asking the question what makes us human is that all the evidence is there right in front of us, in our lives, in our bodies, in our experiences. But what's more challenging then is to how to apply this insight to things like medicine and science and basically navigating all of the complexities that we find in our societies.

Dr. Aasim Padela:

For another take on what makes us unique, we turn to [Megan Peters](#), Associate Professor of Cognitive Sciences at the University of California, Irvine.

Professor Megan Peters:

I think that most people would agree that language is one of the things that makes us uniquely humans. There are multiple schools of thought about the relationship between language and other components that might make us uniquely human. There are some people who argue that language is for thought, and there are others that argue that language is a consequence of thought. And so the question is whether language is an integral component of the way that we think, the way that we solve problems, the way that we interact with each other and with the world. And there are others that say no, we do all of those other amazing intelligent things independently of language, and language is just a reflection of the capacities that make us uniquely human. There are other folks who think that maybe the ability to see very big patterns, sometimes called compositional reasoning. Essentially think about this as, you can see the gist, you don't get stuck down in the trees, you can see the forest for what it is. You can put together patterns of patterns, that some of those capacities might be uniquely human. This is an ongoing and thriving area of research. Ask any intelligent scientist and you will get a different answer.

Dr. Aasim Padela:

Professor Peters considers language as we use it a uniquely human capacity. But whales, dolphins, and even songbirds have language of sorts. [Peter Ulrich Tse](#), Professor of Cognitive Neuroscience at Dartmouth College, suggests that we have the unique thought processes behind our language.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Professor Peter Tse:

The life of a chimpanzee or bonobo now is roughly the same as it was 100,000 years ago. So yes, they do seem to use tools. However, we seem to reinvent our world almost on a yearly basis. Chimpanzees and bonobos don't invent airplanes. And then the question is: Why are they not able to? Well, I think they lack our kind of imagination. So our imagination is incredibly powerful. It's really our most important and most powerful tool and our most important deadly weapon. I suspect that it had something to do with the evolution of tool use, where we had to internally model what we would do before we did it. There are other things that make us different from a chimp like fire use and certainly language. But I don't think it's consciousness per se that separates us from a chimp. But we have in addition, a kind of second-order consciousness that is layered on top of that, which is the domain of the imagination.

Dr. Aasim Padela:

Professor Fuentes introduces us to an idea that goes beyond the making of tools. There's something about creating shared meaning and things he terms symbolic artifacts.

Professor Augustin Fuentes:

What's even more impressive is this pattern that we see over the last few hundred thousand years of earlier human groups coming together around a particular object, or even maybe a particular place and working together to assign that place meaning—or to sense a meaning from that place. And to have that meaning, that symbolic sense, really affect the way they are in the world, the way they see the world, the way they see each other. This capacity to insert meaning or derive meaning from the world is a powerful human process.

Dr. Aasim Padela:

It's interesting to consider the importance of meaning and symbolism that Professor Fuentes ascribes to early human communities. He paints a very different picture than the one we associate with the Neo-Darwinian picture of competition for survival of the fittest. One of Charles Darwin's contemporaries, Alfred Lord Tennyson, memorably described nature as "red in tooth and claw". But if you look back to the earliest humans trying to survive in a challenging environment, they had small teeth and certainly no claws. So what *did* they have that enabled them to survive the harsh elements and to secure themselves from predators and ultimately to gather food and build communities? How did they ultimately go beyond the bare necessities of survival to arguably thrive?

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

As you can hear from our experts, when investigating the nature of the human through the bioscientific lens, the evolutionary account of human origin and development is ever-present. After Episode 2, we are more informed consumers and better equipped to assess this account. So let's not get hung up on it. I would like you to focus on the concepts that are brought to bear to make human beings uniquely human. And the mystery is still present. And despite working from an evolutionary framework, Professor Fuentes argues that it takes more than biology to enable humans to have such complex and even transcendent kinds of thought.

Professor Augustin Fuentes:

If we look at our ancestors, even just a few million years ago, they weren't armed with complex things like language and the technologies that we take for granted, but they did have something really important: each other. The production of complex stone tools, the production and use of fire show us clearly that particularly powerful forms of communication, collaboration and coordination characterize early humans and made us human today. For humans to have this capacity for transcendence, imagination, creativity, we have to recognize that we are never just biology or just our cultures and histories and philosophies and languages. They're always mutually interfacing and co-shaping one another. Let me give you an example. As you learn a language, as you grow up in a particular society, you not only learn the words and their meanings. But your neurological processes, the ways in which your brain functions, the biochemical and electrical signals are shaped in particular sets of relations such that it's not just the words you recognize: it's also the kinds of concepts and perceptions that that language and those words and the culture you're in manifest themselves as. So your brain is cultured.

Dr. Aasim Padela:

So Professor Fuentes is suggesting something about essential human nature that isn't reducible to the physical body or even the physical brain. He locates an intangible aspect to the human being in the process of how we develop these capacities for transcendence and creativity through shared meaning with other humans. But something is necessary for this social meaning-making to be possible. We need to have an awareness of ourselves and of the world. What would you term that capacity? For the clinicians listening in, any guesses? You got it right! In neuroscience, that something is termed consciousness. [Philip Goff](#), Professor of Philosophy at Durham University in the UK, offers a simple but elegant definition.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Professor Phillip Goff:

I think the standard way in which the term consciousness is used just refers to subjective experience. Your consciousness is just what it's like to be you.

Dr. Aasim Padela:

But Professor Peters thinks there's more to it than that.

Professor Megan Peters:

Scientists assume that the way that we define consciousness is the same way that everybody else is going to define consciousness and that's absolutely not true. So we can try to close that gap a little bit. But the way that I would define consciousness for the purposes of my own work and this conversation would be how the philosopher Tom Nagel defined it a long time ago as, you know, what is it like to be a bat?

That's the famous essay from the 70s. So it's the subjective nature of our experiences that is over and above our capacity to interact with the world in a meaningful and goal-directed way. The fact that there is something that it's like, that we feel like there's someone home, that we aren't just zombies.

Dr. Aasim Padela:

We'll learn about the "Being a Bat" essay in the second half of this episode. Meanwhile, Professor Peters takes the zombie analogy further, inviting us to consider a thought experiment.

Professor Megan Peters:

The idea is that some demon comes to you and says:

I'll make you a deal. I will give you the thing that you want most in the world, unlimited wealth, immortality, happiness for everybody that you know. And the only thing that I will ask in exchange is that I will make you a zombie, which is that you outwardly will appear to everybody around you as exactly the same. You will behave exactly the same, but I will turn off the lights in your head. You will just be like a robot, an automaton. There will be nobody home.

Would you take the deal? And I think most of us are probably going to say no. Like you'll never taste food again because you won't be in there. And so that I think is the core essence of what I mean by consciousness and what scientists mean by consciousness. There is something that it's like to experience the world. And it's not just behaving, interacting with the environment, driving, eating, learning stuff, all of those things. That there's something more.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Dr. Aasim Padela:

Professor Tse builds upon the definitions of consciousness as subjective experiences of ourselves and our world. For him, consciousness includes our ability to make choices that shape our subjective experience.

Professor Peter Tse:

I would define consciousness as the domain of mental representations that we can volitionally pay attention to. So anything that I'm volitionally attending now, I'm conscious of. Consciousness or subjective experience, attention and then volition. Those three things are deeply linked.

Dr. Aasim Padela:

I really like Professor Tse's bit there as he ties multiple sciences together in his definition. He said consciousness is one, subjective experience, which to me is about psychology and anthropology. Two, attention, which for me means neuroscience.

And then three, volition, which is partially neuroscience, but partially metaphysics. You'll hear about the metaphysics part when we get to Episode 5, when we discuss human agency and free will. Yet, just as we're getting our definition fixed, Professor Fuentes extends it, and I mean really extends it. The definition of consciousness doesn't just include us, it includes others. What do I mean? He says that the ability to imagine what happens in other people's minds and to imagine fantastical futures is part of consciousness. Instead of my editorializing, let's just hear from him directly.

Professor Augustin Fuentes:

Human consciousness is not just about this sort of theory of mind, that is, I know I'm me, I know you're you, but I can put myself in your head because I know enough about what my mind is like to think that you think in the same way. It's a sort of simplistic way to talk about it, but that's probably what some other organisms have. What's distinctive about humans is we have this incredibly creative, imaginative, perceptual possibility. That is, the human perception of the world, our *umwelt*, the way in which we are in the world, is always both material and immaterial. There are very few species, maybe none, that can look at the world, see the way it is, and imagine some other possibility, a possibility that is not there, that is not material, that is not right in front of them or not measurable, and try to make that imagination a material object. That is a truly distinctive human pattern.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Dr. Aasim Padela:

These are all interesting ideas for understanding consciousness in general and what makes human consciousness unique. And upon hearing these ideas, some of them may seem intuitive to you. However, trying to define what consciousness is poses a problem when viewed only through a bioscientific lens. As our discussants have noted, in order to study consciousness, you must study subjective experience. But I can't make objective measurements of my experience, or indeed of anyone else's experience. Professor Tse comments on this inherent difficulty.

Professor Peter Tse:

All other forms of science look at things that are objectively measurable and objectively observable. The neurosciences, in addition to having something publicly observable, such as brains and neurons, also has subjective experience. But subjective experience is not publicly observable.

Dr. Aasim Padela:

And the challenge that this poses to capturing consciousness using the methodologies of science is known in consciousness studies as the "Hard Problem". Professor Peters summarizes.

Professor Megan Peters:

The Hard Problem, of course, is as defined by Dave Chalmers, the philosopher, that it appears that there's this massive gap between the kinds of experiments and the kinds of information and understanding that we can gain from doing science, and this qualitative experience, this something that it's like this ineffable nature of the fact that there is something that it's like to be you. But why does it feel like something? So that's the Hard Problem. I think a lot of scientists, including myself, say, I'm just going to continue doing empirical science with the hope that maybe in the future, the mystery may unravel.

Dr. Aasim Padela:

Yet, Professor Goff doesn't think the Hard Problem will go away. He thinks it's baked into consciousness studies, and quite possibly, unresolvable.

Professor Phillip Goff:

I'm actually not convinced it's a coherent project. I'm not even convinced it makes sense. That might sound like a strange claim to make. But I think very carefully about what physical science is all about. And I would say what physical science is all about is explaining behavior, what stuff does. I think when we're trying to explain

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

consciousness, that's not what we're doing. We're not trying to explain why a system behaves in a certain way. We're trying to explain why it feels a certain way. And I think that's just a very different question.

Dr. Aasim Padela:

So if we set aside for a moment the problem of pinning down the elusive *something that it's like to be you* that characterizes consciousness, what can we learn about how our minds work? Let's try to approach it another way: by considering the kinds of activities that brains are actually doing. Professor Peters:

Professor Megan Peters:

Our brains are constantly awash in this deluge of information and having to decide what are the patterns? What does it all mean? What is real? What is noise? What is indicative of what's out there in the world and the actual physical state of the system versus what is something that I just made up in my head? Or a pattern that I think is there, but is not actually there? And this is what we do as scientists. And this is actually what your brain is doing constantly. It's what your brain is doing right now, listening to me is, you know: What is the pattern in the information available to you? And is that information and that pattern actually coming from out there in the world versus something that you just hallucinated or made up?

Dr. Aasim Padela:

So what I take from this is that we interact with an environment full of noisy, conflicting and fragmentary data. To cope with this, our brains seem to both seek out patterns to help us make sense of that data, and also to continually assess how well the patterns generated actually correspond to reality. Within the study of consciousness, several approaches have emerged to explain the processes our brain are engaged in to make meaning of our world.

Professor Megan Peters:

One of the main schools of thought right now is that your brain is building these internal models of the world through a combination of what is happening right now, what is the information available to me right now through my sensory organs, and also what has happened in the past. So I have kind of an expectation about the structure of the universe, the structure of my environment, that I can use to fill in gaps when that information is noisy and incomplete. And so this is a very popular framework. It's the Bayesian brain hypothesis, the thought that we build these prior expectations on the basis of our experiences with the world, and then over time, those prior expectations become more and more precise. We build better and better models of what we think is

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

going to happen in the absence of incoming information. And so when that incoming information is noisy or uncertain—it's dark, it's raining, it's foggy, that kind of thing—you use those prior expectations to fill in the gaps.

So that's a very standard kind of view about how the brain builds these internal models of the world. What we do then is think about what comes next. What's the layer on top of that to say, okay, I built this model. Is it good? Is it stable? Is that actually what's out there in the world? And so we would call this, instead of just cognition, we would call this a metacognitive capacity: the ability to evaluate, to think about, to self-monitor yourself, your own internal models of the world that you've built.

Dr. Aasim Padela:

It thus appears that our brains are doing this sort of thing in every waking moment, making up for uncertainty and noisy data by building models and assessing probabilities. So I guess our brains are just epistemic calculators. All right, that was a corny flashback to Episode 1, but I hope you recall the discussion about presumptive knowledge and probabilities. Some may say we are hardwired for the process of dealing with uncertainty and filling in the gaps. I think some of our experts are saying that is what makes us human. And some others think it's what produces consciousness itself. However, there are possibly as many theories about consciousness as there are neuroscientists, and most neuroscientists view the physical brain as the ultimate source of consciousness. Professor Peters herself supports a theory called Computational Functionalism.

Professor Megan Peters:

I'll give you my personal opinion, but I'll also want to acknowledge that this is a fraught area of research and there are a lot of diverging perspectives. My opinion is that I'm a physicalist, I'm a reductionist, I think that the mind is created by the brain.

Dr. Aasim Padela:

Professor Peters lays out the core principle underpinning her methodological approach in that snippet. A physicalist, reductionist model of consciousness seeks to explain the phenomenon of the mind solely through the physical structures and processes of the brain.

Professor Megan Peters:

I tend to find a framework called Computational Functionalism compelling. The idea here is that a system that instantiates the right kind of computations in order to produce some capacity like, you know, flexible adaptive decision making, agentic

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

behavior, even consciousness, that if you get those computations right, then you will have that capacity.

Dr. Aasim Padela:

So the Computational Functionalism approach, along with other similar theories, use the metaphor of our age—the computer—to explain how the brain might produce consciousness. By the way, the term instantiate that you just heard simply means to be an example of something or to represent something. The idea is that with the correct computations, a human being can have the capacity for making decisions in response to changing stimuli, for acting autonomously to achieve outcomes, and even to have consciousness. And in the same way, so might another entity such as a sufficiently complex computer. And there are numerous other theories. Professor Peters gives us another approach to consciousness prominent in scientific and philosophical debates.

Professor Megan Peters:

Then there's also another physicalist view, which would be the Biological Chauvinism route. Which is that biology is special, not again because it's magical, but because there's something special about biology that no other substrate would be able to actually instantiate the types of processes that are necessary.

Dr. Aasim Padela:

So this view says that in order to have consciousness, you need to have the biology of a human being, or at least something very much like it.

Professor Megan Peters:

And then you also could have Dualism theories where, especially for consciousness, there is something completely outside the physical substrate that is something special and unique and not even like informational in its nature, but something that is completely separable from the physical instantiation. I don't tend to subscribe to those views, but there are some people who do.

Dr. Aasim Padela:

So Dualism rejects physical reductionism. It sees the mind as existing in its own right, not as being a product of the brain. The 17th-century philosopher René Descartes, who you may have heard of, had a radical and completely dualistic view. And he saw the body and mind as being separate, but interacting with each other. The body is physical, it is matter, while the mind, on this view, has an immaterial or spiritual substance. There are many different types of Dualism. The type he subscribed to is called Substance dualism, and later on we'll hear about Property Dualism. But before we

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

get on the bandwagon, Descartes has been heavily critiqued from many quarters, both scientific and religious. Professor Peters continues to give us a third approach on consciousness.

Professor Megan Peters:

Then we also have the Integrated Information Theory, which is not Computational Functionalist in nature. Its introspectively derived axioms come from only internal introspection, that you just think about it and you come up with these axioms, and then they tell you that the right kind of causal structure in a system is going to be necessary and sufficient for explaining the presence and nature of phenomenal experience. I don't find that compelling, but some people do.

Dr. Aasim Padela:

So an important way in which the Integrated Information Theory differs from other models of consciousness is in its premise that consciousness exists intrinsically. It is not a product of the brain, nor does it emerge from computational or neural activity. This theory defines consciousness as something that emerges from the processes of information being integrated in a system, and considers a system as conscious if it is characterized by a high level of differentiation and integration. Professor Peters now describes the fourth and final category.

Professor Megan Peters:

And then there's also the components that say: No, all of this is too brain-centric. You need to have a body, you need to be a system that is separate from your environment, but the capacity to move around in and interact with and cause changes in your environment is a critical component of not just the development of consciousness, for example evolutionarily, but also its presence now.

Dr. Aasim Padela:

A good example of an approach focused on the importance of the body to understanding cognition is called the 4E Theory. The 4Es are: embodied, embedded, enacted or extended cognition. Like the dualist theories, it places some of the activities of the mind outside of the organ of the brain, but the resemblance ends there. Unlike Substance Dualism, it does not rely on seeing the mind as being made of a different substance to the brain. Rather, it focuses on the ways in which the brain interacts with the body as a whole and with its environment: both shaping the body and the world by enacting changes and receiving input from both body and world, thus creating a kind of perpetual spiral of feedback. And there is yet another "E" of consciousness that we can

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

add to the models we've heard so far: emergence. Professor Fuentes sets out his own view.

Professor Augustin Fuentes:

Consciousness has to be considered an emergent property, so you can sort of dull it by damaging parts of the brain or parts of the body, but with a fully sort of functioning consciousness, you can't pin it down to one place or one process. And I think that's part of the magic and science of it, right? Both simultaneously, that we know there are all these components to it, but it doesn't reside in one specific material location. And I think that's very important, particularly when it comes to thinking about engaging with mental health, engaging with physical trauma, mental trauma, things like that, to always recognize that it's not just about a "broken car" model of fixing things. You can't just fix one part of our biology and fix the entire thing. There's a lot more going on.

Dr. Aasim Padela:

An idea that is rapidly gaining ground among many theorists of consciousness across many different methodological models is welcomed by some as a possible way to resolve the Hard Problem of consciousness. This idea seems to offer a compromise between physical reductionism, on one hand, and dualism on the other. Neuroscientists can look at parts of the brain that are active when we're conscious. These are the so-called neural correlates of consciousness. But they still cannot actually pinpoint subjective experience. This gap leads some to support the theory of Panpsychism. This idea is that consciousness is a fundamental property of matter. Professor Goff explains.

Professor Philip Goff:

I adopt a view that consciousness goes all the way down to the fundamental building blocks of physical reality. Fundamental particles like electrons and quarks. Well, according to panpsychism then, electrons and quarks have very, very simple forms of conscious experience. And the very complex experience of the human or animal brain is somehow built up from these more rudimentary forms of consciousness at the level of fundamental physics. So consciousness has been there all along. It was there in the beginning. But in the beginning, consciousness existed in very simple forms. And millions of years of evolution have molded it into the wonderful kind of experiences we human beings enjoy today.

Dr. Aasim Padela:

On that view, consciousness is both a fundamental property of the universe and something that arises within the brain. It's important to point out that none of these theories can be wholly proven. There remain significant gaps in both measuring and

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

explaining consciousness within every theoretical approach. Professor Peters argues that the approaches she favors are useful methodologically. And she critiques theories that are not testable using the empirical methods of bioscience, even if they may ultimately turn out to be true.

Professor Megan Peters:

I think that the physicalist reductionist approach, the Computational Functionalist approach even, is a narrower version of that. It gives us something to hang on to. Extraordinary claims require extraordinary evidence. And to say that the universe is infused with consciousness, or that consciousness is this particular causal structure of interacting elements, or that dualism is a thing—all of those are extraordinary claims. And they very well might be true. But I don't know how to even go about finding evidence of those. We have consciousness, we know that. Why do we have it? And why do we think that we have it? Well, we have brains, and those seem to be important for our survival. And the things that seem to behave very differently from us, like plants, don't have brains. Okay, so maybe brains are a reasonable explanation for this.

Dr. Aasim Padela:

We have heard quite a few theories about consciousness, and gotten some sense of how contested this terrain is. Now let's turn to a question that must be on your minds, and eventually might even replace them, at least in some dystopian predictions. Can AI tools and technologies replicate or produce consciousness?

Professor Augustin Fuentes:

One of the areas that I'm fielding most questions in is AI, artificial intelligence. Can AI become the human mind? And my response pretty much uniformly is no, for a couple reasons. One, AI is programmed machines, and human minds are not machines. So I think at one level, we're ahead of ourselves if we think that algorithmic processes, even incredibly adaptive learning algorithmic processes like we see in contemporary AI, will get to sort of do things the way humans do. However, what is amazing is that we're putting more and more information into these AIs, and what we're able to do then, I think, is create these massive information machines, but they don't think. They process, they compare, they engage. They don't imagine the way humans do. And so I don't think we're going to create a machine that thinks like a human.

Dr. Aasim Padela:

Professor Peters disagrees. If we can produce self-reflection, or metacognition, as she calls it, using computational processes, why can't AI?

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Professor Megan Peters:

Metacognition I don't see as beyond AI capacities even right now. It's just people aren't doing it right. I think part of the reason that we haven't built it into artificial intelligence systems yet is that we don't really know how it works in us. But we do know that to the extent that there is something like metacognition being built into AI systems, that it doesn't work at all like ours does. And part of that is that we don't know exactly how ours works. That's what our group is trying to do is reverse engineer how that's working.

Dr. Aasim Padela:

Some of the things we do can be done, perhaps even better, by artificial intelligence; but not all of them. Science fiction films such as Star Wars sometimes portray the droids as more human than the humans themselves.

Clip (Star Wars)

We seem to be made to suffer. It's our lot in life. Where do you think you're going?

Well, I'm not going that way. Don't get technical with me. I've just about had enough of you.

Go that way. You'll be malfunctioning within a day, you near-sighted scrap pile.

Dr. Aasim Padela:

Professor Fuentes says that there are still capacities that are uniquely human. Capacities that set humans apart from other intelligent life forms—or even droids.

Professor Augustin Fuentes:

I think most important capacity is the human capacity for belief. That is, humans are able to take all of their lived experience, their input, their visual input, their social input, what they know, what they feel, and they're able to derive or to build ideas, concepts, and they're able to insert themselves wholly and fully, to fall in love with an idea or a perception and commit to it so that it becomes their reality. That capacity is very, very powerful for our bodies, for our minds and for our societies. So belief, which is tied into imagination, creativity, but also to the sort of sense of transcendence or the knowing that there's more than just the material in human lives. All of those things come together, and I think have to be considered when we talk about what does it mean to be human.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Dr. Aasim Padela:

So Professor Fuentes both acknowledges the importance of physical processes in our bodies and brains and rejects the purely reductionist materialistic accounts. However, he argues that framing debates on consciousness as a polarity of reductionism and dualism can be limiting. Instead, he argues for the importance of incorporating perspectives from different disciplines and bringing these into conversation around what it means to be human.

Professor Augustin Fuentes:

I would not walk a middle ground. I would walk a different ground. As an evolutionary scientist, I ask about what it means to be human, where we come from. I work with theologians who ask the exact same question. What does it mean to be human? Where do we come from? And it turns out we have different ways of explaining, but those ways sometimes overlap. The ideas and thoughts and perceptions can actually sometimes mutually inform one another. And so I think we have to remember that the world is not divided into university departments. The world is there and we experience it. And so bringing the most diverse set of scholars together to ask questions about the human is beneficial. And as every human knows, our bodies matter, but so do what we want to call minds or souls or beliefs. And so to not be in conversation with all the different people who study those things is a mistake.

Dr. Aasim Padela:

And the integration of multiple perspectives on these deep questions about the nature of the human being that we've just heard so eloquently described is a core purpose of this podcast series. So now we'll turn to our Muslim thinkers for their reflections on essential human nature.

(Music)

Dr. Aasim Padela:

We've just heard a naturalistic account of the human being from a bioscientific perspective. Now to introduce us to an Islamic perspective on the human being, we're joined by one of our project members, [Shaykh Hamza Karamali](#). He is founder of Basira Education, which produces educational material focused on the application of Islamic theology to addressing contemporary challenges in modern science and philosophy.

Shaykh Hamza Karamali:

I think that if we look first at how the human being was traditionally understood from within Islamic framework, which is very similar to the Jewish and Christian

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

frameworks, so in the Qur'an, the human being is *Banī Adam*, which is Arabic. So in Hebrew, *Ben Adam*, it means the son of Adam. And *Banī Adam* means the children of Adam. So what it means to be a human being is to be a descendant of Adam, who is the first human being. According to the Islamic scholarship, Adam was created directly by God. He was created within the physical universe. He resembles the other animals in this physical universe, but he has an aspect about him that enables him to know and worship God. He was created in paradise, and he was told not to eat from a particular tree. And he was tempted, and he was misled by Satan. And he ate from that tree. And as a result of that, he came down to earth. And when he came down to earth in the Qur'anic narrative, he came down in a state of repentance. And God said to him, you and your descendants will live your lives out on earth, and there will come to you messengers from me, reminding you about me, calling you back to me. And whoever follows those messengers shall have no fear, nor shall they grieve. They'll be happy and prosperous in this life, and they'll return to paradise, which is where they were initially created.

Qur'anic recitation

قُلْنَا اهْبِطُوا مِنْهَا جَمِيعًا ۚ فَإِمَّا يَأْتِيَنَّكُمْ مِنِّي هُدًى فَمَنْ تَبِعَ هُدَايَ فَلَا خَوْفٌ عَلَيْهِمْ وَلَا هُمْ يَحْزَنُونَ

We said, “Descend all of you! Then when guidance comes to you from Me, whoever follows it, there will be no fear for them, nor will they grieve (Q 2:38).

Shaykh Hamza Karamali:

So in our souls we have a longing and attachment to Paradise, where we long to return.

Dr. Aasim Padela:

We'll explore the soul further, but first, let's pause for a moment and consider the yearning of the soul to seek out God and for paradise that Shaykh Hamza just mentioned. Some would say that this inclination and longing is innate. And it's natural because of the type of thing the soul is and its origin. While the human body was created from matter in the Qur'anic account, the human soul is a mysterious substance with an origin from beyond. And in the Qur'anic account, it's linked to God, as their verse relates that God breathed into Adam the soul. So the soul, then, is nourished by things from that otherworldly realm, for example, the remembrance of God, worship, and things like that. And it ultimately longs to return to divine presence in paradise. But enough on human origin, which was the focus of our previous episode. Let's get back to the focus of this one, human nature. There is a rich tradition of Islamic philosophical thought on what constitutes the human being. [Dr. Macksood Aftab](#), also one of our core project members, is chairman of radiology at Ascension Genesis Hospital, with a specialization

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

in neuroradiology. He provides some more description of the human being through an Islamic framework and how this corresponds to the bioscientific view.

Dr. Macksood Aftab:

So in Islam, the human being is considered to be a composite being. It's a complex being that is composed of both a body and a soul that has material and spiritual aspects to what it is to be human. If we correlate that with what we know about biology, we would be considered not just *Homo sapiens*, but behaviorally modern *Homo sapiens* who are capable of advanced and abstract thought. And that corresponds to the Islamic view that the human being is basically a moral agent. So human beings have certain capabilities of self-awareness and self-reflection that characterizes what it means to be human.

Dr. Aasim Padela:

So these attributes may sound familiar to you from what we've heard in the first part of this episode. Dr. Aftab puts forward a Dualistic model, in which we as human beings have both material and spiritual aspects. He echoes the capacity for advanced thought and what we've heard previously described as the ability to make mental models. And he points out that these capacities enable us to have moral agency. Not only can we act volitionally, but we can reflect on our actions thanks to the capacity for self-awareness. This resonates with the view of agency we heard from Professor Tse. So how unique do these capacities make us, and how do we compare to other intelligent species?

Dr. Macksood Aftab:

There's this idea of sentience, which is the ability to feel pain, to be able to have visual experiences, smell, taste, and so forth. These types are sort of the lower levels of conscious experience we would share with animals. But the ability to do sort of abstract thought, advanced level thinking, things we would call intentionality, to think about something, something that's not currently present in front of us. And especially when we get into the second order phenomenal consciousness where we're thinking about our thoughts, this is something that's uniquely human.

Dr. Aasim Padela:

Shaykh Hamza concurs that humans have something that is unique, and that unique thing sets us apart from other living creatures. And this question of human uniqueness provides us an opportunity to do a deep dive into how Islamic thought brings the frameworks of both science and theology to bear on the question of human uniqueness.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Shaykh Hamza Karamali:

The view that Muslim scholars subscribe to is that the evolutionary process is something that we have scientific evidence for, and living things did evolve to reach their present forms. However, we believe in the possibility of miracles. So it's not actually a question of science, but it's a question of whether or not miracles are possible. So we believe that there is a causal relationship between fire and burning. But when Abraham in the Qur'an was thrown into the fire by his people, when he told them not to worship idols, God willed that the fire should become cool and it shouldn't harm him. So as a scientist, I'll talk about combustion and oxygen and chemical reactions, and I'll explain that with fire and that's how everyday life proceeds. But when I come to a miraculous incident, which is described as miraculous in Revelation, it's not claiming that it's anti-scientific, but it's claiming that it's an exception to the general rule, I'll make that exception from this general idea.

And so human beings in the Qur'an are described as a miraculous creation of God. There's a famous verse in the Qur'an where there was a conversation that the prophet had with the Christians of his time. And so the verse says that Jesus is like Adam. Jesus was created without father, but Adam was created without father and mother. But the thing to take away from this verse is that Jesus is a miraculous creation. He was the result of a virgin birth, and Adam was also a miraculous creation. So if he's a miraculous creation, then we can affirm the evolutionary account of human beings, but at the same time, affirm that human beings were created miraculously by God with their physical form fitting into the natural world. But there's something else about them that doesn't fit into the natural world. And we experience that. We're not like other creatures. We have a mind. We have a soul. So on an anatomic, on a genetic level, you can maybe make a tree of gradual progression. But if you bring the mind and the soul into the picture, it's not a gradual progression. It's an exponential jump.

Dr. Aasim Padela:

Sheikh Hamza describes our seemingly inherent ability to know that we have a soul.

Shaykh Hamza Karamali:

So Muslim theologians, they would say that the fact that I have a soul is something that I know through introspection. It's not an inference that I need to make. I know I have a soul. I have a soul. It's like my pain, my happiness, my pleasure, and my worship and my love of God. It's something that it's not in mass, energy and space-time. It's in this thing that is the soul that I feel and I experience. I know it's there, but I can't tell you what it is. But I know it and you know it. It pre-existed our existence in this world. And when

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

we die, it continues to exist. So death is a separation of the body and the soul. The body decays, but the soul remains.

Dr. Aasim Padela:

So this exponential jump that we heard Shaykh Hamza just describe from simply higher forms of cognition to the existence of an immortal soul points us to a difference not just in degree, but in kind. Hence, the unique miraculous creation of human beings. Dr. Aftab explains that the difference in the way the soul originates in contrast to the material aspects of the human being.

Dr. Macksood Aftab:

It's interesting that the way the Qur'an describes the soul and the body are a little bit different. So it describes the soul as proceeding from divine command or divine direction, whereas it describes the creation of the rest of the material world as just material creation. So there is this distinction there that's drawn, just like some of these terminologies from the Qur'an: *nafs*, *qalb*, and *rūh*, which describe sort of aspects of the human being that are not physical, that are metaphysical.

In the Islamic context, there is no definitive agreement on what the characteristics of the soul are. But the soul is definitively a part of what it means to be human, and whether it's ontologically a physical substance or a metaphysical or immaterial substance is open for debate and disagreement within the Islamic theological tradition. So there's various words that the Qur'an will use to talk about the nature of the self, and among these words are *qalb*, like the heart, *'aql*, intellect, *nafs*, the self, and *rūh*, which is the soul. And all of these words are describing different aspects of what it means to be human, this inner life of the human being.

But we also have the ability to self-correct ourselves and to be able to self-discipline and say, you know, I'm not going to do that. That is what's uniquely human, and in the philosophy you would call that sort of second-order phenomenal consciousness. So not only do we have the ability to think and to feel, but we also have the ability to think about our thoughts and to change our thoughts. And it is that sort of self-discipline and building of character that forms the basis for the Islamic moral agent, that forms the basis for human judgment in the next life. So it's very essential in Islam for that inner life to be present within the human being.

Dr. Aasim Padela:

And we will investigate this idea of our ability to not only reflect on our thoughts, but to change our thoughts and to cultivate self-restraint in Episode 5, when we talk about Free Will and Determinism. Returning to the nature of the soul, Shaykh Hamza expands

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

on the religious importance of the soul as a quality of our inner life, and on the Qur'anic account of how the soul is acquired by an individual living form. And indeed, the soul is the quality that conveys human being-ness to that living form.

Shaykh Hamza Karamali:

The soul is not just about experience, it's about loving God, it's about being a generous person, it's about having mercy, and developing yourself as a human being, developing the soul. And that is what was given to Adam, and the soul is something that is breathed in. So there's a verse of the Qur'an where God says, وَيَسْأَلُونَكَ عَنِ الرُّوحِ He tells the Prophet that they ask you about the soul, قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي say, the soul is from the *amr* of my Lord, meaning that the soul is something that is directly created by God.

Qur'anic recitation

فَإِذَا سَوَّيْتُهُ وَنَفَخْتُ فِيهِ مِنْ رُوحِي فَقَعُوا لَهُ سَاجِدِينَ

When I have fashioned him, and breathed My spirit into him, bow down before him (Q 15:29).

Shaykh Hamza Karamali:

And so the soul didn't come about as a result of the parents. Our physical body came about as a result of our parents, but then at a particular stage in our human development, in the womb of the mother, an angel is sent. And at that stage, the soul, which pre-existed the human body, which was created directly by God, is breathed into the human being. That's when you become a human being. Another meaning of this verse is that it's from the affair of my Lord. It means that we cannot understand, we cannot grasp completely what it is, we can't describe it in words, even though we know it intimately, because it's who we are. It's our identity.

Qur'anic recitation

وَيَسْأَلُونَكَ عَنِ الرُّوحِ قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي وَمَا أُوتِيتُمْ مِنَ الْعِلْمِ إِلَّا قَلِيلًا

And they ask you, O Prophet, about the spirit. Say, the spirit is part of my Lord's domain. You have only been given a little knowledge (Q 17:85).

Dr. Aasim Padela:

So we have heard about the soul being composed of different stuff. And its uniqueness, giving human beings their own uniqueness. By the way, we'll talk about human uniqueness more clearly in Episode 6 when we discuss Extraterrestrial Intelligent Life. However, in this episode, I want to underscore that the revelatory account asks us to be epistemically humble. That we know little about the nature of the soul, and so

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

while we can investigate what it might be, we should recognize that its reality is not fully within our grasp. We are limited human beings. Importantly, Dr. Aftab is careful to point out that the divine command or direction *doesn't* negate the workings of, or the understandings provided by, scientific modes of inquiry.

Dr. Macksood Aftab:

They would say that the Islamic framework would allow for the working of science as guaranteed by God. So in other words, all naturally existing phenomenon should be explainable by human rationality and empirical research. So in terms of transcendence and consciousness, the fact that consciousness is a very real experience in the world, it has to be placed within the natural workings of the universe that is ensured by God.

Dr. Aasim Padela:

In Dr. Aftab's view, we should be able to explain things like consciousness from a naturalistic account, which is what we heard from our philosophers and scientists in the earlier part of this episode. However, Islamic theologians may prefer to keep consciousness, which is the faculty of the soul, a mystery. So now we've heard something about the nature of the soul and an account of its special form of creation through the lens of the Islamic theological framework. And as Dr. Aftab has established, this theological framework doesn't conflict with the scientific methods of explanation. Instead, it explains the underpinnings of how the natural and material universe has been created and continues to be sustained. With this in mind, it's unsurprising that it's not only religious adherents who identify the mystery of the soul—or in other words, we might say a particular quality of being human that seems to be elusive, that cannot be explained purely by quantitative means, or what is often termed as immeasurables. Dr. Macksood shares his insights as a clinician on the qualitative understandings that seem to be necessary in order to more fully understand and describe consciousness. He starts us off with a glimpse of what can be measured.

Dr. Aftab Macksood:

I'm a neuroradiologist, so there's a lot that we know about consciousness, and a lot of it localizes to the brain pretty impressively. So we know, for example, what sensory inputs result in activation in what parts of the brain, and we know that for that activation to become conscious, what specific networks in the brain need to be activated. We know what parts of the brain are involved in what motor activities, what sensory activities, and this is very useful to us in the clinical setting in medicine. So we can give prognostic information for patients if they have a stroke or a brain tumor, and also in the sense of patients who are in coma.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

So we know now that it's really certain parts of the brain that are involved in consciousness, primarily the cortex of the brain and the networks that support that. And I talked about coma, so there's ways in which we can communicate with patients without them having motor skills. So we know what parts of the brain are activated, for example, if you imagine yourself walking through a room, or if you imagine yourself playing tennis. So on the basis of that, we can place the patient in a functional MRI machine, and we can ask them, if you have a sibling, imagine yourself walking through a room. If you don't have a sibling, imagine yourself playing tennis. We can establish communication with these patients. Which really localizes conscious experience, phenomenal consciousness to the brain in a way that we didn't previously know.

And just like in any other endeavor in science, the goal of science is to provide a complete comprehensive explanation for the phenomenon, so we don't need to appeal to anything outside of the natural laws. So in the same way that in the human body, pretty much every other organ has a function that's completely explainable. So the whole goal of neuroscience is to sort of work on reducing the brain function, which is considered to be consciousness, to a physical substrate. This is where it's headed, but it runs into serious problems when it comes to consciousness.

Dr. Aasim Padela:

So while bioscience and medicine increasingly expand the boundaries of what we can measure and what we can explain, these frameworks bump up against limitations when it comes to consciousness. In the first part of this episode, you may remember that Professor Peters mentioned a famous thought experiment concocted by the philosopher Thomas Nagel to help us think about consciousness. Dr. Aftab now explains that experiment.

Dr. Macksood Aftab:

He provided this definition that's really become sort of the standard definition of what consciousness is. And he has this famous article, "What is Like to be a Bat?" And basically he says, well, consciousness is something that it feels like to be something. So that sort of subjective personal experience is what consciousness is.

Dr. Aasim Padela:

So while science can tell us a lot about consciousness, this thought experiment effectively highlights the difficulty in pinning down what consciousness ultimately is. Dr. Aftab continues with an older thought experiment conducted by the 17th century philosopher, René Descartes.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Dr. Macksood Aftab:

He says, what is it that I can't doubt? And he comes to the conclusion that the famous line that "I think therefore I am". So what he's saying is that there is my own subjective experience and my own existence is something that I know for sure. It's something that is very real and exists and something that I cannot doubt. So we learned from these experiments that, one, consciousness is real. It's a real ontologic entity that exists. And secondly, that it's not explainable by physical processes.

Dr. Aasim Padela:

So all of you out there may remember hearing that famous saying, "Cogito ergo sum", that has its roots in this thought experiment by Descartes. "I think therefore I am". With this thought experiment, he establishes that we have privileged access to our own mental states and hence to the knowledge that we think. If we think, then there must therefore be a thinker. And on this basis, we can infer that we exist. But where do we locate our thoughts and inferences? And back to what Thomas Nagel was getting at with his invitation to us to consider being a bat. While we can locate our physical existence and even measure many of the processes that happen in our brains, capturing the subjective quality of how we *feel* ourselves to exist seems to elude us. Shaykh Hamza acknowledges the importance of what we can measure scientifically in terms of consciousness. But he also points us towards the ultimate un-measurability of what we call the soul.

Shaykh Hamza Karamali:

Neuroscience acknowledges the existence of subjective human experiences that are qualitative and unquantifiable: qualia. And it seeks to ground those experiences in natural scientific explanations and in the brain. And there is a correlation between our brain activity and our consciousness and our awareness. And it's very important for us to understand this because doctors use this to evaluate the life of a patient and whether their health is improving or whether they're still alive. And there's many important decisions that are made on the basis of this. But is this a description of what consciousness is? Or is it a description of physical phenomena that coincide with the experience of consciousness? That's a deeper metaphysical question. So from an Islamic perspective, consciousness, it's an experience, it's an attribute, it's a phenomenon that's located in the soul.

Dr. Aasim Padela:

And moreover, he tells us the soul has an ultimate purpose far beyond the level of mere physical survival.

PODCAST SERIES

"Big Questions About the Human Being: Bioscience and Islam in Dialogue"

Shaykh Hamza Karamali:

There's another aspect of the human soul that I think that neuroscience doesn't even come close to. Because if the purpose of the human soul is to be a human being, so there's there's a line of poetry that's famously cited by Muslims, they say that, "Oh, servant of your physical body." So somebody who eats organic food, they work out, they adorn themselves with beautiful clothes, they say: Oh, servant of the physical body, how long will you be miserable in serving your physical body? Do you seek to gain in that which there's loss because your physical body is in a process of decline. Pay attention to your soul and complete its virtues, because you are a human being by virtue of your soul, not by virtue of your body.

And in Islamic perspective, we find that complete level of consciousness in the Prophet Muhammad, he was somebody who responded to other people's harm with kindness. And so there's a famous story of where he went to call the people of a town called Ta'if to God. And they rejected him in a humiliating way. They stoned him, they cursed him, he was running out of the city, his feet were bleeding. They were making fun of him, they were jeering at him. And then God sent him an angel to say that if you wish, I'll destroy these people. And he said, no, because I wish that from their loins will come a people who will love and worship God. His greatest victory was his forgiveness. So this is a model of a complete human soul. And this aspect of the development of the soul is not something that neuroscience can even come close to. It has to do with a process of spiritual development, and self improvement that enables you to go above your body and your emotions. And so the capacity of the human soul is far greater than mere self-awareness.

Dr. Aasim Padela:

And with this concept of a soul, which is metaphysical in nature, and which certainly in religious thought has an ultimate purpose, let's spiral back to the concept we explored earlier: divine will. First, let me recap. The philosophers of mind have attempted to reconcile the paradox at the heart of the disconnect between what can be measured and quantified on one hand, and the qualitative subjective experience, which eludes scientific measurement on the other. We heard this aptly illustrated in the thought experiments on being a bat, and what can't be doubted, leading to the formulation, "I think, therefore I am." These thought experiments challenge materialistic models of consciousness. Dr. Aftab explains how philosophers have developed different types of dualistic models in an attempt to overcome the limitations of materialistic frameworks.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Dr. Macksood Aftab:

There are two primary types of dualism. So there's what's called substance dualism, which primarily comes to us from Descartes. So Descartes' view was that the mental substance is completely separate from the physical substance, and that somehow they interact, he thought, through the pineal gland in the brain. So now we know that pineal gland has nothing to do with that. The other model is property dualism. Property dualism basically says there are not two different types of substances. There's only one type of substance, but that substance has both physical properties and metaphysical properties. So consciousness would then be a property of that physical substance. Islam is not committed to a non-physical soul, so it's open to both types of dualism.

And our view is that because of what we know about science, substance dualism seems a little bit tenuous and unlikely to be true, given the very close link we now know between the brain and all sort of states of consciousness. So the link is way more intimate than if consciousness was a completely separate substance from the brain. The way that scientists would explain consciousness is by using frameworks, we can call them, to say how consciousness exists and comes about. So you'll hear words like computation, information processing, modeling, and so forth. But in none of those types of models is the existence of consciousness as an independent reality affirmed. In other words, our self-awareness and self-reflection ends up being an artifact or an epiphenomenon of the physical processes of the brain.

What we're saying is that, just like Descartes' thought experiment and Nagel's thought experiment, that personal experience is very real and exists. And that personal experience, science has to make space for it. In other words, that personal experience is a natural phenomenon. It's not something that requires faith or a leap of faith to believe in. It's something that we all observe. It's something that we can't deny, like Descartes pointed out. So the model of the universe that would account for that is one in which conscious experience is real. Now the problem becomes, how is this conscious experience interacting with the physical processes of the brain? Those two things can be linked together by divine assurance.

Dr. Aasim Padela:

And Dr. Aftab continues, showing how some specific limitations philosophers have identified with the substance dualism of Descartes can be resolved by an occasionalistic framework on the basis of divine assurance.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Dr. Macksood Aftab:

One of the main schools of Islamic theology, which is *Ash'ari* theology or *Maturidi* theology, is based on this idea of occasionalism, which is the idea that all laws of nature are secured by divine command and divine will at every single moment. It is, in fact, God that ensures the laws of nature so that they work in every single moment. So this allows then for the working of science without any feeling of divine disruption of the course of nature. So the physical and mental properties are held together by divine command.

Dr. Aasim Padela:

So now our Islamic thinkers have given us a clear view on how we can harmoniously apply both scientific and religious frameworks for understanding the essential nature and ultimate purpose of the human being. They've shown how human consciousness and the human soul are unique. Our case study, which you heard at the very beginning of this episode, concerns human uniqueness and whether human care could ever be replicated by artificial intelligence tools and technologies. Before turning to my reflections on the case study, we asked our interviewees for their views on whether we can experience or interact with artificial intelligence-based tools and technologies in the same way we do with other human beings. Let's start with Shaykh Hamza.

Shaykh Hamza Karamali:

There's the Turing test, which is that if you can communicate with a computer and not tell the difference between whether it's a computer that's speaking to you or a real human being that's speaking to you, then according to the Turing test, the machine is effectively alive. So that's a functional explanation. If somebody can program a computer to deceive me into thinking that he is a human being, it just means I've been deceived. So the AI, it doesn't have a subjective experience. But then if you go a little bit deeper into what it means to be a human being, to love, to be grateful, to be generous, to do all of these things. And actually, if we experience this within ourselves, then it's nowhere to be found within a machine. There's a verse in the Qur'an that says that

لَنْ يَخْلُقُوا ذُبَابًا وَلَوْ
إِنَّ الَّذِينَ تَدْعُونَ مِنْ دُونِ اللَّهِ
أَجْتَمَعُوا لَهُ، they won't even be able to create a fly if they were all together to do it. We'll be able to create things that behave like a fly, but it will never have that conscious experience because it doesn't have a soul. And you can't put an immaterial soul into machinery.

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Dr. Aasim Padela:

Shaykh Hamza concedes, however, that he wouldn't rule out the possibility of AI being endowed with consciousness. When we asked him whether God would put a soul into that machine, he said:

Shaykh Hamza Karamali:

Yes, He could. Yeah, through His omnipotence, He could. So it is possible. And in that sense, His ensouling us is like that. Because if you say that our physical bodies can be explained by science, then in effect, from that perspective, we are like machines. But there's an ensoulment that happens with each and every one of us. And that ensoulment is what makes us human. And that ensoulment hasn't yet happened with AI. But if it does, it won't have happened because of the computer programmer, or because of the one who made the microchip. It would have happened by someone else who's done something that's beyond what they have done.

Dr. Aasim Padela:

Dr. Aftab offers similar thoughts.

Dr. Macksood Aftab:

In terms of AI, we have to distinguish between consciousness and intelligence. Intelligence is the ability to perform a process or an action. In many ways, we see that AI is able to supersede what humans can do in terms of intelligence. In terms of consciousness, whether an AI can have a subjective personal experience? This is open for debate within the scientific world as well as within the Islamic theological world. Because in the Islamic theological world, consciousness is sort of a gift from God. And because AI is a new technology, we don't know what the divine, in Arabic, they use the word *ʿAda*, what divine custom will be with regards to these advanced artificial intelligence agents. So in this regard, I have to give credit to my co-author on the chapter, Dr. Nazif, who is an expert on Islamic theology, and has done a lot of work in this field. But from a scientific point of view, the current level of AI is almost entirely computational. It is based on computer algorithms of zeros and ones. And that's all that it is. It's basically a software that's running on a machine.

Dr. Aasim Padela:

With these thoughts on the limitations and possibilities of AI in mind, here's what our Muslim thinkers had to say on the case study. Let me remind you what the case was about. You're a medical expert testifying before state officials who are deciding whether insurance companies should be required to reimburse robotic care assistants for

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

patients with dementia. Nursing associations are pushing back. They want reimbursement directed towards human caregivers instead. So first up, Dr. Aftab.

Dr. Macksood Aftab:

I think there's a role for AI in terms of providing care for these types of patients in terms of providing companionship and providing certain types of services and conversation even. And helping them, you know, get through various medical conditions, sort of rehab for stroke and so on. But there's also a fear and a problem with AI that we see, like even in my practice as a neuroradiologist, we see an increasingly heavier reliance on algorithms, artificial intelligence, metrics in patient care at the expense of clinical skills of physicians. And in medical school, there's a lot of emphasis on not only the empirical aspect of medicine, but also the socioeconomic aspects, the psychological and the psychiatric aspects of medicine. And at the end of that, you know, you have a well-rounded physician. And when they see a patient, they can assess a lot of things that an algorithm might not be able to assess.

And because we have this shift in medicine towards quantifiable and reproducible medicine, in my field in radiology, we see a massive increase in testing. There's this idea that if we just scan everybody, we'll have a lot of answers. But really, that's not how medicine works. Medicine is primarily a clinical science that works well when we use all of our clinical skills. There's a role for AI, and I think the American Medical Association, they use this term augmented intelligence. So there's a role for AI to augment the physician's role, but certainly not to replace it.

Dr. Aasim Padela:

Let's now hear from Shaykh Hamza.

Shaykh Hamza Karamali:

I have a friend, and he had this business idea, and he told one of my teachers, there are these old people, nobody's taking care of them. And so I'll just make robots that will serve them and take care of everything. And my teacher, he's a very hospitable person. And you can knock on his door at any time, he'll always say welcome, you have a meal, you have a place to stay. And he was horrified. I think that that shows how far removed we've become from our own humanity. I mean, we need to take care of the elderly. We need to talk to them, we need to give them company, we need to ask them how they're doing. We need to give them human care, which is beyond the touch. We have to have mercy. And mercy is when you see somebody who is in need, and your heart softens, and the softening of your heart drives you to do something that's for them. And we feel it. And so when somebody is merciful to me, I appreciate it, and I feel it. And that thing

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

that I feel is not the function that it's performed, but it's the knowledge that somebody else cares for me. One of the problems with technology is that we can delude ourselves into saying that, you know, I don't need to care about somebody else, because I'll just make a machine that does what's needed. But no, like, that's like, it's irreplaceable.

Dr. Aasim Padela:

And Shaykh Hamza adds the point that by focusing on using AI to care for our elders, we ourselves might miss out on the opportunity for our own spiritual development.

Shaykh Hamza Karamali:

This is children taking care of their parents and honoring them when they grow old, and being patient with their irritability and their difficulties. It's mentioned in the Qur'an as the second most important duty up after worshiping God. We need to see this not that it's a duty or a chore, but it's an honor, and it helps us grow. And so when we do this, we think that we're caring about somebody else. But the act of showing mercy to somebody else, it helps us grow and become better people. And I don't think that you can ever train artificial intelligence to do that.

Dr. Aasim Padela:

Well, we're now near the final moments of the episode. What a fascinating conversation we've had, touching on consciousness, sentience, artificial intelligence and the soul. The interplay between these concepts is nothing short of captivating. I certainly learned a lot, and if I'm being honest, I now have even more questions than I began with. But alas, we're nearly out of time. So let's return to the case and my reflections upon it. The case is in effect a policy question, and our discussants still tackle this specific scenario in that way. Still, I wonder what you thought.

I would argue that robotic care assistants are not the same as human caregivers. Even when programmed to mimic compassion, robots cannot truly be empathetic. They lack the capacity to sense what it's like to be in another's shoes, to feel with someone in their vulnerability. Yes, we're expanding the boundaries of artificial intelligence, talking about machine learning, mimic sentience, and even artificial emotion. But we run the risk of reducing the human being to input-output patterns. We're not quite creating new life in metal and wires. We're scripting human-like responses into machines. There's certainly a large difference between acting as if one cares and actually caring. If human beings were just biological machines reacting to stimuli, perhaps code and circuits could count as kin. But I, for one, believe we are more than that. And I suspect many of you and many of our guests would agree. So where does that leave us in terms of policy?

PODCAST SERIES

“Big Questions About the Human Being: Bioscience and Islam in Dialogue”

Perhaps there's a middle path. We might advocate that human caregivers who provide physical, emotional, cognitive, and spiritual care be reimbursed at a higher rate. Robotic assistants who primarily support physical and basic social needs could be covered at a lower rate. That's the recommendation I would make. And then I'd offer the policymakers a thought experiment: Imagine you're elderly. You've lost your memory and even your sense of self. You no longer recognize your family. You're surrounded by robotic caregivers programmed to smile, to simulate warmth, and to say comforting things. In this state, would you begin to think that you were a robot? Is that the kind of future we want for our elders? These are the kinds of questions worth pondering because they cut to the core of what it means to be human.

I hope this episode sparks some reflection. And I hope you'll continue the journey with us in our next installment, Episode 4, "What is the Future of Humankind?" Should we, and are we, changing our bodies and brains? In that episode, we'll pick up the thread from Episode 2's case on bodily modification. And we'll dive into the world of transhumanism, enhancement, and the ethical frontiers of medicine. Until then, signing off with warm regards, and wishing you all peace. *Ma'assalāma*.

Big Questions about the Human Being: Bioscience and Islam in Dialogue was presented by me, Dr. Aasim Padela, with Dr. Raudah Yunus. Moez Masoud, Mohamed Darsha, and their team from Acamedia Global and EMC Media LLC, were consultants and dissemination partners. We would like to thank all of the discussants for giving their time and scholarship so generously.

This podcast was supported by the John Templeton Foundation and hosted by the Initiative on Islam and Medicine and the Medical College of Wisconsin. The producers are Kirsten Dwight and Martin Redfern, and this was a Beacon Hill production. For more details about this podcast and about the [project](https://medicineandislam.org) in general, please visit medicineandislam.org.

[2025] [The Initiative on Islam & Medicine]. All rights reserved.

This transcript and all podcast contents are protected by copyright to the Initiative on Islam and Medicine. Feel free to quote or share brief excerpts for educational purposes with appropriate credits and a link back to the show. Please visit medicineandislam.org for more details