

PODCAST SERIES

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

Episode 4: What is the Future of Humankind? Are we and should we be changing our bodies and brains?

Dr. Aasim Padela:

Good day, listeners around the globe. I hope you're doing well. How was your weekend? For my part, given all the gloom and doom in the world, I decided to turn my brain off for a couple hours and just enjoy a fantastical science fiction movie with my kids. I don't want to give away the plot, but in the film there was an underground industry where people would go and have their bodies technologically enhanced and their sense is augmented. And, as you would have it, they would then struggle with the social discrimination of being different from others. I'm sure you've seen movies with the same vision of the future, where our bodily feature is somehow hybridized with technology. Have you ever paused to think about what that would mean? I know in our last episode we discussed what it means to be human and how the increasing capacities of AI technologies push us to think about what distinguishes us from synthetic entities.

In this episode, we'll build on that discussion to consider our future, at least physically, and what that future might look like and what science and scripture have to tell us about it. To make the discussion real, however, let's start with a case. And as usual, I will share my thoughts on that case at the end of the episode. Prior to getting there, let's set up some context. Let's begin by acknowledging that a large array of technological modifications to the human organism already exist. In modern medicine, we use implantable devices such as cardiac defibrillators to prevent death from abnormal heart rhythms. We use prosthetics such as artificial knees and hip joints to help people maintain their mobility. And we use cochlear implants to aid people in hearing. All of these devices are integrated into one's body and arguably become fully part of it. As biotechnology advances, medical professionals will increasingly encounter devices that can be placed within us or they can be put onto our bodies to support or augment our functions. But that's the context to set up the case.

Dr. Raudah Yunus:

You are practicing as a patient-facing physician in a biotech lab and clinic. You joined the company because you wanted to help patients overcome disabilities and you're excited by how you've been able to help transform people's lives. You think of it as enabling them to level up, by regaining abilities taken for granted by most of the population. Given your growing reputation in the city, you have noticed that an increasing number of patients are seeking you out to request bodily alterations. They cite a range of motivations. Some want to enhance their abilities beyond the generally understood capacities of the body. Others desire to make alterations for personal

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aesthetic reasons and some desire to experiment on their bodies. A recent patient who is not able to see color asked you to install a mechanical sensor that interfaces with his brain so that he can feel vibrations for different colors in his field of vision. What are your thoughts? Would you perform the procedure? Do you think such work is part of the mission of medicine or does it go beyond that?

Dr. Aasim Padela:

This case study, which we will return to later, illustrates just one type of scenario that is already occurring within and is likely to spread throughout a range of medical disciplines. As is the case with many technological developments, cultural and ethical responses can lag behind the pace of rapidly emerging realities. One response to the possibility of human adaptation and alteration has been the emergence of the term transhumanism. This concept encompasses a possible future direction for humanity.

Professor Anke Bouzenita:

I think in the first place we need to talk about what transhumanism is. Transhumanism is a cultural, a philosophical, a political movement that has particular presuppositions about the human being. Transhumanism, of course, evolved out of western thought. So the idea of transhumanism is that the human being is a product of evolution that may be faulty. This is why transhumanists will talk about faulty design. The idea is that the human being can and should bring about his own or her own volitional evolution with the aid of technology, pharmacology, joining the human being with artificial intelligence or with robotic, cyborgic elements. One of the promises of transhumanism is that it will bring about the better life or the best life without ever defining what the best life is supposed to mean.

Dr. Aasim Padela:

That was Professor [Anke Iman Bouzenita](#) from the Department of Islamic Sciences at Sultan Qaboos University in Oman. She studies ideas such as transhumanism for research into Islamic bioethics. Well, how do transhumanists define the concept? For that we turn to [Professor James J. Hughes](#), arguably one of the founders of the global movement of transhumanism, and presently Executive Director of the Institute for Ethics and Emerging Technologies, as well as Associate Provost at the University of Massachusetts in Boston.

Professor James J. Hughes:

Transhumanism, most minimally, is the belief that there will be technologies that allow us to exceed certain human average capabilities and that people should have a right to use them. But that's a very minimal definition, and there's a lot of debate around how to

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do that. So, for instance, should governments be involved at all in ensuring that these therapies are safe and effective? The left wing of transhumanism would say yes, and the libertarians would say no.

Dr. Aasim Padela:

[Dr. Anders Sandberg](#), a researcher at the Human Futures Institute, elaborates on the definition of transhumanism.

Dr. Anders Sandberg:

I usually say that transhumanism is the idea that we can improve on the human condition by actually modifying what it means to be a human. Can we modify a core part of a human condition, like aging? Can we do something about our limited working memory capacity and make ourselves significantly smarter? These things would change much more what it means to be a human. More peripheral, but still quite interesting, what if we got new senses? That might not be a profound change, but if we got to experience another dimension of reality, that might still matter quite a bit. Here in Europe, we would, of course, say, Anders, you're just a classical liberal. And I'm kind of guilty on that charge. But generally, I think it's important to have individual freedom and basically argue we have a right to our bodies, we have a right to live a free life as long as we don't infringe on others' freedom. And that might, of course, imply a right to modify ourselves.

Dr. Aasim Padela:

As we've heard from the discussion so far, there is quite a difference of views, not only between those promoting, or conversely rejecting, transhumanism, but also among the proponents of the transhumanist project. The liberal side of the transhumanist project focuses on individual freedom to alter our bodies, while the more left-leaning adherents argue for some kind of government regulation and for equality of access. But it's difficult to debate transhumanism without having clarity on the terms we use. What do we consider to be the normal progression of innovation in medicine and biotechnology on the one hand, and what would be labeled as transhumanist on the other? And with the growing ability to change our bodies and possibly add novel capacities to our beings, what ethical guideposts could we possibly refer to? For example, is it helpful or is it necessary to make a distinction between modifications made for the purposes of medical therapy and those used surely for enhancement or alteration? Dr. Sandberg:

Dr. Anders Sandberg:

It's kind of blurred. You could say that the intention might matter, but quite often the intentions are also somewhat confused. One interesting critic of enhancement, Michael

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Sandel, has argued that health is bringing us back up to a normal level and enhancement is going beyond it. And he argues that we have this moral obligation to help each other to get to the normal level, but we don't have any obligation to help enhancing, which I think is an intuition quite a lot of people do share. But it seems very unclear how he separates becoming normal from being enhanced. I doubt any of us can run as fast as Usain Bolt, but does that mean that, okay, we're subnormal? Or does it mean that he actually is abnormal? He's running way too fast. Maybe we could cure him from that. That sounds crazy. So I'm in the school that, no, we have a lot of different goals in life. And if I want to be a mountaineer, I need a body that works for mountaineering rather than the current body I have, which is much more suited for sitting around in academia. And for my life project, if I truly want to be a mountaineer, I might actually need to have a body that's updated to fit that.

Professor James J. Hughes:

Transhumanists are in general critical of the distinction between therapy and enhancement. We tend to want people to think about directions instead of some arbitrary line. The baseline conditions of being a human being are constantly changing. The fact that we live in a society with analgesics means that we probably experience less pain than our ancestors did. So the baseline human condition is changing, and that means what it means to enhance us is changing. But if you think about what it means for someone with a disability to be given a therapy that then takes them above the human average, is that enhancement? If someone, for instance, takes metformin, which is a drug that lowers blood sugar for diabetes, and goes from having a lower life expectancy to having a higher than average life expectancy, is that an enhancement? There's a certain kind of status quo bias at work. And our question is, well, if in the last century we've increased human life expectancy, wouldn't it be good to do that some more? You know, there's no natural reason to stop at 80. Why not go to 100 if we can?

Dr. Aasim Padela:

However, Professor Hughes continues, distinctions should be made in regard to how we prioritize these technologies.

Professor James J. Hughes:

I do think that there are some clinically and ethically relevant distinctions to make along this spectrum. And the clinically relevant distinction is that, for instance, if we were trying to enhance something like height, then we try to get someone taller. We don't know necessarily what the consequences of all of these interacting novel gene therapies would be. So we need to have a far more rigorous clinical regime around enhancement therapy than for traditional therapy. The ethically relevant distinction I would make is

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that I think there is a reason to put social priority on therapies that fix diseases and disabilities before we spend a lot of resources on enhancement.

Dr. Aasim Padela:

To summarize, it seems that Professor Hughes and Dr. Sandberg think that the therapy and enhancement distinction is fuzzy. They argue that our definition of what is normal today is different from what our thoughts about normal would be tomorrow and indeed what were normal conditions yesterday. And yet, Professor Hughes argues for some constraints. For example, he believes that there should be a hierarchy of need, meaning that we use therapies to help people with disabilities and deficiencies before using them for pure enhancement purposes. But not everyone shares these positive perspectives on transhumanism. Professor Bouzenita draws a clear distinction between therapy and enhancement. Moreover, she urges us to take a precautionary approach to intervention, especially to the most invasive kinds of procedures.

Professor Anke Bouzenita:

If you are unable to walk because your hips just don't let you or your knees just don't let you, then I think anybody would say that that comes under necessity. That's not really an issue. But even here, there is an idea of conservative treatment in terms of, you know, try to do whatever you can without having the surgical intervention in the first place. Now, talking about brain implantations or brain interfaces. So if, let us say, a brain interface is something that could help somebody who is quadriplegic walk, then you would look into are there other ways to bring about this kind of healing, or not; in the first place, less invasive therapies. So there is a difference between a technology that may help somebody who is quadriplegic walk again and between a brain implant that promises you to speak several languages fluently without ever learning them, if you can avoid it by just implanting a brain that has all the knowledge available, we need to be able to evaluate the possible benefits and the possible harms. I think other forms of treatment are always preferred because brain interfaces do have certain dangers that I think should not be belittled.

Dr. Aasim Padela:

So now we've heard three different perspectives on the ethical difference between therapy and enhancement. Dr. Sandberg argued that it's hard to make a meaningful dividing line in the first place. He embraces enhancements even if they're not medically necessary. Professor Hughes echoed this positive view of enhancements, but added the caveat that we should prioritize the allocation of resources to those with deficiencies before we proceed down elective enhancements for individuals. And finally, Professor Bouzenita drew a clear line between therapy and enhancement and completely rejected

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enhancements on ethical grounds. As I've mentioned earlier, the definition of enhancement involves extending human capacities beyond what we consider to be the norm.

But that doesn't get us out of the conceptual conundrum. The definition of what is normal is context-specific and not necessarily fixed. Once again, let me remind you: what was considered to be normal human height in the 1800s is much different than what we consider normal height to be today. So judgments about what are normal human traits and what are normal human capacities are based partially on empirical data, but they're very culturally and value-laden. With that in mind, a larger, some might say, a meta-level question arises. And indeed, that's the question that animates our episode today. Is it theoretically possible that we could alter what it means to be human by means of biotechnology? Professor Hughes ponders what it means to be human in the first place, and he considers the impact of neurotechnologies and how they might impact the notion of humankind.

Professor James J. Hughes:

It's not necessarily a clear idea what it means to be human. But yes, I think there are some, what people tend to mean by being human is things like being compassionate. So I'm very concerned about the potential that different kinds of neurotechnologies or cognitive drugs might impact some of the core qualities that we consider to be important to being human: our capacities for empathy, even just our capacities for learning.

Dr. Aasim Padela:

This answer touches on themes that are central to this podcast series. In Episode 2 we investigated different accounts of human origin and we learned about our connections with, and uniqueness among, living beings. We then took a deep dive into the essential nature of human beings and probed the mysteries of consciousness in Episode 3. In the next episode, we'll explore whether free will is a defining characteristic of human beings. And we'll also talk about some emerging research that connects empathy with our capacity to exercise free will. There's a prominent thread woven throughout the series: the importance of critically identifying and interrogating the naturalist approach underpinning the bioscientific framework. Professor Bouzenita critiques the way in which naturalistic and legalistic definitions of the human being have eclipsed non-material attributes of human nature, particularly within the transhumanist thought.

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Professor Anke Bouzenita:

One of the main problems of transhumanism, as I see it, is their complete inability to define what a human being is. If you go through transhumanist literature, you will find that some of them try to define the human being based on biology, where actually it's quite difficult to define a human being based on the DNA, because there's not as much difference between us and other beings as we would wish for. Some try to define the human being based on legal ideas or legal concepts of human agency, for example. And if you cannot define what a human being actually is, how can you come across and tell us that we need to evolve that human being that we actually do not really understand in the first place? We do not understand what it is in the first place. So this non-acknowledgement, complete non-acknowledgement of the importance of the physical shape of the human being, the importance of the soul, of the personality, of the mind.

Dr. Aasim Padela:

Professor Hughes acknowledges that if the transhumanist vision is realized, it could alter a core aspect of human identity: the idea of individual selfhood. How might biotechnologies change the deeply felt sense of personal identity? And, he asks, would such changes necessarily be a bad thing?

Professor James J. Hughes:

The challenge that I see coming from neurotechnologies, in particular to our sense of self and our use of computing technology already, I think it starts with a phenomenological challenge. That—and as a Buddhist this is where I'm most comfortable—that the Buddhist critique is that there is no persistent, enduring, discrete self and that the effort to constantly find one or define one is a part of what makes you suffer. And the way that that applies in the context of the kind of diffusion of self that occurs in what we call the exocortex, or the use of digital devices to offload parts of our cognition, or the extended mind thesis—that thinking doesn't just happen inside the brain, but it's the interaction of a variety of things in our environment with the brain.

Dr. Aasim Padela:

We've heard quite a lot. So let's pause for a moment. Professor Hughes is talking about the possibility of having exocortexes, something like external hard drives, that we could offload tasks or parts of our neurological being to. What comes to mind here is the image of a human brain somehow connected with multiple synthetic brains in a sort of hive mind. And the sum of all of these is a single encompassing identity. For those who've been following this podcast series, and my self-disclosures about my sci-fi movie

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watching habits, I just threw you all a bone and foreshadowed a cultural reference I'm going to make shortly. For the rest of you, you'll know it when we get there.

Okay, so from a worldview in which the notion of self is decentralized, like the Buddhist view Professor Hughes references, new technologies that blur the edges of one's Self may be welcome. And many of us might be intrigued by having exocortexes, as I'm sure we've all had times when we wish we could outsource some of our mental load. I mean, part of the drive to integrate more and more AI into our lives is for that reason. To save our human brain power for things that truly matter. Yeah, there's always a cost, however. Despite having a relaxed attitude to lessening our sense of having an individual self, Professor Hughes imagines some interesting dilemmas that might arise when we are all using an exocortex connected to some kind of server or the web.

Professor James J. Hughes:

The implication of this is that we can have this diffusion of self and that that can be as good a self as having everything inside your head. But the further we get in terms of brain-computer interfaces, the closer we get to something like uploading or the recording of memory, the communication of emotion and thought between brains with mental telepathy of some kind, you begin to get into scenarios where the actual self-boundaries between people might break down, the kind of Borg scenarios. It's like when you get married, you have to decide, are you going to combine your bank accounts? Are you going to have joint server where everyone can see everybody else's computer files? How much are we willing to share with a spouse? How much are we willing to share with our party, our church? And when does that cross a certain boundary and really start to challenge, you know: Does the Borg get one vote or a million votes? Because, are they one person or a million? Those are the kinds of questions maybe by 2100 we'll have to answer.

Dr. Aasim Padela:

Professor Hughes beat me to the punch! He referenced "the Borg".

Movie clip (Star Trek)

We are the Borg.

Lower your shields and surrender your ships.

We will add your biological and technological distinctiveness to our own. Your culture will adapt to service us. Resistance is futile.

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Dr. Aasim Padela:

I wonder if the *Star Trek* series writers who introduced this concept of the Borg who form a single identity had in mind a dystopian transhumanist future. I mean, all the elements are there. After all, the Borg are cybernetic organisms whose ultimate goal is to achieve perfection. They are stronger, faster and have more cognitive computing power than humans. And they can live almost forever by replacing biological body parts with synthetic ones. But there is a negative. They forcibly implant cybernetic parts into individual human beings or actually individual entities, some of which are human. They transform them into drones and they all become part of the Borg's hive mind. And Borg drones have almost no sense of self. It's all about the collective. Dr. Sandberg ponders what it actually means to be human and what kind of questions will have to be faced should humans transform into new forms of beings. He also builds on a theme of how a collective feeling of identity might overtake identification as an individual human self.

Dr. Anders Sandberg:

I don't think the current embodiment we have is particularly unique. At the same time, there is a lot of very concrete things about just being able to run my finger over the wood on my desk and getting a sensory experience, that do add to the texture of what it means to be a human. Our emotions have a particular structure that seems to be a human universal. And overcoming some of the bad parts of that structure, the flashes of anger or fear that show up at the wrong moment and lead us astray. It might be that in the future people have found ways of regulating that. But I don't think they're going to say, "OK, we solved all the problems, let the good times roll". They're going to be concerned about many other things. For example, in the future, we might find new virtues. It might be, for example, that group-level virtues; many of the environmental virtues don't make much sense individually. I can't make a species extinct under most conditions. We can only think of it as a society. But as a society, we want a society to be environmentally virtuous and not bring a species to extinction. And we might think about civilizational virtues like, maybe we need prudence for humanity. So we handle pandemics and existential threats in a better way. Maybe there are other civilizational-level virtues we haven't even thought about because we don't have the technologies and the understanding going on. So I do think that transhumanism can fit in into these stories quite well.

Dr. Aasim Padela:

So we've heard possible scenarios ranging from a sci-fi Borg dystopia on one hand to a hope for discovering collective, even planetary, civilizational virtues on the other. It's impossible, of course, to predict which way that could go. Professor Bouzenita sounds a

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cautionary note, based on the risks to human identity that she perceives in our existing technologies.

Professor Anke Bouzenita:

We see developments like artificial reproduction outside of the human body, artificial wombs. We see developments like genetic engineering. We see developments like the possibility to have designer babies. Maybe some have the idea to provide the human being with gills in addition to the lungs for certain, maybe even military, applications. So capitalism in the form that we have now has been termed a surreptitious capitalism, casino capitalism. There is a real danger of the commodification of the human being and this will change what it means to be human. So if, for instance, copyrights were imposed on certain so-called enhancements, on certain genetically engineered traits, we have a really, really imminent problem of marketing the human being or parts of the human being. But these ideas converging in an age where artificial intelligence also gains ground and where, in the end, data is collected by private companies, can be used by private companies. So all of these developments together can actually be quite a dangerous development for humankind.

Dr. Aasim Padela:

So that's the stark warning from Professor Bouzenita. She's talking not only about the dangers of technologies themselves, but also of the social and political systems in which they are developed and used. Her analysis just now focuses on the ethical issues raised by the political and economic context of the transhumanist project. She will also be joining us in a moment for our exploration of the future of humankind through an Islamic theological lens. Perhaps it's her religious perspective that gives her confidence that the transhumanist vision will never come to fruition.

Professor Anke Bouzenita:

I do not think that transhumanism itself, in the promises that it makes, is dangerous in the way that it will realize these promises. It won't. There will not be a singularity, a merging of man and machine. There will not be an eternal life on earth. But the danger is that people may be deluded into thinking that the possibility exists and that people will allow certain interventions to be made. Interfaces with the brain, for example, will be performed and will deliver themselves into a kind of servitude to the machine or to certain companies that has not been seen before.

Dr. Aasim Padela:

And despite his embrace of the transhumanist project, Dr. Sandberg shares a similar prediction: that at some point the project will come up against natural limitations.

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Dr. Anders Sandberg:

I think the trick here is to recognize that, yeah, you probably can never totally escape finitude, but it's a darn good thing to fight against it. There are important limits that we think we shouldn't be taking for granted and we should be trying to break through. It is a good idea to reduce pain. It's a good idea to come up with cures for diseases. And maybe we can't cure all pain and all diseases, but it's still a worthwhile endeavor. So transhumanism is not about overcoming all limits in reality, because you can never truly do that. Part of it is, of course, well, we can't transform into pure information right now. And also, actually, pure information doesn't exist.

Dr. Aasim Padela:

Hence, there is a tacit acceptance, even from a self-described libertarian transhumanist, that we are fallible. That there are natural limits to how far we can alter our human nature, and that these limits meaningfully shape how we experience reality. In other words, finitude is essential to the experience of being human.

Dr. Anders Sandberg:

I quite often say that I want to be able to see ultraviolet so I can see the patterns of spring flowers. But there are probably other aspects of reality that we're missing out on. I have a friend who's got an implanted magnet, and I'm always asking him if he's seen any beautiful magnetic field recently. I bought a little dosimeter a while ago, and I've been going around kind of watching the radiation environment around, and I'm getting measurement and spectra. But imagine actually feeling the cosmic rays. I think there is ways of experiencing the world better that we don't have. It's very fun to try to think, can you actually implement this? We can make tools to do it, but can we put the tool inside ourselves? I think the world and our relationship to it is such a wonderfully open-ended thing. Many people say, oh, that's mere matter. But matter is nothing but mere. There is so much fantastic stuff going on, even in fairly inert matter, and once it's alive, oh dear, now things is really taking off. Not to mention, of course, what happens when it starts thinking and being conscious and interacting. We're living in this amazing environment, and quite often, of course, on a grey Monday morning, we forget just how wonderful it is that we can experience that this is a grey Monday morning, and wow, even that is almost like a sacrament.

Dr. Aasim Padela:

Our panel of scientists and philosophers have certainly covered a lot of ground on the future of humanity. We learned a bit about transhumanism and the motivations to transcend our present, biologically-induced limitations by means of technology. And

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that there is a drive in society to become stronger, more cognitively enhanced, and to become almost immortal. We listened in on conversations about how such changes may impact our notions of what the human being is and our senses of self. Our panelists debated the use of biotechnology for the purposes of therapy and for enhancement, and even how they might alter the human being. These points were particularly salient, and we will return to them when we discuss the case at the end of the episode. From the bioscientific perspective, it seems we are changing. And transhumanists use bioscientific arguments to put forward the view that we should accelerate and push this change in certain directions.

Next, we will turn to Islamic perspectives on transhumanism and weigh up whether or not we should use medicine and biotechnology to change our beings. As we discuss transhumanism and the future of humanity, it is important for us to understand how these ideas will come to fruition. The case study we shared at the beginning of this episode speaks to the ways in which physicians and biotechnologists will increasingly confront ethical dilemmas about bodily enhancement in their daily practice. Many transhumanists talk about three different types of activities that are critical to a transhuman future. Genetic engineering can be used to fix an inborn disease on one hand, or to arrest the natural processes of aging on the other. Hence, genetic engineering can be used either for what we would consider to be therapeutic purposes or enhancement purposes. The second type of activity is bodily augmentation with synthetic parts that are somehow stronger or faster.

At this point, the last type of activity is more of a scientific fiction. I know that scholars, philosophers, and scientists alike are still trying to figure out what the mind is, but the notion that one could transfer one's identity, one's being, one's consciousness, and put that into some sort of synthetic hard drive, would be considered mind-uploading. This idea has caught the imagination of our culture today, and it is attested to by the popularity of movies exploring the theme of mind-uploading. One of my favorite ones was the movie Chappie. Do any of you remember that? I don't want to give up the plot, so go ahead and hit the mute key or jump ahead by 60 seconds if you're planning to watch the movie. So at the end of the movie, one of the main characters suffers a gunshot, and the robot Chappie tries to save the protagonist by uploading his mind into another robot. When the character gets transferred into the robot, he says, "I am alive".

You know I can't help it, so let's listen to the clip.

Movie clip (Chappie)

Michael, please take it slow. This will be very disorientating for a human.

My god, I'm...

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Michael, do you have pain?

No, Chappie, I'm... I'm alive.

Dr. Aasim Padela:

The same general story occurred in a film I'm sure you all know: Avatar. The idea that our minds could someday be uploaded is advanced by transhumanists. Their hope is that it would enable humankind to transcend mortality and approach immortality. This premise begs a persistently unanswered question that we discussed in Episode 3, the question that philosopher David Chalmers has termed the "Hard Problem of consciousness." Many of these ideas and activities are no longer confined to the realm of science fiction. In fact, there are individuals who have already taken the first steps towards a transhumanist future using today's science and biotechnology.

I'll give the examples of just two early pioneers who embraced novel interventions for different purposes. We'll start with Professor Kevin Warwick, dubbed "Captain Cyborg" by the British press. He began experimenting on himself with implanted chips in the mid-1990s. He was able to control a synthetic arm from a long distance by means of a chip implanted in his wrist. He extended this experiment when his wife also had a chip implanted into her own arm in order for the two of them to attempt neurological communication with each other using the internet. Lo and behold, this attempt succeeded in what was a notable first for biotechnology: the ability for nervous systems of two humans to communicate over a long distance by purely electronic means. And the second case is that of the late Peter Scott Morgan, known as the "human cyborg". He was stricken by Lou Gehrig's disease.

Clip (Peter Scott Morgan, speaking via a communication device)

My brain is racing away, frantically wanting to communicate with the outside world, but I'm only able to move my eyes. I need AI to second-guess what I'm wanting to communicate. Motor neuron disease, or ALS, may have paralyzed everything except my eyes, but I remain passionate about technology to not just survive, but thrive. I see this new challenge not as a setback, but as a unique opportunity to do breakthrough research into how technology can change what it means to be human.

Dr. Aasim Padela:

Now that we have some examples in mind, let's get a more precise sense of how these terms are used in Islamic discussions. [Dr. Raudah Yunus](#), a member of our project team, rejoins us to define these terms.

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Dr. Raudah Yunus:

Some Muslim scholars approach transhumanism in the context of biomedicine by categorizing medical practices into three groups, treatment or therapy, enhancement, and I will talk about the third category shortly. Now, treatment or therapy is basically defined as activities that target a specific disease or a disability or a dysfunction, and the aim is to restore what is lost to normality. Enhancement, on the other hand, is a set of activities or procedures that target individuals with normal traits and functioning to increase or enhance the ability of certain parts of the body beyond what is considered normal. Now, this is where it gets interesting. Professor Fabrice Jotterand, a philosopher and ethicist at the Medical College of Wisconsin, tries to address these ambiguities by adding a third category, called alteration. Alteration ventures further by traversing biological limits, such that the resulting state is no longer considered human. Now, I can give you a very simple example to make this clearer. An example of treatment is to provide medications that can reverse cognitive decline, for instance, when someone has Alzheimer's disease, but substances that allow an individual to process and retain information beyond the typical capabilities of the human brain would fall into the category of enhancement. Now, if you create a neural implant that transfers memories, images, and facts between one's biological brain and an external storage device, for instance, that would be considered an alteration, because biological limits have kind of been overcome and the resulting being may not be considered part of the human species anymore.

Dr. Aasim Padela:

As we just heard from Dr. Yunus, interventions on the alteration end of the spectrum can raise questions about human identity itself. Islamic ethical discussions about enhancement and alteration also require us to first understand the nature of the human being. Professor Anke Bouzenita rejoins us. She's going to introduce the important terms of *karāma* and *hurma*. These terms are central to ethical discussions about interventions to the human body.

Professor Anke Bouzenita:

There is a concept of *karāma*, of dignity. So, the human being is bestowed with dignity. وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ , We have bestowed dignity upon the children of Adam.

Dr. Aasim Padela:

The concept Professor Bouzenita is referring to can be traced to the following verse in the Qur'an.

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Qur'anic recitation

وَلَقَدْ كَرَّمْنَا بَنِي آدَمَ وَحَمَلْنَاهُمْ فِي الْبَرِّ وَالْبَحْرِ وَرَزَقْنَاهُمْ مِنَ الطَّيِّبَاتِ وَفَضَّلْنَاهُمْ عَلَى كَثِيرٍ مِمَّنْ خَلَقْنَا تَفْضِيلًا

We have honored the children of Adam and carried them by land and sea. We have provided good sustenance for them and favored them especially, above many of those We have created (Q 17:70).

Dr. Aasim Padela:

Professor Bouzenita continues, explaining the importance of the terms *karāma* and *hurma* to ethical discussions of interventions on the human body.

Professor Anke Bouzenita:

There is a concept of sanctity or *hurma*. Now, the concept of *hurma* actually means a prohibition to transgress against the human body physically or mentally, I may add. So, to give you some examples for this, even in warfare, it is not permissible to mutilate the enemy's fallen soldiers. It is prohibited to inflict harm on your body. There is a hadīth of the Prophet ﷺ which prohibits tattoos, which prohibits hair extensions, and which prohibits the filing of teeth for cosmetic purposes. And the question is, why do people do tattooing or hair extensions? Because they think they want to or they need to augment their physical appearance. And this, in turn, has an underlying touch of hubris. That is, the hubris of the human being to do things better or know things better than his or her own Creator.

With regards to *hurma*, I wanted to come back to that point because this is what plays the most important role, probably, when it comes to therapeutic interventions and what is maybe most important for medical students and scientists. So, in which cases would it be permissible or not permissible to intervene in the human body, to perform any kind of surgery, to perform any kind of pharmacological intervention? We need to have a valid reason. In the first place, there needs to be a necessity or at least a need. So, in Islamic parlance, we say there are necessities, الضروريات, there are needs, الحاجيات, and there are embellishments, التحسينيات. Necessities would be questions of life or death. So, you have somebody who has just been in an accident and who needs to be operated on, who needs to have one of his limbs amputated. This is a necessity, a question of life or death. A need is lower than a necessity in the ranking. It may not be that urgent, but even a need may evolve into a necessity. So, if, for example, you have some kind of tumour, then it would be permissible to remove or even mandatory to remove this tumour, because if you don't, you may come very soon to a question of life or death. And then embellishments would be, you know, interventions that are of a rather cosmetic nature, like changing the shape of your nose, for instance. This is purely on an

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embellishment scale, but then also we need to underline here that whatever falls under a necessity or a need or an embellishment may be subject to difference of opinion. So, this is upon scholars, medical doctors to look into, is this intervention really necessary?

Dr. Aasim Padela:

So, what we've just heard is that the essential Islamic concept of human dignity has two parts, *karāma* and *hurma*. *Karāma* can be translated as sanctity and leads to positive rights: that one should honour the God-given body. *Hurma* refers to the notion of inviolability and leads to negative rights: that we should not disrupt the human body unless there is an overarching necessity or a need to do so. Professor Bouzenita continues, pointing out that beyond the ethical problem of purely cosmetic measures, there are more nuanced questions about functional measures—that these could constitute enhancements depending on how they're applied. She takes a deeper dive into prosthetics, a topic I touched upon a few moments ago.

Professor Anke Bouzenita:

There's a difference between replacing the natural limbs with prosthetics that restore the natural function the best they can and between prosthetics that augment the natural function. You can of course provide a person with carbon fibre blades, so he's able or she's able to run way faster than anybody else. But here the question is, is this still covered under Islamic law? It is not a restoration of a function anymore. There are thoughts among some people to have their own limbs exchanged, that is, amputated, healthy limbs amputated and exchanged by highly performing prosthetics. And here again, we have a certain hubris coming into play, as no device, no replacement will ever act like the natural thing. So the first type of intervention would be permissible, the second would probably not.

Dr. Aasim Padela:

Dr. Yunus adds her perspective, as both a medical doctor and a Muslim.

Dr. Raudah Yunus:

If we try to look at what transhumanists are trying to achieve from the lens of medicine, we will find some challenges and I'll tell you why. The first one is that we have to first ask ourselves the question, what are the goals of medicine? What are the goals of healthcare? Many scholars would say that the three main goals of medicine, of healthcare, is that number one, it is to restore lost abilities and functions, number two is to facilitate equality of opportunity, and number three is to acknowledge human finitude. So it's very interesting that if you think about it, none of these three goals of

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medicine or healthcare actually fits with transhumanist goals of extending the human life up to a hundred or two hundred or even a thousand years.

Dr. Aasim Padela:

Now I don't consider myself to be an Islamic scholar, just somewhat literate in the tradition, and as such mostly I try to report what scholars and theologians have said. And I distill those concepts together and think about the dimensions of the problem space and sometimes delineate what still needs to be talked about. So with respect to transhumanism, there's very scant writing on the topic, so one can't really say there is a definitive Islamic position on transhumanism. However, there are certain legal rulings that we can talk about. So let me give you an example. In 1998, the Islamic Fiqh Academy of the Muslim World League brought together scholars from around the world. These were scholars of the highest caliber, and they were discussing the issue of genetic engineering. The jurists in the consensus faction rejected genetic engineering, particularly engineering that was used for enhancement purposes. However, as a carve-out, they gave some approval to use genetic engineering to correct inborn diseases, and those illnesses that they were correcting had to have significant harm. Similarly, with respect to bodily modification, the jurists ruled that you can't do so for cosmetic purposes. However, if someone suffered a burn or some other harm to their body, you could use skin grafting and cosmetic surgery techniques to restore that physical form. So this is the juridical view on the line between therapy and enhancement. The scholars viewed that if you're going to do enhancement, it would be against human dignity.

Now, I do want to mention something else, that when we talk about juridical rulings, we're talking about *fatwas*, and this is a term I'm sure that many of our listeners have heard about. Islamic *fatwas* are contingent rulings, and let me underscore the notion, contingent, that they can change and they are responding to specific contexts. They are not necessarily the final rule that is drawn from the tradition. Yes, *fatwas* draw upon the Qur'an and the prophetic tradition, but many scholars can have different views on what their legal ruling should be. After time, these rulings can become crystallized into what would be a normative view or the going *fiqh*. So we've explored some of the most important Islamic principles and discussions about interventions to the human body. In the first part of this episode, we heard about a secular foundational principle often invoked by proponents of transhumanism. Professor Bouzenita shares her Islamic view on this.

Professor Anke Bouzenita:

The idea of autonomy in bioethics would mean that a human who has autonomy over his own body can induce changes, can even end his or her own life due to a medical

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condition, or maybe due to his simply wanting to end his life. From the Islamic perspective, there is no such autonomy. Autonomy is something that is limited within the framework that we just discussed. So within interventions that are indicated Islamically, within interventions for necessities or needs. But they have certain boundaries, and these boundaries cannot be transgressed. There is the concept of *amāna*, the entrusted good, which means that the human body has been given to you, it's not your property. It is an entrusted good that you have during your lifetime, you are supposed to take care of, and to return it to its Creator once you are dead. So we say, انا لله وانا اليه راجعون, verily, we come from Allah to Him, we return, or we belong to Allah to Him, we return.

Dr. Aasim Padela:

So bodily autonomy, at least as understood in a secular liberal sense, is not the default starting point for Islamic thought on transhumanism. There is another assumption we need to assess. Dr. Yunus contrasts the naturalistic framework of bioscience with an Islamic understanding of the human being.

Dr. Raudah Yunus:

If you look at transhumanism, which is intertwined with modern biomedicine, both these domains are founded upon naturalistic epistemology. It is an understanding that all phenomena can only be explained through natural causes. And they are subjected to observation or clinical experimentation, and anything beyond that cannot be accepted, because you cannot prove it empirically. But of course, as we know also that modern medicine or biomedicine is very reductionist in nature, it reduces human beings to just the body. If we accept that philosophy, it only makes sense that you do not want death, because why would you want death if this is the only life, the only opportunity you have, and only through this physical life you can attain self-actualization, worldly pleasure, relationships, everything is concentrated in this short life, and your life is just a body, there's nothing else beyond that. But what Islam is more interested in is how much you grow in terms of your morality, spirituality, your kindness, your compassion, and your connection to God, most importantly.

Dr. Aasim Padela:

Professor Bouzennita expands on this critique of materialist frameworks.

Professor Anke Bouzenita:

Being distinguished by a soul may be one of the most important points here. The soul is one of the mysteries of life. The soul is something that we cannot actually define or locate in the human body. And this is another important concept in our discussion of

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transhumanism, as obviously the soul does not play a role in the materialistic worldview of transhumanism. It is not computational, just as the human mind is not computational. So Allah Himself said about the soul, **وَيَسْأَلُونَكَ عَنِ الرُّوحِ ۚ قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي** , وَمَا أُوتِيتُمْ مِنَ الْعِلْمِ إِلَّا قَلِيلًا , they ask you about *rūh*, the soul. They say the *rūh* is from the matters of my Lord, and you have only been given little knowledge. So we do not actually know how to define what this *rūh*, what this soul is.

Dr. Aasim Padela:

Hearing about the mysteries of the soul in that verse prompted me to reflect. I realized that as a physician and bioethicist, I'm working in fields that are informed by frameworks for understanding and treating the human being. But in those fields, I wonder: do we find room for the soul? I've been noticing that the disciplinary methodologies that we work within seem to have a habit of solidifying into worldviews. I'm becoming concerned that naturalistic methodology, which informs the current practice of biomedicine, has a lot in common with the philosophical underpinnings of transhumanism. And it feels important to identify this unexamined link between the two domains.

So biomedicine, its vision of the human being, is one that is based on a naturalistic, reductionistic and mechanistic understanding of the human being. I mean, as a physician, I'll tell you, my day involves identifying and diagnosing maladies based on biological data. And that data is derived from bodily structures. I interrogate the body. I get blood tests, for example. I take imaging of the body, for example. That's just a physical aspect of the human being. And based on that assessment, I decide upon what therapeutics to give. So we share with transhumanists a working assumption: the body is the site for interventions to bring about health, and perhaps even flourishing. So when transhumanists argue that if we *can* improve the body, that we *should*, questioning that logic may not come naturally to us. After all, we, as physicians, devote our efforts to bodily healing. And we try to help humans flourish.

But before initiating any intervention, physicians and ethicists have an obligation to ask: What is the intended purpose of this intervention? We also must ask, what benefit do we hope this intervention will bring to the patient in light of the risks of harm that it might carry? At the heart of this precautionary principle is the challenge that religious authorities and people of faith put to a reductionistic view of the human being. It's the conception of a human being as more than a body in motion, or just a biopsychosocial assemblage. We are, rather, intrinsically spiritual beings who inhabit a body. For religious adherents, the whole idea of the afterlife is that our spiritual aspect will continue on, beyond our physical form of existence. And a yearning for something

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beyond purely mechanistically informed medicine is growing among ever larger numbers of people across different belief systems.

Therefore, I think the practice of medicine is increasingly realizing that there is a spiritual side that needs to be tended to. That we are truly inquiring about what the human being is, and not to backslide into reductionistic endeavors just focusing on the physical body. But this idea is countercultural. That's not the norm in medical practice, nor in medical education. I think ethicists and theologians need to push back, both in society and in the practices of medicine, where the body is just treated as the be-all and end-all. From a professional ethics and law perspective, Islamic jurists provide a small window through which bodily modifications are deemed permissible. Namely, those interventions that restore bodily function or lost capacities, and do not seek to enhance, are deemed permissible. Beyond this, our Muslim panelists also raise social concerns.

Dr. Raudah Yunus:

I really feel that it's going to create a two-tiered society where one is superior to the others, and then the consequences of that will be those who are left behind, and all the advantages will concentrate on this specific population who is healthier and wealthier, and who is able to live longer.

Dr. Aasim Padela:

And of the various types of activities in the transhumanist project, radical life extension arguably brings the health equality concerns into perhaps the sharpest focus. Dr. Yunus reflects on the problematic motivations driving the quest for radical life extension, based on the perspective she gained from her research. She investigated the intersection between health inequalities and elder abuse.

Dr. Raudah Yunus:

You know, working as a researcher in aging and elder abuse has really shifted the way I think about life, death, and everything in between. Of course, biomedicine has given us incredible tools to live longer and healthier lives, but there's a subtle danger in equating medical progress with the promise of eternal youth. Somewhere along the way, aging, especially the kind that involves physical decline, frailty, or needing help from others, has become something that society fears. And sadly, this fear is reinforced by a society or by an environment that often looks at older adults through a lens of agism, stereotyping them as weak, unproductive, or out of touch. So basically, the idea is that if you are not aging with endless energy and perfect health, you're seen as having failed somehow. That line of thinking is dangerous. And part of the issue is how our education, research, and even public health campaigns focus so much on health and longevity, as if

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living long is the ultimate goal. Is it really? Or should the goal be living well? So a meaningful life doesn't always mean a long one. It means living with purpose, surrounded by love, doing good and embracing our imperfections. That kind of life is fully compatible with aging, with needing care, with growing old. And I believe that's a message that we all need to say out loud more often.

Dr. Aasim Padela:

Attitudes towards aging and death informed by Islamic views offer a very different perspective.

Dr. Raudah Yunus:

Aging and death should be seen as part of the natural cycle of life. It's not something that you have to transcend and overcome. Death is mentioned multiple times in the Qur'an. It is not just a reality, but it is a certainty that every Muslim has to believe.

Qur'anic recitation

كُلُّ نَفْسٍ ذَائِقَةُ الْمَوْتِ ۖ وَإِنَّمَا تُوَفَّقُونَ أُجُورَكُمْ يَوْمَ الْقِيَمَةِ ۚ فَمَنْ رُخِّصَ عَنْ النَّارِ وَأُدْخِلَ الْجَنَّةَ فَقَدْ فَازَ ۗ وَمَا الْحَيَاةُ الدُّنْيَا إِلَّا مَتَاعُ الْغُرُورِ

Every soul will taste death and you will only receive your full reward on the day of judgment. Whoever is spared from the fire and is admitted into paradise will indeed triumph. Whereas the life of this world is no more than the delusion of enjoyment (Q 3:185).

Dr. Aasim Padela:

Now let's return to hearing Dr. Yunus talk about her perspective:

Dr. Raudah Yunus:

In order to fully capture the Islamic perspective on aging, longevity and death, one needs to know how Islam views the human life course. There is one book called *The Lives of Man*. Imam Al-Haddad described the five stages of human existence. And the first stage is life before conception. So this stage started with the creation of Adam, after which all humankind as souls were brought forward before God, to take the covenant that they recognized his unity and lordship. There is a Qur'anic verse that clearly mentioned this in chapter 7 verse 172. The second stage is the life in this world, which involves the soul being merged with the body to create an ensouled being and begins with human conception and birth and ends with death. So it is in this life, the second stage, the life in this world, that humans are tested and given the opportunity to perform virtuous deeds, on the basis of which they will be held accountable for their

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actions before God. The third stage is called the intermediary life. In Arabic, we say *barzakh*. This is a phase that starts upon death and continues until the day of resurrection. The fourth stage is the life of the day of judgment, where all humankind will stand before God to give an account of their lives in this world. And the last stage, also known as life of the eternal abode, is where every human being either enters heaven or hell, depending on their deeds in the world.

So the effort to extend life as espoused by transhumanist or radical life extension advocates is fully concentrated in this stage. I mean the second stage or the stage of this world. Now from the Islamic perspective, there are two ways of understanding this phenomenon. First, given the shortness or the brevity of life and the ultimate human destiny being the hereafter, you will find many Muslims questioning the enthusiasm and desire to live so long when this world life is described as illusion and deception in the Qur'an. Second, and in contrast to the former view, this brief portion of life is the only stage of human existence that allows humans to gather virtuous deeds and prove their worth in the sight of God. So this phase, in other words, is the main determinant of one's destiny in the afterlife. So you'll also see some Muslims arguing that living longer is praiseworthy, it's something good, I mean, because it gives men more time to do good and to rectify their affairs. As such, there is nothing wrong with efforts to slow down the aging process if that can make humans live longer and healthier in piety and good faith.

Dr. Aasim Padela:

However, as Dr. Yunus pointed out earlier, slowing down the aging process shouldn't come at the cost of exacerbating inequalities for our elders. She contrasts these social inequalities with the Islamic value of cherishing one's elders.

Dr. Raudah Yunus:

The important thing in Islam is of course to worship God and not associate any partners with Him. That's number one, and that is irrefutable. Right next after worshiping God is cherishing and honoring your parents. Another thing is beyond the relationship between child and parents are multiple hadīths where the Prophet instructs Muslims to show a lot of respect and care for the older people within the community.

Dr. Aasim Padela:

It seems to me that Dr. Yunus is pushing back with another theological argument about the purpose of this life and the meaning of death. I speculate that Islamic concepts here contrast with the transhumanist idea of maximizing this *worldly* life, as she mentioned a bit earlier. Professor Bouzenita adds another important point on this theme. She

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contrasts the earthly and mortality sought by transhumanists, on one hand, with the Islamic view that all aspects of creation are perfect including the human lifespan.

Professor Anke Bouzenita:

Longevity is one of the promises, eternal life on earth. From the Islamic point of view, the human being has been created in his or her best shape and the human being has been created with a particular lifespan that is from the moment where the soul is breathed into an embryo in the mother's womb, the beginning of human life, to the point of time where the soul leaves the body, the end of life, this lifespan is predestined. And from a transhumanist point of view, it is more like death is an obstacle to be overcome. Death is like the ultimate spoiler of whatever material pleasure a person can have in their lives. In the Islamic context, of course, we have the promise of *Iblīs*, the devil, who promised Adam and Eve to provide them with eternal life and knowledge that nobody else has by eating from the forbidden fruit. And they fell for it. And the false promise has remained the same during the existence of humankind. And it may well be that the promises of transhumanism are just another aspect of that promise, the false promise that people may fall for. And in the end, they will not gain eternal life on earth or complete autonomy over their own selves. They will just deliver themselves into servitude. The basic ideas of transhumanism and Islam are not compatible. From an Islamic point of view, there is no need to improve upon nature, because the nature we have been created in is a perfect fit for our shape and our capabilities. The physical shape that we have been created in does play a big role in the way that we serve our Creator and the way that we perceive our existence.

Dr. Aasim Padela:

So now that we've heard a very clear contrast between Islamic and transhumanist views, we come to the case study which you heard at the beginning of the program. You're a renowned physician, known for helping individuals with disabilities regain their lost capacities. One day, a patient with achromatopsia, a condition that renders him unable to perceive color, approaches you. He asks whether you'd be willing to implant a mechanical sensor into his skull, one that connects directly to his brain and allows him to hear color through vibrations. Would you do it? Before sharing my own thoughts on this, let's hear from Professor Bouzenita, who is an Islamic bioethicist, as well as from Dr. Raudah Yunus, who spans the clinical and bioethical worlds in her work.

Professor Anke Bouzenita:

This, I think, is a very important question for medical students, medical professionals, scientists. The basic idea of the obligation of a medical doctor would be to assist human

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beings, to heal human beings, to help them preserve their health. So if medical professionals are involved in trying to alter the human being in a way that he or she gains functions that are not part of what it means to be human, for example, implant a device that makes a human being see infrared or sense magnetic fields, for example. And in the end, if medical doctors partake in that kind of intervention, or promote it, then they are complicit in a way. They are complicit in advancing an agenda that is not Islamically compatible. They are complicit in inflicting harm upon people.

Dr. Raudah Yunus:

It's a very difficult situation, and it also depends very much on where I practice, right? If I practice in Malaysia, for instance, I definitely have the right to say no, because I believe the local laws and regulations would actually support the Islamic values, and most doctors would probably be Muslims and agree with that. But if I practice in a western country, where there's a lot of emphasis on patients' rights and autonomy, and the local regulations say that a doctor has to fulfill the request of a patient as long as it doesn't go against the laws, then that will be difficult for me. But if you ask me personally, then if it's just to enhance or to add to something and not to restore a lost function, I don't think I will agree. But at the same time, I will maybe refer the patient to another practitioner who might be willing to do that. So it's not fair for me to impose my values on that person. So if he or she can find another practitioner who has the skill set and who is willing to do that, then that's his choice.

Dr. Aasim Padela:

Now let me share my own thoughts. You might think that this scenario is science fiction, but it's not. This is, in fact, part of the life story of Neil Harbisson, a British citizen and artist. Neil has been described as the world's first legally-recognized cyborg. He sees the antenna protruding from his head not as a tool, but as part of himself. In his words, he is not fully human anymore, but trans-species. After initially rejecting his passport photo because of the antenna, the United Kingdom authorities ultimately accepted his appeal. His journey is well-documented and easy to find. So I encourage you to do so and look online.

But for our purposes, the real question is, what would you do as a physician if he had approached you? On one hand, achromatopsia is a medical diagnosis. One could argue that restoring color perception is a therapeutic aim. But this isn't restoration in the conventional sense. A sensor implanted into the occiput connected to the brain, interpreting vibrations as color, this is quite far outside of the body's natural processes. It doesn't restore what was lost. It introduces a new way of sensing the

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world. To perform this procedure is arguably to participate in the transhumanist project, one that goes beyond healing towards redesigning human beings.

We've heard some panelists speak in favor of bodily autonomy, the idea that individuals should have the freedom to reshape their physical forms. But the question facing you as a clinician or a future clinician is this: Should you participate in such transformation? According to reports, some clinical ethics committees rejected Neil's request. Yet we all know someone performed the surgery. So clearly, not all physicians agreed. From an Islamic perspective, our guests raised foundational ethical principles: sanctity, *karāma*, and inviolability, *hurma*, that relate to the human form. Disrupting the body, especially the brain, requires compelling justification. Restoration is the norm. And there were real concerns voiced about the hubris embedded in transhumanist ideals.

I would argue that from an Islamic bioethical standpoint, this procedure is morally suspect, just as some secular bioethicists would find it troubling. It doesn't merely change appearance, it alters function in ways that challenge our understanding of what it means to be a human being. Still, one might argue that the patient's intent is therapeutic. And if no harm is foreseen, then perhaps it could be allowed. As with many issues we've discussed, there's room for disagreement and deeper reflection. So I leave you with this, especially if you're a clinician or trained to become one: What are the moral boundaries of medical practice? What goals are you aiming to serve through your work? Both you and the patient are moral agents in the clinical encounter. Your values matter. Their values matter. And when it comes to decisions involving the human body, alignment between intentions, actions, and outcomes is essential.

As I've written about in *Medicine and Shariah, a dialogue in Islamic Bioethics* (yeah, that was a little bit of self-promotion), truisms like: you can do the right thing for the wrong reason, or the path to hell is paved with good intentions, they remind us of the dangers of focusing on only one aspect of this ethical picture. Motive, means, and consequences all count. I hope this episode gave you something to ponder.

We're now more than halfway through our journey. Up next is Episode 5, Are our Lives Predetermined? The Questions of Free will and Human agency. In that episode, we will explore age-old questions that have puzzled philosophers, theologians, and scientists alike. You have the choice to listen in. Or do you? Until next time, wishing peace to you and your loved ones. *Ma'assalāma*.

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