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AI, Religion, & Humanity: How Might (or Should?) We Shape the Future?

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The Veritas Forum

This program was recorded at a Veritas Forum event on Northwestern University in 2022. The original title was "AI, Religion, & Humanity: How Might (or Should?) We Shape the Future?" and featured Rosalind Picard, Director of Affective Computing Research, Sylvester Johnson, Professor and Director of the Center for Humanities, and Robert Geraci, Professor. If you enjoyed this episode, please rate, review, and subscribe. And, if you're interested in more content from Veritas, check out our Beyond the Forum podcast. Visit veritas.org to learn more about the mission of the Veritas Forum and find more resources to explore the ideas that shape our lives.

Transcript

This is the Veritas Forum podcast, a place for generous dialogue about the ideas that shape our lives. I think a different way to think about AI is not about replacing people, but as augmenting and amplifying and extending human intelligence and human ability, just like it enabled people, just like early mechanical machines, increased our physical strength, our ability to lift things and build pyramids and buildings and so forth. This is your host, Carly Regal.

Today I'm sharing with you a recent conversation at a Veritas Forum event at Northwestern University in January 2022. The speakers you will hear from are Roslyn Picard of MIT, Sylvester Johnson of Virginia Tech, and Robert Geraci of Manhattan College. This discussion is moderated by Tahara Ahmed of Northwestern and was hosted by the faculty roundtable at Northwestern.

These fantastic speakers will discuss how they see artificial intelligence and religion collaborating as we innovate in high tech. You can learn more about the Veritas Forum and talks like these by visiting veritas.org. I hope you enjoy their conversation. If you can please start us off by giving an overview of the past and present relationship between AI and religion and perhaps focusing on Abrahamic or Western streams and Africana

traditions as that is your forte.

Absolutely. Thanks so much for this invitation and delighted to join the other panelists here. That's a terrific question.

And so I'll briefly highlight a couple of things. When we think about AI and religion in the context of Abrahamic religions, of course, if you open up a Talmud or New Testament, you're not going to find anything about AI and religion. But there are lots of implications and connections here.

It's actually more helpful to think about what is really pointed to with artificial intelligence. So if we can back away from say Siri for a moment or Google Assistant and think about that machine intelligence can things think and machines know things. And if we think about it that way, that these are non human actors entities that are at the center of this question of what can be known can intelligence actually happen in something that's not a human.

Then we can actually pretty quickly discern a very long history of attempts to wrestle with where intelligence happens, where does knowledge actually get constituted, who or what can be a no. And there's actually very long history of that that shapes very contemporary attitudes towards some of the very present iterations of machine intelligence. And just to give a couple of examples in the 1100s, Ibn Drusch, who's also known as a bit was very influential in shaping global understandings of intelligence of thinking of intellectual.

And he wrote a very influential treatise so known as as long commentary on the day and a mile so this was in the Aristotelian text that was trying to explain what makes things alive they got written a long time ago 25 years ago. And so this was actually very influential in shaping a long history of ideas about the soul as the knower. So things that know are entities that have a soul can know and those entities are human.

So humans can know because they have a soul, and selection is something that happens because they resist soul. And so it actually was very influential on many people who gained prominence and this these Western traditions. And also we can say global traditions of knowledge of what things can do in the gist of that tradition is that thing some material entities can't actually know anything material entities don't do into election.

And that, that is the tradition that he helped to really make very popular and widespread. So by that logic, knowing can only happen with humans because only humans have a soul that knows only humans have this intellecting soul. And we see iterations of that and Judaism Christianity Islam long traditions normatively speaking about we are knowledge can happen.

If we look at Africa, religions just by contrast. If we think about the way objects are material entities are treated as having the capacity to provide information they can be information think of doing a reading with some material objects works. These could be cowry shells it could be cards it can be any other material objects that might happen in a tradition of a reach devotion or in historically and Congolese religion these are examples of African religions in which these material entities are used in order to provide information about people to interpret a dream to make a diagnosis of when someone's health condition.

There's this understanding that knowledge can act that information can actually be shared transmitted held by non human material entities. And I'm, I'm shortening that a little bit because if we get into the weeds in these Africa traditions that that distinction between humans and non humans begins to break down quickly. And I'm trying to just summarize this, that's that's the contrast right we could if we wanted to be very crafts and simplistic and un nuanced we could say that we could see a contrast in Africa religious traditions, which do recognize any material entities to be part of this array of things that exist in the universe, that can be information, but they can know things they can transmit knowledge, they can observe people, you can wear something that has been fashioned to provide protection for someone and it can surveil you and it can know what you're doing.

And on the other hand again being press Abrahamic religions, if we look at the majority of how those things have played out in Islam Christianity and Judaism, knowledge is something that happens with people so if we look at contemporary iterations of say your GPS, people today whether or not they identify as religious might actually not want to entertain the idea that your GPS actually knows anything. It is just performing math, but it can't know anything. And what we see there is action and example of this long history of influence of thinking about knowledge is something that only happens among humans.

So that's a quick summary it's unknown once there are lots and lots of exceptions to that. But that that's a quick and dirty version. Thank you so much Dr Johnson.

I really, I'm intrigued by the framing of how you've started this conversation with Ibn Rusht Avaros, and I have some follow up questions for you on that but I'm going to go to Robert next. So Robert your forthcoming book takes a look at Indian perspectives on AI, which by the way I'm ethnically Indian so I'm fascinated that you spent time in that part of the world. Could you give us a preview of what you've seen in that context and how might that be similar or different from our Western context.

Yeah, absolutely. I'm going to I'm going to quickly retreat to something kind of like that question of how much nuance we can add you know it's become kind of a tourism that you. We can't know all the things worth knowing and we barely even know a small

section of what might be worth knowing.

So in thinking about religions outside the Abrahamic fold I was kind of asked to think about, you know, the Eastern Union, the eastern side of the world right we have this term the East as though those are cleanly and neatly differentiated from the West. And I'm happy to answer questions related to that, and to think about India and specifically in my case kind of brominical Hinduism in India, and my position there is as an observer not as a participant in any of the traditions about which I might speak. And so here I am speaking on behalf of billions of people which is like patently absurd, but I'll kind of give it a try contemporary headlines point to willing engagement with AI in Asian nations from Buddhist funeral priests to robots that offer sacrifice to Hindu gods.

These draw on long cultural traditions the role of machines right because the way in which people engage with machines in different cultures has varied, right, and you might have, for example, Japan rituals around printing blocks or around dolls things that don't necessarily make sense in the kind of Abrahamic communities, but nevertheless exist in certain Buddhist and Shinto traditions right and in India we're seeing the willing adoption of machines into kind of temple environments right. So if machines are present in ritual practice by, you know, say a robot arm that that offers art or, or the sacrifice of light to the gods, or perhaps even the gods present in an icon that is robotic, the more relevant that conversation becomes for religious people, and the conversation about AI already permeates global pop culture and tech policy. We see this in singularity theories, dreams of mind uploading expectations of cosmic evolution of humanity into machines right in pop science, most famously in the work of Hans Moravac the roboticists and records while the engineer but there are a whole bunch of others and we see it in science fiction and we're seeing back 100 years to George Bernard Shaw and up to contemporary Netflix shows like altered carbon, we see people thinking about this idea of human evolution into some post human state.

I'm myself am agnostic though pretty skeptical about those kinds of things, but in India, as in the US, you know, in the US those narratives are now really quite rooted, and in India those narratives are starting to gain a foothold in smart phones and Netflix and so forth. The first folks who attended to Ray Kurzweil and others were basically ignored, but now there is an increasing interest and you see it in pop science magazines like dream 2047. There's even a singularity cafe in Chennai, but there are also other interesting narratives that happen in India combinations with existing narratives such as the belief that Kalki will come as a robot.

Kalki is the final avatar of the god Vishnu who comes in Hindu mythology to end the world we're living in and inaugurate the new one. And now in the last few years we've been seeing people, everyone from tech hipsters in Chennai to sutters in the mountains of Nepal saying that perhaps Kalki would come as an AI. And as a quick contrast, no one has ever told me that Jesus might do that.

So I think that to be a difference we're thinking about. So some people might say a god could be a robot and definitely a robot can participate in a ritual that's already happening and maybe even be the earthly presence of God in a ritual. But there are also interesting philosophical conflicts over all this.

If we ask whether AIs can be conscious in the Hindu context, one of the fascinating elements of Hindu thought is that you could argue that a machine could be intelligent, but still not conscious. And by that I mean as intelligent or more intelligent than a human being, but consciousness is something different. And that distinction doesn't meaningfully exist in most Western religious or philosophical thought.

And finally, as like one little addition here is a question of ethics, right. In my, to my mind, if we talk about singularities, maybe that's going to happen in machines will take over the world. But mostly when we talk about machines, gloriously recreating the world, that makes our own concerns trivial.

And we need a real kind of ethics debate that when we look at something like Hinduism and Indian culture, we do see people already trying to apply cultural values and ethics to the way they're thinking about AI, that going from things like Dharma or duty, what are our mutual duties to one another, to the idea of Swaraj or self rule. What does it mean to be in control of my own life. So we need to open in some sense our conversation or discussion to this variety of cultural values, because some of them might change how we think about the design and deployment of AI.

Thank you. Thank you, Robert. That was really interesting.

I'm curious as to, you know, following up on that with a question around and maybe have you think about that a little bit because I think what's the last dimension and what you were talking about. What's the last question between the Abrahamic traditions and what we would call like the near Eastern and Eastern traditions. And where is it that we can think about some of those similarities but then also the stark differences around the idea of a soul and if certain avatars for example can even lead service, whereas in, you know, the other maybe the Abrahamic traditions that may not even be considered a possibility, due to some of the fundamental jurisprudical differences, but I'll follow up with you on that so Roslyn hi.

So from your vantage point does a computer scientist. What has been your experience of the interface between AI and religion. And in particular in your field or personal work.

Are there any specific examples or case studies you would like to highlight for us. Thank you so much for including me I have so much to learn from these other viewpoints that I really haven't seen much of that intersecting with a kind of AI we build directly. In reflecting on my experiences with AI.

I'm thinking of kind of three phases. And the first was very much what I think a lot of people in AI experience which is like like a mountain climber seeing Everest and wanting to know if they can do it. You know we see humans and we're so in awe of how the human works we wonder if we could build it.

And it's not because we want to be, you know, God or something like that it's because we want it's so amazing how it works we want to understand it. And some people I think do want to kind of conquer it. But I'd say most people are just intrigued like is it possible can I climb it can I build it.

As I started learning about the human brain. I started learning about the actually important and useful and rational roles of emotion and intelligence and propose that we give computer skills emotional intelligence which was looked at as a really bad idea when I first proposed it. Really bad.

People were like you're going to throw away your career with this one. I wrote a book called affect computing that led to actually what has turned into a lot of real work trying to understand it and use the technology to understand emotion, which brought me kind of into phase two. One day, young man knocks on my door to borrow a map for a bike trip.

And he says what do you work on I said oh I'm trying to teach this computer to recognize facial expressions and he said, recognizing like emotion and I said well, you know it doesn't always mean what you're feeling but you know sometimes you are clearly trying to signal emotion with your face and yeah trying to teach the computer recognize when that happens. And he said, could you help my brother. And I said, tell me about your brother.

And I realized, yeah, this doesn't just affect people on the autism spectrum. He went on to tell me all about his brother on the autism spectrum, not only seeing impaired people, but lots of people have a nonverbal disability where they just don't read the affective signals that we send deliberately or not. And they miss a lot of important communication.

So I realized what we were building actually didn't have to just be directed at making the AI better it could actually concretely be built into things that might be able to help people like his brother so we started doing that. And then I wound up learning so much more from people on the autism spectrum that I ever expected. And at first I thought oh we're going to help them turned out actually they were helping us, both in the ways they think and alternate ways of seeing detail and making systematic things that we didn't know how to make systematic.

So that kind of led into phase three, which was, I'm thinking I'm getting all these cool ideas how to build much better AI. And I was talking with Marvin Ninsky, one of the

founding parents of the field of AI. I've worked with John McCarthy in the early days when John named AI.

And Marvin was saying, you know, division was to build a eyes that were so awesome and amazing that we'd be lucky. If they kept us around as household pets. Now I had never quite heard it that way.

And when Marvin said that, it was like the wet blanket, you know, like really like my children are going to look at their mom or my grandchildren like somebody who helped convert us all into household pets. Is that really what I want my legacy to be. And I realized and as I immersed more in a much more diverse culture in the media lab and got a lot more different viewpoints on this.

You know, there's a there's so much need to build AI that improves human lives. And not to like make us obsolete. And the problems are actually as hard, if not harder in many ways they're intellectually fascinating.

And we can get all the joys of trying to climb Everest and even greater joys of impacting and improving lives around us if we really take time to learn these needs. That then brought in a whole lot of need to understand more about religion and so much we can learn from these viewpoints. And also just the values that I realized come from, you know, my religious worldview in contrast some other people's religious worldviews that have very dramatically now shaped the work that we're doing.

And Dr. Prakard and thank you for, you know, just being such a trailblazer in this work my father's a neurosurgeon so when you really were talking about some of the connecting points with the work you're doing with AI and the brain and the very practical ways in which you're helping humanity just profound. All three of you have touched a little bit on some of the history as well as like where where we are in terms of utilizing artificial intelligence. I'm curious as to where you all see the next friend here in the next let's say 20 years or so, both some of the threats that people may feel from artificial intelligence because I did hear a little bit of that right Dr Johnson when you talked about the what we call the Western traditions right in particular let's say the monotheistic traditions.

There's, I think an appreciation for what technology and AI has offered, but there are some very deep questions about whether AI can replace let's say a rabbi when you know Robert you mentioned in you know the Buddhist temple where we're actually in Japan as you know there's the idea of like having a goddess that you can go to and receive a blessing form and then you spoke a little bit about in the Hindu tradition with the the art the and the concept of incorporating these avatars that are robots into the actual food but there are some other traditions where that actually may may not find a parallel and in some ways it may actually be seen as a threat right to the actual existence of that tradition. So I'm curious as to where you see this going and what are some of those, you

know, warranted threats that people may feel from AI and that you know for for you Rosalind I think that if not in the realm of religious practice. What are you know some of the notions that people may that you have experienced around the fears that people have of this new technology AI replacing human connection.

So I'll have either one of you know so Sylvester if you want to take a job at first. Yeah these are great questions I'll point to one thing that's related to some of the things that Robert and Rosalind have already identified so the one way to think about the frontier and emerging technology and AI spaces humans versus but as has already been articulated in fascinating ways in the panel, it's humans with machines that I think are actually going to create some of the more profound practical challenges and I'll give an example so the leading military industrial governments globally are expending tens of billions and hundreds of billions of dollars to develop weaponize AI. And to so AI for warfare this is for targeting, you know so called smart missiles I kind of thing, but also modifying human soldiers to make them more effective in warfare and to restore lost capacities due to something like traumatic brain injury.

So the Pentagon in the United States spends a lot of money to develop really third, but I would call third rail cutting edge AI in combining people with machines cybernetics is the fancy term for them. And this is through brain chips for example, that can allow someone who's had a traumatic brain injury to be able to walk again have normal speech again, have restored memory or speech capacity. So that research is very well funded is very serious and us just example there are military industrial states think about comes in mind Germany, Israel around China, we're pouring money into this, because of the high stakes of AI that's going to stay that the recruitment of talent and the amount of capital that's going into those kinds of technologies is not going to come to not think that actually will produce pretty profound results.

And, and I'll give one example you know if at some point in the future human goes into special ops, and not only needs recovery from traumatic brain injury they just not drunk with them, you know you can just enhance their abilities you can give them infrared vision you can allow them to communicate wirelessly with the drones so they can see the drones thing and also with other people who also have the brain chip, and they do their special things that people in special ops do and then they come out and they're civilian. So now they're part of their, their neural architecture the brain architecture is not only it's not 100% organic human is part machine. And so one way that these this question of AI versus human can come up is politically should that person be able to marry vote race children, someone could say well so vaster you're you're not fully human you know your brain is part machine now.

How do we know we don't think machines can love only humans can love. How do we know you can love these children because your brain is not part machine or how do we know you can vote how do we know you're not just being hacked by whoever has most

money to manipulate the AI. So you shouldn't be allowed to vote anymore so best.

So that's that's an example that may sound sort of far better you think about the amount of capital and and talent global that's going into these kind of outcomes. I think what it demonstrates is that it's not necessarily AI versus humans in the some of the film scenarios that we see that might be the nearest challenges that we face it first but rather it might be the question of human rights, political, political spectrum of freedoms and responsibilities that people can have based on whether or not they've been enhanced modified combined with machine systems, or, or synthetic biology, but we're talking about a I'm talking about the implant. So that's an example of what I think is both an opportunity to be able to do the to extend the kind of work that Roslyn has pioneered.

And that is really enhancing the quality of life of people by combining them with machine system you can you can have a wearable or you can train this machine system to be able to work with people to provide emotional support communication. But it's it's also an opportunity to to weaponize. It's an opportunity to outsource the decision.

I was going to say decision services but it's decision to a much more efficient algorithmic system that can act very quickly, but that can also create tremendous military consequences. And, and, and I think really it's the human machine the cybernetic subject that's where I think the rubble, the rubber will hit the road soon is for us, and trying to deal with the political implications of these developments. If I can hop on that.

I completely agree you could see me nodding a lot I guess. And, and by the way it's not just me pioneering this there's a huge number of people I love seeing how much the community has started embracing more human centered AI and AI that's about making lives better whether it's respecting people's emotions helping disabled people. Expanding equality and justice with the technology using it to level playing fields instead of just to keep giving more power to the rich.

And there are certainly these very disturbing military things that we need to be having conversations about as a society, because I think a different way to think about AI is not about replacing people, but as augmenting and amplifying and extending human intelligence and human ability just like it enabled people, just like early mechanical machines increased our physical strength our ability to lift things and build pyramids and buildings and so forth now the cognitive and affective prosthesis, if you will, are expanding our ability to handle re-equip people who have certain diseases limitations visual limitations affective limitations anxiety and stress monitoring and regulation limitations you wearables and all that can help you see the panic attack coming and calm down beforehand or the see the seizure coming and getting a safe place beforehand and maybe even take something that prevents it now. And while also gathering data and giving us insight into hopefully better treatments and solutions for these things in the future. I'd like to sort of change the thinking from just building a

human, which really is sort of the best device for eliciting fear, making movies, although there's been a lot I mean even in the first place at coin to the word robot the traffic brothers are you are, you know, the robots are going to be out to humans right you know there's there's just that sensational play, I think it's much more likely it's going to be humans using technology, hopefully not to wipe out humans, but to hopefully help people's lives be better Robert did you want to join in on that? Sure, the quick segue there is that probably the best thing to listening to fear of human beings is another human being right that it's what's terrifying is what we might do with machines, not really the machines themselves But for me when I, you know, and some of my work has been with like the G20 interfaith forum and that kind of thing on the future religion and AI and how we might think about those things, you know, a number of ways in which we might engage the question whether or not human beings are going to do things to one another with machines would be to think about how we're going to cooperate toward making a kind of better environment, and that means a technological environment right, and that in part means rigorous education for religious leaders of whatever tradition right how will those people join policy discussions or counsel their lay public or whatever else if they haven't been educated to know what the technologies do too often religious leaders are either a lagging way behind the technology and playing a lot of work or be at which point the reactionary by definition, or be the responding to vaporware right like technologies that don't even exist, and better the the the flavor of the day for us all to panic over so we need those people to be in communication with their communities and to be productive, and we need both the leaders and the lay public, and I think this is really important and it maybe goes back to some of those other things that I had to say earlier about avoiding hegemonic narratives, capital T truths I think my truth is a big old capital T truth whether it's scientific or religious or whatever else, and that you need to believe it, we were not in a place to collaborate right we're not in a position to cooperate at that moment and so we have to take the humility of putting that moment inside a fundamental way to do that I think is when we when we notice that things like religion are not just about belief, they're about what people do, and for many religions belief is not even a primary point of interest Hinduism for example provide space for folks to do a whole lot of different things and to participate while believing pretty much whatever they want, I myself am an agnostic but deeply committed Jew, so I see space to think about community contributions that are not grounded in assumptions about other people necessarily but rather what we want to do in the world rather than what we want other people to believe right if we put aside what I need you to believe, and I think about what we want to do, I think that that provides much greater leverage and it promotes interreligious cooperation and also probably I don't know I don't think we have good examples yet but maybe religion technology cooperation when it becomes about what we're trying to get done so if I think about global value systems and how and say I take the goal of self rules for us in India, the idea that I should be in control of my own life, that probably tells me something about what I want from AI technologies, it maybe tells me something about what I owe AI technologies if they ever get a whole lot better than

they are right now, and I mean a whole lot better like many orders of magnitude better than they are right now, but if I simultaneously think about confusion systems of respect and obligation, I could benefit from examining the overlap and the differences and a kind of Venn diagram between that and Svaraj and maybe Christian Gape, like when I think about the efficiencies of technology and the power of AI to expand human capability which is what Rosalind and Svelce were just talking about, right, how do those intersect with other values in producing the world, in making the world one we want to live in, and that's an opportunity to think about how do I genuinely engage with other people, you know what can I do in the world if I take all that seriously, and I think that's the conversation that people in the space who are intersecting with religion and AI need, they need to think about what they are trying to accomplish, because by and large, I think we are all probably trying to accomplish most of the same things, putting aside Marvin Minsky and that crowd who maybe they are trying to accomplish a whole new robotic species that makes us all look like, you know, ladybugs or whatever, putting aside that community and actually finding ways to cooperate with them too, you know, I think we all probably mostly want many of the same things in life and that's what we should be like, you know, relentlessly pursuing, how do we find that moment with all of us, right, and, you know, that's enough, I'll stop there, I gotta get past my academic desire Well, I think all three of you have highlighted that the intent, right, of AI has really been to bring significant change to the human condition, but one of the challenges is was, you know, mentioned earlier is where, you know, if there are ethics around what the next frontier brings for us, right, so when Sylvester, you talked a little bit about, you know, different military systems utilizing AI and incorporating that.

The question, you know, the next question of course that I think many of us would ask is where who governs the values within these systems and what are those global values, if any, that help us navigate through new questions that may arise And so, and this is especially when there are so many different systems in play and paradigms, but, you know, from different traditions around how they even perceive this, right, and some may welcome this and some may actually say no, this is actually a sacrilegious in some ways, so, and as you were speaking Rosalind, I was really curious like in the work that you do, where, where does, where do the values and the virtues like what are those guiding principles and the ethics like, where does that come from to great question and, you know, there's all this conversation about courses on ethics for engineers and so forth, but they still tend to focus on, you know, like preventing disasters. And that's, that's a good thing to do, but, you know, like in the medical space you know we, we follow, I have collaborated with empaticon to FDA clearances right and you just do extraordinary amounts of work trying to prove not only benefits but that you've thought about every possible risk and you've done everything you get in to mitigate it and here's how you document everything you've done and you continue to document it through manufacturing and code changes and everything. So you have to commit to it, but it has to be well defined.

And one thing that, that really shocked me once when I was giving a talk in Beijing is I was talking about some of the work we've done in autism and epilepsy, and not only what it had led to there and how it had changed our thinking for AI, and how we were doing things differently now and how much I valued the amazing insights I got from this work. And some of the people were looking at me kind of peculiar and, you know, and they had good English and they were getting translated afterwards, couple of the professors and scientists pulled me aside and said, you know, professor Picard, you know, they said some nice things about the work, but then you can see the elephant in the room, they were, they, a couple of them said, it's not our religious and we know a lot of people here who believe that people who have these conditions are being punished for something in an earlier life. And why are you working to help them? Why are you like, like, shouldn't you work on something else? And I mean, I had since that they thought this was kind of like, don't touch this topic, which is why I spent so much work trying to tell them, you know, truthfully the benefits that it led to scientifically as well as because they didn't seem too interested in helping these folks.

And then when I heard the worldview that they were espousing, I realized that something I had taken for granted, which is all people, you know, declaration and pen, all men are created equal, and, you know, United States and we're always seeking this right we don't achieve it, we have a long way to go. And we believe that, or I believe and realize not ever else said that we all are equal and I realize now that that worldview, some of you may have more expertise than me, but I realize it comes out of Genesis out of the, you know, Judeo Christian scriptures, Amago Day, all people, you know, man, man and woman created in the image of God, God made them. And that is imprinted on each human being doesn't matter if what you believe doesn't matter if you're able or disabled, it doesn't matter what religion or culture you are, you know, in this Amago Day, all humans, you know, no conditions attached there are made in God's image, and then in Christianity, God so love the world right not for God so love people who followed Jesus but for God so love the world, all people that God sent God and Son for everyone so there's this Christian worldview on top of this Judeo Judeo Christian Genesis worldview that all people are equal and we seek that kind of justice we're all are treated equal.

I felt like there's just as much worth in this disabled person who can't speak who's struggling to type something to communicate equal worth to the greatest, most accomplished individual in our society. You know, right now they're not treated equally right so I see AI as an opportunity to try to remedy some of that. But that touches right on the, you know, where does that come from and somebody coming from a different worldview will completely disagree with me on that.

And that's one of the reasons to talk about what we want, right, what a person really wants. And, and, you know, as a side issue I actually have I have a cousin who's Christian and she's deaf, and her parents were lambasted roundly for their own sins which produced the deafness produced the deafness of my cousin So I raise that only to say in

all kinds of traditions people have really what I take to be unfortunate perspectives on why any one person might be suffering in life right. But when you ask someone, Hey, if you were deaf, would you like me to help if I could.

So if it was your kid, you know, that's why we push away from belief toward what we actually really want. And like, you know, did it kind of sometimes and it's hard for all of us we all have a hard time being in someone else's shoes. But when we, when we get at the concrete ground, I think it's tremendously unfortunate that you had people pushing back on your work saying why would you bother because it's clearly their own fault.

Right. Like that kind of victim blaming is really unhelpful. Right.

Then it's not people. Well, they were very respectful and serious about it. I mean, it doesn't sort of privately pulling me aside and saying, you know, we kind of have a problem with this.

And then, I'm like, oh, I want to understand and they explained and they're like, oh, okay. You know, but it goes back to what are your assumptions. And in our society today people often don't question where they come from.

They just kind of assume that everybody thinks everybody should be treated equally and isn't horrible that that's not happening. So I don't recognize where that comes from that that comes from. Well, I know the source of Genesis, maybe there, there are others.

And certainly the Judeo Christian worldview. And I now I know there's several other worldviews that differ. So I just push us to an ongoing question I have that I would love to hear both you and Sylvester respond to, which is really how we get religious groups and scientists and engineers to collaborate to ensure the value of technological development, really for the most marginalized communities for those who go unseen and unheard and technological progress.

And who are as often is not, you know, the backs upon which that is built right like how do we get people to collaborate together to really produce change for the people who need it most. So that's all yours. Great questions are great points I would be remiss not to recognize the him and whose foundation which is granted funding.

I have million dollar grant to Virginia Tech to do a series of workshops on future humans, human futures, which is bringing together experts and religion and theology and related humanities disciplines to engage with the ethical questions around technology. And that's anticipatory for looking and, and that's bringing together people from multiple religious traditions but also focusing on underrepresented populations, because you're important this question was around equity right how do you, how do we get to people who are along different cultures, numerical or power minorities, given whatever the context might be whether it's persons with disabilities or black indigenous people other

people's color religious minorities, the poor. And, and so that's something that we're doing in order to try to achieve those equitable outcomes and that is bringing together those individuals and putting them in the room with individuals and and companies that are creating technological systems that are developing algorithmic software, or that are designing defense protocols or military applications, so that they can understand what those applications are doing what the real world scenarios of scenarios are.

And, and begin then to try to reflect on what some of the interventions and strategies need to be. I think that's, that's just one example that's not by itself going to solve our problems but it's certainly as part of the solution of getting, getting different people who usually don't think of themselves as meeting the same room, right someone who builds a eye, someone who likes to read of philosophical texts or write poetry, but, or who, who is involved in some kind of civic activism. But I do think that we have to move further into understanding the technology is, is not just a STEM issue.

It's a comprehensive human issue. And some of the questions and the most difficult challenges I'd like to point out in technology are actually not technical. It's not that there's no profundity, profundity in the technical achievements.

Just try to pick apart a smartphone. It's put it back together. I'm just in this just mindboggling is sophisticated.

But if you make a list of the technical achievements and the technical challenges that we saw, you need to whip out, you couldn't do it on a napkin or sheet of paper you know you need to open a spreadsheet and start filling it in. If you make a list of the human side of the technology challenges that we've solved so your question about values, right? How do we get to equity? How do we prevent exacerbating inequality with our technology systems and how do we get equitable outcomes that are socially just that are fair that are not just another excuse to back up into nationalism? We have techno nationalism. Even though the platforms are global and the corporations are global cause they need global talent.

They're not invested in this nationalism. You can't make money doing that as a corporation. It just doesn't work.

But, but our nation states have just used the technology all over again to invest in the nationalism, which is only going to make it more difficult for us to achieve the kind of interventions and the quality. So I think that's that's one way another quick thing I'd add is that when we talk about values, we need to be very serious in addressing value as in financial value as in money, because digital technology is set by the world economic and the world's anticipatory analysis of this over the next decade or so to possibly more than double global GDP. And in other words, in the next 10 years, we might see the development of more new value creation.

In the decade, we might see more in the next decade than we've seen in all the human history. Think about that. Like that could happen.

But if we get half of that, like if that's 50% wrong, it's still basically right. The point is that we're going to generate so much new value largely through digital technologies and a big chunk of that may be 15 to 20% through and so it's an opportunity to figure out how do we avoid just continuing to grow inequality and how do we get to share prosperity. That has to be global.

It can't be based on nationalism. And it has to be based on really being deliberate and bringing in underrepresented peoples, those who are most highly vulnerable. And that depends on which vectors we're talking about.

Okay, then these be context sensitive whenever we're developing these systems and particularly when we're thinking about the future of wealth and value in that sense. Yeah, what you all just shared. I'm going to actually move into the questions from our audience because some of what you shared actually covers several of these questions that have come from the audience.

And there's a reoccurring question around the idea of perhaps investigating algorithms and the fairness of algorithms in data science. And, you know, considering basically moral foundation theory which is about six independent dimensions of moral psychology, including care and harm fairness cheating loyalty betrayal authority sanctity liberty oppression and basically the point I think the question is trying to make is you know, where's the fairness in the algorithms and humans with different cultural backgrounds and politics will weigh on these dimensions differently. So how much of this has been probed in terms of algorithm ethics in the context of the richness of the multidimensional world that we live in.

And any of you can address that if you're if you're interested. I'll read the easy part. Let me leave the hard part for a semester.

You know my work with the G20 interfaith forum. One of the things that came up repeatedly in our work with experts in the field from scientists engineers science and technology studies people policy people was the need for algorithmic bias auditing, which is that if a company is working with say the federal government is easiest right if you have a contract with the federal government, it should be mandated that you have a bias on it before like we give you money. And probably we want to wait it to bring that into industrial practice also right not just if you happen to be working with the US government or the Chinese government or whatever government you might pick but that in general we probably wanted some other way.

And so like on the one hand there's a regulatory framework there because there are all kinds of things that if you want to work with government X or government Y you have to

check the right boxes. And one of those boxes should be legally mandated to be a bias on it. Now that said the hard part of the question was was actually I mean I guess the hard part in the US is getting our Congress to vote on anything at all.

But you know there's the hard part there is how do we reconcile different people's beliefs about what constitutes that bias on it. And I think you probably I'm going to just say one thing and then seat it to my colleagues you probably start with the low hanging fruit. We all know that are racist algorithms a bad one right like we can start there we can you know a sexist algorithm would be a bad one.

And if we could probably build from there but I'll stop at that point with just the low hanging fruit in that question. If I can point to two other things since time is tight and we want to have people have more interaction. One is the work of Joy Boula Mooney recent PhD at the Media Lab who formed the algorithm at just to sleep and has just done I think a fabulous job, bringing together, you know, she's a real AI researcher, opening these conversations and going not with hyper, you know, crazy stuff and then you're going to have to do that with data to companies and saying like, you know, look, you have this bias this, you know, and they want to fix it.

And what we find is that when you take that approach and you show people where these are, they don't want them to be there. And one of the nice things about algorithms and data is it's objective, right, whereas when it's in people, I think you will get away with hiding it and misusing it and even worse ways. So looking for that algorithm, right, it doesn't necessarily manifest itself until something bad happens.

So there is a wonderful new movement in the AI community to try to really look for these things and ferret them out before they become a problem. The second thing I'll point you to is if you're interested in going deeper than the kinds of things I just described into a whole bunch of factors that affect it. And this co-authored a paper with Sharon Chung, CHIA and G in neurology it's the top neurology journal.

This particular paper is not general. It's taking a domain like neurology and all of the things we could see happening with AI and wearables and algorithms. And when it meets that domain, how do all of these ethical principles, the fairness, the bias and benevolent beneficence and not doing all kinds of ethical principles come into play.

And how do we imagine how we might deal better with the ones that we can see now and which other ones are we guessing might be arising. So I recommend that it was published July 27, 2021. First author is Sharon Chung CHIA and G in the journal neurology.

I was a terrific, I'll add one quick thing, the public interest technology university network has been recently formed and supported initially by the Ford Foundation and then more recently, along with other philanthropic entities. And the Ford Foundation has wanted to

do for technology with a very successfully with law in the 1960s, they focus on public interest law. So today we take for granted there are people who are working on law for advancing human rights or civil liberties who are working not just for the benefit of private capital but also for public interest.

And that is the vision of the Ford Foundation has for technology by creating more pathways and emphasis on public benefit. They're not against private capital, they are private capital, but they recognize the need also to be able to bring about the focus on public benefit with technology. That's been a very important trend that now has resulted in close to 50 colleges and universities that are really deliberately aiming to prepare future talent that addresses the equity issues it takes very seriously the need to be inclusive and the teams of people who are actually developing technology.

If that's, if not not inclusive and diverse, it's really losing the game almost before you've begun and so they're focusing on that as well. So that's been another positive trend to try to achieve these equitable outcomes with technology. Thank you all three of you've given us some really great direction, so that we can do our own research on this.

There's another reoccurring question around promising strategies. So what do you see as promising strategies? For helping religious leaders get technology education in a robust enough way to be helpful to their congregants to the next generation. And in connection, there's a, you know, a question around the participation of mainstream religions which, according to Pew is, you know, in 2014, I believe that the research around one in five Americans is now a none.

I know any, not a habit wearing none but not necessarily prescribing so particular religious tradition. But the same research, by the way, I want to disclaimer that it does not mean that Americans no longer care about spirituality or questions of meaning and purpose right. So really the question around how can we utilize AI and helpful strategies that could both educate leaders, as well as provide, you know, maybe a reverse trend to following a particular organized tradition.

Sure, and nobody else is saying anything I will. I do know that that here in the US there is an organization called Science in the Seminary. And I only know a person or two in that group.

I think they take very seriously the goal of helping seminarians understand contemporary scientific progress. And I think that that's really important, right, in the US we see, you know, it's funny when I go to India. People are like, well, here religion and science get along.

It's not like in your country. And I usually say, what do you mean? What's it like in my country? And their assumptions are that in my country, they're all these like angry religious people angry scientists, which by and large isn't really true. And in fact, you're

a religious scientist.

You've scientists don't care about religion. You have religious people who don't care. Like by and large people just get through life, right? But if someone who's going to be a religious leader is going to be a real leader, that person needs to be aware of what's going on in the culture they're living in.

And so an effective science education, I think is really important. But I think symmetry is really important. You know, if someone, one of the things I also sometimes moonlight as is a grant reviewer for the National Science Foundation.

And I find it remarkable when people in things like human computer interaction put into a grant proposal that they're going to spend X amount of time, 20% of the grants about ethics. But everybody writing about ethics like the whole team are all engineers. And I'm like, hold on, why is it that engineers can do ethics? But ethicists can't, I don't know, build robots.

Like, I mean, we all know why ethicists can't build robots because they either can or they can't. They either have a robot at the end of the day. But the assumption that anyone who just wants to talk about ethics can do that work is a really poor assumption.

And just because ethicists argue with one another about what would be the best, the best case scenario doesn't mean that they're like not a good voice in the room. So I think really what we want is the kind of accepting symmetry that says, okay, if we really want to talk about the ethics of this, you know, technology that we need to accept that we're going to have to at least listen to some people tell us what that means. Right.

If we're in the scientific and engineering domain, we may not agree with them, but we at least got to listen fairly. Right. And vice versa.

I think we want religious leaders in training to listen fairly about what scientists are telling them. And we want scientists to listen fairly when someone comes to them and says, look, for my religious tradition, here's why this is a real problem. And then you may or may not change what you're doing, but at least you've listened and at least you've like grown a little bit as a human being in a community and whatever else.

Yeah, I think that's, I think that's spot on, Robert, I love the point that you made in contrasting the engineers are presumed to be able to do ethics with the sophistication that should be able to win millions of dollars in a grant. But it doesn't work the other way around, right, and the undervaluing underestimated the kinds of training and thoughtfulness of preparation that's required to bring the commensurate level of skill to these very difficult ethical challenges. You don't just wake up in the morning and say, I'm going to think about this.

I mean, you should think about it. But expertise is still important, and expertise is not

just technical. It's also humanity, social plans, we think of as creativity or political theory, whatever we're calling those things that are not stem.

They still require expertise. And I think that one of the ways that we've shot ourselves in a foot, and I think they're continuing to nationally and globally, there's a lot of right now it's popular to be angry at big tech. Ten years ago, I mean, very few people care, you know, it's all the rage.

And it's what I think it's important to hold. Companies accountable, but I think it's worth no everyone account, not just not just corporation governments, I mean, private philanthropic organizations, whatever, whatever people are doing. But if we, if we don't correct the problem, where we have spent decades through our legislative assemblies, be funding comprehensive education.

Ever since Sputnik, you know, we've just told people, look, what matters is math and science. And we have translated that into funding models and to educational standards and to social values. And in the crisis now, as students go to college, they're scared to major in something that's not stem because everyone's told them, you're not going to be able to make a living no one's going to hire you.

And what I think is unfortunate is that it's so popular politically to rage against big tech. But we haven't, we haven't stopped be funding comprehensive education. And, and the things that people are raging about are not really at the root necessarily about technical difficulties.

They're about the human frontier of technology. It's about fairness. It's about justice.

It's about being equitable. It's, and I love the way you phrased this question earlier, to her, you talked about governing technology. How are we going to manage it? How are we going to get it to do what we needed to do so that we can have a world that we actually want to live in instead of one that looks like Terminator or some other apocalyptic scary film.

And, and what one of the things we need to do to get there is to stop this false narrative that claims the technology is really just technical. And what we need for technological society is really just spent. And all that other stuff over there, you know, defund it don't spend taxpayers money on that.

We're still shooting ourselves in the foot. The reason why we're in this situation is not because private companies are developing technology and now they make a lot of money is because we required students who came to our universities who said that they wanted a career in technology. We require them not to be able to have a comprehensive education.

We crammed their curriculum so full of only mapping science. We didn't allow them to

study these other things. And now we want to be, we want to be angry at those students that our society created because we think they're threatening democracy, which is not a technical thing.

It's a humanistic kind of thing. But we didn't even allow them to study democracy. It wasn't in their curriculum.

I don't think we can have it both ways. I don't think we can, we can force people into these curricula that take them into professions that we claim are the only things that matter to the to the global economy. And then when it starts to threaten things like freedom and fairness or democracy, then we want to beat our chest and point fingers at them and we want to get on our high horse.

But we're still defunding comprehensive education. And we're still saying to our school systems that the only thing that really the only talent we really need in the future is math and science. We're just creating the same problem all over again.

And I think that that hypocrisy and the way that we handle the funding of education and the way that we talk about values and the way that we valorize what people study, that that hypocrisy will continue to undermine our ability to get to these values that we're talking. So we definitely need to invest in the very best of our religious traditions, and we also need to invest in human traditions and trends that that maybe they don't fit into religious labels per se, but they are necessary for human to interact with. And the way that we have politicized the rage against big tech I think is not going to get us what we need if we're not self critical about what we've done as a society.

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