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What Does Human Progress Mean? | Alana Ackerson & Christopher Hitchcock

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The Veritas Forum

We have computers in our pockets, and we can 3-D print a house. But as our technology advances, are we better off? At a Veritas Forum from Caltech, Alana Ackerson, finance leader and entrepreneur, and Christopher Hitchcock, professor of philosophy at Caltech, explore the relationship between human progress, our technological capacity, and the role of religion in shaping conversations about the future.

Transcript

This idea of newer and better technology, being a faithful act, right? The development of that, and that is an expression of hope for a better future for humanity, right? So that is something shared amongst technologists and people of faith, this question of hope. Both are taking risks to a certain extent, with the intention of finding something that is better than where we are now. We have computers in our pockets, we can 3-D print a house, and soon with the help of Elon Musk, we might be headed to Mars.

But as our technology advances, are we better off? At a Veritas Forum from Caltech, Alana Ackerson, finance leader and entrepreneur, and Christopher Hitchcock, professor of philosophy at Caltech, explore the relationship between human progress, our technological capacity, and the role of religion in shaping conversations about the future. So, Dr. Alana Ackerson, she is an entrepreneur and investor, and we were talking over dinner what she's doing right now, and she's sort of at the frontier of new financial models and banking models, and so she works at Figure Technology right now. And to my left is Professor Christopher Hitchcock, and he's a professor here in philosophy, and specifically his research areas are origins and foundations of science and science philosophy.

And to get us started, I would like them to sort of consider these three questions. So, say, I will pass this around, don't worry, you don't have to memorize this. So, right, right, so here's the three questions to get us started in the moderated portion.

In your professional life, have you encountered tension at the interface of advances in science and technology and effects on society, and based on your experiences professionally and personally, what is your perspective on what human progress means, and how does your world view influence your perspective? So, Alana, I will let you take it away, and if you would like to take this around, you could. I'm good, okay, perfect. So, again, just to give a little more context, I have had the pleasure of spending a lot of my career looking at how we put capital to work in macroeconomic ideas and trends, and also technological innovation and scientific research.

And then I've also somewhat on the side, but I'm integrating it in, trained as a spiritual director, did a master's in philosophical and systematic theology with a focus on radical life extension, and then completed a doctorate in ministry with a focus on faith and technology. So, a lot of fun, and yes, there are lots of ways in which those two domains inform one another, and that's where I love to live. I find that a great place to play.

So, in terms of progress, I think the first thing we need to do is understand how we're defining progress. It's one of those terms that's kind of out there, and there are a few different ways we can think about it when we are trying to decide whether or not there's sort of clarity around what is good progress. The first would be sort of looking at it from an evolutionary perspective, and that is linear.

Are we making steps forward in the advancement of how we do things? The second would be sort of an efficiency question. Are we getting better through our technology? And that starts to push you on questions of effects that you had raised. So, if I make a car a lot faster, some would say that's progress, but what if it's polluting quite a bit more? So, the question of efficiency starts to get a little problematic, and then finally sort of progress around doing things that are really disruptive in terms of innovation.

You start to get into questions of progress that become even murkier when you talk about whether or not you are doing something that is, to a lot of the questions you ask, how that is being distributed within society. And in a lot of those cases, and we'll probably touch on this, it has less to do with the actual development of newer and better techniques, but it has to do with political and social will. So, right now we have the ability to feed everyone on earth.

We are not doing that, and that's an issue of political and social will more than it is of our ability to create more robust crops that grow at faster speeds. And so, we have to be sure as we're asking some of these questions that were clear about how we want to unpack them and make sure we're not confusing different pieces of it, right? Because technology inherently is sort of, again, that Greek word, technique implies, you know, sort of not just a, this is technology, like this is a piece of technology. Someone conceived of this and made it and presumably thought it was better than what we had before.

But technology is also a set of systems and processes. It's how we do things, right? It is applied science. We use science to understand the material world, and then technology is how we apply that to do things in this world, right? And so, you know, with progress, you know, it's a question of what are we trying to achieve, right? From a lens of faith, there is a question of where are we trying to go in the future, right? So, part of what I looked at in my doctorate was this idea of newer and better technology, fundamentally being a faithful act, right? The development of that, and that is an expression of hope for a better future for humanity, right? So, that is something shared amongst technologists and people of faith, this question of hope.

Both take, both are taking risks to a certain extent with the intention of finding something that is better than where we are now. And from a Christian perspective, and you look at actually the work done, you know, over the past thousand years, and much of it, before we get to sort of very modern day American Christian discourse, much of it was very much informed by a Christian belief that the pursuit of science and technology was in service of the desire for something transcendent, the desire for something redemptive, hope of better understanding God, the nature of God, right? So, when you look at a lot of sort of the forefathers of the work we're doing now, Galileo, Louis Pasteur, you know, I could name many of them, Francis Bacon, you know, is a big one, you know, you look at the language they used, right? You look at how they conceived of their work, and it was very faithful in that there was that hope, and many of them actually explicitly talked about trying to do something redemptive, right? Trying to do something creative in the true sense of the word. And, you know, there is this idea that we are not just created beings, however you conceive of God or a divine organizing force, but we are co-creators, right? We are designed in the image of the creator, right? And so, we are called to participate in the unfolding of creation, and it's a very Augustinian idea that there's a God that created an earth, and then, you know, after day six, stepped back and said, "This is perfect, let it spin," right? And that's problematic in a few different ways.

One is it implies a distance, right? And it implies a static and closed system, which is not, I think, our experience of the world, and so a different way to conceive of it is this idea that the world is unfolding, right? That there is sort of a divine improvisation going on, much like jazz, you know, that there's an artistry in it, and that there is not only an opportunity, but even a mandate and a duty for us to participate in that unfolding, and as we participate, we are going through a process of discernment. What technologies do we pursue, right? What are we progressing toward? What do we value? What are we optimizing for, right? And creating a lens that is informed by, you know, that inquiry by a faithful technoculture is how we arrive at decisions around what to do when things get murky around self-driving cars, right? Because when we program self-driving cars, we are programming it to make decisions based on a set of values we have, whether or not to hit a pedestrian or hit the guy on the bicycle, right? So it's layers upon layers. I think it's a really rich subject matter, and it certainly informs all of the work everyone in this

room does every day, right? Whether or not we are using a lens of religion, or even thinking about the ethical implications of the scientific research we are doing, or how we're applying it in the real world, we are doing something that is fundamentally somewhat faithful, right? We are looking for a deeper understanding, and our hope is that deeper understanding leads to a better future for humanity and for the way that we structure and build society.

So I will stop there as sort of an introduction to how I view this subject, and I'm really looking forward to the rest of this evening. I think we could probably spend far more than the time allocated because it's very, very rich, and there are a lot of different ways we can go. So thank you for having me.

Oh, thank you for being here. So Chris, same questions. Same questions.

Yeah, same questions. We'd like to see them. Yeah, I think I remember them.

Yeah, so I think maybe start with the second of your questions, which is what does human progress mean? In philosophy, we grapple with a lot of big questions. I'm teaching a course on free will right now, and you start off, do we have free will? What does free will mean? And kind of my own take in philosophy is that as philosophers, we spend far too much time arguing over what is the right definition or the right meaning or what's the true meaning of a word. So I think with a phrase like human progress, I think there's a danger of what does human progress mean? Well, there isn't one true thing that it means one correct thing that it means that and the kind of move I like to play when I'm talking other philosophers is to say, Rebecca, you can mean whatever you want by human progress, but you're not allowed to assume that because you've called it progress that it's good.

You still have to explain to me why the thing you're talking about is important, why it's valuable, why we should care about it. Right, so I think there's always a danger that when you put a name on something that that name is carrying the weight that should really be carried by examining it more directly, right, you don't stop a debate by saying you can't stop progress, right, progress is good. Now tell me why this thing is good.

So I think the question about what is human process, I'm kind of aware that my chair is angled this way, and I'm talking to only half the room, so I'll try to crane my neck occasionally over here. The way I interpret the question is what kinds of changes are taking place, what kinds of change have taken place in the past, what kinds of change might take place in the future, which of these are positive changes, which of these should be celebrated, which should be encouraged, which should be discouraged. Those are all great questions.

I think we should, you know, we need to ask the questions of each of the bits and pieces, and one of your questions, this was the guiding question I'm supposed to answer, but I'll

cheat and answer one of the ones from the earlier slide. Can we come up with a measure? So, you know, almost any time you develop an index, there are a couple of things. First of all, there are going to be assumptions about value built in, and even with something like inflation in economics, if you think about, you know, so let's say since last year the price of beef has gone up and the price of pork has gone down, what does that say about inflation? Well, if you're a Hindu or a Muslim or a vegetarian, or, you know, if I'm happy to eat what's ever cheapest, or if I, you know, really value a varied diet, right, this is going to have different impacts on me, but when you develop an index and say this is the rate of inflation, you're smuggling in assumptions about, you know, how much pork I'm going to buy and how much beef I'm going to buy, right.

And so, you know, be aware, I mean, indexes can be useful, having an index of inflation is useful, but we need to be aware of those assumptions that could be built in. I actually just saw, going to bed and, you know, reading stories on my phone about somebody writing an article about is Scandinavia, the paradise it's supposed to be, and Scandinavian countries always come up highest on these happiness indexes, which I think of as kind of maybe being along the line of what you're what you're looking for, and there, you know, it was, this one focused on Denmark, which in somebody's survey came at the highest and all these Danes saying, yeah, it's actually kind of boring here. And, you know, I've been to Helsinki in November, and they always, they always go really high, but the people there are kind of like Helsinki in November, and I'd rather be in California.

So, and, and, you know, you're always going to be using proxy for the things you're actually interested in, right, you're going to be using something that you can quantify, when maybe the things you're really interested in aren't quantifiable or something you can easily measure. And there's also always a danger that sort of once you use an index that it's niplable. So, an example I think most of us are familiar with the, you know, U.S. News and World Report rankings of schools.

They want it to be objective, so they collect quantitative data, but of course, you know, they're assigning a certain number of weight to certain categories, and I can tell you why it was an undergraduate Princeton, and the, you know, one measure that Princeton always does really well on is school spirit. And, yeah, they've got a spirit meter, and one of the measures of school spirit is, you know, what percentage of the alumni give money, and, you know, the number of times they get called on the phone and asked to give just one dollar to Princeton, right, and because they know this is going to drive up those scores, right, so, so the second you have a measure of something, it can be distorted, or it can be exploited. So, you know, we may be able to come up with indexes that are good starting points for discussion, but we have to be really savvy about what the assumptions are behind that, how those are being used.

Okay, so, so what does, what does human progress mean? I think, so, so one dimension

that I would maybe just pick is one thing that I think is important, and that it maybe is a lens for a lot of the dimensions you are talking about, and something that has been important among philosophers talking is autonomy. So, the ability of people to control their own lives, to make decisions for themselves, this has been, I'll turn, look at this part of the audience again for a little bit, this has been important, really important in medical ethics, and in medicine, we've not only made progress with our ability to treat diseases, but also understanding what it's like to treat a person, and 50 years ago it was very common that doctors would just decide what treatment was right for you, not consult you, it was common that people that had terminal illnesses, the doctors would decide, well, there's no point telling them we can't do anything about it, they'll be happier if they just don't know they're dying, right? And, you know, this is kind of a, I think a hard one realization that no, actually letting people participate in their own decision making, make their own decisions in life is, is really important and, and contributes to people's well-being, I think we see this in, if you think about a job satisfaction, sort of the, the one thing that makes people hate a job is if they're being micromanaged, and if they don't have control over their time, so I'm very fortunate here, I have a job where I have to work really hard, but I've got a lot of flexibility in my time, how I use that time, I'm not, you know, this has to be done by noon, I don't encounter a lot of that, and, and even, even that amount of freedom makes a big difference to people's well-being, and, and so of course, being healthy, free of disease, having access to education is a dimension of that, but also, you know, if you want a career as a scientist that you're not foreclosed from that because of your sex or your race or your social class, that is very important, and that's, you know, these are dimensions in which we're making progress, but we still have a lot of progress to go. I think, on my tie.

And Chris, if I can jump in, so it feels as if we're defining progress and trying to answer the question of what is the fate of human progress and where are we going, but much of how we think about it with respect to technology also depends on how we're defining what it means to be human, to some respect, so, you know, it's, it's interesting, so when you think about human longevity, right, so the pursuit of, of living a longer life, right, and the scientific, and work we're doing there, and to certain extent the, the work we're doing in technology around sort of pharmaceuticals and things like that, you know, as you're thinking about what progress is, you know, there, there is a, there's a group of people who are looking for radical life extension, not just the incremental years that we've been experiencing steadily over time, because we are part of the life extension project, right, we don't live to 35 or 40 anymore largely, we're living to 80 or 90. And so, so then the question is, you know, if we're pursuing lives of, you know, living to 200, 300 years, how does that change the experience of being human, right, and then there are those who, who go a little bit further and they go, okay, I don't want to live to 200 or 300 years in this body, I don't even want this body anymore, right, I want to be able to extract my intellect from my body into like the Borg, right, and I want to be able to live in as like cybernetic reality, and I want to free myself from this embodied state, and now I

am post-human and that is awesome, right, because now I'm not subject to any of these things anymore that come along with being in this body. And, and, and in their mind, that is progress, right, because we've left behind the suffering that is associated with being embodied, you are isolating human intellect, right, and that's just awesome.

And for them, that is heaven, right, this idea of being a floating mind, right, and certainly unifying with other floating minds and kind of the singularity and all that fun stuff, which is a rabbit hole, we could go down next time we do this. But, you know, there would be others that would say, okay, I, I get where you're going with that, and that's fine, but is, is being embodied a, a design feature or a bug? Is there something specific to being human that comes with being embodied and negotiating a, a world, right? Is there something outside of the pattern recognition of our intellect that is essential to what it means to be human that we would want to preserve? Is there a spiritual aspect of being human you would lose if you don't have that experience of the body and the mind, right? And so these are all questions that point to what do we mean by human progress? What do we mean by being human, right? And so, so it comes into play when we look at all sorts of technological advances and scientific work that we're doing, because, you know, a lot of these definitions are shifting, right? And so it's a question of where the truths are, and, and you can look at certain areas of technology like, you know, pharmaceuticals, right? So technology, it's, it's a recursive relationship. Technology acts upon us, right? The definition of what it means to be well and healthy has changed dramatically over the years, right? And, and it used to be that there was certain definitions of what was, was crazy or, or what was insane.

There were certain definitions of what was healthy in terms of the way the body functioned. And now we want to be better than healthy. We want to be, you know, sort of optimized to be really, really well in sort of a holistic sense.

It's not just about not breaking bones, right? And so, you know, the drugs we take, designer drugs are, are making us better than well now, right? That's to some extent. And so again, as we think about the definition of what it means to be human and where we want to go to and what values we are expressing in this work we are doing in science and technology, it really does beg the most fundamental questions of how do we define a human being, right? What, what do we, what do we want to preserve? What are we trying to, to optimize for or extend? And those are really interesting questions and we'll determine where we put again to sort of a question of this being applied into the work we're doing in our lives and the discernment of how we are creating in the world. Where do we put our money and our time and our attention, right? And the time piece is the most valuable.

Anybody can throw money at stuff. You see very wealthy people investing all sorts of stuff. But it's a question of what are you going to invest into, particularly if you're living for 300 years, then it becomes an interesting question.

Okay, so there's, there is so much there. So let me, let me ask a follow-up question from this angle. So as I've, this is going to sound funny to maybe people in my parents' age in the room, but as I've gotten older and I'm thinking more and more about the world I'm inheriting, the world as it is now, I don't think I've made quite a contribution to it so much.

It definitely seems like the, the world that my parents' generation and generations before that, I'm inheriting something. And then with that comes some agency and then responsibility and then culpability to do what I would, I would like to do something good with it. And then what you've been talking about, there's assumptions about what good is.

And there's existing technology. And where, where do we go with that and what are some competing factors? So here's an example that I was actually talking about this morning, clean energy, solar panels. So I don't know too much about how solar panels are made, but my friend who's in geology does know a little bit about how solar panels are made.

And she brought up the issue, well, if you need maybe a rare earth metal to make these solar panels and that heavy metal is found in a place that is like unobtainium. Exactly, unobtainium. If that metal is found in a place where perhaps it's an impoverished country that is just abundant in this rare earth metal just because that continent is older, what do you do with that? Who, how do you start weighing these decisions of, I, I actually, I care about pollution.

My lungs are very angry in Southern California. There's a lot of pollution. I care about pollution.

I care about the environment, but the means to get to progress are at the interface of intruding into someone's home and country. So that's an example where I'm not so well informed. I'm not a geologist, but those are the sorts of, that's, that's where I see at least with my generation, that's where the tension could lie is our solution.

What are we defining for the good of humanity? So for the good of the people who maybe aren't in this place where we're intruding and how do we weigh, how do we weigh those factors? And I think assumptions are at the forefront of how all of us in this room would weigh those factors. And then if it's, if it's just all assumption and belief, and then, you know, we're, we're arguing opinions, and it's hard to get at a satisfying answer, a satisfying conclusion that's the most beneficial for everyone. So if you, if you could touch on in your sort of your professional expertise about weighing those factors where there is a situation where you cannot guarantee, or it doesn't seem like you can guarantee net zero suffering.

So that's my question. An easy one. Chris, you want to jump in on net zero suffering? So

I would, I would begin by highlighting something that, that Alenna said that I completely agree with, which is, is the importance of political institutions and processes in all of this.

So that, you know, this is part of our safeguards are going to be regulatory agencies and other, and, and, and, and, you know, just transparency and the people as, people as a whole being aware of what's going on and having the opportunity to express their pleasure or displeasure at what's going on. So, you know, having some kind of, um, um, effective, um, uh, regulatory agencies in which, people have a voice, um, through elections. Um, I think, um, increasingly we're, I mean, one way we're making moral progress is I think, um, we're more aware of impact we're having on people that are further away.

We're just much more interconnected. There's much more, uh, mobility. So we, we meet people that come from other places.

We see them on television. Um, so it's important that, um, we be made aware of what's going on in this country. Um, and that, that provides a safeguard that if there are, there's media there, they're covering the story.

People here can see what's going on. They can say, is this right? Is this just, um, and I think the other, another point that, that a letter is that I would agree with is, is one of the challenges is always, you know, that there's, there's progress that can be made technologically and there's, um, maximizing the benefit to everyone. And a very common pattern we see is that in times of rapid technological innovation, you get increasing social inequality because they're the people that have access to the new technologies.

Um, and the people that don't, um, and, uh, and new technologies often, um, involve economic displacement. Um, so, so this is, you know, a challenge we really have to think about is how do we, you know, not only, um, arrive at the technological, you know, independently of, is this technology going to benefit mankind? How do we arrange things so that it's not just, uh, the 1% that benefit from this technology, right? So that the, um, that the benefit spread. So, um, I mean, you know, one natural, and maybe you can pick up on this, um, because this might be related to some of your project, but, but kind of thinking about ways that this might encourage economic development in this place.

Can this be done, uh, in a way that the people benefit from either the labor or, um, uh, you know, from the sale of this? How can this be done in a way that they benefit as well as, as well as us? So a lot of what you talked about, you know, go to some very real social justice issues, right? Which, um, require a great deal of attention and consideration, um, and, and is not always brought to bear and sort of conversations around how to deploy new technology, right? Um, it's, it's, you know, it's sort of the Elysium question. Um, you know, you create this technology and then it's only, how many people saw Elysium? Anybody see all that? No, very small group. Okay.

Anyway, the, the, the, the, the, the, the one percent saw the, you know, it's, it's sort of, you know, a futuristic movie pointing to, um, what happens when a small subset of privileged people all can leave Earth and operate on this sort of little, um, outpost that, um, is free of suffering or hunger. There are these devices you can go into and immediately be healed of anything you have, right? But it's only for a very small population. And the rest of, you know, humankind is left on Earth, which is now this post-apocalyptic, Mad Max looking like grungy people can't breathe place, right? And it's about sort of the struggle for that population to get to Elysium and what are the implications of, of, of reality like that, right? And so, you know, there's, there's, you know, there, but to just say, you know, it's sort of a social justice issue, we have to answer separately, is true.

It's also a cop-out, right? Because the development of technology, um, is embedded with values. What we choose to invest in, um, is an expression of what we care about, right? And as we are developing that and adopting it and using it, that is also an expression of what we care about, but it doesn't stop there. It's a recursive relationship.

So technology acts on us, right? The act of using certain technologies affect us on a systems and structures level, right? And so the more that we engage with certain technologies, the more it changes our lens for how we think about ourselves as communal beings and, and as individuals. And so it's all, again, very recursive, right? So that's why these things are big questions and you have to spend a lot of time on it. It's good to spend time on it from an interdisciplinary perspective.

Um, but sort of these issues of how do, how does, how does technology change access? How does technology change, um, you know, the ability for more people to participate within society? So the company that I'm, I'm working to build right now figure, you know, we are looking to really, um, disrupt the financial services sector by moving a lot of things onto the blockchain that otherwise, you know, we're not very democratized before, right? There were a few key stakeholders that were able to determine what is value, um, who owns what. And there are a lot of really powerful things you can do with new sort of blockchain and crypto tokens, um, in, in changing the structure of financial products and services. And that's really, really exciting, right? Um, and, and that's a lot of the intention behind what, what we're working on.

Um, so, so, you know, there, there are ways to, to tackle these issues of access, but it does start with stepping back and saying, you know, what do we value as, as individuals, but what do we value as a society and as community? Um, you know, um, there is, you know, sort of a very faithful perspective of sort of love, mercy, justice, right? Um, and it's a question of, you know, who we put into power to make decisions, right? The people we put into power to make decisions are going to express certain values. And that's why it really matters, um, when, when running a society. Thank you.

Um, so I'd like to tuck a little bit, um, about maybe a little bit of a historical perspective, because I've heard, I've heard little, uh, sort of touching on pieces that, when there's rapid technological progress, there's, uh, this pattern of, uh, sort of a disparity in access. And then over time, maybe that kind of, it kind of expands, and then it shrinks again. And something that you, that you touched upon, um, was access.

So maybe right now, this year, perhaps there's, perhaps there's a piece of technology where it looks like only a certain population is accessing, maybe the very privileged, we'll call it, but then maybe in 100 years, actually, the, it will shrink back and there will be more access. So could you, um, do you have a favorite example of that to give us a little bit of perspective? I talked with you beforehand, so that's, um, I guess a little bit cheating again, when we talked about, uh, railway construction, and when we talked about the invention of refrigerators. Um, so those sorts of things to give us a little bit of perspective, because, um, so, so where this is coming from, uh, the, the project, the project at Oxford, uh, has, has, uh, pulled different populations about, uh, perceptions of, is the world getting better.

And overwhelmingly, uh, uh, the response is that the world is not getting better. And, uh, his, his argument is that actually, we wouldn't right think that, but that's because we don't have all the data. Um, and so for a sort of older technology is maybe we have more data now, and that can give us a framework for thinking about what we're seeing now, the inputs that we're seeing now, and the maybe, uh, two quick judgments that we're giving some of those pieces of technology.

Maybe AI is one of those. Um, so could you maybe give your favorite example of, um, something that maybe had seemingly a negative effect at first, but then actually has been really beneficial? Yeah, so, um, yeah, so, so the example you mentioned that we talked about before, which is cheating, but, um, yeah, so, um, well, so, you know, I think one example we're going to face is, um, increasing smart technology, automate, I mean, we already are facing a lot of automation, but if, for instance, self-driving cars, you gave the example, um, you know, there are a lot of people that earn their living driving goods, you know, truck drivers. Um, but it, um, you know, probably fewer taxi drivers, but people that drive for Uber now are going to be replaced by Uber self-driving cars, right? And, um, yeah, there are going to be ways that this technology can help us too, but we're going to have to figure that out.

And, um, yeah, so, so, so, so the example that, that, um, that Rebecca alluded to was, you know, when refrigeration was developed, well, there was economic displacement, there were actually people that would, you know, mine ice and, you know, collect these huge blocks of ice and go door to door selling you chunks of ice. This is an incredibly inefficient way of, you know, achieving refrigeration, but, you know, people did lose their livelihoods, people lost their jobs. Um, and, uh, of course, at the same time, they're, you know, refrigeration isn't just convenience that saves lives, right? It's, you know, you can

store food effectively, um, it prevents illness.

So, so there's all, yeah, there's, there's a trade-off, there's a balance. And, and figuring out how to do that is tricky. I do think, yeah, a historical perspective, it is worth keeping.

I remember hearing a story on the radio. I don't want to talk too much of a politics, it's a signature leader, but, uh, I remember listening to NPR and, and this was actually a forum where they got this during the election, but they brought together, you know, Trump supporters and Clinton supporters and had them sit down and talk. And I thought there's kind of one interesting conversation where, um, it was an African-American man that was a supporter of Hillary Clinton who just kind of said, well, when you say make America great again, you know, what creative time in the past do you have in mind as the time when America was great, right? Was it, um, you know, 1960 before the passage of the Civil Rights Act when much of the status was still segregated? Because that doesn't sound too attractive to me, right? So, so I think having a historical perspective is, is important.

It's, it's everybody always thinks, oh, I actually think it would be an interesting exercise to go through history and find all the quotes from people saying we are now living in a time of great decline and so on. And I bet you could find one for every year, you know, some, a quote from somebody saying this. Um, you know, let's not be too rosy-eyed about the past.

Let's be, let's be realistic. They're, they're, you know, they've always been problems. They've always been, uh, you know, disagreement.

Um, as you say, we have made tremendous progress. We sometimes, we sometimes lose sight of the progress we made. It can be so prevalent that we don't even see it.

So, we're talking about, at dinner, about a congressman at a debate was saying, "Now, why do we need to fund weather satellites when you can just look up the weather on your phone?" Right? And, um, and that, that, that, that example sounds, sounds a little silly, but there, there, there are people that think, "Oh, I don't need to immunize my kid against measles because measles isn't a problem." Right? Well, there, yeah, measles isn't a problem because you immunize your kids, right? So, um, you know, we, we need to keep, uh, and, and, and, you know, just being aware of history, um, being aware of how we've got where we are, what we have achieved, I think is important. Um, that doesn't mean we should say, "Yay, we're making progress, no more problems," right? We've made progress by, by grappling with hard questions, by fighting tough battles, and we're going to need to keep doing that. So, we should obviously be aware of problems that need to be addressed, but I think also be optimistic.

Um, uh, you know, I, so, so come thought experiment, if somebody said, "I will magically transport you to any time in the past where you can live out your life," I, you know, I, my

first answer is no thank you, right? Um, and, and I expect that in the future people will say the same thing. And nostalgia can be a pretty dangerous thing, you know? Yeah. It's very selective.

Yeah, it is. It is very selective, you know, and, and, and it also, um, sort of dis, um, sort of downplays the fact that we, we don't know, um, all of the possibilities that are coming. You know, so the question of the loss of jobs to certain technological development, which has always been the case, right? The, the throwing in of the wooden shoes into the machinery, in the industrial age, the, you know, just, you, you can point to so many instances.

And right now we don't know what the next wave of job creation is going to look like, because by definition it's going to be a new sort of function, a new area of expertise, and that's how it's always been. Now, you know, I'm, I'm not so idealistic that I can't foresee a period in time where there is a little bit less to do in the world, um, on an individual by individual basis, but, um, I think, you know, there's always been that warning cry of, wait a minute, don't take away, you know, the factory line worker jobs, um, before we even knew we would have data engineers as we do today, right? Um, and again, it points to very big issues of political will, of social, sort of focus around training, around thinking about what we mean about it, like what is education for, right? Um, so, you know, one of the things I've spent time looking at is, you know, this question, and this is when I was running the foundation, we looked at this as well, is, you know, it used to be, you know, that the four year liberal arts degree was really kind of the pinnacle of education, and it was assumed that it was what you did to be successful in the world. And, and we're now moving into a space where that might not actually be the prevailing truth for everyone, right? For some, but, you know, there's a question around is, are there better ways to train for what the workforce is going to look like? Are there better ways to, to train our minds given the access we have to all sorts of online tools, um, and learning sort of systems, right? And so, it's, it's, things are always moving, um, and it's important to, again, not get nostalgic, um, and also going back to something that I pivot to quite a bit, which is a hopefulness, right? A, a belief in something that has not yet been proved out, um, but that you anticipate and you, um, long for and also participate in making manifest, right? And making real as part of creating the better futures we want to see.

All right, well, there's, I like, I like a good pattern. Um, if there's a good pattern in your thesis work, maybe it means you're making some progress. Um, so, a pattern that I'm hearing is that again, I come back to this, this rapid advancement in, in history happens over and over, where you have this sort of stretching and then sort of shrinking again.

And so then, um, why are we surprised this is happening yet again? Uh, why, why, why is there such, uh, why is there such tension? There seems to be tension, like, uh, automation of jobs. Actually, that's not a new concept. Um, that's a very old concept.

Um, and I've never thought about it in terms, and those sorts of terms before. So maybe how can we, so before we get to the, uh, Q and A, I'd like to hear your thought, so maybe how can we get better at maybe predicting where we will need to be more flexible as a society and adapting to these, uh, advances so that we don't, uh, maybe make the same mistakes that previous generations did by not trying to sort of resist, just adapt. Well, I, I don't know the answer to that.

It'd be great to know that answer to that. That being said, you know, throughout time, there's always been a role for priests and prophets, right? And sort of in technology, much like in sort of religious tradition. And so, you know, you, and I think you need both, right? You need the, the priest saying, here's, here's what exists, here's the reason for it.

Here's what we seek to preserve, right? Um, and you really need the voices of the prophet saying, here's where we're going. Here's what this means. And the thing that we forget about sort of the prophetic voices, it oftentimes is looking backward to history and bringing in that historical perspective and talking about what's next, right? And so, making sure that we have both those voices always in the work that we're doing, and in, in how we are progressing as a society is, I think, very important.

So I would say, I mean, I think you want to be careful about saying it's a little bit the same issue with the, you know, the weather satellite or the measles vaccine, you know, just because historically we've seen this, you know, there's been displacement, there's been adaptation, doesn't mean that doesn't get achieved without a lot of struggle, without a lot of hard work, without a lot of people vocalizing and expressing how this is harming them, making other people aware of it. So, you know, we can be optimistic and still say, resolving these problems is still going to require a lot of work. It's going to require a lot of sometimes shouting to be heard.

It's going to involve a lot of, you know, listening to even, you know, the minority, whether it's a minority or a majority of people that aren't benefiting. How are they being affected by it? So, yeah, I mean, even if there's a pattern, I mean, you know, you shouldn't say, you know, you don't tell a general who's, you know, getting fuel for the tanks and so on and say, oh, but you've won all your battles, why are you stressing, right? I mean, you know, it's won all those battles because he's been doing this. It's a little bit like that.

And the listening, so a diversity of voices, right, always. Certainly a diversity of voices in the creative process, right, because then you ensure or can't ensure, but you hope to achieve, you know, the bringing in of different perspectives as to what is valuable, right, and that question of an ethical lens so that you get to a techno-ethnic that is robust and is best for society. And so that's why, you know, research teams and institutions should have a diversity of voices, right, across, you know, gender, ethnicity, socio-economic context.

Context is so important in everything. And that's why we need a diversity of voices in sort of our political sphere. We need a diversity of forces in sort of our capital markets and how people are investing.

And, you know, I'm optimistic that as a society we're rapidly becoming aware of the value of that. And I mean, debate and disagreement is, I mean, it can be uncomfortable, but it's healthy. You know, we need to, we need to, I mean, people need to speak up.

People need to disagree. People need to argue with each other. You know, preferably while listening to the arguments and listening to the reasons and not just shouting and yelling, but at least presenting their point of view and doing it forcefully.

I often hear that people talk about polarization in Washington and looking for common ground. And I kind of think like, you know what, it's not surprising that in a country of 300 million people you've got different opinions and different parts of the country. But what distresses me is more that you don't get kind of tough negotiation and good faith, right, rather than sort of cheap tricks that it's fine to be, you know, have tough negotiations.

And I think also, you know, I'm following a little near points too, the diversity of opinions incredibly important, getting different perspectives, that it's a great way to kind of ferret out false presuppositions that are holding you back. And it can also create economic opportunities, you know, if you realize how, hey, can this product we're developing help, you know, can this be of use to the segment of the population that we previously haven't thought about pitching it to? Can we make this accessible to them? Can we present something in a way that is economically affordable, right? And that's, you know, that's actually good for the bottom line as well. [Applause] Find more content like this on veritas.org and be sure to follow the Veritas form on Facebook, Twitter, and Instagram.

[Music]