

# AI and You

Transcript

Guest: Calum Chace

Episode 99

First Aired: Monday, May 9, 2022

Welcome to episode 99! We are going to conclude the interview with Calum Chace, futurist, keynote speaker, and author of *Surviving AI: The promise and peril of artificial intelligence*, and [The Economic Singularity: Artificial intelligence and the death of capitalism](#). His think tank, the Economic Singularity Foundation, published a book of short stories by its members titled *Stories from 2045*. In part 1 we talked about singularities, like Ray Kurzweil's, and the economic singularity, and how our socioeconomic system will cope with the changes that come from AI, and we also learned that frogs are smart enough to jump out of a pot of water that's slowly coming to a boil. Are people as smart as frogs? In this conclusion, we're going to talk about sustainable ecologies in the singularity, and the metaverse. Have you been in the metaverse yet? What do you think? Here's our first mention of it on this show. Let's get back to the interview with Calum Chace.

One of the fundamental problems of prediction is that even when you're getting close to an accurate prediction, it doesn't sound right. To explain that I was reading this collection of stories that you curated, the *Stories From 2045*, which are people's ideas, some futurists' ideas of what could be happening, a day in the life of someone, in 2045. And I was struck by how much they sound tongue in cheek even when they're not, how much they sound like a Douglas Adams *Hitchhiker's Guide to the Galaxy* view of the future just because they are not as grounded in today's reality, like someone talking about New York City being renamed Trump City, and being flooded. And that definitely sounds tongue in cheek, and maybe it was, but then again 20 years ago, the idea of Donald Trump being president was even more tongue in cheek to the point where it was good enough to be a *Simpsons* episode. And so reality has a way of reaching a point where it sounds like what we would have said was parody at some point in the past - if we went back 30 years and started saying in the future people will be tweeting and in the metaverse will be - and use these terms, they say, yeah, that sounds like you're on something. Is that a risk that we - well, what is the difficulty for you as someone who thinks about this far in the future of trying to convey that without it sounding like you're just making things up randomly?

Yeah, you're absolutely right. Most of those stories do sound like they were written by Douglas Adams and of course, we're not as good writers as Douglas Adams by a long way. Firstly, it's very hard to write positive stories about the future, because stories need jeopardy. They need a hero who suffers terrible difficulties and then triumphs, possibly dies in the process, but triumphs. And that's why most science fiction futurist Hollywood movies, are dystopias. There are some great honorable exceptions: *Star Trek*, the movie *Her* the movie *Transcendence*, which is slightly dystopian, but I think a bit optimistic as well. There's a lot more negative ones. And, yes, all forecasts are wrong. The world develops in astonishing ways and you're right, I mean,

who on earth could have predicted Trump being president 20 years ago, that would have been mind-bendingly hard to predict. But we need good stories and something that's given me pleasure recently is the Future of Life Institute, which was founded by Max Tegmark, is running a competition to ask people to write positive stories about the future. We do need that. If everybody thinks, oh God, AI is going to become super intelligent, and it's going to kill us all, if that's the settled view, if that's the consensus and we're going to technological unemployment, which means that there'll be a few rich people and everybody else is staff, then we will get the panics which could end up destroying civilization. We need positive stories about the future. So when I edited that book, I really pushed all the contributors to write one positive story as well as one negative story. The first 10 or 20 stories that got contributed, were all negative, I had to really push people to do positive ones.

Yes, I know exactly what you're talking about both from a story point of view - when I was talking with Beth Singler (anthropologist at Cambridge), she mentioned we have this need - and also I find when I'm talking to audiences about the future, and I see AI as being equally balanced between positive and negative effects over various timeframes, positive effects and negative risks; that as fairly as I try to pitch that, they will glom on to the negative side of it far more. And then I will increase the emphasis on the positive side, and I've got to do that by at least a factor of three before it starts coming across as balanced. Do you find when you're talking to audiences about this, that the factor of the unknown in the future that you're talking about, because you're saying "there's gonna be huge changes and we think it'll be like this, but maybe not"; that that unknown factor of big change causes some sort of paralysis, terror?

Yeah, very much. It's something I'm continually fighting against, is this fear of the future. I'd say most of the people I speak to think that the rapid improvement in AI is overall scary. And one of the things that I have always [been] perpetually surprised about is people don't like the idea that - something we haven't talked about very much, which is that longevity science could bear really big dividends in the relatively near future, I think it's quite likely that in this century - death will become optional. The advances being made in longevity science are remarkable. We have a very long way from it yet, but given the exponential growth the long way can be traveled quite quickly. Human biology is absurdly complicated, just ridiculously complicated, but we are starting to tease out possible therapies which could make death optional. And I'm always astonished at how many people are not excited by that. Lots of people think it's a really bad idea. This is sort of a death wish that people seem to have. So yeah, I'm continually fighting to get people to be more optimistic about the future. As I say, I'm an unrepentant techno optimist, I think that our lives are much, much better than they were 500 years ago, and at the end of this century, they're going to be enormously better than they are today.

And you and I both use the *Star Trek* label as the shorthand for that optimistic view. I haven't found a better one yet. So you've talked about another couple of singularities. Agricultural singularity and the longevity singularity, where do those happen relative to the economic singularity and what are their outcomes?

Good question. So the agricultural singularity is the one I know least about, but it seems clear to me that within a relatively small number of decades - I would think before the economic singularity - we will drastically reduce and possibly stop giving over so much of our lands to raising animals to eat them. I think that 70% of the UK is given over to growing crops to feed animals to eat them. It's an astonishing use of land and there's dramatic progress in ersatz meat, if you like, plant-based meat, and lab-grown meat. And I imagine that in 20, 30 years, we will be mostly eating meat that comes from plants or comes from labs. And the other thing is vertical farms in warehouses near to cities. So, you don't have to ship these from Kenya to London, you can grow them in a silo in Southend, or Maidstone. Let's cover Maidstone with vertical farms, that would be a good idea. So, I think that's going to happen. And as I say, probably will happen before the economic singularity. Longevity singularity I think might take a bit longer because human biology is so complicated, but there's some really fascinating work going on. There's an organ called the thymus, which sits below the breastbone, which generates T cells, which are one of the main things that the body uses to fight off infections. And the thymus, sadly, just deteriorates as you get older, and so it's virtually useless by the time you're my age, and people are working on ways to regenerate it. And if we can do that, you know, we can tackle an awful lot of infectious diseases. People are working on injecting tissues into the brain, so the brain doesn't get any older. Now we know that within a not enormous length of time, we'll be able to replace pretty much every organ in the body, except for the brain, and the brain is the most important one. But if we can stop the brain getting older by injecting tissues into it, stem cell tissues into it, then we could solve aging that way. There're various other experiments going on with telomeres and clearing out senescence cells and so on. So, my guess - and this will certainly be proved wrong, because the only thing we know about any forecast is that it's wrong, we just don't know by how much and in what direction - so my guess is that you'll get the agricultural singularity, then the economic singularity and then the longevity singularity.

As a vegetarian, I certainly welcome this progress towards artificial meat and replacing the farming of cattle, which would also have a beneficial effect on our climate. I was reading an article in the *Los Angeles Times* today by a writer saying about a report that just came out from an international climate change body, the name escapes me, about how dire things are and saying, really, we shouldn't be talking about anything else. And there's a lot to that - if it was happening suddenly, we wouldn't be talking about anything else, it would overshadow war and pandemic and everything else - but because it's always there and 1% here, 1% there - the frogs are smarter than we are. The frogs jump out of the water. And so this is overshadowing a lot of the things we're talking about; I feel it's overshadowing it for me. What do you think about technology versus climate change?

I'm a techno optimist, and I think that we can solve it. I think that actually, we're making remarkable progress towards stopping digging up dead dinosaurs as the majority of our energy and getting more and more energy from renewable sources, I think it's a terrible shame that the environmentalist movement took against nuclear power, because it does seem to be that nuclear power is a valuable part of the mix in the transition, I think we need to accept the fact that there is going to be a transition, I think the idea that you just stop using oil and gas today, and

everything will be great, is not a good idea because it means many people will starve and of course, the people who will suffer most will be the poor people. There is a transition that has to happen, but I think we are actually making progress on it and I think it will accelerate. And it will accelerate partly because of economics. As you go up the learning curve with any new technology, then the process gets cheaper; and that's happening with solar cells. I've just built a new house, here in Spain, and we've got solar panels on the roof, and we are pretty much energy independent and that's, you know, it's not uncommon. Now down here in Spain, we have a lot of sun. But in fact, too much sun makes solar panels less efficient. So, you can use solar panels very efficiently further north in Europe as well. So I think we are making progress, there needs to be more progress and I think things like the agricultural singularity moving away from having cows chuck out tons of methane into the atmosphere will be a good thing. I am optimistic, I think we'll get there. I do think panic is our biggest enemy, our biggest threat.

I think that writer was making the point that we perhaps ought to panic a bit *more* about the climate change, in that we are ignoring it too much, but, I mean, panic is not productive; then at least to pay more attention to it. But this might be getting outside of the scope of this conversation. We hear a lot about the metaverse these days and it's a little hard for me to wrap my head around. I look at augmented reality, virtual reality; I keep thinking, "I need an excuse to buy an Oculus Quest and see what it's like," but I don't find any business productivity applications for that, only games. That's not enough. But I get the sense that certainly Mark Zuckerberg thinks that this is where the world is pivoting to and there might be much bigger implications for it in the future and uses of it than just games. What do you think?

I think that virtual reality is going to be an enormous part of our futures. But I don't think that we are all going to spend hours and hours a day in virtual reality in the next two to five years. I've got an Oculus Quest 2, it's really impressive. But actually, I wouldn't urge you to go buy one because I agree with you; I don't spend a lot of time using it. What I haven't done yet, and I will do, is try out VR as a meeting place. I think that might be a really interesting use of it. Zoom has changed the way we do phone calls in the last two or three years. The pandemic switched us all on to Zoom. And there's no doubt that in a video call, you convey a lot more information. Because you can see people's faces and where they're moving their hands are and what have you. And I think in 3D and really VR is essentially or the metaverse anyway, which is kind of primitive VR is actually I think the best way to do it. It's the internet in 3D. It's the web in 3D and I think in 3D, you convey more data than you do in 2D. Now, I think where Zuckerberg's real focus is, and this is true for Apple and Google and the others as well, is in augmented reality, and particularly smart glasses. I think what they all believe, is that smart glasses are going to become the portal through which we all interact with the web. They won't replace smartphones, they'll be the thing that we look at our smartphones through. So, you take your smartphone out of your pocket, you look down at it, and you cross the road and you get run over. If you're wearing smart glasses, you carry on looking, you've got a head-up display, the information's being presented to you and you can continue interacting with real world in a more natural and, frankly, safer way. And what's happening is that because of processing power getting to the right point, it's possible to convey that sort of information through a pair of smart glasses. So my

hunch is that what Zuckerberg really thinks is that we're all going to be wearing smart glasses, somewhere between 5 to 10 years and he wants to have a big role as one of the platforms that we access that world through. So we'll be walking around with smart glasses on, we'll still have our smartphones in our pocket, they will probably be where most of the processing errors, because we'll need more and more processing power video chews it up. There's an old phrase that hardware giveth and software taketh away, and that'll never stop being the case. So I think that's the switch that he and Apple and Google are working on, the switch from just smartphones with the screen, that's how you access the internet, you access it through a smart pair of smart glasses with the smartphone being a compute device that where the processing sits.

I think for me that, because I've long had those glass envy - wanted something like Google Glass, but much more capable, like you're describing - for me that would necessitate a lot of AI to provide utility. Like, I'm terrible at names and faces. So I would like something that tells me when I see someone, "You've met this person before, here's their name, here's where," and that would make a huge difference to my life alone. You need AI to do that. It's doable, absent privacy implications, but it's doable now. And what do you see in the intersection of AI, the overlap between AI and the metaverse?

You're right. Yeah, AI fuels virtual reality, and it will fuel future virtual reality and I agree with you, I'd love a pair of glasses to remind me the names of the people I'm bumping into, the names of their kids and frankly, I'm getting to the age where we all start talking about the organ recital, you know, what we're going to the doctor about this week. So, you know, to remind me of the things that I do already know about people, they'll be fantastically useful. But it isn't just that, it's information about everything, where I'm going, how long it's going to take me to get there. The history of a particular building and so on. One of the great promises of AI is that it makes the world intelligible and that is so exciting. Having grown up in the 70s, where if you wanted to know who the fifth Beatle was, the Beatle who fell by the wayside, you had to go to a library and look it up. And now you just open your phone and look it up there. Well, won't be long before you can just say, "Who was the fifth Beatle?" and Alexa or Cortana or Google assistant, whichever one you're using, will say it through the bone conducting mic in your glasses. The world becomes more understandable, very exciting.

As we talked about all these possibilities and applications of technology, it occurs to me that I can only look through these through so wide a window. And that window isn't wide enough to look at all of them at the same time. It's related to George Miller's magic number, the number of things that you can essentially hold in your mind at once - seven plus or minus two - and it's a limitation of our cognitive ability. And one of the things I do is ask people to imagine what an AI could do that didn't have that limitation, and could think about a million things at the same time. And now you have me thinking about the difficulty of predicting the future when, at least my cognitive window is relatively narrow compared to what we need to look at; but also whether an AI that wasn't so limited could actually help us predict the future and then it becomes a threat to the job of futurists. Oops, maybe I shouldn't have said that.

Well, if futurists - and everybody else - is augmented by AI, then that just raises the bar for everybody. Today to be a successful futurist, you've got to be more plausible, or perhaps just more exciting and more charming than your fellow futurists. That would still be true in this AI augmented world, it's just that the bar would have been raised, and you just have to be that much better.

Granted, so what's coming up for you in future projects? What are you working on?

I've just created a new talk. Because a lot of what I do is give keynote talks to audiences around the world. Just created a new talk on the metaverse, I think there's an enormous amount of confusion and befuddlement out there about what it is and what the difference is between augmented reality and virtual reality and mixed reality and extended reality and how that all fits into Web 3.0. So, I've just created a talk on that. So, I started going around giving that talk, and I'm doing a series of interviews with people working in the longevity space, as we were talking about before we started. It's a real privilege to talk to these people, they are absolute heroes, and engaged in a project which is going to transform human life incredibly for the better. If death becomes optional, wow, what a better world that is. So it's a delight to talk to people working in that. And I've really enjoyed doing that series of interviews. And really just kind of looking forward to getting back out and meeting people again, as the pandemic recedes into the background and events started happening again. We start meeting in person again.

And that's been one of the paradoxes of the pandemic, for me, that I have gotten to speak to thousands more people much more easily and cheaply than I would have otherwise, because they *had* to meet online, and therefore more of them could meet online, and I could meet them without having to leave my home. And so there was that benefit, but the bandwidth of this connection, and I'm not talking just about video, but the other submodalities of the senses that we're not getting and I don't mean that I can't smell them, I mean, even if I'm having a meeting with half a dozen people around a table, I can have a much faster, more connected conversation. Because I can look at someone in one direction and say something just for them and their ears, and the spatial audio, and them seeing me making eye contact with them, will let me deliver that message to them instantly in a way that's impossible on Zoom. And so those meetings can be that much more productive. But the thing I've always been thinking about throughout the pandemic has been, yes, we can get that, that is, I don't know how much, maybe it's 10%, maybe it's 90% more productive a meeting than what we are doing right now with Zoom and video. But is it worth the travel costs and the overhead of meeting in person? That is the huge question.

To me, the answer to that is definitely yes. Zoom is really good for one to one, you know, us sitting here chatting, because the screen is big enough to hold our faces. It's fine. It works really well, and I think travel to do one-to-one meetings will be rarer. But the difference between, as you know, giving a talk to people in a room, and giving a talk on a screen when you've either got you know, sort of 20 to 100 or more little thumbnails, and you can't actually see any of them properly or you have got none, right, you're not seeing the audience at all. That is a way worse experience both for the speaker and for the audience. For the speaker, it's terrible because you're

getting no feedback at all. You know, I love talking to audiences and you know when they laugh at my jokes that's very exciting. When they don't laugh at my jokes, I know to change them, and that feedback is enormously valuable to me. And I also know that as somebody who attends talks online, it is so tempting to fiddle with the emails on my phone, while somebody's talking, you know, just don't pay the attention I would if I was sitting in a room. If you're sitting in a room, people are still looking at their phones, doing their emails, but they're taking more in. Partly a matter of etiquette, I suppose. But just you do take more in. So, I think: one to one meetings, Zoom is fine. One to many meetings, it's nowhere near as good. It may be, in fact I'm sure it will be, that in the future virtual reality will allow us to do one to many meetings really, really well. I suspect we're not there yet. I haven't done them yet, but I will try them. But there's a development process there, which will take us to a good place eventually,

I completely agree, and some of my most transformative and elevating experiences have been in front of audiences live. Those have not been reproduced online. And just an anecdote: in observing some TEDx talks that were done online, and being a TEDx speaker, I was engaged in looking at these because I was part of a TEDx coaching and curation team. So, we were very interested in seeing what was happening with talks online. My observation, my interpretation of what happened with these online TEDx talks, was that in person, a speaker with an audience is able to make an emotional connection that lets them trade on that connection to make an ask of the audience, because most TEDx talks are going to make a call to action. So, they're going to describe some kind of problem and make an emotional impact on the audience that something needs to change so that they can then ask for their engagement in that. And what I saw with the ones that were done online, where they didn't have the audience in front of them to do that with and these speakers are not experienced with, like being on television, where actors have to be able to make that connection with an imaginary audience, was that the talks were just grueling. They didn't make that connection. So instead, they came across as being depressing. After like the fourth one of one day, I was messaging my friends who had to watch this and saying, "Do we have to keep doing this? I've had enough." No one feels like they can crack a joke in this, that it's all too serious. And so I am really interested in when we will have Metaverse technology, virtual reality technology, that could improve on that. Can you speculate? Well, not as to when, but what it would look like, how it could engage us?

Yeah, at the moment, if you have a meeting in the metaverse in Horizons - Facebook's current Metaverse world - you use avatars, which are sort of cartoonish versions of their selves. They have hands, that the hands may well not be connected to the body through arms, arms are a bit difficult to reproduce and legs are really difficult to reproduce, so they don't have legs. So, you've got these kind of little cartoon characters, but it's still quite effective, because the faces can be quite expressive. Now, when it gets really interesting, of course, is when you have holograms, or when you have a 3-D representation of the photographic reality of people. We are some way off that. My hunch is that in the next 2 to 5 years, people will be doing more meetings in virtual reality, in cartoon avatar form. And probably more like 10 to 20 years, we'll have something like a hologram experience in virtual reality, and that's when it gets really interesting. That's when you get to the position where possibly you get the death of distance. That's gonna

be really interesting. Will people stop traveling for business anyway? If you can have a VR meeting, where you've struggled to tell the difference between being in a room with people and doing it online? Maybe it's more than 20 years, maybe it's 30, but the power of exponential growth is always surprising.

Exactly. A wise man once pointed out 30 years gives you a million-fold improvement. (That was in your book.)

Exactly.

And there's only one Peter Scott, there's only one Calum Chace, and sometimes there are two things that I'd like to do at the same time. I wonder when AI will get to the point where there will be a meeting that's sufficiently undemanding that that avatar of me could be run by an AI, while I'm doing something requires a bit more of me?

Yeah, I think it shouldn't be very far off. If you remember, Google Duplex - I haven't looked up to see where that's got to recently - that was essentially avatars talking to humans to undertake basic transactions, book a restaurant, book a hair appointment. And I think in the next 5 to 10 years we probably will send our digital agents or avatars, whatever we're going to call them, off into the internet to do basic errands for us. Going to buy the shopping, going to negotiate new electricity contract for a house or something; that should all be doable with an avatar. It'll be interesting to see how that works. I imagine probably people will flip into accepting it and doing it pretty quickly. It seems pretty spooky right now that you'd send off an AI to represent you in a commercial transaction, but I imagine that we'll get used to it pretty quickly.

I believe there are examples of people having already done something like this in Zoom meetings, or - yes, I can't recall the details, like who or to what extent, but there have been examples of people putting virtual versions of themselves in a Zoom meeting and having it not actually be noticed. Obviously wasn't engaged into the extent that we were here, but it was, nevertheless, something noteworthy.

Yeah, I mean, I guess you could have an avatar sitting in a meeting and pretending to pay attention, as long as it wasn't called on to say anything or do anything. That shouldn't be too hard and of course there is. There are virtual secretaries. I think there's one called Amy, which will negotiate setting up a meeting, scheduling a meeting. That's been around for a while. There are people who swear by it. I'm not aware of actually ever having dealt with one but you never know. And I understand that interesting phenomenon is that even when people know that they're interacting with a bot, they like it; they like the bot and they sometimes say to the person when they actually get to meet them, oh give my regards to Amy. Knowing full well that Amy's a bot. We anthropomorphize everything, actually, humans, we anthropomorphize cars, we anthropomorphize animals and we will anthropomorphize AIs, and that could actually be quite dangerous. We need to be careful about that.

Yes, I agree. Duplex didn't reach the level of use that had been forecast for it, but it lives on; I get calls from it occasionally asking me to verify my Google Business Listing. It's a man in that,

and the first time it called me I didn't realize that it was an agent until it hung up and I thought: that's different. It wasn't pushy, like someone trying to make a sale - they would usually do some sort of upsell, didn't do that - just said. And then I realized that it started out by saying "I'm the Automated Google business assistant" and just calling the...

It did declare itself--

It has to.

Yeah. I thought it did. Yeah, I'd heard that they had promised that they would do that.

Oh, wow, this has been fascinating. Calum Chace, how should people get in touch with you or follow, you find out what you're doing?

I'm quite busy on Twitter. I'm @CCCalum. And definitely they should buy my books - which you have done Peter, bless you.

All right, Calum Chace, thank you for coming on *Artificial Intelligence and You*.

Thank you, Peter, it's a great pleasure. I've really enjoyed it.

That's the end of the interview. We've visited that idea before of offloading some of your busy work onto a virtual clone of yourself - it's on my bucket list, okay - but this is the first time we said, what if it were in the metaverse? If you're looking for Calum online, start with [calumchace.com](http://calumchace.com).

In today's news ripped from the headlines about AI, an AI that reads chest X-rays by itself, no human radiologist in the loop or checking its results, got cleared for use in Europe recently. The company is called Oxipit and the AI is called ChestLink and so it reads chest X-rays. Its certification is like the EU's equivalent of FDA approval, although it doesn't have that yet. Oxipit says that it has made "zero clinically relevant errors" during the pilot phase. This inevitably brings to mind comments by Geoffrey Hinton, who practically invented deep learning, who said in 2016 we should stop training radiologists, and memorably said that "radiologists are the coyote already over the edge of the cliff who hasn't yet looked down." That turned out to be an overstatement, and we still need just as many human radiologists as ever, but you can't help but wonder whether this development will change that.

Next week is a special episode, because it will be our hundredth episode, so there's no guest, just me, and I'll be talking about what I learned from our guests, and it'll be a kind of guide to the previous episodes and why you should listen to them. That's next week on *AI and You*. Until then, remember: no matter how much computers learn how to do, it's how we come together as *humans* that matters.

<http://aiandyou.net>