TECHNOCULTURE

Immortality through science and technology: From transhumanism to quantum archeology

Episode 11

Full transcript

Guest: Zoltan Istvan [Zoltan]
Host: Federica Bressan [Federica]

[Federica]: Welcome to a new episode of Technoculture. I'm your host, Federica Bressan, and today my guest is an advocate for Transhumanism. He is also a journalist, author, entrepreneur, libertarian futurist, and was a reporter for National Geographic. He speaks to me from California, where he lives. His name is Zoltan Istvan. Welcome Zoltan.

[Zoltan]: Oh, thank you so much for having me.

[Federica]: So, it's such a pleasure to talk to you, thank you so much for being on the show. Basically, you now travel the world and speak about Transhumanism. For those who don't know: what is Transhumanism? And then I have a question for you about it.

[Zoltan]: Absolutely. Well, Transhumanism is a social movement of now tens of millions of people around the world that want to use radical science and radical technology to improve the human being, and also to improve the human experience. It can anything from exoskeleton suits that get disabled people out of wheelchairs, could be things like brain implants and, you know, interfacing directly with machine intelligence with your own thoughts, and it can also be something like genetic editing where people are trying to put plant DNA into their skin so that they can photosynthesize from the sun and get energy that way, replace eating. So, it's anything that's radical technology.

[Federica]: Excellent. So, my question was precisely: oftentimes we hear Transhumanism equalled to just achieving immortality, defeating death. I wanted to ask you, since you often talk

about this having "superpowers", enhancing the experience of being alive, enhanced vision, and doing all the... not just vision, which we have, but the possibility to do photosynthesis, for example. How does that relate to just the one goal of achieving immortality?

[Zoltan]: Well, yeah, the number one goal of Transhumanism is definitely, at least in the near term, achieving immortality through science and technology. And you do that through either reversing aging or stopping aging, with perhaps genetic editing where you can change the DNA of human cells that, you know, wanna age. Or you can do that through placing body parts. For example, most people, well, about a third of people die from heart disease. So, a lot of companies out there that are transhuman are trying to create artificial hearts, bionic hearts. And you can also do that even, you know, achieving immortality through, you know, kind of crazy stuff like uploading your brain into a computer. And there are numerous companies now that are paying hundreds of millions of dollars into this type of technology where I live in California and Silicon Valley. So, you know, there's a lot of different ways to achieve a much longer life span.

[Federica]: Because this is literal, this is not metaphorical, this is not "I will live forever through my children". This is "I get to live as long as I want," or forever: and that's a[n important] distinction [between as long as I want and forever]. Sometimes people are scared by the concept of forever, but I heard you say "what about just extending our life expectancy, and then at some point switch off, but when I decide."

[Zoltan]: Well, yes, you know, sometimes I will say the word forever or sometimes I say the immortality. But, you know, as a science minded person, I don't really mean that. You know, this is just speaking very freely. Because I don't really know if I want to live forever. It's hard to imagine I want to die, but what I'd like to say is I would like to live a thousand years, or five hundred years. And that's what a lot of people think is realistic at least right now, given what we know about the universe and how fast technology is evolving. But, I think, for the short term, what we're trying to do is, you know, basically it works out like this: technology is improving so quickly right now, you know, based on Moore's law, where the microprocessor is doubling every 18 to 24 months approximately, in speed and size, then if you live a year, you probably gain a year, based on how much technology and science there is out there. And so, that means if you can live another 10 years, you're gonna gain 10 extra years of life just because medicine will be able to keep you alive, because it's gotten so much better in that time. Now, if you can live 20 or 30 years, you almost certainly will be able to live 500 years, just based on the trajectory of how fast modern medicine is evolving, and the new types of technologies that will be out there in 15 to 20 years time to keep you alive.

[Federica]: Yeah, about medicine, is there a qualitative difference in the approach that medical research has now and what Transhumanism pursues. You know it's about getting rid of a disease or just fixing a body? Is it different? Because now the heart implants, the pacemaker for that

matter, which is not perceived as something alien or foreign, you know, in your body, whereas some skeptical will be afraid of "what are you talking about, chips in your body, or cables in the brain." It's hard to draw a clear line between these two things. So, medicine is already extending our lives. I mean, seriously, it's probably a bit of a radical statement, but if you really think about everything we consider as medicine, including what we know about hygiene, seventy-five percent of us wouldn't be around now. So, how is medicine approaching this life extension issue differently than Transhumanism would or is doing?

[Zoltan]: Sure. Well, that's completely correct what you said about, you know, just even medicine today making us live twice as long. You know, the average lifespan in 1900s was about 40 years of age, and now course the average lifespan is mostly, you know, in the mid eighties about, or a little less. But either way, it's doubled from 1900s. And a lot of that just comes from basic hygiene, and the aspirin, and the fact that we don't die from a cavity anymore. In the 1900s, you could still die for a cavity, something as simple as that. But, you know, this is a great question you ask about how medicine versus medicine treats healthcare differently, and I can tell you that the big pharmaceutical companies out there, that literally run the healthcare system, treat medicine very differently. They are not looking to make people live indefinitely, because they make their money off fixing ailments. Whereas transhumanists, we don't say, oh, let's have some kind of medicine for cancer so that you can live better before you die. We say, how can we eradicate cancer 100%, so that there is no more cancer on planet earth. Very similar to how we would say that with polio or other major diseases. We look for vaccines with cancer. You want to get rid of cancer forever. And I think that's quite a different approach than the big pharmaceutical companies, because obviously if the cancer drug company got rid of cancer, it would also be out of business. So, this is a problem with our modern medical system, where, you know, transhumanists, we don't look to cure heart disease, we look to replace the heart entirely, so that you have a machine heart that has literally zero disease, and literal literally zero pumping malfunctions.

[Federica]: You've been involved in Transhumanism for many years now, and it all started... you tell this story [about] when you had a "philosophical nuclear bomb", when working with the bomb diggers in Vietnam. Can you tell that story a little bit, so we understand how you grew into this movement?

[Zoltan]: Sure, sure. Well, you know, so, I became interested in Transhumanism in college, and I'm age 45 now. So, you know, at age 18 and 20 and 22, I was reading books, and [I was] very interested in them and, you know, when you're a young kid in college and you realize there's a movement out there that wants to overcome death with science and technology, it's wonderful. I became immediately attracted to [that], I wanted to dedicate my life to that. But after college, I began working at National Geographic as a journalist, and some of my transhumanists ambitions were put aside, because, you know, I got this amazing job, and I was covering a lot of war zones and a lot of, you know, kind of I guess dangerous issues. So, I had one issue when I was in Vietnam

covering groups of people that were undigging unexploded bombs, in the forest, in the jungles. And you know, these jungles in Vietnam, because of the war there, even 30-40-50 years later are filled with landmines, so it's very dangerous work, including for journalists just to cover it. And I had a very close call with a landmine, and I was about thirty, you know, I don't know, maybe 35 years old, when that happened, and after that incident, you know, [that] very close call, I just said, kind of, sat there and said, I'm done being a journalist, I'm done doing dangerous things, and I now dedicate my life and all my resources and all my energy into Transhumanism and to living much longer. And, you know, at the time I've been writing wonderful articles for National Geographic, but it wasn't directly related to Transhumanism. So, what happens after my time in Vietnam, I came back and wrote the novel "The transhumanist Wager," and that went on to become a best-seller, and it did very well, and it really sort of launched my public career in the transhumanist movement. And ever since then, I've been pushing forth, I guess, in very many media circles, the idea of Transhumanism, and trying to convince the American public as well as the world that this is a movement that we have to put our money, our resources, and our time behind, because everybody's life is at stake. This isn't just for transhumanists. I mean, Transhumanism is one of the most humanitarian movements out there. We're trying to make everybody live a lot longer and a lot better.

[Federica]: So, since you've been involved in this for long, and you say technology actually changes every year, almost, now, I wanted to ask: Transhumanism, in its concepts, how - if - has it changed since 10-15-20 years ago.

[Zoltan]: What's amazing is how fast Transhumanism is changing today, and every year now, just because of technology. You know, the movement itself started in the 60s, and then, I guess, it started in the 80s, you know, in real terms, in terms of philosophers getting together, saying this is the world we're gonna use, this is a concept, here's a philosophical basis for it, but of course the word's been a little bit older, 20s, 30s, I guess 1920's 1930's, it was used for the first time. But more importantly, in the last 10 or 15 years, the movement has been catching on, because the science has been catching on. But even just 15 years ago, talking about Transhumanism, talking about robotic arms connected to the brain, was science fiction. Now, all the sudden, you know, there are thousands of people out there with robotic arms that are connected to the brain. And the reason is, because, you know, there are thousands of amputees, and people that have been hurt in war zones that need these kinds of limbs, so what was once a sign a movement somewhat based on science fiction, and the promise of the future, is now based on reality, now based on the idea that it's very possible a human arm could be replaced by a better bionic arm within 5 years, and we're already experimenting on amputees. And this is, you know, Transhumanism is really about merging into machines, because that's where a lot of the longer life will be, because machines of course don't wear down like biology does, and it's also, you know, this kind of idea that one day we can be completely cyborgs or robots and perhaps even upload into machines, and we would have very different experiences and be much more, I guess, much longer lasting.

[Federica]: You're a bit of a bionic man yourself, because you do have a chip implant in your hand. That's correct?

[Zoltan]: Yes, I mean, this is a tiny thing, but yes, I do have a chip implant in my hand. I can start my car, it opens my front door, it allows me to not have keys. It's quite a fun thing to do.

[Federica]: How long have you had it?

[Zoltan]: I've now had it three years. And the funny thing is that the chip's already obsolete. Like, this is kind of one of the problems with putting technology in your body, that the technology develops so rapidly now, that, you know, if you put in, you know, a chip implant your hand, in 18 months you'll have to replace it with the new modern one if you want to have all the new upgrades. And, of course, this is going to be a problem with bionic hearts and robotic eyes as well, that, you know, by the time, you know, when they start putting in this stuff, the technology improves so quickly, but, you know, we will probably become like automobiles at some point, where, you know, if you want to replace your engine, yeah, you go into the doctor and do it really quick, and then in three years you get an even faster engine. And you can kind of see a human being like Formula One racing, where every part is interchangeable.

[Federica]: Does having a chip implant qualify as biohacking?

[Zoltan]: Yes, yes, so biohacking is really the part of Transhumanism where mostly young people are trying to do hacks to their biology, and it's not only technology, it's a lot of the genetic editing that is considered biohacking, where they'll take DNA or plant DNA and try to inject it into their system in hopes they might be able to create, you know, in their own body, something like plant DNA where they could photosynthesize, and get energy from that. Now, no one's had success with that, but this is what bio hackers are experimenting on. They're experimenting on, you know, HIV vaccines, things like that, that very few or not as many of the academics or universities are doing yet, because it takes so long to go through human trials, but biohackers just skip all that and do it on themselves.

[Federica]: How does one get a chip implant? Yes, I'm interested! And I assume it's legal... right?

[Zoltan]: Well, frankly it's not that it's even illegal or legal yet. It's such a new technology and this is the case with many new technologies, that it hasn't been approved. In fact in some States it is, I think, downright illegal, because you're not allowed to modify your body without permission from the Medical Association, which we generally call the FDA. But these chips implants are not FDA approved yet. So, basically, getting them on the black market, these chips go into a syringe,

they're so small that you actually inject them into your system, and you can do it on yourself or you can go to, like, a tattoo shop, and they'll inject it for you. They only cost around thirty or forty dollars now, they're very inexpensive. Some of the more sophisticated chips cost hundreds of dollars, but either way they're pretty much all shot into yourself through an injection.

[Federica]: So the main issue is finding somebody who will do it to you?

[Zoltan]: Well, you know, a friend can do it as well. You know, it's really easy, you can even do it on yourself, but I think it's wise to have somebody who's experienced do it, and part of the problem is these [chips] are so small you don't want them to get dislodged and end up in some other part of your body.

[Federica]: Yeah, I'm not suggesting anybody at home should try this! But I think that I can honestly say I'm very interested. I mean, I was interested in biohacking a little bit, recently I got involved in some communities, and I realized that all my courage and boldness went away when it was time to inject something suspicious in my body. But this chip, I mean, by now it seems safe enough, so this is probably just an indicator that my fantasy goes wild when I hear you talk about Transhumanism and what is already possible, but also the possibility that this opens up. First of all, I like very much that you talk out of love for life. This is why we want to stay alive so long: there is love for life, fundamentally, there.

[Zoltan]: Yes, and you know, one of the great statistics I try to tell people and this is what I think a lot of people don't realize, is that if Transhumanism and the radical science movement are able to stop death or stop aging by the year 2030 - which many experts think could be possible, I'm not saying it will be, but it could be,- if we can stop death by 2030 versus the year 2050, in that time we could save the deaths of 1 billion people. We never had such a humanitarian social movement as Transhumanism ever, that literally is trying to stop people from dying on such a massive scale. We're not talking about stopping a few thousand people from dying a year, we're talking about stopping a 150,000 people from dying a day. And this is why Transhumanism, I believe, is catching on so quickly, it's such a viable social movement, and it's such a humanitarian movement, because we really are trying to eliminate suffering from people, you know, in general, suffering in any sort of way, and especially death.

[Federica]: Something else you've been saying in order to promote Transhumanism goals is [about] money redistribution, in a smart way. Meaning: take it away from activities such as financing wars, and put it into the science. Even into medicine, you know, what could we do with that kind of capitals. So, if big money was actually put on the science we need to achieve immortality, that time span of 30-40 years could actually become very realistic.

[Zoltan]: Oh, absolutely. So, you know, I mean, the reality here is, you know, America, for

example, let's just take America, we spend 20% of our GDP, our domestic product, on war, on bombs, on bullet, and we spent less than 2% on science. And if we were just to even put 10% of the war money into life-extension, I can virtually guarantee within 10 years, humanity would have found a way to live indefinitely, stop aging. It's really a matter of money. The human body is a machine. We must understand that, you know, the brain, our brain is 3 pounds of meat, on our shoulders. Call it whatever you want, but it's just 3 pounds of meat. We need to find a way to improve these body parts and we can only do that by spending a lot of money on the research, and a lot of money on the universities, and a lot of money on the private companies working on this stuff. And the government has to be there to help out, and [?] when it decides to fight wars in Afghanistan instead of fighting wars against cancer, everybody loses. So, a huge part of my, you know, political platforms, whether I ran for the Presidency in 2016, or for Governor in California 2018, was reducing the military-industrial complex, increasing the science industrial complex, let us just take money from the military and put it directly into science. It's not like the country's losing any money, it's just changing the message, and the message is that the citizens' health matters more than anything else.

[Federica]: Transhumanism is about achieving immortality with technology and science. Now, when you speak, you're often criticized with many different arguments, and I agree with some, mostly not, but one thing that can certainly be said is that defeating death sounds like a grandiose statement. So, I'm afraid that because of this grandiosity, the whole movement can be easily dismissed, like "you read too many science fiction novels" or "come on, I understand a positive discourse around technology, we can already do amazing things, god knows what we can do in the future, but defeating death... like, sounds too much." I want to ask: is there actually evidence to reasonably believe this is feasible through science and technology? So, with objective knowledge and progressive accumulation of new knowledge. Is that achievable?

[Zoltan]: Oh, a hundred percent. This is a great question, because a lot of people actually say, okay, here you are coming and talking about curing aging or stopping death, but what proof do you have. Well, in the last five to seven years, various studies, various research are going on proving that all this can be done. For example, we now have multiple studies on mice where we have stopped aging or at least been able to rejuvenate their cells to a point where we can get mice to live almost twice as long as in normal lives. And the problem here is that we have the government saying, ok, now you're ready to take this to other animals and then to human trials, but such a process takes 10 to 15 years, because we're talking about very complex chemicals and solutions and therapies. So, these studies have already been done. These chemicals, and these pills, and these kinds of essentially fix-it solutions for stopping aging are out there. But they're just taking forever to get through our Federal Drug Administration, and and that's the proof in the bucket, the proof is already out there, it's really getting it through to the point when you as a consumer can go and buy a therapy or a shot or a certain kind of pill that makes you live longer. That said, a few anti-aging pills have already hit the market. That shows great promise. And of

course other things like bionic organs are already out there, there are already people using bionic kidneys, of course different types of heart valves, bionic hearts and stuff like that. There's a French company that is trying to replace all the heart entirely. So there's so much proof in the system, but the real problem is that there are literally a dozen companies out there working on this stuff, but all of them are kind of mired in these government trials, that take 10 to 12 years to really get through the system, before you might actually start seeing it. And then there's all the new companies doing all the real radical research. And that's stuff you're gonna be hearing about in five years, that will take another ten years after that. But yes, there's so much science. There are now billions and billions and billions of dollars in the pipeline feeding into this machine of trying to get you to live a lot longer. And the proof is way beyond... there's no one's questioning this anymore. The real question is, how soon will we start seeing these kinds of therapies out there, where you can walk into a doctor's office and get a injection that will make you live an extra five to seven years. And that's coming.

[Federica]: Are you worried at all about whether we have enough wisdom to manage all these possibilities? It's not to give you hard time, it's actually because it rarely comes up in your interviews. You're normally asked, like, what if this happens, what if that happens, but even if everything goes well, in fact, this is like superpowers really, and humans are clumsy, you know. Will we have the wisdom to manage? Is it even a factor that is discussed in the transhumanist movement? It's not just technology, technology, technology, but then: who are we? What we do? How we behave to each other, and the rest of the environment?

[Zoltan]: You know, these are things that are discussed all the time, but they rarely hit the media because they're not that exciting. And the truth of the matter is, I'm not the best person to ask about the worries of Transhumanism or the critical points, because I'm an optimist. I go out there and promote it all day long, and I talk about the wonderful things. Of course, Transhumanism has its critics too: people say, oh, you know, think about the movie Terminator, it didn't end well. Or what about eugenics? Is Transhumanism gonna turn into eugenics? And we all know the bad history of eugenics. But, you know, in the end of the day, technology and science have largely been responsible for improving the world. I mean, the reason that people live a lot longer, the reason people live a lot better, the reason we have more prosperity across the world, the reason that we don't die from just simple things like cavities, is because of people that push radical technology and science forward. And we believe that all the science and technology that's coming out now from transhumanists are going to make the world even better. But of course there's some caution that always has to be built into the system, and I'm glad that there are critics out there that balance me out, because I'm only out there straight from the rooftops saying how beautiful, positive this is. But we also need a good balance of criticism.

[Federica]: Well, yeah, I will dare say this, in fact, I feel for you sometimes when I hear you attacked on so many future scenarios, "what if this happens, what if that happens," because it's

just too easily reflected in, like, before we had cars: what if everybody had a car, then we will have accidents, then people will not walk anymore, they will become fat and have heart disease. I mean, it's just so easily attackable. But now we have this technology and it's just a matter of the use you make of it, it's not bad in itself. So, you're an optimist and it shows, and sometimes it must feel tiring a little bit to just receive this sort of easy criticism. I feel that if somebody were to criticize the movement, they should find more subtle arguments than that, because the car example, I think, perfectly relates to "what if one day," you know.

[Zoltan]: Yeah, so first off, I think I should mention this and, you know, in this interview, that America is 75% quite religious. They're quite Christian. And if you believe in Christianity very deeply, you know, - Christian religion is based on dying and meeting your maker, meeting the Creator in heaven. Well, transhumanists are mostly secular people, and they're mostly people that say, well, we really don't believe in a maker and we also have no reason to die. Now, of course, these two ideas, these two philosophies, go directly against each other. And a lot of the criticism that I find in Transhumanism comes from people that are religious, saying "you're doing God's work, you're taking God's power away, or you're trying to play God," but the reality is we're not trying to play God. What I'm trying to do is, I have two daughters, I have a wife, I have a mother, I want to protect them. And I have neighbors, and I have family, and I care about the human species, and I don't like to see anybody suffer. I'm trying to create a social movement based on real science and real technology, that can help lives and make it so that human beings don't ever have to suffer, or I have to suffer dramatically less. And that's really what Transhumanism is about at the core. But, of course, as we get into this very modern world where technology is becoming so complex and so sophisticated, I think a lot of people are getting afraid of what it means to lose our sense of humanity. But I keep telling people that we're never going to lose our humanity. What's gonna happen is, we're gonna gain better parts of our humanist [?] through technology, and we're gonna take our humanity with us. It's not like we're ever gonna become these evil giant machine creatures, that have no soul. We're gonna make the best of all the different worlds.

[Federica]: I suspect that when the technology is there, and a religious person is on his or her last day, you'll have a queue, a line outside of your facility. In those moments, I think that, you know, when it touches you, you change your mind. Maybe, maybe. But our time is running out, and I cannot let you go without asking you about this exciting expression that is "quantum archaeology." It seems to me like the next step, the frontier. It's not just about keeping alive the people who are currently alive, but it's about bringing people back to life, right? And what is 3D bioprinting?

[Zoltan]: Well, so quantum archaeology is kind of the frontier of Transhumanism, if you were gonna imagine it like that, the undiscovered land. Basically, there's two different facets of quantum archaeology. The first is that 3D bioprinting, we're already capable of basically printing cells out of human beings. And in 50 years' time, with the evolution of the 3D bioprinter, we will probably be

able to print out the entire human body. And that's incredible. But more importantly, the other facet of quantum archaeology is the idea that physicists are getting so good at different types of experiments including the god particle and other different types of their experiments, that many of them feel that with enough AI or enough computing power, we might be able to reverse-engineer certain parts of the universe. For example, you would take a hundred square miles of the planet and just reverse-engineer all the subatomic particles, all the subatomic activity that has happened. I mean, after all, it's a computational mathematical formula to reverse-engineer how something happens in matter, because in the end of the day, we are all these quantums, quarks, all these other things running around. Now, if you combine those two fields together and you were able to reverse-engineer parts of the universe, that means you would be able to reverse-engineer even people who have died in the past. So, for example, if you've lost the father or if you've lost a grandmother, there is a possibility in 100 years' time with enough computing power, to go back, reverse engineer wherever they were and whatever they were like, perhaps right before they died, and then 3D bioprint them out exactly, because we have the configuration of what they were like. That's what quantum archaeology is. Now, there are entire transhumanist groups out there that want to 3D bioprint every person who has ever lived on planet Earth and bring them back to life. Now, again this is the fringe of Transhumanism. But it's almost like a religious act [?], it's almost like the afterlife, and it combines the best of theology with Transhumanism. And I like the idea because I also think there have been so many tragic deaths in the past, think of all the people that died of the plague, think of all the children that have died, people that never got to live out their lives or never experienced existence. So, there is some humanitarian aspects of really bringing back anyone that has ever lived and asking them "would you like to live again, would you like to live longer," that's the power of Transhumanism. And I'm not saying I support this necessarily, because this is so many different problems, overpopulation and ethics involved, but I just think it's great to mention about where transhumanists are when they're thinking about the frontiers of Transhumanism. That's what quantum archaeology is.

[Federica]: Yeah, even if it wasn't feasible, it's just a great idea to have. And speaking of great ideas to have: in an interview, you were asked what's the most beautiful thing in life, or on earth. And I loved your reply. You said: to have an idea that nobody had before or about how to help other people.

[Zoltan]: Sure, sure, that's a good one. [laughs] You know, I think I get asked questions at the end of my interviews quite often, and I give sometimes different answers. But honestly, in my opinion, if someone asked me what is the best thing, what is the most beautiful thing you can do on planet Earth, I would say: to come up with the idea of saving lives, a new idea that nobody else has ever thought about. That is perhaps the most altruistic, the most heartfelt, the most innovative thing that you can do: change and help their lives with something that no one has thought about. And, you know, these are the kinds of things that a lot of transhumanists are working on day in and day out. That's why they're scientists and engineers and technologists and

futurists. They're trying to come up with the next best way to help people, help humanity.

[Federica]: I thank you so much for your time. I wish I could speak to you much more, but I know you have another interview scheduled in probably half an hour. So, I thank you for your time, and I wish you good luck and just keep doing what you're doing because I think it's inspiring, whether one adheres hundred percent or not. It's inspiring, and it's with a humanitarian cause underneath, so thank you for being on Technoculture, Zoltan.

[Zoltan]: Oh, it's my pleasure. Was great to speak to you.

[Federica]: Thank you so much. Have a good day.

[Zoltan]: Bye bye.

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