Jake   02:18
Thank you, Jason, for coming on. And joining me on the show today. I really appreciate you taking the time. I've been seeing you on Twitter for a while talking about all sorts of things related to progress. And technology. In particular, you're the founder and president of an organization called the roots of progress, which is a nonprofit dedicated to establishing new philosophy of progress for the 21st century. And I understand you also do some work for our world in data or you know, advise them a little bit and just do tons of writing and speaking. And I've been doing so for least a few few years now all sorts of in and around this, this topic of you know, progress in technology. So it's great to talk with you today. Obviously, this is a big theme of the podcast and looking forward to digging into things. But before we dig into all of that, for those who don't know you, for those who are not familiar with the roots of progress, I think the best way to get started would just be to hear your story from as early as you're willing to start and some of the decisions you made along the way to get to where you are today.

Jason Crawford   03:21
Yeah, sure. So thanks for having me here. Great to Great to be here. Yeah, my my story. So yeah, I write mostly about the history of technology and the philosophy of progress. Maybe I'll maybe I'll jump backwards in some sort of big steps. So I started the roots of progress as a blog over five years ago, kind of early 2017. At the time, it was a side project for me sort of an intellectual hobby, because I was actually working in the tech industry. I was a tech startup, co founder and CEO at the time, of my whole career for almost 20 years had been you know, prior to getting involved in progress stuff had been in sort of software engineering and tech companies and startups. I went to school for computer science. And so, you know, we sort of jumped back, like, I guess I've, I've had a very long standing interest in science and engineering, ever since I was a little kid. I mean, I'm trying to remember I think was around 11 or 12, maybe when I started learning to like program, got a book from the library, but I taught myself basic out of a book. Did it on my, the, the the what was it, I think a Macintosh Pro that we had at home which had maybe like, you know, half a megabyte of RAM or something. You know, this was back in like, I guess I think we got that computer in the late in the late

80s. Right. You know, I was learning to code in like the early 90s went to a high school with actually a special program for for math, science and computers dropped out of high school halfway through to just sort of teach myself for the rest of high school that's a different story. Decided to go back to school for you know, university level and got a computer science degree. And then I guess you know, The other thing that was sort of a very long standing interest was philosophy, and a kind of an interest in particular in sort of the power of fundamental ideas to, to change the culture to move history, ultimately to change the world. And I was I was definitely interested in that for my teenage years as well. The funny thing is that what I was not interested in early on that it was history. So you might think that, given that so much of what I do now is history, history of technology, history of industry, history of progress, you might think, Oh, well, he was always interested in history, he was always a history buff. Nope. I thought it was a super boring subject in school, I avoided history class as much as I could, I think I took zero history classes in college. And it wasn't really until my mid 20s, that I realized kind of what a mistake that had been, and how you just can't understand the world. If you don't understand history, you can't understand, you certainly can't understand politics or have like any, frankly, any informed opinion on almost any political topic, certainly not the things that were going on. I mean, in my early 20s 911 hit, it was right after, it was actually right after I, you know, I graduated college, just like three months after I had actually moved to New York City. So I was living in New York for about a few months when that hit. And that was devastating, of course. And, you know, trying to make sense of everything around that and all of the, you know, sort of defense policy and geopolitics and like what should we do? And you know, there was there a huge debates over all of that, of course, and I realized at some point into that, that I was just so ignorant, like, I didn't know the history of the Middle East, I didn't know the history of the US relationship, I didn't know, you know, there was kind of all these things that that were just missing. And so I started learning history in my 20s, sort of making up for the education that I had sort of missed, or avoided or whatever in school. And so I think it was kind of combining those interests. Science and Engineering on the one hand history, and philosophy was kind of what ultimately led me in late 2016, early 2017, to realize, hey, I think this this sort

of story of human progress is really important. I was starting to realize how fundamental it was to my worldview, when I think about what are the things that I care about in the world, I care about things like reason, science, technology, industry, business, capitalism, economic freedom, I care about, you know, maybe maybe broadly like enlightenment values. And I asked myself, Well, why do I care about these things? Why is this so important to me, and I realized, well, keen part of it is that I just have a strong sense of the progress that we've made as a human race, especially in material living standards, just over the last couple 100 years, how much life used to suck, frankly, and how much better it's got and how lucky we are to be alive, how unprecedented those growth rates are in all of history. And I just think when you look at that stuff, and you look at how far we've come and how recently most of that progress happened, you've just got to ask, wow, how did this happen? Like, what were the specific steps that got us that made the modern world and built what we have today? To Why did it take so long for that growth to really start happening? And three, how do we keep it going into the future? How do we make a future build a future that is, as well off compared to the present as we are compared to the past? And so those are the questions that kind of animated my work in what later became known as progress studies. So I just started off as an intellectual hobby. I was like, just reading books. A few months into it, I decided maybe I would make some notes on a public basis and put them in a blog. So I created this blog, the roots of progress. And it was kind of this long term. I mean, I figured it would take me like 10 years to learn the history of progress. But you know, it's just going to be reading books in kind of evenings and weekends, and then writing up some notes now and then. But what happened over the next two and a half years, let's say is, I got slowly just sucked into this topic, and completely fascinated by it, kind of obsessed with it. And the research that I was doing got got deeper, and the essays that I was writing got longer, and the audience started to grow. In particular, in mid 2019, I had this my first viral breakout hit was a post on the history of the bicycle. Why did we wait so long for the bicycle? Why was it not invented until like the late 1800s When on the face of it, it might not be obvious why you couldn't have had bicycles in like, you know, ancient Rome or something. But it's not like it depends on some, you know, scientific theory that that didn't get developed until the 1800s

or whatever. So I wrote that post that post got really popular started growing my audience, and then right around the same time, this progress As movement started to take off like a whole intellectual community and movement formed around this idea of progress, kind of galvanized by this one article in The Atlantic, written by Tyler Cowen and Patrick Collison calling for a new discipline of progress studies. And so sometimes it goes by the term progress studies. Sometimes they'll say progress community or progress movement. But it's just a bunch of people who, who kind of came together around this concept like yeah, actually, progress is underrated, undervalued, under studied, under appreciated, and we really need to focus on it more to make sure that we get more of it. And that's where I've been operating. Soon after that happened. I decided to make a big midlife career shift, I left the tech industry decided to go full time on the research and writing became an independent researcher, and then, you know, more recently actually formed a nonprofit organization to support my work. So that's kind of the I don't know if that's the brief summary.

Jake   10:53
No, yeah, that's, that's a great summary and appreciate you sharing. And I should comment, I feel like you have a good radio slash podcast voice. So it's always helpful to have someone on with a good good radio voice and a good audio setup and everything like that. I think people should enjoy listening to this one. But your story? We'll be right back after these messages. Yeah. Oh, wow. That's even Yeah, it's better than I heard in the in the story, I guess when you turn it on, it's, it's another level. But it's interesting, you've got this, you know, pretty like diverse story you mentioned, sort of like flipping on your thoughts about history, not appreciating it growing up and later coming to basically obsessed with it, you know, early in life deciding to drop out of high school. And then eventually, you know, you returned and went to college, I think a lot of people who dropped out, don't end up going back. But I'm curious to hear sort of how that all came to be and how you look at that decision, or that set of decisions retroactively. You know, whether you do anything differently, or you're sort of glad the way that things went. And then most recently, deciding to actually go full time on what started as a part time, hobby, and you just sort of recognized like, I'm obsessed

with this, this, you know, studying progress and doing this research and writing and speaking and I personally think, you know, from everything I can tell, sort of following your obsession is generally a good move in life. So I'm curious, like, those were sort of two very sort of life changing decisions. It seems like, I'm curious how you reflect on both of them, obviously, the more recent one being, you know, not too far in the path, but still, maybe some some changes in perspective sense.

Jason Crawford 12:28
Yeah, sure. So, you know, the dropping out of high school was, I mean, so just to give context, like, basically what happened was, I got bored in high school. And I felt like classes were kind of slow, I thought I could learn more better, faster. On my own, I had had great experiences, just reading books, sometimes literally, reading textbooks, sometimes just getting books out of the library, I found I could teach myself all sorts of things. And so I decided, why not, you know, get rid of this school thing that I have to go to, and just, you know, kind of read books all day and do projects and, and teach myself. And so that was what I did for two years, I was a, you know, sort of self schooled with the help of my parents to kind of put together the curriculum and help select materials and that sort of thing. You know, they helped at that level, but they didn't teach me on a day to day basis. I was, you know, I'm sort of teaching myself. And I got help from other adults, here. And there, I you know, I can tell the whole story if you want, but the short story is, it works out great for me, I really enjoyed it. I, how much did that actually change my life? I'm not sure. I think if I had just stayed in, you know, like I said, I kind of got back on the normal educational track two years later, when I went to college, but it was just great for a sense of, I don't know, autonomy, independence. A good it was a great example to myself of lucky like, you don't have to follow social conventions or do the normal path, you can just do the thing that you think is right. And that feels like it would be best for you, you know, once you've evaluated that, and, you know, and just go for it. Now, I wanted to just literally drop out, as soon as I was legally able to at age 16. You know, my mother sort of pointed out, you know, maybe instead since you're not you know, most people who drop out of high school, right? They like they don't keep they don't go to the

spend all day in the library reading books. Right? So maybe, you know, instead of calling it dropping out, we could call it something else like homeschooling. So she gave me a lesson there and you know, how to how to market things and communicate to others what's really going on and pay attention to the words you use. For a year, I was officially a homeschooler according to you know, sort of the state government and then actually after that I was literally officially a dropout but I was still doing the exact same thing. The only concern we had was Would I be able to get into a good college because I still wanted to go to college. And we, you know, we just talked to colleges about this homeschooling idea. And they were like, Yeah, sure, you know, that's fine, just kind of document what you did. So you don't have just like two big blank years on your, you know, on your, on your college application. And that was fine, you know, when I got into places I wanted to go into. So, um, so that was great. Again, I think just more for the sense of personal autonomy and being able to buck the system, you know, the more recent thing in terms of deciding to go full time on the roots of progress that grew very organically again, it was something I'd been doing at that point for like two and a half years as a side project. It had become, you know, it had become what I spent my nights and weekends on, and it becomes something I was totally obsessed with. And yeah, I think follow your obsession is sort of a good rule, find a way to do the thing that you can't stop thinking about, right? If there's, if there's something that you think is big, even if other people don't see it, right. And, and, and if it gets to the point where you just, you just can't stop thinking about it, it's grabbed you and won't let go, then find some way to follow it and pursue it and do it full time, if you can. I mean, one thing, so I mean, the weird thing for me was, again, making this midlife career shift and saying, Wow, my entire, ever since I was a teenager, and started learning to program and taking computer science classes in high school, I thought that this was gonna be my life and career I was going to be, I was going to go into the tech industry, and you know, I was going to do a start up and like that, that was the that was what I done. You know, that was that was where I pointed my whole life. And surely the next thing for me to do was to like, come up with another tech startup idea and do another one. But I, you know, I didn't have a burning tech startup idea at the time. And I did have another idea that was burning, and it was this, and it was this blog, it was this

research project. And ultimately, I figured I might write a book. And so I guess that was part of what made me really realized that I should do this. So back in 2013, I co founded a tech startup, it was called fieldbook, it was kind of a hybrid spreadsheet database a lot like airtable, if you're familiar with that. And I ran that for like five years, and really tried to make it work. And we just, you know, we just couldn't quite grow it fast enough. So I ended up shutting it down. But you know, in, in, in 2013, when I started that I had been thinking about the idea of a hybrid spreadsheet database for a long time. And I'd been obsessed with the idea for over a year, I just kept coming back to me every time I even if I tried to think about other startup ideas, this the spreadsheet database kept coming back to me, it's like, no, no, this is the thing I want to do. Definitely. And that was great. And I'm super glad that I gave it my all and that, you know, I kind of have no no regrets and no what ifs about that, you know, time in my life. But what I realized about the roots of progress was I felt the same way. Like I was obsessed to the same level, I couldn't stop thinking about it in the same way. And so I said, Okay, well, this isn't a tech startup idea. But it's obviously the thing that I really care about. I knew that if I went and got some other jobs in the tech industry, which I mean, I did a job search, I got a few offers that were quite good I was I was strongly considering just joining a sort of early to mid stage tech startup. But I knew that if I did that, I would want to keep doing the blog, like as a side project. Whereas I also knew that if I could go full time on the research and writing, I would not need any side projects. So I'd be totally content with that. So I think that's a good Another good rule in life, right? It's sort of like, if there's a thing that would completely fulfill you such that you would not feel the need for any hobbies or side projects, then that is a great thing to go full time on.

Jake   18:35
Yeah, that's really interesting. I think the common thread if I can, like impose one on on both of those decisions, one from early in life, and one from more recently is like just following your gut and, and seeing what you're obsessed with and naturally want to do, like literally not learning fast enough in school and deciding I need to go and drop out or whatever your mother might have advised you to call it

to, you know, learn faster. It's obviously not the the common reason to drop out but really interesting nonetheless. And I think it takes a lot of guts, you know, to like, like you said, Just give yourself that autonomy and take step off the beaten path. And always a big fan of that, and then doing it again later in life, when you realize like, oh, you know, the natural next step would be to go and come up with another startup idea. But I don't really have one of those that I'm just about and obsessed about the blog. So let's go for that. So he started the blog and you know, march 27 team went full time on it, sort of this decision we're talking about in October 2019. And in 2021, I think you formalized it into like a real organization and sort of like a one man research nonprofit. And now you're actually taking sort of another transition, I understand where you're looking for a CEO to, you know, make a new big expansion for the roots of progress. So can you talk a little bit about what exactly the roots have progresses, sort of today or what it's been for the last year or so since you sort of formally became an entity and and then you know what this next step looks like in your mind and why are the compresi

Jason Crawford 20:02
Yeah, so far, it's been mostly a vehicle to support my work, my research and writing my speaking and, you know, in various venues. And we've done a little bit of other work in terms of sponsoring some events, or CO hosting, we launched a site called the progress Forum, which is an online home for the progress community. So there's been a few things like that, that we've done. But again, it's mostly been centered on me and my writing, and it is time for it to go beyond that. And for us to support dozens of progress intellectuals, not just myself, and to do more to build this community, in terms of both both online and off. So that is really the goal. Stepping back a little bit. You know, you've stated our mission of the organization and what I consider my personal mission to establish a new philosophy of progress for the 21st century. So let me just say a little bit about sort of what that what that means and why I think it's needed. The, you know, the the very idea of progress, I think, if we're going to if we're going to make progress, one of the one of the key most fundamental things is that we as a society must believe that progress is possible and desirable. And there was a time when I think people took that for granted. And through the course of the 20th century, I

think a lot of doubt, was cast on that idea. Partly because we in the past, I think we really were somewhat naive about the costs and risks of progress, and that a lot of that came crashing on our heads in the 20th century through a for instance, the world wars, and through through other things that went really wrong. We learned a lot of hard lessons about the costs and risks of progress, and about how moral progress doesn't always go hand in hand with technological progress. But through that, I think we grew overly fatalistic and defeatist about about progress and about our ability to shape the future and make it better for humanity. And I think we knit need to get back to a more humanistic worldview, that, that believes strongly in human agency in our better in our in our ability to create beneficial technology and to shape the future. And so that is what I see as a fundamental to making a better future. And that's what I want to create. So really, what I'm talking about here is a broad based cultural shift, a fundamental change in the way that we see the nature of humanity and our relationship to nature itself, and, and the role of technology and so forth. And those sorts of things take a long time, they take a generation for that kind of, you know, philosophical shift to happen. But they start out with a small number of intellectuals, and, and a set of typically a set of books, it's really books that change the world, and the community that grows around them, and that takes those ideas really seriously, and then can communicate those ideas out to the broader world, through education, journalism, arts, and entertainment, and so forth. And so, where the progress movement is right now, I think, is we're still in the very early stages where the intellectual basis for this movement is still getting flushed out, there are a couple of core ideas like yeah, progress is real and important, it's not automatic or inevitable, we should really study the causes in order to keep it going and to steer it, and to make sure it goes it goes well for humanity. But, you know, those core ideas are there, but they need to be clarified and elucidated and explicated and fleshed out and all of their applications and implications, you know, written about. So we need shelves and shelves of books, you know, to sort of flesh out the progress vision. And I think the most high leverage thing that I can do right now is to help create the next generation of progress intellectuals, who are going to write those books and give talks and write essays and more generally

create this intellectual foundation for the progress movement. And so that's what the organization is going to focus on going forward.

Jake   24:07
So two questions for you. One is on the CEO to the you know, in case there might be a potential CEO listening to the podcast, what are you looking for? Does, you know how much does age matter and experience and things like that, versus motivations and capabilities and whatnot. And second, to that, we're talking about, you know, the books that sort of build the future, or at least inspire and sort of, you know, set a roadmap for the future, who are and sort of instilled the philosophy and everything like that teach the history. So the second part is on you know, these books and these people who are writing them, what are some like current examples, you said, it's, you know, still very early in terms of sort of like installing this new philosophy of progress, but who are some people and what are some books that come to mind as good examples that people can look to and, you know, see how interested they might be and and you know, go Lying on the shoulders of these people and writing the next book or something like that?

Jason Crawford   25:04
Yeah, sure. Okay, so that was two questions. So let me take the first one. First, you asked about a CEO. Yeah, so the, the programs that the new organization, and I think we'll do, and this is still, you know, high level needs to get fleshed out, but I think the core will be a fellowship program, that will be a career accelerator for progress intellectuals. So anybody who wants to be a public intellectual in progress studies or already is, we will give you the support that you need to launch or accelerate your career, whether that's money marketing, and PR help coaching and training connection to a network or whatever would be sort of, you know, tactical support that you would need. And so you know, the kinds of programs will be running or that conferences, workshops, local meetups, the online progress forum, a bunch of community building things kind of surrounding and supporting that that core fellowship program. So the kinds of people that we're going to need for this, if you think about the staff to implement those programs, we're going to need a program manager for the fellowship, we're going to need an event planner, a community

manager, some marketing and PR people, you know, those sorts of things. So the core job of the CEO is to build and manage that team, and to, you know, set their set their goals, and lead them to success on on on those goals and metrics, the CEO will work closely with me, I'll be sort of the intellectual leader and the CEO will be the the sort of people in execution leader will work together on the vision and the strategy. And on settings, sort of high level goals will also work together on fundraising and recruiting. And, you know, with me, perhaps bringing the network and the kind of the, the reputation of the audience that I've built, and the ability to communicate a vision and to pitch and, you know, the CEO, bringing the ability to drive a process. And also, you know, of course, to build out networks, and to build reputations, of course, CEO skill. And so in terms of what we're looking for, in that person, definitely need someone I think, who has some management experience, exec level experience would be a bonus not strictly required. Certainly previous CEO, or founder or Executive Director type experience would be great. Again, not not a strict requirement, passion for the progress mission, you've got to get excited about this stuff, of course. And beyond that, it's really just great leadership and execution skills, ability to get a lot of stuff done deliver results, and the sort of entrepreneurial wherewithal to do the CEO role where, you know, no job function is off limits, kind of everything's your responsibility, and everything is your fault. So if that sounds like you, you know, please get in touch, you can find the job add on, on the on the roots of progress website, and, and how to apply. So we'd love to hear from you. Then, sorry, you asked a second question. Now, please just briefly remind me what it was,

Jake   28:05
yeah, first, great ad for the CEO spot, if, you know, I hope that people listening that there's at least a couple of reach out, and hopefully it gets filled with an awesome person, I think it's just gonna be like a huge, huge, you know, high leverage position that can materially impact the future, and, and the future progress. So that'd be awesome. Second question was around, you know, you mentioned sort of books and people and intellectuals in particular being at the center of sort of what drives progress, or at least, what has driven progress historically. And you know, that we're going to need a lot more of each moving forward to make sure that the progress we've seen

over the last, you know, 100, couple, 100 years, whatever it's been, sort of continues and ideally accelerates into the future. And I was curious if you could sort of offer some people and some books that people can look to as models for, for what that is, and sort of what we need more of in the future. Basically, the types of people I think you'll be looking for in the fellowship, who is like a mature version of that that exists today?

Jason Crawford 29:04
Yeah, sure. Um, well, so first, let me tell you about the book that I'm working on. So I am writing, tentatively titled The Story of industrial civilization. And it is the history of how the modern world was created the discoveries and inventions that led to the standard of living that we now enjoy. And it will be about three quarters history and one quarter philosophy. So the first three parts will tell some of that history. Part one is material abundance, how we how we sort of all got got rich and increased GDP. Part two is global connectedness, the stories of transportation and information technology and how they've made a globalized world. And then part three is health and safety, including, you know, things like the advance of medicine and the conquest of infectious disease. Part four is going to be the philosophy and it's going to address questions like is progress good at the end of the day? And can progress continue into the future? Or was it also a one time thing that's over now? And finally, what should we as a society do about it? So that's the the overview of of the book that I'm working on. I'm just to point to a couple of other books that I've really enjoyed and would recommend to people who want to sort of read about progress. Steven Pinker's 2018, book enlightenment now, subtitle the case for reason, science, humanism and progress. It's really about how the progress of the last few 100 years actually is the result of and the vindication of the Enlightenment ideas of reason, science and humanism. Enjoy that one. Another I'll point to is where is my flying car by J stores haul, really interesting work of futurism. But both diagnosing sort of some of the problems of progress today and but also talking painting a really bold, ambitious vision of where we could be in the future not only with flying cars, but with nanotech. With nuclear power, AI and robotics, you know, and a lot of a lot of really ambitious ideas. Maybe one more than I'll throw out there is Charles man's book, The Wizard and the Prophet. really

insightful, very well written kind of tale of two competing worldviews, roughly the kind of techno optimist versus the like, Enviro pessimist worldviews. And he chose kind of his archetypes for these Norman Borlaug, who created what's known as the Green Revolution in agriculture. And then William Vogt, who was one of the foundations of the sort of mid 20th century environmentalist movement. Again, yeah, really insightful and well written. Some other writers that I like, I'll just throw out, Anton house is really excellent on the history of English invention in particular, he is the official historian of the Royal Society for Arts in the UK, and wrote the official history of them called hearts and minds, which I recommend, he's working on a new book about, about invention and the nature of invention, which I'm really looking forward to. I'll just throw out one other I don't think he's written a book yet, but I enjoy the writing of Eli Dorado. He writes about, you know, near future potential technologies like supersonic airplanes and geothermal energy. And he also writes about the kind of regulatory context about what regulations or regulatory reforms will be needed to, to enable those those developments and, you know, make sure they arrive and that those potentials are not stunted. So those are some examples of good intellectual work and the kind of thing stuff that I think we need.

Jake   32:32
Yeah, that's a few new books from my reading list, which I appreciate. And Eli was actually on the podcast pretty early on. So really like his work as well. And hopefully he does write a book soon. Maybe he's working on one, but okay, so bunch of different places that could go from there. But I want to touch on, I tried to stay away from asking the double questions, because I know they can be a little bit difficult. But we've been talking about humanism a couple of times. And, you know, towards the end of those book recommendations, you mentioned, one where there's sort of a contrast between someone who's more pro tech and someone who's more environmentalist, you know, excuse that, if it's a little bit of a butchering of the dichotomy, but I was wondering, you talked about humanism. And like, to some people, it's obvious, like, you know, we want to do what's best for humanity. That seems like a sort of non controversial thing, until maybe you get someone at the opposite end of the spectrum, or at least, you know, a polar point of view on on a particular topic, which

is environmentalism, where some people at the extreme side of things like our, you know, against having kids, and think we should, you know, decrease the population, because it's not possible for, you know, humans to exist in this volume and continue to industrialize and things like this while maintaining Earth's environment, or, you know, we're killing earthen environment and everything like that. However, these movements, you know, conflicted over obviously, you have a much better understanding of the history than I do. But have they been at odds for some time now? And where do you see things standing today in terms of humanism, versus environmentalism? Or maybe they don't square off as directly as I'm making it out?

Jason Crawford 34:15
Yeah, um, I think some people, some environmentalists would say that there are maybe different approaches to environmentalism or different wings or factions. Stuart Brand, for instance, says that there are sort of the scientific environmentalists versus the romantic environmentalists. And I think he places himself squarely in the scientific camp where, I mean, Stuart really wants to, I mean, one way to look at it is, are you saving? Do you want to save the earth for humans or from humans? And I think Stewart would want to save the earth for humans. And so he, you know, he looks at how do we, you know, if we think of the environment as infrastructure that supports human life, how do we be, you know, how can we be good stewards of that infrastructure and good maintainers of it. He's actually writing a book right now on the theme of me maintenance in general, and, you know, how can how can we maintain the environment in a way that, you know, that supports human life, if you start thinking about the environment as infrastructure, you want to not only necessarily maintain it, but also improve it right? Maybe upgrade it, maybe make it better than you found it better by the standards of supporting human life. And of course, we do this all the time on a, on a local scale, for instance, hydraulic engineering, digging canals and dredging rivers, and building dams and levees, and, you know, things like that. That's just one example of how we we not only maintain, but upgrade or improve the environment for, you know, for the, for the sake of supporting human life. Um, but I think, you know, you get into this, you know, very fundamental people have just sort of different gut level emotional reactions that I think come from deep philosophic

premises, maybe implicit about, you know, is that even a worthy goal, right, is supporting human life is that even really what we should optimize for? And I think it contrasts with the romantic view of the environment, which is that there is something sort of intrinsically good about untouched nature. And that sort of anything that we do to touch or change or impact the world outside of ourselves is, you know, maybe inherently bad or has some inherently bad aspect or element to it. And I think that if you work this out consistently, it's it's fundamentally anti human. And you have to choose, I think this, this notion that we shouldn't have children, because it's putting pressure on the environment, or we shouldn't try to drive economic growth, because will, will destroy the environment, or we even need to shrink the economy a little bit to make it quote, unquote, sustainable.

Jason Crawford   36:53
I mean, so I have an opposite view, which is that we can and should continue to grow the population. And our level of affluence and wealth and our level of technology, all of those things should continue their upward exponential path and can continue without, you know, if we use our ingenuity, and we have good governance, all those things can continue without destroying the planet or leading to some sort of disaster for humans. So if you don't want to do those things, I think there are, you know, there's sort of two basic reasons you might be opposed to the sort of techno optimistic vision. One is, you might think that it's literally not possible that if we try to go for that the that level of technology and economic growth, that it will be fragile, that it will fail, that it will lead to disaster, and that ultimately, we will harm people. And so from a humanistic or humanitarian point of view, you might say, No, don't go there. It's a mistake. But the other reason that you might be opposed to these things is if you actually don't like the vision in the first place, if you if you actually think that a world of more humans, with more technology, and ultimately probably more impact on the environment, if that is fundamentally a thing that you that you don't even think should happen don't want to happen, if you have some fundamental, you know, emotional or philosophical or romantic aversion to that vision of the future. And so that's really, and those two things often get conflated. It's hard to pin people down on which one they truly believe. Because anti human visions, maybe will emotionally resonate

15

with some people, but they're really hard to argue for at the end of the day. And so anyone who has a fundamentally anti human worldview is always constantly falling back on what sound to be more humanistic, practical arguments, like oh, no, we're overrunning the earth's carrying capacity, or we're setting ourselves up for disaster that will harm people, you know, on and so on, and so forth. So I think you have to really, um, these things get really subtly entangled. And in the worst case, there can be a kind of Motte and Bailey back and forth between them. And so I just think you have to be really clear about, you know, where people stand and what they're going for. And fundamentally, I want to, I want to push for a, a very strong, clear, humanistic vision, right? We can argue about which technologies will get us there, which technologies might have risks or dangers or external harms, etc. But at the end of the day, our standard is, must be that well being of humans that our ability to live longer, healthier, happier lives of choice and opportunity and freedom and flourishing.

Jake 39:32
Yeah, I think myself and most of the people listening are probably lined with you on all of that. And that was a really good sort of explanation of, of, you know, those two, you know, sides of the equation, I guess. I think an interesting place, you know, we've got like, less than 10 minutes left and interesting place and an inspiring place, maybe to end will be to talk a little bit about from your perspective, you know, you've studied deeply several, you know, countless examples basically, of, of, you know, remark we'll progress throughout history and different inventions and discoveries. And I'm curious if there's one or two, that you might like to drill into a little bit of just these moments in history that we just had such remarkable progress, whether it was through one thing or sort of a sequence of different things. What is what's an example of something that's really stood out to through all of your research?

Jason Crawford 40:22
Yeah, one thing I was just reflecting on recently, is the incredibly massive impact of technologies related to electricity. It's, it's just when you start tracing out all of the different implications of the fact that we, you know, in the, in the 19th century, we kind of worked

out the basics of the physics of electromagnetism. And wow, everything that was downstream of that, I mean, it was a new, you know, a fundamentally new way of storing and transporting energy, it led to new types of motors, it led to electric lighting, and heating. And so it was a complete revolution within energy, of course, so So these things went on to revolutionize other areas. It was it completely revolutionized factories, for instance. So before electrification factories would be run, the machines would be run on essentially mechanical power. So you'd have one large engine, maybe in the early days, a steam engine, or even a waterwheel. Later on, they would use internal combustion engines powered by gas or gasoline or kerosene. But that engine, you'd have kind of one big one, and it would be hooked up to a central power shaft, literally just a rod that ran through the length of the of the building in the ceiling. And all the machines would be connected to that one rod by a belt. And you would just, you know, connect and disconnect the belt in order to run the machine. And this had like a lot of problems. So you had to organize the machines in a in a line, basically, because they all had to be connected to this one power shaft, which meant that you were not free to organize them according to the natural flow of materials through the shop. And so once you had electricity, every machine could be on its own, it could could have its own local motor. And, of course, power cords are distributing the power throughout the factory. So you can now completely reorganize the factory. So to put the machines in the sort of optimal places to follow the flow of the materials, it also allowed for the machines to be turned off when they're not being used, right, rather than then there just being one central power shaft that's turning all the time. And that saved energy. It also allowed for higher powered and higher speed machines, the central power shaft could only move so fast, just in terms of you had some mechanical limitations. So if you want a really high speed tools, you kind of needed the electric motor. So and then on top of that the factories got electric lighting. So imagine a factory trying to run, you know, when you don't have strong daylight coming in, and you've got to run it on what gas lighting or kerosene. So you've got a risk of fire, you have, you know, fumes, you have potentially ashes and soot. And all of this is, you know, made a really bad work environment, not to mention the lighting is going to be dimmer, because you just you can't get the the power or the you know, the lumens out of it. And that was actually

a safety hazard. So electric lighting was so much safer, and it was more efficient. And it was more powerful. It was just a just a complete revolution of the factory. And then I haven't even mentioned, of course, electronic communications were a complete revolution starting in the really in the 18 watt 40s or so with the telegraph, and then through to the telephone, and then the radio and television. And then of course, electricity was the basis for the entire computing revolution, right. So that's at least like two major, you know, out of out of maybe six or seven major, like general purpose technologies or technological revolutions that I can think of in the last 150 years. Electricity is absolutely fundamental to at least three of them. So it's like half of the technological progress that we've made in the last 150 years, it feels to me has come from electricity. And that's really just amazing.

Jake   44:06
Yeah, that's crazy. And it's really interesting, I'm gonna have to rewind and sort of listen to that, again, there's like so much to process and I need to read more, or something like that. It's all very interesting to me, but I just don't know that much. But anyway, I wish we had sort of time to go down. Just keep going down your list from electricity to whatever's next, and keep going down. But I know we have a hard stop. And I want to respect your time. But thank you very much, Jason, again, for joining today. It's been awesome talking, and maybe we can continue it at some point in the future. Where can people go to, you know, follow you and the roots of progress and you know, everything you guys are working on? As you know, the future unfolds?

Jason Crawford   44:45
Yep, you can find all my writing at roots of progress.org. And I spend probably too much time on Twitter. You can follow me there. My handle is Jason Crawford. Those are the best ways to follow that's also where you can find out about our CEO search. And yeah, Thanks for having me on it was great conversation