I'm Ezra Klein, this is the Ezra Klein Show.

So I think it's hard to overstate how dramatically the narrative on China swung in the past couple of years.

You go back to 2020 and 2021, and honestly, even before that, and I've said this before, the dominant emotion in the American political dialogue about China's envy.

And that is most true among the people who are counted as most anti-China.

Take Donald Trump, he would go on and on about how China was winning, how it was beating us at everything.

But this was pretty broad, and it was based on something real.

It's manufacturing prowess had become stellar.

It had gone from making very simple things to very complex things, things that we no longer were able to reliably make.

It was embarking on big, ambitious projects like Made in China 2025 and the Belt and Road Initiative.

It had weathered the pandemic without the mass death we saw in the West.

It was able to build infrastructure and housing and transit at speeds unimaginable to us now here.

And what Trump said Biden and Mowys put into practice, it isn't just that he kept things like the Trump tariffs.

It's that if you look at the Biden administration's economic policy, a lot of it is about rebuilding our capacity to compete with China on what it can already make, things like solar panels.

And a lot more of it is about trying to make sure we stay ahead of China on the technologies where we can make them now and they cannot.

And so that was the status quo, let's call it six months ago, eight months ago.

And then came the rest of 2022 and early 2023, and this entire story has flipped.

China's property sector melted down, its zero COVID policy strangled the economy and led to nationwide protests.

Foreign investors were getting cold feet.

China had allied itself tightly with Russia.

 ${\it Xi}$  Jinping was consolidating power in a way that worried basically I think everybody.

Economic growth was slowing, thing after thing after thing was coming home there to roost in a way that made a lot of people feel like the longtime predictions of why an autocracy like China cannot sustain the kind of growth and competence it had had until then were all coming true.

China went from being viewed as this model worth emulating to something of a disaster story, at least a cautionary tale.

You all know, because I've said it a bunch of times now, that I think trying to stay abreast and trying to understand China is about the most important political question of the age.

And for those of us trying, one of the things you anticipate every year is this letter that Dan Wang writes.

And Dan Wang, he's a technology analyst at Gapical Dragonomics who've been in China for these years.

He's a visiting scholar now at the Yale Law School Psi Center.

And one of the things he does in these letters is he's able to weave together a sense of China's technological capabilities, what they are making and how they are making it and what capacities they are building through that process and its culture and its geographic differences.

And these really interesting ways to give a felt sense of what it is like to have been there.

It's hard to get from the outside.

And in 2019 and 2020 and 2021, it was really hard to read those letters without feeling envy for what China was building and what being in China then was like.

And then in the most recent letter, things took this very sharp turn.

So I wanted to have Wang on the show to talk about what it has been like in China over this period, then particularly to talk about what's become the core vector of competition between the two countries, which is technology and how we make it and how we create it.

As always, my email is reclineshow at nytimes.com.

Dan Wong, welcome to the show.

That's right.

Thanks for having me on.

So I read your 2020 letter from China, your 2021 letter from China.

And I read them as really the most convincing cases I'd seen for what China was getting right, at least up until that point.

So let's rewind the clock a year or two.

You're living there.

You're a technology analyst there.

What was your read of China prior to 2022?

To set the stage a little bit, I think 2020 and 2021 were quite good years to be in China as you pointed out, Ezra, that in the very early stages of the pandemic, it was actually quite a fun time to be in China, in part because the government controlled the virus in really good ways.

Now, I've been living in China since 2017.

For the last three years, I've more or less been stuck in China due to COVID.

And over 2020, I saw this enormous effort that the Chinese government made to control the spread of the virus when it was more or less out of control everywhere else.

Everywhere else outside of East Asia, there were a lot of people getting infected and also a lot of people dving.

And so I think 2020 and 2021 were guite nice times to be in China.

Seemed like quite a lot of things were going right, not just with a pandemic control, but also with various economic, political management issues that the Beijing government was really trying to pull off.

So you'd align in your 2020 letter that I think captures as well, where you wrote,

This year made me believe that China is the country with the most can-do spirit in the world.

Every segment of society mobilized to contain the pandemic.

One manufacturer expressed astonishment to me at how slowly Western counterparts moved. US companies had to ask whether making masks aligned with the company's core competence.

Chinese companies simply decided that making money is their core competence, and therefore they should be making masks.

So tell me a bit about that.

That was a strange moment of global reversal.

We had this virus that came out of China.

There's obviously questions about where it came from, but hold us to the side for a second.

But pretty quickly, it seems China has not just internally a very strong response, but they become sort of the world's manufacturing shop for what other countries need to respond. And they're able to do that very, very quickly.

So tell me a bit about your sense of both the competencies that revealed at that time, and also what that did for China's sense of itself and its role on the world stage. Yeah.

One of the most important points I'd always like to make is that Chinese are really good at making money.

And there are always going to be looking for opportunities to figure out whether they can make a buck here, make a buck there.

And in the early months of COVID, the Chinese manufacturers were thinking, well, you know, this is actually a really good time to try to make masks, try to make things like rubbing alcohol and every other sort of personal protective equipment.

And we had all of these pretty funny headlines, I thought, of companies like BYD is actually China's largest electric vehicle maker, also makes quite a lot of batteries.

And in 2020, one of the major lines was that BYD was getting into the business of making masks simply because it was a nice, profitable thing to do.

And so one of the things that I felt quite strongly in 2020, as you said, is that China has very much a can-do spirit, that there was this very good embrace between a highly competent government that rallied quite a lot to control the spread of the virus with some of the world's best business people and embrace a marriage that has been in place, I would say, for the last few centuries, where you have a lot of mandarins who are supposedly very well trained in poetry and classical Chinese, locked in a very fertile embrace with some of the world's best business people.

And here is where you had an instance of a strong state working very well together with strong entrepreneurs to tackle a big problem in 2020.

But one thing that then happens alongside this is that the Chinese government feeling some strength, feeling that it is exhibiting competence, it has the support of the people, becomes in important ways more assertive at home.

And one thing that was a major focus of your analysis in 2021 was the set of regulatory crackdowns Beijing launched in that summer, particularly around tech companies and even full sectors of the technology industry.

And in America, if you're reading the coverage, because we have a certain attitude towards the government heavily regulating companies, this was taken as authoritarianism, kind of a crackdown.

But you at least then had a more contrarian theory of what those crackdowns were meant to be, an idea of how the Chinese government was trying to guide Chinese society and economic growth.

Tell me what they were and how you saw them then.

Well, the first thing to note is that I have absolutely no disagreement with the portrayal that China's actions were highly authoritarian, that the Chinese government more or less decapitated the online education sector, made it much more difficult for entire sectors to function like the video game industry.

It has more or less driven cryptocurrency mining out of the country, that there are still some cryptocurrency activity in China, but at least a lot of the mining was gone. And it punished particular companies, especially anti financial was the big one in 2021, as well as DD for various transgressions against either law or against various political objectives. So there is no doubt that what the Chinese government did is highly authoritarian, that it acts with this brutality and ferocity that everyone would be completely unused to in the West.

And I think you're right that I was thinking about a particular vision by the Communist Party that it was trying to achieve with respect to cracking down on various private initiatives of which the tech companies, the tech platforms were the biggest victim.

And in particular, what I thought was going on in 2021 was that the Chinese Communist Party has decided that they don't very much like capitalism with American characteristics, or maybe you can say this is just some variant of Anglo-Saxon capitalism that they were much more skeptical of a mode of growth in which over the last 20 years, let's say that in the US growth has been driven very significantly by Silicon Valley on the one coast, represented by consumer internet as well as software businesses, and by Wall Street on the other coast, represented

by, let's say, a lot of financial initiatives.

And I think the Communist Party has taken the look at where that has gotten the US over the last 20 years.

And you can also say, again, a rope in the UK here, which is a lot of their growth has been driven by the city in London, represented by the financial industry.

And the party has said, well, you know, there are different types of capitalism that we'd like to pursue, and that it has looked a little bit closer at, I would say, something like German industrialization and said, you know, we would quite like to be a little bit more like Germany.

And Germany, I think, in their view, is going to be represented by something like a lot of medium, large manufacturing firms that are really, really good at pursuing some sort of niche technology in which they are totally world dominant, that is embedded in a very well regulated market system, where you have a very large manufacturing workforce, that in Germany, the manufacturing share of GDP has steadily declined over the last few decades, but not as drastically as in the US or the UK, where manufacturing, last I checked in the US, is about 10% of the value added share of GDP in the economy.

And so I think, you know, the Chinese government is much more keen to say that, well, you know, a lot of these physics PhDs really ought to be doing something like physics rather than going to work for a hedge fund.

And they are, to some extent, closing off these exciting dazzling, glamorous opportunities in consumer internet or in finance, and really trying to encourage the country's best and

brightest to go work in something like semiconductors or metrology or chemical engineering instead.

So this was a view that the Chinese government had a point of view on what kind of technological growth it wanted, and it connects to something that's in your writing, which is that maybe the most important resource in an advanced economy is talent.

And there is a public interest in where talent goes.

You have a line in an older essay where you say that you wish in America, it hadn't become a joke that you would go into plastics.

And instead, young, ambitious graduates wanted to go to Goldman Sachs or Facebook that you should really want to go into plastics, that there should be social value excitement around advanced materials manufacturing, say, and that in your view, that was what China was trying to create.

So tell me a bit about that idea of the flow of talent and both the critique you were making of the US and what you thought was happening in Beijing. Yeah.

Well, it is, I think, a bit of a shame that plastics became a punchline.

And the movie that I'm referencing is something called The Graduate, which was released when the manufacturing workforce in the US was still really substantial.

But somehow that the word plastics became a punchline even then when a fresh college grad represented by Dustin Hoffman was considering where to go next.

And I think of talent, as you say, as probably the most important thing there can be in an economy that the economy really is simply made up of people and the knowledge that they have, and that we are able to think of our industrial civilization as something represented by big buildings, big bridges, big train tracks, at least in Asia.

I'm not sure if the US has really good train tracks anymore, but as all these artifacts of an industrial civilization.

And I think what we should do is to refocus our attention much more on the knowledge in people's heads rather than in these artifacts of technology that we have been able to create. We wrote then that the Chinese state has long placed greater value on resilience over efficiency, which has dragged down its performance on metrics that economists care about like return on equity, and that in your view, that is as often an indictment of the economic profession. Tell me in this context we're talking about this tension between resilience and efficiency. So one of the big successes I think that China has had over the last 25 years is to employ a lot of people and get them to build a lot of the basics of an industrial civilization that over the last 70 years, since the founding of the People's Republic, when China was a broken country where a lot of things had already been torn up, either by the Japanese invasion or by the enormous civil war afterwards, that they didn't really start with much. And they still didn't really start with much up until the 1980s at the start of reform and opening.

And one of the things that is pretty important to appreciate about the Chinese economy is that every year they've had a lot of expansions in the workforce all the way up until about 2015 when the workforce started to shrink, that they needed to employ a lot of people and give them stuff to do.

And the Chinese government has therefore been much more focused on just creating goods,

building cities, building bridges, building roads, even if a lot of these roads go to nowhere, even if a lot of these cities were empty at the beginning, simply to have a lot of the basics of an industrial civilization in place.

And so one of the problems that this creates are things like lower returns on profits, lower returns on equity, that one of China's major problems has been significant overcapacity in all of these things that I mentioned, and that is one of the most significant pathologies that has animated the Chinese Communist Party, which they build first and then ask questions later.

So there's one way of thinking about this difference to go back to an Obama era program, this loan program that backed Selindra, which was kind of a disaster in terms of returns on equity and embarrassed people in the Obama administration, but also backed and through a lifeline at that time to Tesla, which was a small struggling electric car company is now obviously a behemoth.

I would say it's fair to say that here, the incentives of government are such that they are so afraid of Selindras, they would prefer to not have them at the cost of not supporting a Tesla.

And what you're saying is that the tradeoff in China is the opposite, that they are willing to accept many, many, many, many Selindras, if that means they get some Teslas. Yes, that's right.

I think that the Chinese, again, I would call this a pathology, is to just try things out and to build, and even if a lot of these investments really don't work out and drag on returns on equity, that they really like it if a Tesla emerges out of a bad program.

Now I really like the example you bring up of Selindra, because Selindra was a failed solar startup, and one of what I think is the most emblematic successes of Chinese industrial policy is in the solar industry.

And I think the solar industry is absolutely fascinating for many reasons, but in the context of what you're thinking about, Ezra, I think that the important thing to mention about solar is that China just went all in on trying to figure out solar and more or less succeeded, but its success has been much more of a public policy success than a success for investors, which again is something that hurts return on equity.

So when I think about the solar industry, I think about most of all a decision taken by the State Council, which is the executive agency of the central government in Beijing, to declare solar a strategic emerging industry, an SEI in 2010.

What happened after the Chinese government designated solar to be a super important industry was that the subsidies were enormous and they flowed in, that the Chinese government subsidized a lot of the aspects of solar production as well as consumption that made a lot of different entrepreneurs who previously knew absolutely nothing about solar to jump in because there were so many subsidies out there.

And I think what you see basically in 2023 is that the solar industry has probably been a major public policy success in China, that China controls about 80% of the value chain in solar, everything from the tooling and the materials to produce solar photovoltaics as well as the actual production of the modules and cells.

It is an industry absolutely dominated by Chinese companies.

And so that is good for the Chinese government from a not just a pride perspective, but also

from a strategic perspective.

I think that has been good for the climate movement where the breathtaking drops in solar costs has fallen something like 97% over the last few decades.

So that has also been really good for consumers.

And one thing that has not been all that good for has been the capitalists, which are both running the solar facilities that are actually selling the solar panels as well as their investors.

Because something that the Chinese government did was that it induced so many companies to jump into the space, companies that are mostly making commoditized products that there is not huge difference between all of these different solar photovoltaic makers to jump in here and start competing with each other to make what is a pretty commoditized product where no one is making a lot of profits.

And so this is a Chinese industrial policy success, but this is very much a success with Chinese characteristics in which investors and corporates don't make that much money, but the government and the consumers can be pretty happy.

And to flip that analysis, it is certainly now being treated as an American policy failure that if you look at the Inflation Reduction Act, I talked to the Biden administration about this exact question a number of times now, they are on the one hand, all of their climate goals require an incredibly rapid buildup in solar energy and solar deployment. And on the other hand, they don't want our entire energy infrastructure to be dependent on Chinese manufacturing.

And so they are trying on the one hand to accelerate solar and on the other hand to onshore the solar manufacturing chain.

And something you've pointed out in the past is that this is a little bit of a weird position for us to be in because not only America, but substantially America made a lot of the major technological discoveries in solar.

And we along with Germany and others did a lot of the subsidies in recent years to encourage the purchasing of solar.

And yet we lost the entire manufacturing chain of something that we substantially invented. And this goes to a point of a Foreign Affairs article you wrote not long ago about the ways in which we miss how China has outcompeted us on certain dimensions, but also has moved up the value chain, has actually developed kinds of knowledge that we thought were not that valuable, but that turned out to be incredibly valuable, and now we are desperate to restore. So do you want to talk about that a little bit from the perspective of the American policy failure?

Sure.

So I think that it hasn't been for lack of trying that American policy hasn't nurtured enough of a solar industry.

That I think it was under President Obama in around 2012 that the U.S. government had already recognized that Chinese were making very efficient solar panels and that President Obama decided to impose tariffs, tariffs that ultimately President Trump also extended again in something like 2017.

There have been several rounds of allegations by the U.S. government that the solar supply chain, namely polysilicon production, implicates forced labor in the Xinjiang region where

a lot of Uyghurs are in detention camps in part that these detention camps are possibly helping with the production of polysilicon, which is a charge that Beijing denies. But the U.S. government has levied various regulatory instruments, something that includes tariffs, which is a traditional instrument, as well as these blocking orders that make it much more difficult for Chinese companies to sell solar to the U.S. without a lot of documentation trying to prove that they don't have forced labor.

That the U.S. government has imposed a lot of these novel regulatory instruments really to try to constrain China's growth in the manufacture of solar PV.

And for the most part, I think that has made not a dent in China's ability to actually maintain its dominance in solar.

And so solar, I think, is emblematic of Chinese success not only because it demonstrates that the Chinese government is much more interested in the interests of consumers as well as strategic advantage and less interested in whether investors are able to make a profit in these new technologies.

It is also an example where China was able to more or less piggyback off of the successes made by the U.S. as well as Germany in investing a great deal in a lot of the basic science in creating this industry.

A lot of the science, R&D, a lot of the basic research in solar technologies was made by the U.S. government as well as in Europe to establish the basic scalability of the solar PVs.

And what happened was that China, after waited, I think not totally intentionally, but was in a good moment to wait for the science to be mature and then focus on scaling.

And so it built a lot of the manufacturing capabilities.

China doesn't have still a really excellent world-class scientific capabilities yet.

But China does have world-class manufacturing capabilities.

It waited until a lot of the science was mature and then just focused on scaling up the technology. And so I think solar is emblematic of China's ability to focus much more on using manufacturing to just outcompete the U.S. after the science is mature and I fear that it is going to happen in different industries if the U.S. doesn't think much more about building out the labor force to have a very good manufacturing ecosystem to be able to scale up the next solar technology. many of the strengths we're talking about here for China remain so today.

But I've kept us in your analyses in 2020 and 2021 because they capture China at a certain point of time when their strengths become very, very visible and there is a tendency to extrapolate out from them.

And then comes 2022 and your letter looking back on this year in China takes a very, very different tone.

And I think that tone tracks a broader shift in the narrative and estimations of what China is and where it's going.

So tell me about what changed in 2022.

Tell me about how your view in 2022 was different by the end of it than your view had been at the end of 2021.

Yes, absolutely.

So I think the starting point for thinking about China in 2022 has to be three major events. The first was that the enforcement of zero COVID went a little bit too far and emissrated

a lot of people in China due to lockdowns until they were completely and abruptly abandoned in December, which I also lived through.

The second big event to do with China has to be the greater centralization of power under top leader Xi Jinping in the aftermath of the 20th Party Congress in October when Xi Jinping more or less routed any sense that he had an opposition within the party that this validated his tenure for a third term as General Secretary of the Chinese Communist Party, and I think more or less makes it very likely that he will have a fourth term once this is up so that there's more or less guarantees that he will have about 20 years to be the top leader in China.

And then the third most important thing to happen in China was a declaration in February about three weeks before Russia invaded Ukraine that Beijing had a limitless friendship with Russia, which knows no forbidden zones.

And so this really embraced an imperial power right before that imperial power launched a major war in Europe.

And so I think this has to be the starting point of what we're thinking about in 2022. My lens here is that this shows very much that the Communist Party has been interested in growth for a very long time, that it remains still fairly interested in economic growth, that it retains quite a lot of economic pragmatism.

But I think one of the things that we really have to adjust is to think of this country as a little bit less of a technocracy that slips occasionally into Marxist doctrine and Marxist faults, and that this has to be viewed on balance much more as an autocracy that is occasionally interested in economic pragmatism, but which is an autocracy that is much more committed to these ideological goals where growth is important, but it is a more of a secondary concern.

One of, to me, the profound lessons of life, of getting older, is recognizing in myself and in other people that whatever our strengths are, that's also where we're going to find our most terrible weaknesses.

And this is true, I think, for countries too.

And something I appreciate about your analysis here is that the 2022 look is really about the same dynamics of China as the 2021 and 2020 letters.

But it's about how they can turn.

And you write, what I did not sufficiently appreciate is that a government that would so casually decapitate the online education sector would also have the will to visit catastrophe upon whole cities.

But tell me a bit about that.

We didn't talk exactly about what they did in the online education sector, so maybe you can say that quickly.

But tell me about how you understand that state as having unleashed itself, moved from having the power to maybe make decisions the American government wouldn't make to making decisions that the American government should never make.

The Communist Party imposed, I think it's not unfair to say, communism on the online education sector declaring that online education platforms cannot make profit in China. And so that along with the bundle of tech regulations we were talking about earlier, so things like video game regulation, cryptocurrency regulation was part of the bundle of the moves

in 2021 that I thought that this is a signal that they are much more interested in being more like Germany than being like the United States.

I think this demonstrates that China has a problem sometimes of too much state capacity, that it is utterly possible to fail when one succeeds.

And so that the Chinese government is able to do a little bit too much.

So in 2020 and 2021, this was a broadly successful strategy of keeping debts low in China due to COVID because it was able to block transmission of everything up until the Delta variant. But it is able to take these things a little bit too far and impose whole lockdowns on places like Shanghai where for about two months, 25 million people were not really able to step outside of their apartment doorways or at best travel outside their apartment compounds, which is made up of kind of a garden that a lot of people are able to walk through. And so I think that these moves demonstrate that China's problem is sometimes to just have a little bit too much state capacity, a little bit too much of an engineering mindset to control various problems.

Sometimes that's good and I'm sure you're familiar with this term as well of supply side progressivism.

I've heard of it, yes.

Where China is a very good supply side economy where it is just really intent on building a lot and doing a lot, but I think the flip side of this term where it is not so progressive anymore is that it is just a little bit too intent to control too many things that perhaps it is just really not a successful strategy to continue pursuing.

You keep saying here a little bit too much, but I found the letter that the description which mirrors other reports from this period pretty chilling.

I mean, huge cities were put into extended lockdown.

People died because they couldn't get medical care.

You talk about food becoming the obsession of almost everybody and people going without food so their children can eat because the logistics chains couldn't handle feeding that many people when people couldn't go out and purchase food.

I mean, I think you'd certainly connect this to the detention and surveillance of the Uighurs and possibly to the surveillance state being built all across China top very advanced technologies like AI.

I think the other side of looking at this is that it's not potentially an excess.

It's that the danger of having a state this powerful is that eventually somebody is going to want to use it and the tendency, the seductiveness of being able to control society when you think you can do it, eventually that will come to define how the government operates. So that's the question I guess I have about this.

Do you think that this marks, the fear many of us have is that this marks a real turning point in China where you move from this sort of technocratic government that seemed quite pragmatic to something under Xi that is very different and that will continue to be very different?

How do you see that?

I think it is the construction of let's say a splendid instrument of just a very powerful weapon that they are sometimes able to use for quite good means.

I would still say that control of zero COVID made China really, really good in 2020 and

2021 until it met the Omicron variant when it wasn't able to course correct and made people food insecure in Shanghai, which is kind of an unbelievable proposition when the entire city was locked down that the system improved quite quickly afterwards. But there were a few days to a week when a lot of people in Shanghai were feeling quite food insecure.

And on the other side of good controls during a pandemic are what I think are quite a few episodes in Chinese history that show that too much state capacity may not be a very good thing.

I'm thinking of a decision in the Ming dynasty a few centuries ago when one of the emperors said, we have these really marvelous treasure fleets sailing out to Africa that are impressing people around the world that are able to bring giraffes back to the emperor in Beijing for the emperor's pleasure.

That these things are pretty cool, but we don't really like that there is so much coastal development.

And so they shut down this entire program of building out the treasure fleets. Now this decision may be good, it may be bad, it may be reasonable, it may be not. I think this is just not really something that any other government in Europe at the time would have been able to do, that the Chinese government is a little bit too intent on using things like too many of these engineering approaches to enforce something really devastating

even more recently to something I'm thinking of the one child policy, which was started in the late 70s, early 80s, when the government decided, well, we have too many people, so our solution is to stop births, which resulted in millions of sterilizations, which resulted in babies, mostly female babies being dropped off on the side of roads because they thought that China's population was big.

And a real tragedy of that was that China's population fertility was already declining, but what it didn't need to do was to visit this trauma on so many millions of families, especially women, to pursue these types of tendencies.

And so I think this is just a problem of too much state capacity that perhaps for human flourishing of various sorts, it is a little bit better not to able to have so much capability here to be able to do what the state wants, especially if the state is an avowed Marxist-Leninist power that has some revisionist tendencies around the world that it is continuously able to pursue so many big projects that perhaps this is not the very best thing for human flourishing either in China or globally.

So something you focus on is the psychological effect on the population broadly, but particularly on the young.

And I feel like it's a dark mirror of your initial argument, the thing we were talking about earlier about the can-do spirit of China a few years ago.

You write that the Communist Party has, quote, managed to pull off the impossible, blowing away China's enormous stock of human capital.

So tell me what you mean by that.

So over the last three years, I've been more or less stuck in China, aside from one trip out in October 2022 when I visited the US.

And one of the things that China declared in 2022 was that it was going to make it much

more difficult for people to travel outside the country, that for Chinese nationals to travel outside the country for ostensibly COVID pandemic control measures. It didn't want people going on holiday to France and then, you know, bringing the virus back with them.

And so one of the things it did was that it restricted a lot of passports from being renewed or issued, and that it declared that people who needed to go abroad really had to furnish a work reason or a school reason to be able to go out.

And among my younger Chinese friends in Shanghai as well as in Yunnan, this was one of the biggest

pieces of news for a lot of them because they really felt they had become enormously stuck. And so when I traveled out of China in October 2022, one of the things I had to do was to pass through the exit control immigration line in China.

And one of the people I passed was a young lady who was weeping in line at Customs Control. I presume because she was denied the ability to get on her flight overseas.

And this is one of these issues that created a lot of distress amongst young Chinese on top of the other big thing that stressed out a lot of people in a more latent, long-burning way when a lot of his any perceived opposition to him in the party was demoted or retired that a lot of young people have felt that the tightening trend that they've lived through over the last decade in which they're seeing less room for free expression, that they're seeing less room for cultural creativity, that they perceive this tightening course that asks them to turn their backs on a lot of the Western societies that many educated Chinese have some exposure to, that this wasn't a lot of fun, and that a lot of young Chinese, not just entrepreneurs in affected industries like video games or cryptocurrency or online education that they have felt that this is a society which gives them much less freedom to pursue the things that they are interested in.

There's another group you focus on in the letter, aside from the young of China, which is foreign business, which is a community that you know well and study and in a way are part of, and you talk about the Chinese government losing quite a bit of their trust. There is much more effort now among particularly major American firms that have used China as a manufacturing base to diversify, and I know Apple is trying hard to figure out how it can be diversified into Vietnam and India and other places.

Tell me a bit about how the last year shifted the attitude of the foreign business community to China, given their importance in China's rise.

Yeah.

I think that foreign businesses in China, even the hyper-embedded American companies that have been there for several decades, are starting to sour a little bit on China's production capabilities, that 2020 and 2021, that China remained a really great place to produce, that it was able to keep its factories open and really accelerate production when no one else can.

But again, these three events that I mentioned in 2022, first, zero COVID, second, the centralization of power under Xi Jinping, which may not necessarily be such a big concern to businesses, but does heighten geopolitical tensions with the US, and then third, this embrace of Russia right before Russia launched its war, that these are things that are making foreign businesses are pretty uncomfortable.

And I think that foreign businesses are seeing China as kind of a three-headed chimera.

One head represents the China of old, which showers, which is on the savvy.

Another head represents something like Japan, which is a large market, but probably won't deliver booming growth in the future.

And then one third, something like Russia, in which case, these companies may have to leave in a hurry, especially given mostly American sanctions, especially if Beijing makes any moves on Taiwan.

And so China is now becoming a little bit more difficult of a place to actually do business.

It is not necessarily the most reliable place to manufacture products anymore.

And so companies have become much more interested in offloading a lot of their export-bound production out of China.

So a lot of production in China is for foreign markets.

So producing in China for the American consumer and a lot of companies are much more interested in moving that component of the business over to places like Vietnam and India, and not necessarily moving everything out because the Chinese market is still enormous and will still drive some growth for a lot of different companies, but moving a lot of their export-bound production to other countries because China looks a little more risky of a place to do business from now on.

You wrote something here based on your conversations with foreign executives working in China that

I found very intriguing.

You said that for executives, a posting to China used to pave the way to the highest corporate ranks.

That's starting to feel less the case.

China is now so different of a market, given data controls and the political complexities that a posting there is now being viewed as often a quagmire as an essential rung on the corporate ladder.

Tell me about that.

There were a lot of American executives who became CEO after spending a couple of years. Standard length is something like two to five years running the China operations because that was such a booming market that everybody really needed to have some exposure to because that could have represented a lot of growth in the future.

But one of the things that China has done under Xi Jinping is to reject a lot of, at least one can say, liberal values, that these globalist values that are more present in the US as well as in Europe, that the rest of the world will nicely converge onto American, European, Western standards of business.

Xi Jinping is not interested in letting Chinese entrepreneurs be part of this globalist class that Xi Jinping has told Chinese scientists that they must be patriots first, that they must do national service and service of a lot of China's strategic goals.

He has been fairly explicit on that and that it is trying to create Chinese major brands instead of global major brands.

And so I think a lot of companies are taking a look at that situation and saying, well, this is kind of a different market that it used to be the case that China would factor into a lot of global growth.

And that remains the case for a lot of different types of companies, a lot of consumer companies, a lot of healthcare companies, and still some technology companies view China as a major growth story.

But that is starting to feel a little bit less the case after China seems pretty intent on taking a direction that is a little bit closer to Russia and a little bit further away from America's.

So I went to China, I think more than a decade ago now, and it was on this very weird reporters trip kind of junket.

And even then, in the meetings we had, the fear, the belief was that there was a real estate bubble, that you would hear about these ghost cities full of big apartment buildings and nobody seemed to live in, the government had flooded a lot of money into the sector, it was accounting for quite a bit of Chinese economic growth, despite not seeming like it was using money all the productively.

And then year after year after year, you wouldn't have that pop, right?

You would keep reading, you'd check into this on Bloomberg, people would still be worried about it, but there'd be some turbulence and then China would stabilize the market and they would get through it for another year.

And then over the last year, it has melted down.

Tell me a bit about what happened in the Chinese real estate sector.

Well, first of all, Ezra, I want to hear a little bit more about this weird trip that you had on this press junket about 10 years ago.

What was that like for you to go visit China?

I'm curious.

I'm not sure my reflections at this point are that interesting because they're very out of date.

We had a lot of meetings with officials, with economists, with some business people.

The main impression I had then was that everybody seemed to believe that if economic growth fell under 8% a year, that Chinese society, the sort of political stability of it would crack up.

And so the party's pragmatism on economics came from this overwhelming view that you really had to maintain a very high level of growth to hold the system stable.

And what has been interesting to me in the past couple of years has been a clear end of that view.

She and others coming to the perspective that they can hold Chinese society stable even if growth begins to fall and even if it begins to slow and even if they go negative.

And that I think actually speaks to the real estate thing here, which as I understand it and you know this better than me, they made a decision to try to pop the bubble and get to the other side of this and it didn't really work.

But that decision, I mean, thinking back to the trip I had also bespeaks a sort of political economic confidence that they didn't have even as recently as then.

Yes.

So I think one of the major things that she has done over the last 10 years was that he has continuously, at least for the last five years, to talk down the importance of economic growth.

That economic growth, GDP growth was one of the main ways previously that local party secretaries could get promoted up to higher and higher rankings in the central committee. And she has said, well, you know, maybe GDP growth isn't our most important task. And I think this is something that a lot of people in the West can appreciate that, you know, other things matter as well, and for him, you know, it is things like rural revitalization, it is to end poverty, it is to focus a lot more on the environment, and I think these things can be pretty positive things.

But I think it did prompt a little bit of a rash decision to try to pop their own real estate bubble.

Here, I'm thinking of a lot of my other work done by my Dragonomics colleagues in which the Chinese government decided that it had a possibly looming financial crisis in the property sector, and that it was pretty intent on trying to deflate this crisis.

But subsequently, what they did was they triggered a totally different financial crisis in China in which construction as well as sales have collapsed.

And so, you know, I think this shows that the Chinese government does have a pretty good read, I think, of a lot of its problems.

It doesn't always have the political will to tackle these things, and that's true everywhere. But sometimes, it's will to tackle things, create entirely different sets of problems

that were not necessary in the first place.

Again, an example of excess state capacity where it is possible to fail when it succeeds.

You've also seen in that area, as well as in COVID, a willingness to entertain hard reversals.

So, for quite a long time, on COVID, they have zero COVID.

They maintain zero COVID long after it is possible to do so, given Omicron.

And then basically all at once, they move to a let COVID rip strategy.

Health becomes the responsibility of the individual, not the responsibility of the collective.

You note that if you look at the preparation given to hospitals, to the manufacturing sector, to the ability to have fever medications in stores, there was really no coordination of this unbelievably sharp shift in policy.

And in the real estate area, they've jumped back into trying to subsidize the sector again to try to stabilize it.

So, one thing that has been striking is as much as I think the reputation fairly of she is that he's much more ideological than some of his recent predecessors and much more self-confident and is trying to purge dissent from around him.

There certainly was evidence as the year came to a close and going into 2023 that he will take a signal and shift his policies based on it.

Yes, I agree that she is patient, that he has some pragmatism, that he is capable of tactical maneuver, and he has adjusted several things in the past.

For example, under criticism of the Belt and Road Initiative, they made some tweaks there that after entrepreneurs complained in something like 2018 of not getting enough love and attention from the government that he was able to convene some meetings and try to reassure them.

The problem, I think, is that these tactical adjustments are not being missed for the grander strategic goals that he has.

One of his signature slogans of the last two years during the hubristic year of 2021 was

something called common prosperity.

During the reform and opening era, which allowed a lot of Chinese to get rich, Deng Xiaoping said it is okay for some people to get rich first and then later on that these people have to pull up their fellow citizens and have prosperity for all, common prosperity.

She has decided that China has become rich enough and that it is a little bit more intent to do common prosperity.

The problem is that these types of terms really freak out a lot of China's entrepreneurial class in which this is coded as socialism, that this is back to the battle of the days.

I think the Chinese government is able to say the sweetest words of encouragement to entrepreneurs, that it is to speak about the economy and the importance of economic growth in totally loving and tender terms, but this is only after it has strangled a lot of businesses and delivered a comprehensive beating to the Chinese economy.

Here's where I wonder how many times will entrepreneurs, foreign businesses, as well as young Chinese, really be able to be receptive to these messages that a top leader who continuously

has to say that the Communist Party is really in favor of entrepreneurs if they have to constantly say it, then I think the message hasn't really been sticking perhaps for good reason.

One reassessment this has triggered as they moved a little bit away from such a single-minded focus on growth is there's always been, I think, a suspicion within the American conversation about the Chinese economy about whether some amount of what looks like success is actually the illusion, that it's property bubbles, it's the state throwing around huge amounts of subsidies to firms that, yes, they can do well when they're that supported, but if you took all that out, they wouldn't be able to, and that's a real problem.

What has happened in the real estate market, I think, has gotten to this point a little bit, and this does bleed into a doubt about some of the industrial policies that I think are understood as their success and that you very much see as their path up the value chain.

The economist and commentator Noah Smith had an interesting argument about this in his newsletter where he said that Chinese industrial policy, in his view, has largely been a failure, that you look at its AI industry, it's far behind the US, its efforts to build an internal semiconductor industry have been a failure.

We come back to semiconductors, that its aviation sector has gotten a lot of money but can't compete really at all with Airbus or Boeing, it hasn't managed to produce a top car brand. There are studies suggesting that if you look at the firms that got Chinese subsidies, that their productivity is negatively correlated with getting those subsidies.

How do you think about the skepticism that maybe actually this economic model isn't working out and that as the tide goes out on some of the subsidies and some of the shine and some of the foreign business excitement, we're going to see actually a lot of hollowness there?

Yeah, well, I think I would have no pushback to any of the particular pieces of views either collected by Noah or the economic research that shows that Chinese firms are less productive after they have the subsidies.

But I think that my picture of just the landscape as a whole, I would say that it is at worst

a mixed record of success in China, that there have been two areas that have been, I would say, pretty obvious failures by China to catch up to the leading edge in global technologies. That is, first, advanced semiconductors where China doesn't really have much of a position, as well as in the white body aircraft in which China's answer to Airbus and Boeing, Comac, is really behind schedule and the most important components, namely the jet engines, are still being manufactured in the US in the collaboration with General Electric.

These are pretty obvious points of failure, but I think if one had to take a look at the entire forest, ignore a couple of these broken patches of dead trees, but I would say that there are a lot of triumphs as well.

China is now leading the world in terms of renewable technologies, especially in solar as well as in batteries, and I think that they have a pretty good chance at capturing the hydrogen market as well, that China last year exported a greater number of cars than Germany did, which is kind of a stunning statistic.

Now, a lot of that is Tesla's facility making cars in Shanghai, but I think it is a pretty successful effort by China, and that if you take a look at a broader mass of manufactured goods, something like, I don't know, a hydraulic pump or things like basic manufacturing equipment that don't grace the headlines of fine papers like the New York Times, well, China is pretty sophisticated in a lot of these different components, and one statistic that I like to cite is that the original iPhone, when it first came out, and about 5% of its value added are actually produced in China, and that was pretty much the value of the labor of workers in Shenzhen assembling components, mostly from Germany, Japan, Taiwan, South Korea and the US, and the figure for the iPhone X in 2018 is something closer to 25%, because a lot of the Chinese companies are able to make the sophisticated components inside the iPhone, and so I think that China has broadly risen from a pretty low base of technological achievement, and I think a lot of that is still set to continue.

That's where I used to work in Silicon Valley, the saying that we have there is that knowledge travels at the speed of beer, beer or coffee, picked or poisoned, people tend to talk about these sort of things, people tend to move between firms, knowledge tends to travel, China has accomplished a great deal in the past, a lot of technological growth in the West has broadly slowed down, in part because it's increasingly difficult to keep pushing forward the technological frontier, this is what a lot of people have acknowledged in the US, perhaps even that Moore's law in semiconductors is really on its last likes, and therefore I expect that China will be able to figure out a lot of these technological deficiencies because these are, I think, still mostly engineering challenges that it's within a very large industrial power's ability to solve.

So that gets to what has, I think, begun to really shift in boring ways, the US-China relationship.

One thing that I really hear when I talk to the Biden administration is a sense that manufacturing dependence and not just manufacturing dependence, but profit dependence, US economic interwovenness

with China has become for them much more significant national security vulnerability. And so there's a real sense now that we need to change our policies to keep ourselves out of a situation where if China, say, invades Taiwan, we don't have the economic interdependence and manufacturing resilience to have the response to that we'd want to have.

And I think semiconductors in particular are a place where you really see this. I think the most aggressive thing the Biden administration has done, which in my view goes way beyond anything the Trump administration did, although I'd be curious for your thoughts on that, has been to directly say, we are going to try to restrict China's ability to move forward technologically on semiconductors simply because we don't want them to be in a position of parity with us.

And semiconductors, for reasons maybe you can explain, I think feel to a lot of people like they're going to be the energy of the 21st century and the way that a lot of geopolitics was oil and gas over the past half century, perhaps a lot of geopolitics will be semiconductors over the next half century.

So you study this industry quite directly.

Can you talk a bit about, first, why semiconductors have become so central in the US, China relationship

and antagonisms?

And second, what has actually happened there in the policy and the responses to it? Yeah.

So I think semiconductors are a focal point for the US for two broad reasons. First, chips are in everything these days, that chips are in electric vehicles, they're in basic vehicles, internal combustion vehicles, they are in pretty much everything. And if you buy all this hype around 5G, which mostly I don't, but if you buy up the hype on 5G, that there's going to be chips in the traffic lights, chips in my pen, chips in my coffee, that chips are going to be everything, that this is going to be a super important industry.

And then the other fact is that the US has been a major producer of semiconductors up until the last few decades, that a lot of the semiconductor production has migrated to, especially Taiwan, as well as South Korea and some parts of Southeast Asia and some parts of China as well, that the US government, I think, has really realized that it used to be totally dominant in semiconductor technologies, which is really important. But that it is still super dominant, I think, in a lot of types of semiconductor production tools, that if you take a look at the semiconductor production equipment, a lot of that is still American.

So these are names like LAM Research and KLA Tencore and applied materials that are making the actual tools for semiconductors.

All the software tools are made by American, this is called EDA software makers, that this is still kind of a US monopoly on the tools, and China is really gunning after this industry, that China has been thinking about semiconductors for quite a long time, that China has announced in plans like Made in China 2025, that it is very keen to have a big chunk of the semiconductor industry market share, please.

And the US government is a little bit less excited that one of the few crown jewels left in its technology sector, namely semiconductor production equipment, is still some types of semiconductor manufacturing that really oughtn't go to China, just as a lot of other things already have.

And so I think the US government has reacted to constrain China's ability to manufacture a lot of advanced types of semiconductors by asserting its ability to control things

like the semiconductor production equipment, as well as the EDA software tools, the design chips to China.

And that has brought down a lot of Chinese capabilities in advanced chip design.

But here is where I also have two broad concerns with the US approach.

And here is where I have, you know, let's say two questions about the approach.

The first is that I think that on net, a lot of US actions have accelerated China's ability to produce advanced semiconductors over the longer run, that a lot of Chinese companies previously were uninterested in buying obviously inferior Chinese chips, that they were much more interested in buying the best products on the market, which were overwhelmingly American. And after mostly the Trump administration has designated a lot of China's technology champions to, you know, various sanctions lists, that after these companies are unable to buy American chips, well, they really have no choice but to buy Chinese instead. And that has given them an enormous push.

And so something I wonder is whether the Biden administration has really gained out the future, where a lot of its actions to block Chinese from advanced chips might have actually accelerated the Chinese ability to figure out advanced chips, because previously Beijing did not have a lot of companies on its side, and now they definitely do.

The other question I would have about the US approach is to pick at this question of trying to decouple the two economies on US terms, that the US government is, I think, undeniably still in a pretty strong position in terms of semiconductor production equipment to deny a lot of Chinese companies the ability to advance, that a lot of them are really hobbled after US actions, but, you know, over the longer run, if it is the case that China has the ability to figure out a lot of technologies, first of all, China is making the bulk of mature semiconductors, you know, all the things that are going into washing machines rather than the iPhone. China is able to do, that if the shoe were ever on the other foot, you know, would China, you know, be willing to return the favor and deny a lot of the more basic chips to the US when it's in need, not to say a lot of these other types of goods that the US no longer mostly makes on its own, that it was, I think, a pretty good thing that in the worst days of COVID, when China was able to produce a lot of the PPE more effectively and more efficiently than American producers could in, you know, the earlier days of 2020, that the Chinese government has been able to sell a lot of goods, that the Chinese government has tolerated a lot of sales of essential goods to the US over all sorts of times, that if someday that the Chinese government loses its restraint, I think it is more likely because of, you know, all the provocations that the US government has delivered rather than because it has, you know, judged that it would like to close itself off from global markets.

And so I wonder if this is actually hurting the US also in the longer run for this reason. I think those prospects are very scary and very plausible.

And maybe two things I would add just as thinking about this.

So one is that you were suggesting that the US doesn't want an area of technological and economic strength to offshore to China, which I think is probably true, but I don't get the sense that's really what this is about.

I get the sense that this is now considered a profound national security question. And the weird thing about semiconductors in particular is that their production of the

advanced ones is very, very, very localized.

And quite a lot of it is localized to Taiwan, the absolute flashpoint of US-China tensions. I've seen numbers like something like 90% of the most advanced chips are coming out of Taiwan.

So talk a bit about that because I do think there's also a fear on the US side that if China invades Taiwan, their leverage will be the chips to try to keep everybody else out of whatever it is they're doing.

Also of course, the chips are something that keeps America and others on Taiwan side.

This has become to me a very underplayed dimension of the Taiwan flashpoint in the way that Ukraine's

wheat did not matter to America the way Taiwan's chips do.

Sure.

And so this is, again, one of these longer-term questions that I think are unanswerable.

But I wonder how much these things are really being gamed out in quite a big way.

That it is certainly the case that US export controls can hobble a lot of China's most advanced technology companies.

But over the longer run, does this decelerate or accelerate China's ability to manufacture more advanced chips?

I expect that it will accelerate, but I could be wrong on that.

But how well do we really understand these questions?

And if we are really intent on delivering a lot of insults to China's technology sector, is that more likely to protect Taiwan or is that more likely to endanger Taiwan? And this is, again, one of these things that I think are not terribly well thought out. And I suspect that these things really were not terribly well thought out because initially when the US government was doing a lot of these actions, it was President Trump in

when the US government was doing a lot of these actions, it was President Trump in charge of the process.

And I suspect that they did not do the most careful sort of planning and thinking about the long term under President Trump.

And more or less, the Biden administration has continued a lot of these different policies, especially to control China's access to the most advanced chips.

And here is where, again, I would think a little bit about what America's technology obsession is and whether China's makes a little bit more sense.

And so if I want to create the best case for whether technology controls are good, I think a lot of that has to rest on the proposition that a lot of the competition in the future is going to come down to things like advanced semiconductors between China and the US, as well as a follow on technology, artificial intelligence, and AI.

And so far, at least, I'm not totally sold on the case that really the only thing that matters between competition between these two countries is the ability to produce the most advanced chips and the ability to do the hardest AI.

I think that, God forbid, that if these two countries were ever aggressively openly hostile against each other, that many other things matter as well, that logistics capacity matters, that production of many more basic things matter, that broad manufacturing workforce matters, that it does not really come down to the most glamorous technologies at the moment.

And here, again, is where I would think that if China is able to make a lot of these different types of technologies, it doesn't matter so much that it is unable to make the chips that are necessary for, let's say, mining all the Bitcoin right now, which China doesn't really like anyway, that maybe the US should be focused on a more holistic view instead.

Well, where we are going here feels tragic to me.

I mean, I'm not saying there are good arguments for it.

I'm not even saying we don't necessarily need to go there.

I find my own confidence in my judgments in this area is pretty low.

But to go back to some of the examples we've talked about here, you have been in the very, very recent past and ongoing into the present.

Real obvious examples of places where fairly good relations have allowed for a lot of advances in problems we really care about.

So it really was helpful to us that we could get so much protective equipment and other kinds of important goods from China during the depths of the pandemic.

And a world in which China is that much less likely to let people know about a new pandemic or a new virus coming up in its borders, I don't think that looks good from that perspective either.

But it's hard to believe that China would be more likely to admit to something to the US now than it was a couple of years ago.

We've talked about renewables, where the incredible advances and drops in price on solar, on batteries

to some degree on wind come from Chinese manufacturing advances.

And that has been to the extent we can be in any way, I think, optimistic about our climate path that has a lot to do with this sort of alley-oop between American science and American subsidies and Chinese manufacturing and Chinese subsidies.

And people know this.

I mean, if you ask the Biden administration, they will admit to all this.

And maybe it's good that we're going to have enough competition that's going to accelerate our manufacturing and maybe our science.

I mean, you can run other ways of thinking about this.

But it does seem to me that there are real tangible examples of places where fairly good relations have been good across a lot of dimensions.

China did not politically liberalize in the way many people hoped.

But I think that when everybody goes back now in America and thinks it's such an obvious mistake that we welcome China to the global system, and they don't weigh on the other side, say, the drop in renewable pricing, they're making a mistake.

And then you have the balloon recently, which it's very hard to know what to make of that and might have just been an honest technical error in terms of our constant spying on each other.

But it comes in this moment of heightened tensions and cancels an important visit. It just feels to me as somebody who doesn't watch this relationship as closely as you do, but watches it somewhat closely that almost all now of the political incentives on both sides are on escalation and decoupling.

And it's very easy to imagine ways that could go either wrong in a flash, right, wrong through

misjudgments or miscalculations or a spiral of retaliation, or also just wrong because ways that we might have been able to cooperate on issues of importance sort of in the background or just integrate on economic questions and share science and manufacturing costs and whatever are just those opportunities are going to be missed now.

Yes.

Gosh, wouldn't it be great if we were all getting along, Ezra?

But I'm afraid that's the logic of the 90s, and maybe you should get on track with 2023. I certainly find it very strange, all sorts of these crazy incidents, let's say, about the balloon, that I think it could be a defensible position to shoot down the first, let's say, allegedly spy balloon, let's say that surveillance balloon, but to blow out of the sky and incinerate the probably hobbyist balloon of the bottle cap balloon society, that seems just a little bit weird to me.

Now, I think maybe a more general point on all of this, Ezra, is that I think that in a while, the US and China have become much more tense with each other, not just about sharing things like pandemic news with each other, not just working together to address climate issues, that perhaps one other tragedy that adds another layer of sadness to this entire story is that I think that this competition is making each country internally worse versions of the other that I brought up in the US that the US government is pretty intent on constraining sales of American companies to China for, I think, perhaps not the very best reasons, but also that it is doing things like prosecuting a lot of scientists of mostly Chinese heritage because of various pretty small research malfeasance issues related to nondisclosure, that the DOJ's China initiatives that were ongoing throughout the Trump administration, that this was not the very best thing for the US government to do to drive out a lot of scientists and place them under prosecution.

That I think it is a little bit of a shame that the US government is not doing more to try to welcome Chinese students and to try to welcome Chinese entrepreneurs and workers and make itself much more of an attractive society, and instead the rhetoric is not always very friendly towards people in Chinese people who may well want to keenly emigrate to the US.

Of course, in China, I under see that there is much greater, you know, discipline of private sector firms in order to try to pursue a lot of goals that are in line with national government goals, that a lot of these reasons to be suspicious of the West are, you know, in part driven by the sense that the United States is now an implacably hostile power that, you know, has something between the gradual impoverishment of China to perhaps the, you know, total expulsion

of the Communist Party in Chinese society, that they are reacting quite strongly to that and that they are making life more difficult for whole segments of the population as well, that this competition is making both of these countries not on their very best form. I think it's a good place to end.

So always our final question.

What are three books that have influenced you that you would recommend to the audience? Well, as far as it's been, you know, a little bit of a bleak note to end on, but, you know, perhaps, you know, things to think about are the longer term.

I read a very good book last year called The Chesuits by a German historian called Markus

Friedrich, who studied the Society of Jesus, which is a quite successful organization that has had, you know, quite a lot of success in establishing itself as a, you know, center of scholarship and having influence in church affairs.

You know, a second longer term book that I like is something called Last and First Men, which is a British novel written in the about the 1930s by a Hegelian professor called Olaf Stapleton, who imagined, you know, what the human race would look like, you know, millions of years from now.

And so you would have these casual throwaway lines like, you know, 60,000 years later, you know, this is what the 17th iteration of the human race did.

And I find that to be a very mind-expanding book.

The third book I'll recommend is a set of essays by Freeman Dyson called Disturbing the Universe, which talks about, you know, his experiences in trying to do space travel on what I think is a pretty mad idea to get to the moons of Jupiter by exploding nuclear bombs behind a space vessel, also his, you know, times in the civil rights movement, and doing all sorts of crazy things in terms of big science.

So these are, you know, three books that are a stretch across long stretches of time as well as space.

Dan Wong, thank you very much.

Thank you very much, Ezra.

Ezra Clanjah is produced by Emma Vagabou, Annie Galvin, Jeff Gell, Roger Karma, and Kristin Lin.

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Thank you.