

The collapse of Western civilization

The following is a transcription of the interview

That's the title of a novel written by Naomi Areskes and Eric Conway.

That's after their book Merchants of Doubt, showing how they claim certain interested parties with vast funds have been undermining climate science systematically for years, hence those doubts.

But the novel shows what may happen if we don't act on the evidence and change our ways.

It's an extract.

By 2040, heat waves and droughts were the norm.

Control measures such as water and food rationing and Malthusian one-child policies were widely implemented.

In wealthy countries, the most hurricane and tornado prone regions were gradually but steadily depopulated, putting increased social pressure on areas less subject to those hazards.

In poor nations, conditions were predictably worse.

The portions of Africa and Asia began experiencing significant depopulation from migration, malnutrition induced disease and infertility, and starvation.

Still, sea level rise had only risen 9 to 15 centimeters around the globe, and coastal populations were mainly intact.

Then, in the northern hemisphere of summer of 2041, unprecedented heat waves scorched the planet, destroying food crops around the globe, panic ensued, with food riots and virtually every major city.

Mass migration of undernourished and dehydrated individuals, coupled with explosive increases in insect populations, led to widespread outbreaks of typhus, cholera, dengue fever, yellow fever, and viral and retroviral agents never seen before.

Surging insect populations also destroyed huge swaths of forests in Canada, Indonesia, and Brazil.

As social order began to break down in the 2050s, governments were overthrown, particularly in Africa, but also in many parts of Asia and Europe, further decreasing social capacity to deal with increasingly desperate populations.

As the great North American desert surged north and east, consuming the high plains and destroying some of the world's most productive farmland, the U.S. government declared martial law to prevent food riots and looting.

A few years later, the United States announced plans with Canada for the two nations to begin negotiations towards the creation of the United States of North America to develop an orderly plan for resource sharing and northward population relocation.

The European Union announced similar plans for voluntary northward relocation of eligible citizens from its southernmost regions to Scandinavia and the United Kingdom.

Well, that is a rather shocking prediction.

How much was based on solid science?

Well, it's all based on solid science.

Everything in this book is based on the scientific projections from the intergovernmental panel on climate change.

All we did was to add the social and human aspects to it, to take the scientific data about potential temperature rise and sea level rise, and to ask the question, what does this really mean in terms of what its potential impacts would be on people, and its potential impacts on our institutions of governance?

Now, you suggest that sea level rise is mild, that again comes from the IPCC projection?

Well, yes, and it's mild at this point in the story.

This is the early part of the breakdown when sea level rise has not become catastrophic yet, but we're beginning to see very significant food shortages caused by agricultural crop failures.

In the latter part of the book, we get to the point that gives the book its name, the collapse of Western civilization, that word collapse is used in our story as a double-on-tongue.

The initial collapse is the collapse of the West Antarctic Ice Sheet, which increases the sea level rise from centimeters to meters, and with that we see the collapse of social structures, the collapse of governments, and ultimately the collapse of Western civilization.

Why not the collapse of eastern civilization as well?

Well, there were two reasons for that.

The first reason was simply a historical point.

We know from history that civilizations have come and gone, but the Chinese civilization has proved to be among the most durable, and so it seemed plausible to us as historians that if anyone will weather this storm, it seems likely that it will be the Chinese.

But there was also a more important point that we were trying to make.

This book is an outgrowth of the earlier work that Eric Conway and I did writing the book *Merchants of Doubt*, and in that book one of the points we talked about was why people denied climate change, and we provided evidence to show that many of the people that we wrote about denied climate change because they feared that it would be used as an excuse to expand government, to increase government intervention in the marketplace, and to restrict the personal liberties of individuals, personal freedoms.

One of the things Eric and I wrote at the end of the book was that there was a profound irony in that story.

The irony was that by delaying action on climate change, they actually increased the likelihood that unmitigated disruptive climate change would cause the kinds of droughts and heat waves and crop failures that would in fact be an invitation for intrusive government, the kind of natural disasters that cause governments to step in and usurp the authority of local governments, state governments, provincial governments, and to usurp the personal freedoms of individuals.

The irony was that by delaying action, these people actually increased the likelihood of the very thing that they most feared, the very thing they most dreaded.

What we wanted to do was a story that brought out that irony and that pointed out that if things get really bad, when push really comes to shove, it's going to be the authoritarian countries of the world that will be more able to cope with catastrophic climate change than the liberal democracies.

Yes, that's not an irony as well because John Gray, the philosopher from the London School of Economics, Professor of European Thought, has said that intrinsic to the free market is the very undermining of the dreams of a conservative person, in other words, the calm village and family life and such like, being completely disrupted by inventions and innovations such as IT, such as iPad, such as the intrusion of everyone knowing what your actions are with your computers and so on.

So those very things are bringing a tidal wave of change, of porn, of disintegration, of intrusion.

So similarly, you're suggesting that a naive view of the role of government is itself undermining what these very people are wanting to have and that is, you know, small government and less intrusion.

Exactly.

That's exactly right.

Now, how do you account for that naivety because with sophisticated nations and people in business have been to Harvard Business School around the corner from you, surely this becomes obvious.

Does it not?

I mean, when you shoot down a plane over Ukraine, obviously, local authorities can't cope, it has to be the United Nations and world action and big governments.

Well, that's right.

And you might think that this would be obvious, but I think the reason it's not obvious to people is because they also subscribe to what Eric Conway and I called techno-fideism or faith in technology.

The emergence of doubt that we wrote about before were completely persuaded that we didn't need the government to intervene in the marketplace because the marketplace, doing its magic, that the marketplace would respond to our needs and provide us with green technology, provide

us with technology that would solve the problems created by climate change.

So it's a kind of faith in the marketplace to respond to new needs, new problems as they develop.

The problem, of course, is that that faith hasn't been supported by evidence.

So here we are 25 years after people first really realized that climate change would be a significant issue.

And yes, the marketplace has responded in some ways.

We certainly have seen the cost of solar power come down substantially.

But in terms of the large scale transformation that we need, we're not even close to that, the market hasn't even begun to respond on the scale that we need.

Yes, but you see, the people who are putting their faith in the market are not backing renewables.

In fact, they're the very things that are being shelved and being undervalued.

What instead they're doing is saying that the fossil fuel industry is the only way forward because we're so dependent on it and we have to have cheap energy and no other substitute will do.

Right.

Well, of course, there's different forms of doubt-mongering in denialism.

So I was talking specifically about a sort of ideologically driven, a kind of faith-based driven denial rooted in this faith in the magic of the marketplace.

But there's also a lot of rather cynical denial as well.

And there's no question that there are people out there making the argument that our prosperity depends on fossil fuels and therefore we just have to keep on doing what we're doing.

Most people who say that have ties to the fossil fuel industry.

So the cynical financial self-interest is pretty obvious in those cases.

It is denial because they're simply denying the reality of the disruption, the dislocation and the damage that climate change will do not just to people in Bangladesh, but all across the globe.

They're suggesting something will turn up.

Well, I think it's a mix.

I think some of them think that.

I think some of them truly do think there'll be a sort of magic, you know, it's like the Sydney Harris cartoon where after all the equations, there's a step that says and then a miracle occurs.

So I think there are some people who do think something will turn up.

But I think that view has already been shown to be false.

I mean, you just look at what's happening around the globe.

That's something that they hoped would turn up should have turned up by now and it hasn't.

And so now we have the problem that we could keep waiting.

We could be like the people waiting for that spaceship from outer space to come and save us.

But all of the available evidence suggests that the spaceship isn't coming.

Let's go back to some of the details of your book.

What is the sea level rise denial bill?

Well, the sea level rise denial bill really exists.

That's the shocking fact of the matter.

Everything that happens in this book up until 2013 has really happened.

So the sea level rise denial bill is a bill that was passed by the state legislature in the state of North Carolina that made it an offense, made it a crime for any scientist to project sea level rise at a rate that was greater than a linear rate.

Now this may seem like a very technical point.

So you could ask yourself, why is the state legislature even passing laws about technical matters to be the province of science?

But the reason they did that is that one of the things that we know is that sea level rise is accelerating.

And it's accelerating because of accelerating ice mass loss due to global warming.

So what the state effectively did was to forbid scientists from talking about the truth.

The truth that shows us that the problem is getting worse and that it's threatening coastal real estate.

And if you look at the people who were involved in passing this law, many of them had ties to hotels and other interests associated with commercial real estate in coastal Carolina.

So you don't want to put off the tourists?

Correct.

You don't want to put off the tourists and you don't want to deny the opportunities for business people to build hotels, which will make them money in a short run.

I mean, you could build a hotel and still make a nice profit over the next five, ten, fifteen years, even though in the longer run people will be hurt.

Secondly, what about those pets?

You know, these wonderful animals we've been living with for 10,000, 12,000 years, they are suddenly overwhelmed by the heat and that galvanizes the population.

Well, yes, a few readers have already asked, well, how exactly did all those pets die?

And one meter even told me that he started crying when the pets die.

So I didn't mean to upset people too much, but Eric and I were always talking about, well, what is it going to take for people to really sit up and notice?

Because you might think that those things have already happened.

You might have thought that Hurricane Katrina would have been a wake-up call for the United States.

You might have thought that some of the terrible droughts and wildfires that you've had in Australia would have been a wake-up call for Australia.

You might have thought that the floods in the United Kingdom in recent years would have been a wake-up call.

So all of these things have happened that are exactly what scientists have predicted in more intense hurricanes, more intense wildfires, more intense floods.

And yet somehow, each one of these events captures our attention for a few minutes, and then we forget about it.

The media forgets about it, politicians forget about it, and ordinary people forget about it.

I was just trying to come up with something that I thought people wouldn't forget about.

And I thought, well, you know, Americans spend billions of dollars every year, take care of their pets.

And I thought, if people's dogs started dying, maybe then they would sit up and take notice.

Yeah, not only because of an animal, but it's local.

You see, one criticism of the scientists is they were talking about global things, and it's very hard, even if you want to try to, to leave home in the morning and worry about the entire world.

And so if you're looking at your village, your animals, your fields, your park, your kids, and the scientists are talking about a small world that you know, then it makes a greater impact, doesn't it?

Well, exactly.

It was about bringing it literally home, literally into your home, your family, your pet, the dog or the cat that you love, who's your faithful and trusted companion.

When it comes to the temperatures, however, you actually predict something like 3.5 degrees increase or even up to 5.

Now I understood that once you get to 3, you get feedback systems and it's completely out of control.

It's over.

Well, of course, nobody really knows for sure when we get to that game over point.

But one of the things that we wanted to explore in the book was what does the worst case scenario look like?

Because scientists for quite a long time now from more than two decades have been giving us ranges for the climate sensitivity and ranges for what they think the expected climate change global warming will be.

And of course, one of the things that we know from work that I've done with my colleagues and other people as well is that some of the earlier rounds of predictions have actually been underestimates.

And we're seeing temperature rise, we're seeing ice mass loss, we're seeing sea level rise at faster rates than scientists predicted, even as recently as five or six years ago.

So I was interested in thinking about, well, what if that pattern continues as well?

What if climate change unfolds more rapidly than scientists have predicted?

And what if the high ends of the estimates turn out to be right?

So in the sea level and temperature increase in the book, we simply take those high end estimates.

They're based on science, but they're based on the high end and say, what does it look like if these things come true?

And I think almost all scientists have already said that, you know, we've talked a great length about keeping warming below two degrees.

I don't think there's anyone in the scientific community who realistically thinks that we will meet that target.

And people in the scientific community have already begun to talk about having to be honest about the fact that two degrees is no longer a realistic target.

And things that only a few years ago, scientists thought were unimaginable, almost unspeakable, like a four degree or a five degree temperature range.

Now we realize we have to speak about them because that is where we are heading.

I don't want to give away the story, but of course, humanity, human beings do survive.

We don't get wiped out, but you talk about your own research, your historian of science now, but you used to be a mining geologist and you actually worked in South Australia.

Was it for Western mining?

That's right.

So you have been in the business?

Absolutely, yes.

I do think that when people are working inside an industry, it can be hard to speak out publicly against things that are happening in your own company.

I know that one of my closest friends from university days, Greg Cowan, who worked for British gas, sadly died early of a heart attack a few years ago.

But the last four or five years before he died, he had started a kind of one-man campaign within British gas to educate his own colleagues about climate change.

Because what he found, what he told me, was that a lot of his colleagues, they were just in a kind of cavalier denial, they hadn't really looked closely at the question of climate change, they hadn't really read anything about it, they hadn't studied it, and if they were oil and gas geologists, they really probably hadn't learned much about the atmosphere as geology students at university, we weren't really taught a lot.

If you studied hard rock geology or oil geology, you weren't really taught a lot about atmospheric physics or atmospheric chemistry.

So he found that a lot of his colleagues just didn't really know that much about it and they just assumed that it was wrong, they assumed it was exaggerated or hysterical or whatever, they just wanted to get on with their job and go to the pub at the end of the day.

So he started a sort of program within British gas of seminars and workshops, educating people about it.

I think that probably things like that are happening in a lot of places.

I'm sure that within the halls of industry there are thousands and thousands of geologists who understand that this is a real problem, who understand that their own scientific colleagues and universities aren't making this stuff up, you know, this isn't just sort of, we don't have anything else to do, so we sit around and invent problems.

I think people understand it, but I think it is very, very difficult to speak up publicly when you're working inside the private sector.

How much sympathy do you have for the ordinary person who picks up best-selling daily papers and sees that there hasn't been a temperature rise in 15 years, who sees that the IPCC is quoted as predicting that sea level will hardly change at all, that the temperatures won't go up beyond two degrees and they're quoting all this stuff as if, and you use the word in your book, people like yourself are just alarmists.

Right, well, I have tremendous sympathy for the ordinary citizen.

I often say that if many of us are confused, it's because people have been trying to confuse us.

To some extent, we are victims here because we have been victims of two things, really.

A systematic and organized disinformation campaign, which is what Eric Conway and I wrote about, emergency of doubt, and then we've also been the victims of a tremendous amount of false equivalents in the media.

The media has done the public a huge, huge disservice by presenting climate change as a big scientific debate long after that was no longer the case.

But because of the media presentation, there are hundreds of millions of people around the globe.

People I meet every day, students I meet in my classes, people I meet on airplanes, people come to my public lectures, who will say to me, well, I read in the New York Times or I read in the Australian, where I heard on television that, you know, and then they will spout some nonsense.

Something that we know is factually incorrect, and yet it's been presented in the media as if it were somehow equivalent to actual scientific data.

And this is a huge, huge problem.

It's become so difficult to counter because it's so entrenched now.

So just a few days ago, Eric and I did an interview on National Public Radio here in the United States and someone brought up the issue of the Oregon petition.

Your listeners may know this was a fraudulent petition that has been widely circulating, claiming that thousands of scientists around the globe don't agree with the reality of climate change.

That's 30,000, isn't it, usually?

Is it up to 30,000?

Well, I get quoted different numbers.

I've heard 9,000, I've heard 7,000, now you have 30,000.

It's fraudulent. We know it's fraudulent.

It's been discredited.

People have demonstrated that the people who have signed it include the Spice Girls, Victoria Beckham, Charles Darwin, who's been dead for 100 years, you know, it's not real, right?

And yet it's a lie that you can't kill.

It just goes on and on. It lives on on the internet.

People read it. People think it's true.

And then if it affirms their own biases to begin with anyway, like they don't want climate change to be true because it's scary or they don't want climate change to be true because they might have to change the way they live or they don't want climate change to be true because they work for an oil and gas company or they have stocks and coal.

I mean, there's so many reasons why we might not want climate change to be true.

But the media has done a huge disservice by perpetuating what really lies, lies misinformation, disinformation that ordinary people read and think are true.

Two final questions.

One, to slightly misquote something you have in your book.

The invisible hand never picks up the bill.

What does that imply?

Well, as we talked about at the start of the program, so much of the denial of climate change is tied up with this faith and free market capitalism to solve our problems.

And of course, we've all heard the metaphor of the invisible hand of the marketplace.

But the invisible hand doesn't really exist, right?

The invisible hand is a metaphor that many people have come to treat as if it were actually existed.

What the invisible hand doesn't do is pick up the bill, pick up the check.

The bill, the check, is a metaphor for the cost of climate change.

Fossil fuels are wonderful in many ways.

They're an incredibly concentrated source of energy.

And the lifestyle that we all live today in the Western world, the comfortable, warm, prosperous, or in your case, cool, life that we live with heating and air conditioning and transportation and excellent food and wine that gets shipped all around the world,

all of that depends on fossil fuels.

So it wasn't a crazy thing to want to tap the energy and fossil fuels to live a comfortable, prosperous and happy life.

But then at a certain point, we came to understand that there was a cost.

And that cost was climate change.

And economists even have a name for this for these costs.

They're called external costs, external because they're external to the marketplace, because the marketplace doesn't actually reflect them.

So that cost is the bill.

And whatever coming in, I like to say is that bill has now come due.

And the invisible hand is not picking it up.

Given the book, despite its eventual strains of hope, is a pretty rugged read about what's to come.

What do you expect, what you hope a reader might take away from it?

Well, I can ask that question a lot.

And I can't really answer that because it's so hard to predict how readers will respond.

And one of the joys of being a writer actually is hearing from readers and finding that they took all kinds of things out of your

writing that you'd never actually thought of.

But you think, oh, wow, that's such an interesting idea.

And that's kind of a nice thing when people find things in your work that you didn't realize were there.

So I don't like to really tell my readers what I think they should find in the book.

I just hope that they'll find it compelling or thought-provoking or useful in some way.

And a few people have sort of said, it should have been longer, which is a nice compliment.

One of the reasons we kept it short is because we didn't want it to be too depressing.

We didn't want to go on and on and on, like 300 pages of misery.

That really wouldn't be any fun.

So we're sort of hoping that the book, despite the fact that it's a depressing topic, it's actually we think kind of a fun read.

It is thought-provoking and we hope that it will help people feel motivated to just think about what they can do as individuals wherever they live or wherever they work to think about what piece of this puzzle they could help to solve.

As an alternative story, one that you could have had as a companion maybe, is the transition to a different sort of technology.

You implied the solar and all the other ones, which are discounted as being only what between two and five percent of what is available to take over from the fossil fuels.

Do you really think that it's a credible transition in the time available could make a difference using those renewable technologies?

I do. And if I didn't think that I probably wouldn't be still involved in this issue, I would just give up and go live in Canada or something.

But I think, yes, I do.

And partly, you mentioned Jeremy Leggett earlier, partly because of work of people like Jeremy and others like him, Amy Lovens is another one who comes to mind.

There are people around the globe who are working very seriously on the question of the energy transition.

I think we have a lot of evidence to suggest that the technologies that we need, we actually already have.

We don't have to sit around waiting operating under some kind of fantasy that there's going to be some breakthrough technology that will solve all our problems in the future.

The technologies we need really already exist.

The problem is how do we get there?

And we're not getting there because of a whole series of obstacles, one of which is denial.

If people don't think we need it, then they're not going to be motivated to do the work or spend the money to work on a solution.

Another is the power of the fossil fuel industry.

There's no question that the fossil fuel industry has played a pretty significant role in recent events in Australia.

We know that there are certain kinds of mechanisms like a carbon tax that can be highly effective to change the incentives in the marketplace to make solar less expensive and oil and gas more expensive, to make oil and gas and coal reflect those true costs, those external costs, those bills that the invisible hand doesn't pick up.

So we have instruments, both technological instruments and policy instruments that could at least get us well along the road to recovery.

Whether it can solve it completely, I don't know, but certainly could move us definitely in the right direction.

And yet we aren't implementing those instruments, those solutions because there are so many obstacles standing in our way.

Thank you very much, Naomi Oreski's.

Thank you, it's a pleasure talking with you.

Naomi Oreski's book written with Eric Conway of Caltech is called The Collapse of Western Civilization of View from the Future.

It's a novel, plus notes.

She's a professor of the history of science at Harvard, and this is the science show on our in.