MMITM Ep 21 - "Why Trust Science" with Harvard Professor Naomi Oreskes

Announcer: From Curtco Media, what are you gonna do about.

Bill Curtis: Welcome to Politics. Meet me in the middle. I'm Bill Curtis. Well, firstly, I'm once again here with my co-host, the Pulitzer Prize winning historian, professor, worldwide lecturer Ed Larson. He's the author of numerous books. And I've just picked up his new book, Franklin and Washington, The Founding Partnership, which just hit the bestseller list. Congratulations, Ed, you've done it again.

Ed Larson: Thank you so much. Pleasure to be back here.

Bill Curtis: We're a bit bicoastal today. On the phone with us is Naomi Oreskes. The New York Times calls Naomi one of the biggest names in climate science as a defender who uses the tools of historical scholarship to counter ideologically motivated attacks on the field. She's a professor of the history of science and affiliated professor of Earth and planetary sciences at none other than Harvard University. She's co-author of seven books, including Merchants of Doubt, which, by the way, was the subject of Sony Pictures film and her latest Why Trust Science is a particularly appropriate book to talk about today when we have such a debate between science, politics and our economy. The New York Times also credits Naomi with throwing herself into the messy public arena that many career minded climate scientists try to avoid. Welcome, Naomi. It's nice to have you here.

Naomi Oreskes: Thank you. It's nice to be with you.

Bill Curtis: Naomi, let's get right down to it. Today, there are people who consistently refuse to believe any position that threatens their pocketbooks or their politics. Why does the scientific community struggle so to get their message out by comparison?

Naomi Oreskes: Well, I think there are several answers to why the scientific community is kind of on its backfoot on these issues. One has to do with the fact that these people are scientists. These are people who have dedicated their lives to doing science. And I know because I used to be one of them, I think of myself as a recovering scientist.

When you're trying to be a scientist, you spend long hours in the lab learning differential equations, learning techniques of microscopy and other forms of analysis or computer modeling or whatever it is. And you don't spend a lot of time developing your communication skills. So when scientists are put in a position where they have to fight back against marketing, against advertising, against slick rhetorical campaigns, against political campaigns that have been crafted in many cases by professional PR agencies and advertising agencies, scientists are just grossly unprepared to deal with that. And so it's something that scientists didn't ever think they'd have to do, didn't ever train to do. And in most cases, simply don't even know how to respond to. So that, I think is the most important reason. Related to that is that scientists like doing science. You become a scientist because you enjoy it, because you find the work meaningful, maybe because you like being left alone in the laboratory and don't actually want to interact with other people. So, you know, and now so you chose this profession because it was good. You were good at it and it suited you. But now you're in a political and cultural situation where you've been asked to do something dramatically different from what you ever thought you'd have to do. And that's not a really comfortable place for scientists to be. And then the third reason is that even when there are scientists who are willing to fight back and there certainly are some. And even when the scientific societies realize that there's a need to speak up in public, which I would say in the last decade, the scientific societies have recognized that it's just not a level playing field in terms of money. So we've seen the scientific societies put money into communications efforts, teacher training programs, programs to train scientists to be better in public. And often the budgets for these things are in the tens to hundreds of thousand dollars, maybe a million bucks, if you're lucky. You go to the other side of the aisle and you see the fossil fuel industry, the tobacco industry, big pharma, pesticide, chemical corporations spending hundreds of millions of dollars, possibly even pushing up into the billions in advertising and marketing and disinformation and lobbying. And so it is just such an unlevel playing field that even if scientists were willing to really step up to the plate and even if they were sort of temperamentally suited to do so, they would just be at a giant financial and strategic disadvantage.

Ed Larson: If I can add one other, is I don't think scientists really think that way. Scientists are trained hyper-rational. Any sort of non-rational thinking is driven out of them through grad school and through their process. They're hyper logical. There's a way thinking of cause. And people don't think that way. People, their emotions, their,

other factors work in, and so in a way, if the scientists can make what they view as a very rational argument and it just really doesn't resonate with a lot of people.

Bill Curtis: The Corona virus has had a bit of a roller coaster week in the White House with messaging that found itself spun under political controls and oversight, but finally now seems to be maybe seeing a little bit of the light of day. But Naomi, you call yourself a recovering scientist. You're a recovering scientist that now has a platform. Can you add a little perspective to this for us?

Naomi Oreskes: Yeah, I mean, I'm not an epidemiologist or public health official, so I don't want to say anything specific about how great a risk the Corona virus is or is not. But I think that this is an example where we begin to see why it's so important for us to have a robust scientific infrastructure and why it's so important for scientists, public health officials to be able to speak objectively about what we know and we don't know, because these are issues that do instill fear. These are issues in which gossip can spread very quickly, in which misinformation can spread very quickly. And it's really, really important for us to have credible scientific authorities to speak on these issues. But that's not what we've seen happen in the general milieu we're in now, where almost I think it's fair to say everything that comes out of the White House is politicized. We see the Vice President being put in charge, and that's deeply troubling because it's essentially making it political and saying we're going to put a political leader in charge of communicating this issue rather than a scientist or a public health official. And to me, that's deeply problematic because it sends the message that it's appropriate to politicize something that's essentially a public health matter. It's actually tragic because it means that, you know, I'm not going to sugarcoat this, it means that people may die.

Bill Curtis: Clearly in the White House, we've got a megaphone that yells that climate change is a hoax and coronavirus is a hoax. It's a small problem now. Go call your broker and buy stocks. So where is our administration getting its argument from or its information from if they're just making it up? Are you saying that the entire field of science, educators, conservationalists and media can't seem to educate the public in a new way that works?

Naomi Oreskes: The White House is absolutely not making this up. If they were making it up ,actually, I'd be less upset because if they were making it up, it would imply

that it wasn't part of an organized and systematic program. But we know from our work, this was the whole subject of the book, Merchants of Doubt, which I wrote with Erik Conway, was published 10 years ago in 2010. We have a second edition that has just come out this month. What we documented in that book was that disinformation about climate change and a whole set of environmental and public health issues was deliberate and orchestrated. That this pattern had been created originally, not by the fossil fuel industry, but by the tobacco industry, who had decided back in the 1950s that the way they would deal with the scientific evidence of the harms of their product was to try to cast doubt on the science and to try to undermine the credibility of the scientists. And they worked with PR agencies, they worked with advertising agencies, they hired shills, experts for hire. And they really created a whole edifice, a whole network, a whole infrastructure of disinformation. That infrastructure has now been applied to a whole set of other issues. So for me, what's happened the last four years, three years is a kind of apotheosis of a really terrible pattern that's been going on in this country for much longer.

Bill Curtis: We can blame the companies or the politicians. But I think it's a two way street. We need the scientific community to develop a kind of a voice, because what good is the level of information that can be garnered from the scientists if they can't properly convince the public of its existence?

Naomi Oreskes: Well, that's a great question. I think I'd say two things on that and then invite Ed to weigh in. The first thing I would say is that the vast majority of the people promoting disinformation are not scientists. And so one message that I always have for journalists is why are you calling these people on science when they're not scientists? Journalists have played a really major role in this story because they have perpetuated disinformation by quoting these people, by asking them questions about science and allowing them to talk about science when they are not scientists. And so if anybody listening remembers one thing from today, it's that people need to know that in the vast majority of these cases, scientists are not arguing. Scientists are onboard and have a pretty much unified position on most of these issues. But the the people who don't want action on these issues want us to think that scientists are arguing when, in fact, they're not. However, that said, you are right that there are a tiny, tiny handful of scientists, very small numbers of people, but they do exist who shill for industry or who become involved in disinformation campaigns for other reasons, for reasons of ego or contrarian

personalities or political ideology. And it does raise an interesting question of what is the role of the scientific community at large with respect to these, I guess we could call them errant individuals. And I've thought about this a lot because if these people were lawyers, they could be disbarred. If they were doctors, they could have their licenses revoked. But we don't actually have a mechanism like that in science. So I'm going to throw this to Ed, who's both a historian of science and a lawyer to ask him if he's thought about this and what he thinks the scientific community could or should do in this case.

Ed Larson: Well, one thing that the scientific community is doing to an extent is require when any paper is published in a peer reviewed journal that you discuss all your conflicts of interest,.

Bill Curtis: Peer review journals.

Ed Larson: a Good point.

Bill Curtis: That's a huge part of what makes science actually.

Ed Larson: Work.

Bill Curtis: Something that you can believe .

Ed Larson: Right.

Bill Curtis: Can you talk about that for our listener a minute and let them understand what that process looks like?

Ed Larson: How peer review journals operate is that when you send in a publication for publication, when Naomi does or I do or scientists do, it goes to a panel who are experts in that field who will then review it. It has to be peer reviewed. It can't just be published. And that's one way science is trying to make things better. Now that still doesn't deal with the other issue. One of the other issues that Naomi raised, when you get a scientist from an entirely different field. There you have to have a sophisticated

enough population to see, hey, they may be scientists, but they're not scientists in this field.

Bill Curtis: Here's an idea. We need an independent organization with funding and a board made up from scientists, business leaders, politicians, activists, media and educators, an organization that publishes the findings to the world that we can all take seriously, taking all concerns into consideration because this isn't working.

Naomi Oreskes: Well, I guess that's an interesting idea. I guess I'd have to ask, well, what is the "this"? Because we do know that in most areas of science, it actually is working. A recent report by the American Academy of Arts and Sciences shows that despite all the gnashing of teeth and wringing of hands, the vast majority of American people still do trust science in the vast majority of areas. We just have these specific areas where there are problems and these are areas where the science clashes with either someone's economic interests, someone's ideological interest or someone's religious worldview. And so I think what we know from the evidence is that I don't think we need to say that there's this giant problem. I actually don't think the data supports that. I think it shows us that we have these specific areas and that each one of these areas needs to be addressed.

Bill Curtis: So, Naomi, I had the opportunity to watch your TED talk the other day. You mentioned some things like scientists like to work with mathematics and computer simulations. But I have to ask you, can that be a compelling communication for a doubting society?

Naomi Oreskes: It's a great question. I think you're probably right to be somewhat skeptical. I think it is the case that the sorts of arguments that are persuasive with an expert communities are often not the same as the sorts of arguments that are persuasive to the general public. And this is where I do believe that the scientific community needs to make more effort. And I'm not saying that every scientist necessarily has to take on the job of public education. In fact, I often say some scientists should not be allowed out of the laboratory. But but some proportion of the scientific community does need to take this on and to make the effort to find ways to explain these things in ways that are persuasive. And so if you can get people engaged in a conversation, you can show how, for example, there are market based mechanisms

to address climate change or, you know, we fixed acid rain and the price of electricity didn't go up. So if you engage with people and figure out what those concerns are, you can begin to address them because it gives us models for how we can rethink communication with the broader public.

Bill Curtis: On that note, we're going to take a quick break. We'll be right back.

Announcer: On Medicine, We're still Practicing. Join Dr. Steven Taback and Bill Curtis for real conversations with the medical professionals who have their finger on the pulse of healthcare in the modern world. Available on all your favorite podcasting platforms produced by Curtco Media. So whatcha gonna do about it?

Bill Curtis: We're back with Naomi Oreskes is now. I've got to talk to you about the climate change part, because obviously you can tell by this, that I've been looking at your writings and some of your videos. And I want to give you an example, cause if we continue on our path as far as climate change is concerned, the probable cost to ourselves and our earth are pretty amazing. Scientists say that if there's a 2 degrees Celsius rise in global temperature from 100 years ago, that would bring us to a catastrophic tipping point. But we're already at 1.2 degrees. And I would say that we have allowed politics and corporate concerns to muddy that conversation. So how can we comfortably sit back and say we're all doing our jobs if we're in that kind of position?

Naomi Oreskes: Well, clearly, we can't. I mean clearly we haven't all done our jobs and I think there's certainly plenty of responsibility to go around. I place the greatest responsibility with the fossil fuel industry that has funded disinformation for more than 25 years now. So I think that's the biggest sort of blame belongs there. But I think you're right that we all have work to do on this issue. One of the things I was thinking about was that I would like to put out a call to anyone out there listening who is in the business community. I think that the equivalent in climate change is the business community, because we know that the vast majority of businessmen out there know that climate change is real. They know it's serious. And they know, as you just said, if we don't do something really quickly, we're going to be facing huge amounts of damage and it's going to be costly both in terms of money and also in terms of lives and safety, security, property, the whole nine yards. We need other industry voices to say the fossil fuel industry doesn't speak for the whole of American business. In fact, it only speaks for a

tiny, tiny fraction of American business. And this, ignoring this part is not in the interest of the American people. It's not in the interests of American business. And so what I'm really asking for is for other business leaders, other wealthy people, other people who care about the economy and the environment, to step up to the plate and to make it clear to the American people there is a solution to this. That doesn't mean giving up our prosperity. It doesn't mean becoming communist. But if we don't do something soon, we will actually lose our prosperity from inaction, rather than from action.

Bill Curtis: The idea of this organization that I'm pushing you for, that actually has the megaphone, is the trusted organization, has a a clear understanding of all parties and all angles of a question. You know, how do you deal with climate change while you also are trying to drive on the 405? How do you deal with the next 50 years of transportation as you're trying to get rid of our carbon footprint there? There are a lot of things that I think require communication skills. And right now, the politicians are guilty of denial for the sake of getting elected and the scientists are guilty for having really poor communication skills then. So they need to marry with someone who has good communication skills so that their message can come across.

Ed Larson: Now, in theory, what you're talking about was the concept, and Naomi can expand on this, the concept originally in, I believe, 1863, behind the National Academy of Sciences, that here.

Naomi Oreskes: I was going say the exact same thing. Yep, uh huh.

Ed Larson: Yet here was an organization founded by Lincoln and the Republicans, who wanted to bring credibility to science. And they picked 50, I believe that was the number, 50 leading scientists from America. And then it became self-perpetuating. And one of their roles was that if there's any issue of science and the public that needs to be vetted, it can be turned over to this organization, the National Academy of Sciences, and they can bring their appropriate experts within the National Academy to bear on that issue and issue a neutral, nonpartisan report. Now, they've done that over the last 150 years. Often it has succeeded, but often and they have, as you pointed out, they worked on the creation evolution issue. They've worked on the tobacco issue. They worked on a variety of different issues. And the question is, do they still functionally serve that role?

Certainly on climate change they have issued a report after report after report that have tended to backup the findings of the Intergovernmental Panel.

Naomi Oreskes: Yeah, I was going to say the exact same thing. I mean, really what you're asking for is what the National Academy was supposed to be, to do. And it is interesting that it was founded in 1863, probably the last time our country was as divided as we are now. Probably the most divided this country has ever been. So I think we could say that in many ways the academy has done its job well. And there are certainly many areas where we have seen academy reports have been influential in public policy, in public debate. We have a government now that ignores the reports of its own academy. And it's a little bit hard to know what to say to fix that because I don't think that the academy speaking more clearly or in more plain English will change what happens in the current White House. One of things people don't realize about the Academy is that it's actually a lot less independent than people think. So the academy does reports when it is asked to do a report by a group. And typically that group is a federal agency or a congressional committee or some some executive or legislative branch group. But there are lots and lots of problems out there that the government doesn't necessarily ask the academy to look at. Even though it might really be in the interest of the American people to do that work. And I know a few years ago, Ralph Cicerone, who was the previous president of the academy, had an idea that it would be good if the academy actually could do more work of that type where, you know, we could identify issues like you just said, Bill, about vaccinations or whatever it is where there was really a crying need for an independent organization to look at the issue, talk about it in plain language, issue a report that would really explain it to anybody who cared to read teachers, journalists, parents, whatever. And and what Ralph told me at the time was he had no money to do that. And so I think this would actually be a great thing for a philanthropist who might be listening, whosoever's out there to step up to the plate and think about, could we do some fundraising to support a fund at the academy for this purpose. I think that what you're asking for, Bill, the Academy comes close to doing that. Maybe it would need to make a few adjustments in who the membership were to achieve exactly what you're talking about. But I think we do have a mechanism that's close to that. But the funding structure doesn't really quite enable him to do it in the way that you're suggesting.

Bill Curtis: Maybe you could tell us a little about your book, Why Trust Science, which I believe is published by the Princeton University Press. And how can you see what you wrote there to be communicated slightly differently now that the scientific community sees the obligation to communicate on a new level after this program airs.

Naomi Oreskes: Well, that's great, thank you. Well, the argument in my book, Why Trust Science, is essentially an expansion of what Ed said a few minutes ago about peer review. What I argue is that many of us have a vision of science, which is based on the scientist as a sort of exceptional human being, a kind of exceptional genius. The Albert Einstein of the world. And we think that that's what makes science trustworthy as that scientists are geniuses. Or maybe we think that what makes science trustworthy is about scientific method, that scientists have a unique method that they use that guarantees reliable results. And what I argue in the book is that history shows that both of those Is views are wrong. Yes, it's true Einstein was a great genius. But the reason why we believe his work is not because he was a great genius. And it's not because scientists all use the scientific method, because actually historians have shown that we use a lot of different kinds of methods. But really, it's because science has a process for vetting claims that when Einstein made the claim about special relativity or general relativity or other scientists make claims about moving continents or or, you know, the stuff that is studied about evolution, it's not simply that Darwin makes a claim, whether Einstein makes a claim that Albert Alfred Veigar makes a claim, it's that there's a process to judge and evaluate that claim, to look at the evidence, to argue about it, to ask questions, to pick holes and to really expose it to tough scrutiny and sometimes kind of nasty scrutiny, frankly. So the things that we say are known, the things we say are facts, the things we describe as scientific knowledge are claims that have withstood that process. You can think of them as kind of running a gauntlet or like a kind of intellectual version of running with the bulls, that it's only if a claim survives this process of critical scrutiny that it gets to be called a fact or a demonstrated thing, or a thing we know and it's, so it's that process that is what really explains why claims are reliable, because they have to go through this rather severe testing. And so I think it the people had a better understanding of that than they would also be less subject to disinformation. Because what we see when we think about that image of science is we realize it's not just about what one person thinks, it's about what a community of scholars, of experts have concluded after some extensive period of time. And so if you understand science that way, then if some shill for industry gets up and says, well, I

don't agree, well, then you say, OK, good for you.So what? I mean, take the example of Freeman Dyson, who just died this week. Freeman Dyson was a great scientist in many ways, but he was completely wrong about climate change. And a lot of people got all stressed about that. And I used to get people to say, well, what about Freeman Dyson? And I would say, well, what about Freeman Dyson? But no, that's not The New York Times did. I mean, they gave him huge amounts of press because they buy into this idea of the scientist as genius. He's seen as a genius and therefore what he thinks seemed to be extremely important and necessary to report. And I want to say, no, it's actually not necessary to report at all. What is necessary to report are the conclusions of the Intergovernmental Panel on Climate Change,the work of the National Academy of Sciences, The work that I reviewed when I did the first analysis of the scientific consensus on climate change back in 2004. These are the things that are relevant. This is where the weight of scientific evidence lies. These are the conclusions of the thousands of experts who have worked on this issue for the last half century.

Naomi Oreskes: And Naomi, what you're talking about is one of the things that helps undermine the credibility of science, because you're giving an example of a scientist who went beyond his expertise or went in a different area. In the creation evolution debate, We have somebody like Richard Dawkins who goes way beyond what you could say and comes up with an argument that somehow evolution proves atheism and that fundamentally undermines science. And so I use I always joke that if if Richard Dawkins didn't exist, the creationists would have to invent him because he serves their purposes. One of my favorite scientists of my of my early lifetime was Linus Pauling, but he went off on this vitamin C stuff. And so by that process, a Richard Dawkins or Linus Pauling undermines science because they are letting their ideology. They're letting their alternative viewpoints carry them way beyond what science can say. So I think in a way scientists have to learn to stand up to their own heroes when they're going beyond what science tells them and are doing polemics.

Naomi Oreskes: Well, I agree with that completely. And I think, again, this is an example where the scientific community could do more. So most scientists are very, very reluctant to criticize a fellow scientist, especially a famous one like Dawkins. But I think it would be actually very helpful if, as you suggested, the scientific community would say, well, look, Richard Dawkins is entitled to his opinion, but it's simply not the case that believing in evolution proves that, you know, the validity of atheism. I mean,

that's just a ridiculous claim, goes way beyond anything that science can prove. I mean, this is a case for an argument for why scientists need to study at least a little bit of history or philosophy or something, because sometimes the scientific community actually makes it worse. So Dawkins is a big public figure. He sells books that are bestsellers. And some years ago, my home institution gave him a prize for public communication and science. And I wanted to say, what are you guys doing? I mean, this is terrible. Dawkins has so set back the cause of understanding evolutionary theory. This man should not be a role model for us. This man should be a negative role model. But obviously, whoever was on this committee, they didn't understand that. They just thought it was great because he sold lots of books about science.

Bill Curtis: So check out Sony Pictures Classics film, based on Naomi's book, Merchants of Doubt and buy her new book, Why Trust Science, published by Princeton University Press. Naomi, it is an absolute pleasure to have you with us. And let's pick up this argument again sometime soon.

Naomi Oreskes: Sounds good. It's been a pleasure to be with you both today.

Bill Curtis: And Ed, as always, thank you for talking some sense into it.

Ed Larson: Thank you for having me on. And I learned from talking to both of you.

Naomi Oreskes: Likewise.

Bill Curtis: Thank you so much. This is Politics. Meet me in the Middle. I'm Bill Curtis. Thanks for joining us. We'll see you again next week. If you like what you hear, please tell your friends. And let us know how we're doing by leaving a comment. It really helps if you give us a five star rating and we really appreciate it. You can also subscribe to the show on Apple podcasts, Stitcher or wherever you listen to your favorite podcast. This episode was produced and edited by Mike Thomas. Audio Engineering by Michael Kennedy. And the theme music was composed and performed by Celeste and Eric Dick. Thanks for listening.

Announcer: From Curtco Media. Media for your mind.