

Q&A with Anthony Leiserowitz

Interviewed by Andrea Appleton

The evidence is conclusive: the planet is warming and humans are to blame. But there are still those, some in powerful positions, who don't believe in climate change. Yet Anthony Leiserowitz, director of the Yale Program on Climate Change Communication, says there's reason for hope. An expert on public opinion on global warming, Leiserowitz says attitudes about climate change are more nuanced than we tend to think. He spoke with *Dimensions* about his research.

Anthony, the Yale Program on Climate Change Communication worked on a national poll in the United States that was released early this year. Can you tell me what you found?

Sure. So we've been studying how Americans respond to the issue of climate change for just about the past 10 years. And this was our latest in that series. So basically two of these national surveys every year. This was a survey that we conducted just after the presidential election because we wanted to see: how are Americans actually thinking about climate change after the very contentious presidential election? And what we found is that basically Americans' engagement with the issue of climate change is near or at record levels. So about 70% of Americans now believe that global warming is happening. That's pretty much an all-time high. Likewise, about 55% of Americans believe that climate change is human-caused. That clearly has a long way to go but nonetheless it's still at the high end of the scale. And one other important one is levels of worry. Again worry levels are at an all-time high and in particular those Americans who say they're very worried about the issue is at a record level, now 19%. Those of us who are paying attention to the science would say that needs to be higher, but nonetheless it's heading in the right direction.

Were you surprised at these results?

Yes, somewhat. Because of course, we had just come through a very partisan, contentious election. However I think one of the things we can see, certainly in retrospect, is that this was not a climate change election. This was not an election where climate change was frankly discussed pretty much at all. It got some attention in the Democratic primaries but once we got to the general election, neither Hillary Clinton nor Donald Trump talked about it much at all. So in that we find that—and in fact we did a study of Trump voters. And found that Trump voters, the majority of Trump voters, actually do believe that global warming is real and support a whole host of actions to

address the issue. So we'll see how that does or does not influence the actions that the Trump Administration and the Republican Congress now take.

And for those who say they don't believe in climate change, why do you think there continues to be a resistance to the scientific evidence?

Well, there's a whole host of reasons there. But one of the most important is first of all politics. Unfortunately the issue of climate change has become very politically polarized in this country with Democrats largely accepting that it's real and human-caused and seeing it as a very serious problem and at least a significant segment of Republicans—not all Republicans, because there are different reactions within the Republican party—but at least a significant proportion of Republicans who think it's not happening or not human-caused, not a serious problem. And then you'll even find a small but very loud wing that says it's a big conspiracy. They say things like it's a hoax or scientists making up data or a UN plot to take away American sovereignty or other such kinds of conspiracy theories.

So there's a range of perspectives here, but one of the big ones is this political dynamic. And we know that's in part driven by political elite cues. This is a kind of a political science concept. Basically, it's recognizing that most people don't know much about this issue. I mean let's just first of all be clear. This is the basis of a study we did in partnership with ASTC a few years ago, was a study of American climate literacy. And overall, Americans just really don't understand this issue that well. I mean even those who are most concerned about it, you know they know the basics, that it's happening and it's human-caused and that there are going to be some significant impacts. But they don't really understand in anything close to what you might expect from someone with say Climate Change 101. And as a result, people listen to their leaders. They listen to the people that are talking about it. And unfortunately there's been a longstanding effort within Republican circles, conservative circles in particular, to basically say that climate change is not real or not to be worried about. Or even more so, they're worried about some of the potential policy solutions to the issue. So unfortunately, the issue has become very politically polarized, which in the end is really too bad. Because in the end, the climate system just doesn't care. The climate system doesn't care whether you're a Democrat or a Republican, liberal or conservative. I mean it's not like Superstorm Sandy only destroyed the homes of Democrats and not Republicans, and it's not like the drought that did such damage in the Great Plains a few years ago was only destroying the livelihood of liberal ranchers and not conservative ranchers. But in the end, our response has to be across these party lines.

Are people who live in areas like those affected by Hurricane Sandy more likely to concede that climate change is happening?

There's not a simple answer to that. We do find in our research that there is some role, a significant role, of direct experience. So as people increasingly experience either extreme heat waves or floods or other types of events, and especially as they see more and more of those events happen and begin to put the pattern together and say . . . There's an old saying that if something happens just once, it's just a happenstance. If it happens twice, it's a coincidence. If it happens three times, you're beginning to see a pattern. And if it happens 4, 7, 12, 20, 27 times, people start to go, "What is going on? Why are we having so many record-setting events?" So at least people begin asking the question "Does this have anything to do with climate change?" But still, for most people, this is an issue that they are still predominantly interpreting through these kinds of political and other lenses. That is a signal, if you will, that's only beginning to really rise from the surrounding noise. That these impacts are not far away in space and time, which many Americans still believe. That we won't feel the impacts for a generation or more, and that this is about polar bears and maybe some small island countries but not the United States, not my state, not my community, not my friends and family, or any of the people and places I care about. Instead people are just beginning to wake up to the reality that climate change is here and now. The impacts are happening all over America and, in fact, in many cases you can see the impacts in your own backyard if you know where to look.

Is the complexity of the climate part of the problem? I mean, there are always people who scoff at the idea of global warming just after a major snowstorm, for instance.

Sure. I mean, look, I've called climate change the policy problem from hell. You almost couldn't design a problem that's a worse fit for our underlying psychology or the ways that we're set up as a society to make decisions. Yeah, it's highly complex. Perhaps even more importantly, the fundamental causes are invisible. I mean, you can look out the window right this very second and there's CO₂ pouring out of tailpipes, there's CO₂ coming out of buildings, there's CO₂ coming out of smokestacks, there's CO₂ coming out of your mouth and nose this very second. But until I said it, you weren't conscious of it. And that's because this is invisible. If it was like back in the bad old days of the late '60s and '70s with the Cuyahoga River catching on fire or L.A., I mean you couldn't see because of the smog, it's the kind of air pollution we now see in Beijing and New Delhi today, this would be a very different issue. But unfortunately the primary cause [is] these invisible gases like methane and nitrous oxide and, of course, carbon dioxide most importantly. And so that just makes it that much harder for us to get our heads around and see it as the real problem that it is.

Is there a magic formula for convincing a skeptic to accept the reality of climate change?

There are no magic formulas. No. And moreover, I think that's actually in many ways not the most important kind of conversation to have. In our work we've identified what we call Global Warming's Six Americas. That it's too simplistic to simply divide the country up into believers and deniers, for example. That's just far too crude and simplistic and it really misses out on the vast majority of the country that's actually willing to have a conversation. So the first group we've identified is 18% of the public. It's a group we call the Alarmed. They're fully convinced. It's happening, it's human-caused, it's urgent, they strongly support action. However many of them don't know what to do. They don't know what they can do individually and they don't yet know what we can do collectively to solve the problem. So that's really an important conversation that they're eager to have: what do we do about this? The next major group is about 28% of the country, a group called the Concerned. They do think it's happening, it's human-caused, it's serious. But they think of it as distant in time and space. Again, they kind of wish somebody would do something about it but it doesn't seem like it's a high priority. So they would support action but again it doesn't seem pressing. Then another group, that's about a quarter of the country, that we call the Cautious. These are people still on the fence. Is it happening? Is it not? Is it human? Is it natural? Is it serious? Is it kind of overblown? They're paying attention, but just haven't made up their minds yet. Then a group that we call the Disengaged, about 5% of the country, that say, "I've heard the words 'global warming' but I really don't know anything about it. I don't know what the causes are, I don't know what the consequences are, I don't know what the solutions are." So for them, it really is just kind of basic awareness. Then a group we call the Doubtful, it's about 12%. These are people who say "You know, I don't think it's real, but if it is it's natural. Nothing humans had anything to do with, nothing we can do anything about, so I don't think about it that much and to the extent I do, I don't see it as much of a risk." And then last but not least is a group that we call the Dismissive. Nine percent of the country who are firmly convinced it's not happening, it's not human-caused, it's not a serious problem. And again most of whom very clearly indicate that they are conspiracy theorists. Those are the six different groups and that last group, the so-called skeptics you just described, are only 9% of the country. And yet they're a really loud 9%, really vocal 9%. They're a 9% that's pretty well represented in the halls of Congress and they've tended to dominate the national discussion on this issue. And yet when you look at their numbers, they're only about 1 in 10 Americans. The other 90% are at least willing to have the conversation. And that's really I think a critical, critical point. Because we see that many people are actually afraid to talk about climate change. It's become like, you know, sex and politics and religion at the Thanksgiving Day table. It's one of those topics you don't want to talk about. Well, if you don't talk about it, the problem doesn't exist. And certainly most people would conclude it doesn't seem very important. So breaking that silence is really a critical first step.

Have you looked into how willing individuals are to make personal behavioral changes to fight climate change?

Yes, we've looked at that in lots of different ways. And we find that in fact people are willing to do a whole range of things. So first of all is how people actually use, waste, or conserve energy at home and on the road. And Americans are actually quite keen to do a lot more of that. From the easy stuff like obviously changing your light bulbs or, you know, weather stripping one's house and things like that, to harder behaviors like putting in solar panels. That's something that not everybody can do immediately and one of the biggest barriers tends to be just money, right? I mean if you don't have the upfront capital, many people say, "Then I can't get solar on my roof." But this is where new business models have really revolutionized that. Because there are now a whole host of companies out there, like Solar City is just one, where you can now get the panels put on your roof for free. It's a lease instead of actually buying them. So anyway we're seeing tremendous change and opportunity opening up for people to take those kinds of actions. And then there's a lot of things about consumer behavior. People are actually quite interested and willing to pay a little more for products that are better for the climate and better for the environment. And increasingly we're seeing a lot of interest in even going further and becoming what are called citizen activists, consumer activists. To actually reward or punish companies for their actions on climate change. So if it's a company that's doing really good things, I'll give my business to them. By contrast if it's a company that seems to be blocking action on climate change, I'm not going to give my money to them. That's really growing I think as a theme.

On the other hand, you've got those people that are engaged in becoming active citizens. To say, "I'm not going to stand on the sideline while this issue gets worse and worse." They're saying, "I want to roll up my sleeves and get involved and demand a broader political economic and social change that's going to be required to address this issue." We're seeing a lot of people flooding into what we might call the overall climate movement saying, "I want to get involved." And that's not all politics. It can be on lots of different levels.

How do public attitudes about climate change in the United States compare to attitudes in the rest of the world?

So we've looked at that in about 130 countries around the world. Basically the U.S. is pretty unique. There are in fact only four countries that have significant what we might call resistance movements, those Dismissives I talked about before. And those countries are basically the United States, Canada, Australia, and the United Kingdom. Note that they're all English-speaking countries. That's really where you see the primary organized people who are saying that climate change isn't real, or it's not human-caused, or it's not a problem. In fact you'll even find some that say it'll be good for us. You don't find that in the rest of the world. It's not a significant theme in

China at all or in India or in much of Europe or in Central and South America at all. And so on and so forth. So really the U.S. and these few other countries are pretty much outliers in terms of that kind of discussion. In fact, what we see around the world at this very moment is the world after [the] Paris [Agreement] has reaffirmed its commitment to taking action with or without the United States. We will see how that plays out over coming months. But I think one of the things that's been quite interesting to see in kind of the world response to the incoming Trump Administration—which has, of course, been talking a lot about pulling the U.S. out of the Paris Agreement, for example (for which, by the way, the American public overwhelmingly, including the Republicans, say we should continue to be part of that agreement. But nonetheless, the rest of the world is not saying, "Well, if the U.S. pulls out, we're going to pull out too." Just the opposite. Most of the major players in this agreement are saying, "We're *more* committed to it." Because in the end they recognize that the problem doesn't go away just because somebody doesn't believe the problem is real. And unfortunately the impacts are already being felt pretty strongly in many parts of the world and they can see they're only going to get much worse if we refuse to act.

Are you hopeful that will more of the public will not only acknowledge that climate change is real but begin to see it as a priority?

I mean, we'll see. We certainly have seen more engagement, a higher level of priority among the public in the past couple of years. And like I said in the beginning, we're seeing record levels of public engagement. There's still however a long way to go. There's still not yet a distilled, crystallized, powerful movement of Americans demanding that climate action. There are lots of great groups doing really good work, but it has not yet coalesced into a really powerful political force. I think that's one of the big ones to keep your eye on, to see what happens in coming years. But in the end this is even more broad than our politics. This is about how do we engage with this issue in our families, in our educational institutions, in our local communities, among our friendship and family networks? This is an issue that isn't going away. And now we unfortunately have to have the conversation not just what can we do to try to reduce the problem, but we need to have the conversation how do we prepare ourselves for the impacts that are already starting to take hold? Which are unfortunately only going to get worse. So it is long past time that we begin having really serious conversations about how are we vulnerable? How do we improve our ability to bounce back when we get hit with these types of events? And at the same time, not lose sight of the bigger picture, and that we have to reduce the risks if we want to continue to prosper in the future.

What advice do you have for science centers that work to engage the public in this area?

Talk about it. Educate your visitors. It's one of the big things that we learned in the survey that we did with ASTC. That overwhelmingly your audience comes to you because they like science centers, they like science museums, that's why they come. They're there to learn. They want to know about this stuff. They trust these centers. They're willing to come with their kids, as families, to come and experience and enjoy science. And as a result, science museums have an incredibly important and unique role in American society. With hundreds of millions of visitors every year coming to engage with science and to learn about even problems like climate change, which are scientific and big and complicated. And yet through the power of storytelling and narrative and adventure and courage and excitement of the process of discovery . . . I mean there's such an incredible set of stories to be told about the science of climate change. It doesn't have to all be framed as doom and gloom. And just as important are the stories about the solutions. There [are] just such great stories to be told about the solutions to climate change and the building of an energy system for the 21st century. That's a scientific story too. And so really I think science museums and natural history museums and your ASTC members are really in an incredibly important and unique role and even responsibility within American society.

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