



Anthony Leiserowitz on Making People Care About Climate Change

January 4, 2013

BILL MOYERS: Welcome. So as you know, we avoided the cliff, at least for the moment. But only for the moment. A bigger Grand Canyon looms ahead, in about two months, as the government reaches its debt ceiling and can't borrow any more money. President Obama wants to lift that ceiling. The Republicans don't. And it appears we're heading for another "Thelma and Louise" ride to the edge. Remember – they went over.

We'll discuss that possibility next week with Paul Krugman, the Nobel Laureate in economics and *New York Times* columnist whose bestselling book, *End This Depression Now!* calls for full employment as an alternative to austerity. Read it, then send us the question you would like me to put to Paul Krugman.

Meanwhile, another reality beckons and there's a menace more threatening than the fiscal cliff ever was. What should really be scaring the daylights out of us -- the crisis which could make all the others irrelevant -- is global warming. Get this one wrong and it's over -- not just for the USA, but for planet Earth. That's the message delivered by Hurricane Sandy, and by almost all the extreme weather of the past two years.

And here in the first month of the New Year, it's the message from the most informed scientists in the world. They're scared, for real. And they say that unless we slow the release of global emissions from fossil fuels, slow it enough to keep the planet's temperature from rising by two degrees Celsius, or 3.6 degrees Fahrenheit, the earth's polar ice sheets will melt away -- with catastrophic consequences.

Time's running out. Not one, but two major scientific reports in the last few weeks have concluded that the rapid increase in fossil fuel emissions makes that increase of two degrees Celsius all but inevitable. This headline in the *National Journal* spells it out: *It's Already Too Late to Stop Climate Change*.

Yet as the clock ticks away and warnings mount, official Washington irresponsibly continues to look the other way. And so does the Beltway press – as demonstrated in that Town Hall debate last fall when CNN's Candy Crowley almost – almost -- asked Barack Obama and Mitt Romney about global warming.

CANDY CROWLEY on CNN: Climate change, I had that question, all you climate change people, we just, you know again, we knew the economy was still the main thing so you knew you kind of wanted to go with the economy.

BILL MOYERS: And so she veered away, avoiding the issue as if global warming is of concern only to a small clique of elites instead of every one of us. And so for the first time since 1984 there was no mention of climate change in any of the presidential debates. No mention as that clock ticks away and the warnings mount.

Why isn't this planetary emergency on every politician's mind? Why are any of us still silent? Those questions prompted me to ask Anthony Leiserowitz to join me at this table. He's director of the Yale Project on Climate Change Communication and a research scientist at Yale University's School of Forestry and Environmental Studies.

He's a geographer by training, with a specialty in human behavior, the psychology of risk perception and decision making -- an expert on the public's perception of climate change and whether people are willing to change their behavior to make a difference. He has said, quote, "You almost couldn't design a problem that is a worse fit with our underlying psychology."

Tony Leiserowitz, welcome.

ANTHONY LEISEROWITZ: Oh thank you, Bill, it's great to be here.

BILL MOYERS: What did you mean that we almost couldn't design a problem that is a worse unfit with our underlying psychology? What did you mean by that?

ANTHONY LEISEROWITZ: Well, look, as human beings we are exquisitely attuned to what's happening in our immediately environment and what we can see around us and what literally touches us physically.

If you're walking through the woods and you hear the crack of a stick behind you, your body immediately goes into a fear response, a fight or flight response. Climate change isn't that kind of a problem. It's not an immediate, visceral threat.

And I can say right now, this very day we can look out the window and there's CO₂, carbon dioxide, pouring out of tailpipes, pouring out of buildings, pouring out of smokestacks. And yet we can't see it, it's invisible.

The fundamental causes of this global problem are invisible to us. And likewise the impacts are largely invisible to us as well unless you know where to look. So it's a problem that first of all we can't see. And secondly it's a problem that is seemingly faceless. It's not like terrorists who we

can imagine who are coming after us trying to kill us and challenge our fundamental values. It's a problem that we can't see, that's going to have long term impacts that aren't going to just impact us now, but impact us into the future; impact our children and our grandchildren.

BILL MOYERS: But you've seen the stories: 2012 the hottest year on record; 2011 carbon dioxide emissions the highest on record; Arctic sea ice shrank to a record low; the world's largest trees are dying at an alarming rate, I could go on and on. These are signs and signals, are they not?

ANTHONY LEISEROWITZ: They are. And, in fact, 2011 was an all-time record year in the United States, for example. We had 14 individual climate and weather related disasters that each cost this country more than \$1 billion. That was an all-time record, blew away previous records. And in 2012 we had events ranging from the summer-like days in January in Chicago with people out on the beach, clearly not a normal occurrence, an unusually warm spring, record setting searing temperatures across much of the lower 48, one of the worst droughts that America has ever experienced, a whole succession of extreme weather events. And I haven't even gotten to Hurricane Sandy yet.

BILL MOYERS: Right.

ANTHONY LEISEROWITZ: And the real question is at what point do we put on the brakes? So let me just use a simplifying analogy here. In some ways this issue is kind of like we're in a car driving through a very dark night, there're kids in the back, they're not buckled.

We're fiddling with the radio, we're probably eating something at the same time and we're passing warning signs that are saying, "Curvy road up ahead. Mountain road up ahead. Be careful, there are landslides." And yet we're going probably 70 miles an hour and our foot is on the accelerator.

So the real question is we are going to hit this patch of really rocky road. It's there up ahead of us. We're not exactly sure how soon we're going to get there, but it's coming. The question is do we start applying the brake?

There's a big difference between entering that stretch of road at ten miles an hour where even if we have an accident it'll be, you know, just bumps and bruises and a little body damage perhaps versus hitting that same stretch of road at 70 miles an hour.

BILL MOYERS: Here's the problem with that as I see it. The global accounting firm PricewaterhouseCoopers has warned that even if we doubled our current rate of reducing carbon emissions we would still be facing six degrees of warming, an almost intolerable situation, by the end of this century. Now the driver of that car with her children in the backseat hurtling down the road, not paying attention to the signs, is hardly going to put on the brakes because they heard about a report from the global accounting firm PricewaterhouseCooper.

ANTHONY LEISEROWITZ: That's right. It is about the warning signs. But here's one of the real dilemmas, is that we've done a really good job at helping people understand that there is this

thing called climate change. Almost all Americans have at least heard of it. But we've in our own work showed that in fact there is no single public. There are multiple publics within the United States. In fact, what we've identified are six Americas.

BILL MOYERS: Six Americas?

ANTHONY LEISEROWITZ: Six different Americas that each respond to this issue in very different ways and need different kinds of information about climate change to become more engaged with it. So the first group that we've identified is a group we call the alarmed. It's about 16 percent of the public. These are people who think it's happening, that it's human caused, that it's a serious and urgent problem and they're really eager to get on with the solutions.

But they don't know what those solutions are. They don't know what they can do individually and they don't know what we can do collectively as a society to deal with it. We haven't done a very good job of explaining what we can do. Then comes a group that we call the concerned. This is about 29 percent of the public. These are people that think okay, it's happening, it's human caused, it's serious, but they tend to think of it as distant.

Distant in time, that the impacts won't be felt for a generation or more and distant in space, that this is about polar bears or maybe small island countries, not the United States, not my state, not my community, not my friends and family or the people and places that I care about. So they believe this is a serious problem, but they don't see it as a priority.

Then comes a group, about a quarter of the public that we call the cautious. These are people who are kind of still on the fence, they're trying to make up their mind. Is it happening, is it not? Is it human, is it natural? Is it a serious risk or is it kind of overblown? So they're paying attention but really just haven't made up their mind about it yet. They need to be just engaged in some of the basic facts of climate change.

Then comes a group, about eight percent of the public that we call the disengaged. They've heard of global warming, but they don't know anything about it. They say over and over, "I don't know anything about the causes, I don't know anything about the consequences. I don't know anything about the potential solutions." So for them it's really just basic awareness that they need to be engaged on. Two last groups, one is we call the doubtful, it's about 13 percent of the public. These are people who say, "Well, I don't think it's happening, but if it is, it's natural, nothing humans had anything to do with and therefore nothing we can do anything about."

So they don't pay that much attention, but they're predisposed to say not a problem. And then last but not least, 8 percent of Americans are what call the dismissive. And these are people who are firmly convinced it's not happening, it's not human caused, it's not a serious problem and many are what we would lovingly call conspiracy theorists. They say it's a hoax. It's scientists making up data, it's a UN plot to take away American sovereignty and so on.

Now, that's only eight percent. But they're a very well mobilized, organized and loud eight percent. And they've tended to dominate the public square, okay. So here you have these six totally different audiences that need completely different types of information and engagement to

deal with this issue. So one of the first tasks, and you know this as a communicator as well as I do, one of the first rules of effective communication is, "know thy audience."

If you don't know who your audience is it's kind of like playing darts in a crowded room with the lights off. You might hit the target sometimes, but most times you're going to miss. And unfortunately too often you're going to do collateral damage. You're actually going to hit somebody by mistake and cause a backlash.

So you know, this is why if we were to do a true engagement campaign in this country we would need to recognize that there are very different Americans who need to be engaged in very different ways who have different values and who trust different messengers.

BILL MOYERS: Assume that [REDACTED] a skeptic. Not only a skeptic but a Tea Party Republican who goes to church every Sunday where my beloved pastor tells me that, reassures me that God created the earth 6,000 years ago and that if God wants to end the earth God will on God's terms, that this is out of our control. If you were sitting across from a good, disciplined believer like that, what argument would you make to me?

ANTHONY LEISEROWITZ: Well, the first thing I would do is I would listen, I would really listen. Because [REDACTED] want to know really what are the depths of, not just their concerns about this issue, but what are their aspirations? What do they want for their children? What do they want for their grandchildren? What kind of community do they want to live in? What are the values that really animate and motivate them?

And I would try to find some way to then meet them where they are first. So let's just take the religious side. There are wonderful activities going on by all of the world's major religions right now including the evangelical churches to say this is a moral and religious issue, okay.

From our worldview, from our standpoint, this is crucial both because we were commanded by God in Genesis to till and tend the garden, to care for his creation which when he created he kept telling us, "It is good." Okay, it is our responsibility they would say to take care of his creation, and that the kinds of things that we are currently doing to the planet are essentially violating that promise.

But moreover, we're also seeing the theme of social justice, that we've been commanded, they would say, to take care of the least of these: the poor, the sick, the powerless both in our own country and around the world. And many churches, in fact, have invested enormous resources, I mean, sending their young people abroad to do great works to try to help people who desperately need that help.

Their argument would be how can we in good conscience ignore a problem that's just going to push millions of more people around the world into those exact same kinds of circumstances we're trying to help them with, okay. So all [REDACTED] saying is that the faith community itself is not monolithic, it isn't homogenous. And it too is trying, currently, struggling to make sense of this new issue and what is the role of religious faith in answering it.

BILL MOYERS: What do you say to the secularist?

ANTHONY LEISEROWITZ: I say let's engage on the science. Let me hear what your arguments are and then let's respond to them. And I would ask in turn that you listen to what the scientific community has to say. It's perfectly fine to have a great conversation with many people about the science itself because the science is so robust at this point. I mean, we have basically known for over 20 years now that, and it actually boils down, for all the complexity of the science it's really quite simple.

It's real, okay, climate change is real. It is mostly human caused this time. There have been climate changes over many millions of years in the past that had nothing to do with human beings. This time it's mostly being caused by our activities. Third, it's going to be bad. In fact, it's bad now and it's going to get worse.

Fourth, there's hope, that there are lots of solutions already on the table that are in fact already being implemented in this country, communities all across this country as well as around the world. There's an enormous amount of work that we can do right now with things that we have in hand.

And then last but not least, what we also know is that many Americans don't understand this one last crucial fact, and that is that the vast majority of the experts, the people who study this day in, day out for a living agree that it's happening, that it's human caused and that's going to be serious.

BILL MOYERS: How, then, do you reconcile the religious and secularist imperatives?

ANTHONY LEISEROWITZ: Well, it really actually boils down to this fundamental question of what is the proper relationship between human beings and the natural world, okay? That is really at the heart of it, what our challenge is in this century. Are we going to live in a world where we believe that we have mastery, domination over this planet, where it is basically a stockpile of resources for us to use and to use as quickly and rapidly as possible to give us all the things that we like?

Or do we have deeper responsibilities to the life of this planet? Because in fact species, ecosystems are not just inert warehouses of resources. They have evolved along with human beings. Our own evolution itself is inseparable from the climate system, the biophysical world and the other species that we ride on this rock with.

What is our responsibility to them? And I think one of the most interesting things that comes out of science that challenges some of our long held cultural beliefs that somehow human beings are fundamentally different than the natural world is the recognition that at root, when you look at the DNA, we are kin, okay? You and I share a lot of genetic material with a tree, other animals, with fish, and so on.

We are literally relatives, okay. That is an idea that we haven't even really begun to process as a complete culture. What does that really mean when you understand that we are inseparable in

that way? We are descendants of the same lines of other animals and plants on this planet. Does that change the way you perceive your relationship with the rest of the world?

BILL MOYERS: So why isn't the message getting through?

ANTHONY LEISEROWITZ: Well, one, the volume has been really low, okay. So that's one side, and we've done media analysis as an example. The media plays an enormously important agenda setting role in this. Because, again this is an invisible problem to most of us. The only way we know about this is because of what we've learned through the media. As a normal American I don't know a climate scientist, I don't read the peer review literature. I only know about this issue because of what, excuse me, you, the media, tell me about it.

And so when the media doesn't report it it's literally out of sight and out of mind. And we've seen that this issue gets just a tiny proportion of the news haul. Of all the stories that the media focuses on every year climate change is miniscule. And in fact, even the environment as a category never gets above say 1 or at most 2 percent of total news coverage.

But it's not just the amount of media coverage. It's also the fact that there's been a very active disinformation campaign that's been going on for many years, it's very well documented, that was primarily, certainly originally and still to this day, driven by fossil fuel company interests who are the world's most profitable companies. I mean, they're very happy, thank you very much, with the status quo, okay?

BILL MOYERS: So what are they saying in this disinformation campaign?

ANTHONY LEISEROWITZ: Well, historically this has been the key strategy all along and in fact it's a strategy that was lifted explicitly directly out of the tobacco wars.

Which is make people think that the science is still unsettled. And if my perception is that the experts are still arguing over whether the problem exists, as a layperson my tendency is to say, "Well, you know, I'll let them figure it out. And you know, I'll take this as, much more seriously once they've reached their conclusion." Okay, so that has been the primary message. That has been the primary strategy of that disinformation campaign is to get people to believe that the experts do not agree.

BILL MOYERS: There's something else that has come through and I saw it, we all saw it I think, throughout the campaign last year, the argument that we can't do anything about climate change that the experts are urging us to do and keep our economy growing. What's the argument to respond to that?

ANTHONY LEISEROWITZ: Well, I'll tell you, that it's a myth. It's a false choice. It's a zero sum game. You either can grow the economy or you can protect the environment, okay. So I changed the question, and I've been doing this now for several years. I said, okay, here's the question: do you believe that protecting the environment harms the economy and costs jobs, has no impact on the economy or jobs, or actually grows the economy and improves jobs?

Okay, and what do we find? An overwhelming majority of America, now, ■■■ talking like two thirds of Americans, say that it either has no impact or it actually improves the economy. In fact, that's the most frequently chosen answer is that most Americans don't see this as an inherent contradiction.

BILL MOYERS: What you're saying is that a big powerful industry controls or affects the outcomes of perception in this country disproportionately to what most people think?

ANTHONY LEISEROWITZ: That's right. And in part they're able to do that because this issue is a low level issue, because we don't talk about it and because there is no what we call issue public on the other side.

BILL MOYERS: What do you mean?

ANTHONY LEISEROWITZ: Okay, so an issue public is basically an organized social movement that demands change, okay. And we're very familiar with this term. It's the pro or anti-immigration movement or the pro-gun control or the anti-gun control movement--

BILL MOYERS: The Civil Rights movement--

ANTHONY LEISEROWITZ: The Civil Rights movement.

BILL MOYERS: --the Suffragette movement, women's rights, you've got to be organized.

ANTHONY LEISEROWITZ: Absolutely. You've got to be organized. And what we see, remember that 16 percent I identified as the alarmed? Again people who are very concerned and think this is an urgent problem, but they feel relatively isolated and alone. They say, "I feel this way, some of my friends and family feel this strongly." But they have no sense that they're part of over 40 million Americans that feel just as strongly as they do.

They've never been properly organized, mobilized and directed to demand change. And I mean, that's what the political system ultimately responds to. If you basically have a vacuum of people who are demanding change, and I don't mean that truly. I mean, there are of course many great organizations that have been advocating for change for a long time. But it hasn't been a broad based citizens movement demanding change. In that situation a relatively small but well-funded and vocal community that says no can absolutely win the day.

BILL MOYERS: As you know twice in the last 20 years the country's tried to take, the government's tried to take a big step forward, under the Clinton administration and then under the first year of the Obama administration. And each time the Senate killed it.

ANTHONY LEISEROWITZ: Yeah. But the key thing there is that each time both the Clinton administration and the Obama administration tried to do this it was essentially a top-down, inside the beltway strategy. We are going after and trying to cajole and convince and persuade the members of the Senate and the House to pass this legislation without first engaging the broad

public and building a citizens movement, a issue public as I talked about before that was actually demanding change. Because in the end politicians care about their job.

And if they don't feel like there's a political price to pay for opposing action on climate change or alternatively a political opportunity to be had by being a leader on this issue, it's very easy for them to say, "You know what? I've got a lot of other things here on my plate to deal with. I've got lots of lobbyists coming into my office as well as people back home saying, 'Do this, do that, do this.' And it's not climate change." So until they feel that they have to act many of them probably won't. And in fact, almost you couldn't find a worse problem that fits with our current political institutions, okay. Because this is a long term problem, okay. Our government is run on two-year cycles, four-year cycles or six-year cycles. Our businesses are essentially run on three-month cycles, what is the next shareholder report going to tell you, okay?

Those time frames of decision making lead to decisions that are profitable or best in the short run but do not adequately address these long term creeping problems that turn out to be much worse when they are allowed to fester. And it's not just climate change. It's the health care problem, it's the entitlements issue, it's debt and deficits. All of these are not things that suddenly happened in the space of a couple months.

These are long term problems that people were warning about years and years ago and yet we didn't respond back when the problem was relatively small and relatively easy to fix. Instead we have this tendency because of this short term myopic focus to put those kinds of problems on the back burner until they become so big it requires much more wrenching change to try to deal with them.

BILL MOYERS: So if the president asks you to suggest what he should say, to send him a draft of what he should say about climate change in his upcoming State of the Union message, what would you urge him to do?

ANTHONY LEISEROWITZ: I would ask him to do two things. One is to say I have consulted with the nation's leading climate scientists including the National Academy of Sciences which exists to guide the nation on science and science policy. And they all tell me, all of them tell me that this is real, that it's human caused, it's a serious problem but that we have the solutions in hand to do it. So, one, I would want him to carry that message.

But the second thing I would like to hear him say is that this issue has to stop being a partisan issue. The climate -- the earth's climate does not care whether you are a Democrat or a Republican. It doesn't care whether you're liberal or conservative. Sandy did not only destroy the homes of Democrats and not Republicans.

The terrible drought that has gripped the Great Plains and our nation's bread basket has not only gone after liberal farmers and ranchers, it's gone after all of us. The point is that climate change will affect all Americans no matter what your political beliefs, your religious beliefs, your race, class, creed, et cetera, okay. And in the end the only way we're going to deal with this issue is if we come together as a country and have a serious conversation not about is it real, but what can we do about it, okay. And I think that the effort to try to de-politicize this issue so it doesn't just

become this knee-jerk-- identity politics: ■ a Democrat, therefore I believe in climate change, ■ a Republican, therefore I think climate change is a hoax. This is crazy, okay. I mean, again the climate system doesn't care.

BILL MOYERS: But the realists in politics will say that that's unrealistic, in fact former Republican congressman Sherwood Boehlert has said that the best way for this to happen is if a Republican comes up with a proposed solution. If Obama does it, it won't happen. But if some Republicans start the conversation and make the first proposal, that's the only way we're going to have not only the conversation you're calling for, but action on change.

ANTHONY LEISEROWITZ: And I totally agree with that.

BILL MOYERS: So why can't we get the Republican Party to see what you have been talking about?

ANTHONY LEISEROWITZ: I think basically the Republican Party has reached the conclusion themselves that they are appealing to the dismissive wing of their own base. I mean, it's actually quite remarkable when you look back over the history of this. I mean, remember the figure in the U.S. Senate who repeatedly put forward the nation's best and most sophisticated answers to the climate challenge for many years was Senator John McCain.

The nominee of the Republican Party was the premier architect of responding to climate change. How far things have changed in the past four years where we ended up in the primaries of-- the Republican primaries of 2012 and we found that all of them, with the one exception of John Huntsman, were calling into question the basic reality of the problem itself. Were basically saying in some cases saying that it was a hoax, okay. This is a remarkable turn for the party itself.

And you know -- and what we're seeing of course right now is that in the aftermath of the loss of 2012 -- Republicans are beginning to look inward and they're trying to say, "Where have we gone wrong? Where are our new opportunities to engage the public?" Immigration is one of those issues that they're beginning to say, "Maybe it's time to change our position." Climate change could be another of those.

Because it's one of the ways that they can appeal back to the middle. Our own work, we found that Independents are much more like Democrats on their beliefs about climate change than they are Republicans. So if Republicans want a way back, this is one of the ways that they could do it. And there's actually a historical precedent.

We used to have a huge acid rain problem in this country. We created essentially a cap and trade system where we capped the amount of sulfur dioxide being emitted from these smokestacks, brought that cap down over years and allowed companies to sell their emission rights between each other. So a company that was really good at reducing their emissions could sell that remaining block to another company that needed more time.

It was one of the most successful programs in American history. It was put on the table and passed by a Republican president, the first George Bush, Bush Sr. And it solved the problem or it largely solved the problem at a cost far below what even the best estimates at the time were. We know that these kind of policies can work. It was a Republican idea, okay.

And so the irony of it is that the Republican Party has walked away from even one of their best ideas, one of their best proven ideas that really worked. So the question is how can we bring Republicans back to the table and say, "That's ours, we own that. This is our contribution to solving the problem. And in fact, we think our principles and our solutions are better than yours."

BILL MOYERS: So [REDACTED] Speaker of the House John Boehner and I ask you to come see me and I say I want to do what you're suggesting. Give me the sound bites a real conservative can use.

ANTHONY LEISEROWITZ: I think there are a couple things. One is they need to look at the threat, okay. So as an example could we think in a different way about climate change as a threat to our freedoms, okay? Climate change itself is a threat to our freedoms.

BILL MOYERS: To our freedoms?

ANTHONY LEISEROWITZ: Sure. If you're a rancher or a farmer in the Great Plains today, your freedom is enormously constrained by the fact that you're in the midst of a two-year severe drought, okay. You don't get to choose what you're going to plant. You don't get to choose what cows you're going to slaughter. In fact, we've just seen in Texas in the past year two million head of cow, cattle are no longer in Texas, they had to move them out because they couldn't provide the food and forage and water for them because of that drought. That's not freedom, okay. You are literally not able to do the thing that you were raised and that you believe in as part of your culture because the climate has changed.

BILL MOYERS: You got me on that one. What's another one?

ANTHONY LEISEROWITZ: Another side though is the opportunity side. First of all, political opportunity which is perhaps the language that most touches them directly, and that is that they've now lost two national elections, okay. And that hurts. [REDACTED] sure it hurts. They need to find a new way back to the middle of this country, okay.

Now, there's an active debate happening within the Republican Party right now between, "perhaps our problem is that we weren't pure enough," okay-- I mean, we hear those voices on the right who were saying, you know, Mitt Romney was really just a liberal in disguise, that we didn't make a stark enough choice, and that what we need is purification, we need to become true, you know, even take this party farther to the right versus those that are in the middle that are saying there is no pathway to political success unless you can reach this new America that is quickly emerging: Hispanics, minorities, young people, women who voted in record numbers not just in 2008 but in 2012.

And if we ever want to be able to succeed at the national level again we have to find a way to appeal back to these new voters who are not responding to these far right messages, okay. So there's enormous political opportunity. We'll see where the Republican Party decides to move.

BILL MOYERS: And that brings me to a survey you took part in, you and your colleagues at Yale took part in with the Gallup group globally, the worldwide group that studies public opinion.

ANTHONY LEISEROWITZ: Yeah, this is the Gallup world poll. It's the first every scientific quality survey conducted in 130-plus countries around the world. It's a remarkable scientific achievement. And one of the things that it taught us right from the very beginning that to be honest surprised me, four out of ten people on planet Earth have never heard of climate change.

BILL MOYERS: Forty percent?

ANTHONY LEISEROWITZ: Forty percent. And in fact, when you look in particular countries, even countries that are kind of poster child countries for climate change like Bangladesh, it rises to two-thirds of people have never heard of climate change. In some countries it's 75 percent have never heard of climate change.

Now, this doesn't mean however that they're not observing acutely the change that are happening in their local systems. They are. What they lack is the concept of climate change to make sense of the observations, the changes they're seeing in local temperature and precipitation patterns and so on, as well as the understanding of here's what this means going forward.

How do we use this new information to change the decisions we're making now, the kind of crops we plant, the kinds of cities we build, where we site a hospital, you know, do we build next to the coast? I mean, these societies are making enormous, you know, decades long investments, infrastructure investments, and often doing so without thinking about climate change as part of that decision making process. So globally we see that there's an enormous need even for the building of basic awareness of the problem.

BILL MOYERS: There was a destructive typhoon in the Philippines recently as you know that killed over a thousand people, caused massive damage and left over a million people displaced. And as fate would have it at that very time delegates from around the world were meeting in Doha for the climate change conference. And the representative from the Philippines, while there hearing about this typhoon back in his home made this very impassioned plea.

YEB SANO: There is massive and widespread devastation back at home. Hundreds of thousands of people have been rendered homeless, and the ordeal is far from over. Madame Chair, we have never had a typhoon like Bopha, which just wreaked havoc in a part of the country which has never seen a storm like this in half a century. And I am making an urgent appeal, not as a negotiator, not as a leader of my delegation, but as a Filipino. I appeal to the whole world. I appeal to the leaders from all over the world to open our eyes to the stark reality that we face. I appeal to ministers. The outcome of our work is not about what our political masters want. It is about what is demanded of us by seven billion people. I appeal to all – please, no more delays,

no more excuses. Please let Doha be remembered as the place where we found the political will to turn things around. And let 2012 be remembered as the year the world found the courage to do so. To find the courage to take responsibility for the future we want. I ask of all of us here, if not us then who? If not now, then when? If not here, then where?

BILL MOYERS: Were you there?

ANTHONY LEISEROWITZ: I was there.

BILL MOYERS: Was anyone really listening to him?

ANTHONY LEISEROWITZ: Absolutely, people were listening to them. But what I think is particularly important about what he said is the world needs to open its eyes.

These events are no longer abstractions. They're no longer talking about what's going to happen in 2050 or in 2100. Again this pervasive sense up to now has been that climate change is distant, distant in time, and distant in space. And what we're now beginning to see is that it's not so distant. It's not just future generations. It's us and it's our own children. I have a nine-year-old son. He's going to be my age in the year 2050. I don't want him to live in the world that we're currently hurtling towards.

BILL MOYERS: Describe that world for me as you can see it.

ANTHONY LEISEROWITZ: Currently we are scheduled, unless we change direction to go through the two-degree mark. And in fact, we're heading on towards three degrees, four degrees and perhaps even six degrees centigrade warmer than in the past. As you go things get much, much worse. And in fact, let me just use a simple analogy.

Because people often will say, "Wow, you know, four, five degrees, that doesn't sound like very much. I mean, I see the temperature change more from night to day." But it's the wrong way to think about it. I mean, think about when you get sick and you get a fever, okay. Your body is usually at, you know, 98.7 degrees.

If your temperature rises by one degree you feel a little off, but you can still go to work. You're fine. It rises by two degrees and you're now feeling sick, in fact you're probably going to take the day off because you definitely don't feel good. And in fact, you're getting everything from hot flashes to cold chills, okay.

At three you're starting to get really sick. And at four degrees and five degrees your brain is actually slipping into a coma, okay, you're close to death. I think there's an analogy here of that little difference in global average temperature just like that little difference in global body temperature can have huge implications as you keep going. And so unfortunately the world after two and especially after three degrees starts getting much more frightening, and that's exactly what the scientists keep telling us. But will we pay attention to those warning signs?

BILL MOYERS: What do you think?

ANTHONY LEISEROWITZ: I think we are entirely capable of responding to those warning signs, absolutely. When this country and when this planet puts their minds to do something, they absolutely can do this. And in fact, I often go back to a great old quote by Henry Ford who said, "Those who think they can and those who think they can't are both right."

This is within our power. We have waited however a long time to really engage this issue and to get started. And unfortunately, and this is actually a core American value, it goes back to the founding of this country and it goes back to Benjamin Franklin, one of the leading lights of that time, who said - and every American knows this - "An ounce of prevention is worth a pound of cure."

A little action now is going to forestall much greater-- the need for much greater action later. And that's exactly the nature of this problem, is that if we delay-- if we wait until we've reached three and four degrees, it's too late. At that point the climate system is locked. It's a massive system. The heat is already in earth's system, it's absorbed in the oceans, it's being absorbed by the ice systems.

It's in the atmosphere, there is no magic vacuum cleaner that's going to suddenly pull the CO₂ out and bring our temperatures back to what we consider normal. So that's why it's so imperative that we begin taking these actions now to forestall the worst effects that are going to happen decades to come.

BILL MOYERS: So what ounce of prevention could be taken in this new year, 2013, that would make you think we might be on the right path?

ANTHONY LEISEROWITZ: It's not like we haven't already gotten started. California has done tremendous work already to take action on climate change.

If it was a country it would be one of the leading countries in the world. There are mayors all over this country that are doing tremendous things, companies that are changing their systems and getting the CO₂ and its emissions out of their processes because they find it actually makes them more efficient and profitable in the process, citizens all over this country that are doing what they can individually and are starting to engage the political system to demand change.

We're not starting from ground zero, okay. But what we haven't had is the ability to come together as a country and clarify the choice that's in front of us and to really help the broad set of country, those six different Americans I was talking about, engage with this issue and recognize that we as a country and as a planet are facing a fundamental threat, a fundamental challenge to the way of life that we have now and the kind of life that we want to hand on to our children.

Until we start with that conversation it's very hard for me to see how we ultimately lead to the national policies that are going to be required, much less the international policies that are also going to be required. So I think whereas in the past we've treated this as an issue, that we learned about from climate science and that has basically been a few set of political leaders that have tried to impose solutions on this country, on our states, at the world from the top-down, what we have not done is build the bottom up to meet them halfway.

And until we have that bottom-up demand for this issue because it's going to affect every one of us, it absolutely is going to affect us either directly or indirectly through economics, through disease, through foreign challenges in faraway places, the world is now one planet. We are all interconnected in fundamental ways. And so these issues are rising the most deep questions about what it means to be a human being, and what is the right relationship that we have-- and again not just to the planet but to our fellow human beings. Because our choices now are going to have collectively huge implications for the lives of our fellow travelers within the human family on this planet as well.

BILL MOYERS: How did you come to this, to this depth of commitment and passion about this issue?

ANTHONY LEISEROWITZ: Well, it really actually comes down to a key moment actually, an epiphany in my own life. When I graduated from undergraduate school I went and lived in Aspen, Colorado for four years where I worked at the Aspen Global Change Institute.

And I remember there was one day where I went up to my favorite place which is up above this old ghost town called Independence, Colorado. And I was sitting on a mountainside and I noticed all of a sudden, these little wildflowers, these white wildflowers. And they grew in the tundra, these little tundra zones on the tops of these mountains.

And I suddenly realized that these patches of tundra on top of these mountains were the remnants of tundra that used to cover all of the West when the ice sheets retreated 10,000 years ago. And this is where they were left, this was the remaining fragments of that ecosystem. And that they just like islands in the South Pacific that are going to be inundated because of sea level rise, these ecosystems were going to be literally pushed right off the mountaintops because of warming temperatures and climate change.

And I just realized looking around that the forest I was looking at and the animals and the fish and so on, that I had resonated with were also deeply at risk because of the changing climate.

And then I kept looking down the valley and I saw Aspen twinkling down below. And beyond that there was Glenwood Springs and beyond that there was Las Vegas and beyond that there was Los Angeles. And if you could see those there would be these huge clouds of CO₂ pouring out of them. And so for me it was really about suddenly the bringing together of my analytical understanding of this issue as an abstract scientific problem with my lived experience in this particular landscape which I love deeply to this day.

And unfortunately now I go back to Colorado and I see the impact, I see what's happened with for instance Pine Bark Beetles that have devastated entire forests of that state and then just this past summer the record setting wildfires that have happened in Colorado.

And I think every American has a place whether it's Colorado or the ocean or the farm or the ranch or the city that they love dearly. And if they can see it they will see how each of these places is uniquely at risk and how the places and the people that we care about are at risk because of this issue.

BILL MOYERS: Tony Leiserowitz, thank you very much for sharing this ideas a new time with us.

ANTHONY LEISEROWITZ: Oh my pleasure Bill, great to be with you.
