ACCESSION SHEET
Maine Folklife Center

Accession Number: 2758

Accession Date: 2016.06.14 **T#** **C#** **PM#** **DAT** **CD#**

Collection Number: MF 192

Collection Name: Climate Change Institute 40th Anniversary Oral

P# **S#** **V#** **DV#** **DA#** mfc_na2758_audio001

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Narrator: Robert Kates

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Description: **2758 Robert Kates,** interviewed by Adam Lee Cilli, April 2, 2014, over the phone, with Kates in his home in Bangor, Maine and Cilli in his office in Stevens Hall at the University of Maine, Orono. Kates talks about the beginnings of his career in geography; his current research on transformational adaptation to climate change; his beginnings at the Climate Change Institute; the CCI's role in informing the public about climate change; and his induction into the National Academy of Sciences.

Text: 6 pp. transcript
Recording: **mfc_na2758_audio001** 40 minutes

Related Collections & Accessions

Restrictions Restricted, no release form

Formats Included Document: Original= .docx, Master= .odt, Access= .pdf; Sound: Original= .mp3, Master= .wav, Access= .mp3

Notes

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Date last updated 6.14.2016 by MO'Brien **Use Tracker** **To transcriber**

Previous name(s) **Completed**

Narrator: Robert Kates

Interviewer: Adam Lee Cilli

Transcriber: Adam Lee Cilli

Date of interview: April 2, 2014

ABSTRACT: This interview took place over the telephone, with Adam Cilli in his office in Stevens Hall at the University of Maine in Orono, and Robert Kates at his home in Bangor. In the first half of the interview, Kates discussed his experiences as a geographer studying human responses to major weather and climate events. His current research explores what he calls transformational adaptation to climate change, which is supported by a belief that human societies must prepare for rapid and significant changes in climate. Later, he reflected on how he became affiliated with the Institute, the Institute's role in informing the public about Climate Change, and his induction into the National Academy of Sciences.

Note: This is the transcriber's best effort to convert audio to text, the audio is the primary material.

Adam Cilli (AC): This is an interview with Robert Kates. Today is April 2, 2014, and this is Adam Cilli conducting the interview. I'm wondering if you can tell me how you got interested in climate science.

Robert Kates (RK): Well, I wrote my dissertation (I'm a geographer, first of all), at the University of Chicago, and I wrote my dissertation on flood hazards. So I started out my adviser was very well known geographer, Gilbert White, who had also wrote his dissertation on flood hazards back in 1945, and I wrote mine in 1960. And somewhere around 1968 I think, I and a colleague were contacted about issues related to weather modification. Some people saw that as a major way we can adapt to droughts. And others saw it as a threat in some sense. And we started to explore weather modification. And that was right around 1968. From there, in order to do that, we tried to broaden and learn more about different types of weather hazards, then climate hazards. The First World Climate Conference was in I think 1980, and I ended up giving a talk to the conference [to an audience] who were very much still geophysically-oriented to what social scientists might be able to contribute to understanding climate and society. In 1985 I did a book bringing together a whole bunch of people's thoughts, the first book on climate-change adaptation. And I've been working on and off on climate, climate adaptation, and the like.

Cilli: So, how did you first become affiliated with the Institute?

Kates: I moved to Maine permanently in 1992 and began to spend, beginning about ten years ago, time in Bangor. And I thought it would be nice to, I had learned about the Institute, and thought it would be nice. I heard Paul Mayewski give some public lectures went he came out towards Trenton, where we lived several months a year, and I thought it would be nice to connect myself to people interested in similar things. I was working also with George Jacobson, was on a committee that I had put together. I thought it would be nice to have local contacts, and

I also got increasingly interested in Maine. I served on a state advisory committee on climate change, and I wanted to have that affiliation.

Cilli: What was that committee that you put together that George Jacobson was a part of?

Kates: It was an advisory group for the Maine Sustainability Solutions Initiative.

Cilli: When was that?

Kates: And I also helped organize two state-wide climate change conferences. Probably about ten years ago.

Cilli: Can you tell me about that advisory committee that you were on in regards to Maine's climate future?

Kates: We helped, back around 2005, organize the Maine Climate Plan, and tried to put together a series of 2010 targets for reduction of greenhouse gas emissions to 1990-levels. And I think I chaired… there was a stakeholder advisory group. So the Department of Environmental Protection created a climate-action plan, and we put together a scientific support committee.

Cilli: Can you tell me a little bit about your research, since the 1990s?

Kates: Well, my latest research is on transformational adaptation to climate change. Most of what people talk about when they say we need to adapt to climate change are incremental adaptations, doing more of what we already do, but do it more intensely. So, for example, farmers already now continuously select seeds, if you're anticipating dryer conditions, you would look for more intensely for plants that you're interested in to be able use less water, for example. Transformational, but my own feeling is that, so you do these things kind of incrementally, if you anticipated a lot of snow and you're a city you might buy some additional pieces of snow-moving equipment. Transformational adaptation says, no. You may have much, much more climate change than slow process of change. And you need to do very significant changes. So, for example, people in Australia who have vineyards are now leaving the country because of increasing droughts and moving to Tazmania. Or farmers are considering changing completely, not just changing some variety of the crop they're growing, but actually changing the crops themselves. Those who like putting storm gates across the Hudson River and the East River in New York are also examples of transformational adaptation. So, in general most of my actual climate research has been on adapting to climate change and the range of adaptation, how people decided which one, and we've done studies all over the world.

Cilli: It sounds like, when I heard you say that incremental adaptation to climate change maybe isn't the way to go, and that because climate change can occur rapidly, the response has to be more significant.

Kates: Yeah, and not only rapidly, but at a scale that hasn't been envisioned. So, are you addressing if you IPCC results and have you, and you say, "well, yeah, but if there is an outlier of 5 or 10 percent it changes on the order of 10 degrees Celsius over a century rather than the normal one and a half to four degrees Celsius."….. So, it's not simply the suddenness of the change, but it's also the magnitude of the change.

Cilli: Has your research required any field work?

Kates: Yeah. First of all I've been in a whole series of places that have had major weather or climate-related hazards. One of the things I've studied is how do you reconstruct after disasters? And I did that initially not with climate-related disasters, but with earthquake-related disasters. But after Katrina I went to New Orleans, and worked out what I thought would be the fate and challenge of reconstructing New Orleans after Katrina. And I have a model to predict how long it would take to reconstruct places, based upon how long it takes people to deal with the actual emergency period by itself. So, I've been to a lot of places that have had some storm surges. I've been to, for example, Bangladesh; I've been to two places within a week of major typhoons; so I have done post-event field work.

Cilli: What were some of the challenges you encountered doing your field work?

Kates: I think one of the biggest challenges is to keep in mind the pain, the misery. The most common victims are either the children, babies, and old people, in almost all hazard situations, but especially in severe weather changes. So, in Bangladesh, sitting with the translator, sitting with usually with a former student of mine, sitting with people who have had these enormous losses, interviewing them, and trying to avoid turning these cases into just scientific studies, or vice versa, getting so overwhelmed by the human cost that you can't address them as a scientific study. I find that one big challenge.

Cilli: Did you encounter any difficulties related to cultural differences?

Kates: Well, I'll tell you one of my biggest surprises was back in '70s, [when] we did a world study of what amounted finally 5,000 people who lived or worked in areas that were subject to one of twenty major hazards, of which many of them (actually most of them) were weather-climate-related hazards. And we used a sentence completion test. Do you know what those are? One of the questions was, for example, "when I think of the cause of whatever was the local hazard, I think of BLANK." And we were pleasantly surprised, when you field test it in my end [?], to try to get a sense of its universality. And we found a series of questions that had somewhat universal applications. What surprised us most were the answer. What do you think the answer was? 95 percent of the people gave the same answer. "When I think of the cause of flooding, I think of…"

Cilli: I have no idea.

Kates: Well, the answer was god.

Cilli: Wow.

Kates: And if you looked at any of our textbooks, if you looked at any of the books we wrote, if you look in the index, and you look for god, you don't find him. And here was the most universal of explanations. So, I have found myself getting interested in that and how supernatural resource magic [?] takes place. For example, there's a whole debated about why two of the great religions ban pork. There are a whole set of instructions in various religious traditions. What to do with different kinds of natural resources of food supply.

Cilli: Fascinating.

Kates: A little off the subject. [laughs]

Cilli: That does lead me to another question, and that is, it seems to be the case that within the scientific community the human role in climate change is not debated, it's established. But outside the scientific community, particularly in American society, it's still hotly debated. And I'm wondering if you could comment as to why that might be the case.

Kates: First of all, what politicians do when they need time to think about things is say, "well, that's a good question." [laughs] I was gonna give a glib answer, which is other societies have less of a literal investment in spreading doubt about climate change. So, it's very clear in the United States, they have substantial amounts of money and effort, subsidies of denial research, organizations, and so on. Major oil and gas companies have engaged in an effort to discredit. Then, the question is, so why is that the case in the United States and not in Europe, even though they have oil and gas companies? In fact, you can find European oil based companies have done less of that, and in some cases haven't done that at all. So, I see it mainly as a kind of a European view versus an American/Canadian-based view. And I don't have a really good answer. To explain that, the European counterparts have, not for climate change, but for other reasons, long sought enormous amounts of renewables. If you fly over Germany you see miles and miles of windmills, everywhere you have extensive offshore developments. If you step back from the climate change, how do you move out of fossil fuels. We will, because we continuously moved out of one form of [energy], into increasing amounts of hydrogen in the fuels we use, and so the shift now to natural gas was predicted by many people twenty, thirty, forty years ago, as a natural development of going from wood, to coal, to oil, and natural gas—each of those adds more hydrogen content in the fuel. But we also will leave the hydrogen content and move into total renewable. And that will come, but it takes a lot of time. And so the big challenge of this century, is how do we end the use of fossil fuels in this century. And the climate change comes, the mitigation part; how do we do it fast enough? And that part that I worry most about, [that] we'll do it, but we won't do it fast enough.

Cilli: Do you think the Institute should attempt to affect public opinion about climate change?

Kates: Well, I think members of the Institute do. Paul and George give talks all the time. They give good talks. I think the Institute has been most backward, if you'd like, because its history is rooted (initially) in geological time. George Jacobson's work is looking at pollen analysis, they still do an enormous amount of drilling, so they still do a long studies back into time. And it was that geological background. So it's only relatively recently that they've encouraged current studies, current issues, what they can do. To their credit, they're doing it more and more. But I think that the particular way they shifted from a Quaternary Institute to a Climate Change Institute, the shift has not been whole and complete. In their membership they reflect their groups.

Cilli: I was just going to ask you a related question, and that is how has the Institute changed since you first became affiliated with it?

Kates: Well, I think they've been… the study they did on Maine climate and climate change helped with the… I don't know if it's been complete, the study on adaptation. But they've certainly moved out to try to create some materials that are more popular. If you want to find

and do that in cooperation with the state, during the previous administration it was very good cooperation. So that's been a big change.

Cilli: Can you tell me about your career teaching?

Kates: I taught basically at three different places. I taught at Clark University, was my first job, in 1962. And I stayed there till 1986, with one interruption of about three years when I headed up a research institute and did some teaching at the University of Dar Es Salaam in Tanzania, Africa. And then I went to Brown and headed a program on world hunger, and taught some courses on hunger. I don't think I'm a very good teacher [laughs]. I'm a reasonably good graduate teacher; I'm not a very good undergraduate teacher. And somewhere early on I realized that and worked out to essentially teach half time and do research half time.

Cilli: Did you finish your career at Brown.

Kates: Yeah. I retired in 1991. So, I've been up in Maine, and doing research and writing, all the years since then.

Cilli: I see that you're a member of the National Academy of Sciences. When did that happen?

Kates: 1975.

Cilli: So, fairly early in your career.

Kates: Yeah, big surprise. [laughs] It kind of came out of the blue.

Cilli: How did you feel, when you received notification?

Kates: I felt very uncomfortable. [laughs] Very surprised. You know, the National Academy is like a consulting firm. By its charter, they are required to answer questions of the government. Abraham Lincoln charted them in the middle of the Civil War. And so Congress very often poses questions, and the [academy] puts together a group of volunteer unpaid scientists who do a report, very often a published study. Beginning with the Alaskan earthquake in 1962, I've been on various committees created to do these reports. But then I got into the Academy and I went to the building for a meeting, and I'd come early. I had some hours to kill. And I went in and the receptionist asked me something, and I couldn't bring myself to say that I'm a member.

Cilli: Well, that's quite an honor.

Kates: Yeah, especially for a relatively young member.

Cilli: Well, Bob, that's all the questions I had, but before we conclude the interview I did want to give you a chance to add something that I didn't think to ask you about.

Kates: Well, let me reflect for a minute. I like that question. [laughs] I don't know quite how to phrase the question. The question would be something like, "having worked on climate related, weather related things, what would surprise you?" And I've always thought a lot about surprise and the unexpected. And I think, despite I share the general feelings about climate change, its origins, what's happening, I'm also open, as I look back at the history of science, the brightest and the best in many, many periods turned out to believe in nonsense: ether, phlogiston. You go

back in time, and the brightest and the best of scientists (or the closest approximation of scientists at the time) had all these crazy believes. And so it may turn out that some of our most favored views, or ones we hold most strongly, will also turn out to be dead wrong, or partly wrong, or significantly wrong, and we should be open to that and humble about that.

Cilli: Well, thank you once again for participating in this interview.

Kates: Bye now.

Cilli: Okay, take care. Bye.