

to me. I've heard that argument before. Remember the presidential inaugural that was supposed to be heated with a solar-heated reviewing stand and everybody froze their buns off? I think you remember that day.

Interview: Jeremy Namias

CO₂ effect has not been proven by evidence

Dr. Namias of the Scripps Institute of Oceanography, at La Jolla, California is known as the "dean" of American climatologists.

Q: I have interviewed a score of scientists on the greenhouse effect, and so far, not one of them has agreed with what is coming out of the news media about the supposedly cataclysmic consequences of the greenhouse effect. . . .

Namias: Don't put words in my mouth. I'll give you my convictions on this matter; in the first place I think that the publicity that has come about associating the drought of last summer with the greenhouse effect is absolutely wrong. That there is no indication that that had anything to do with the drought. The greenhouse effect, that is. It can be explained with normal things as has been done in studies of many droughts in the past and even droughts of similar nature in the plains and so forth.

Secondly, I don't believe that the greenhouse had any effect on the path and generation and movement of Hurricane Gilbert, which was a very severe hurricane if you remember. That can also be adequately explained on the basis of air-sea interactions and many other studies of hurricanes, so that I think that we can write off what is sometimes claimed that the greenhouse effect is here now. I don't believe it is here at all yet. However, I do believe that if we keep burning fossil fuels and the accumulation of other gases at the rate we have, and carbon dioxide increases the way it has been increasing, then I think it is likely there will be a tendency to a warmer Earth as has been predicted, and also I think that the polar, higher latitudes will be warmed more than other latitudes.

I don't know about the impacts of this on the ice caps. I am not qualified to predict when it will occur, and I am not ready to believe it is here now. I am inclined to believe that it may not take place for about 50 years. But that is due to certain delaying factors. I think that ultimately it would come about *if* the carbon dioxide increases and if we keep burning fossil fuels, and so forth, so I am willing to go along with

that part of it. Even so, the effects, what this will mean, whether there will be a lot more drought like we had, or there will be more hurricanes—that is up for grabs. In my opinion, the targeting of specific areas has not been adequately established scientifically.

Q: Pat Michaels at the University of Virginia says that to blame CO₂ is too simplistic, that you have other greenhouse gases. If you add them up, you get over 407 parts per million of CO₂ equivalent in the atmosphere, so that allegedly if the

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models are correct, you should already have had a 2°C warming.

Namias: Well, we can't prove that there has been, you know. The fact that there have been some warm years in the 1980s, that could be due just to the way the ball bounces statistically. I don't think that those warmings indicate that the CO₂ effect is here. And there are some people, the British and so forth, who have made various studies, and the early part of the temperature record a century ago is very bad, so you can't just extrapolate those numbers.

Q: I see. Do you think that the range of temperature increase that Hansen gives is accurate?

Namias: Well, in the last 40 years of his record, there is more probability that it is in the right ballpark. There has been some question about some of his work about historical temperatures. As I said, the British have studied this a lot, and I heard Professor Wigley speak two weeks ago in Cambridge, Massachusetts. He's from the University of East Anglia [Great Britain], and he read a paper which dethrones some of Hansen's estimates, showing that the temperature increases were well within the natural range of variability.

Q: I think it is very interesting that even if you take into account an increase in carbon dioxide in the atmosphere, there is no evidence that CO₂ is warming up the atmosphere. If that is so, then my question is, what is warming up the atmosphere. Can it be the amount of forests that have been cut down over the century?

Namias: There is one factor, which is believed to be a small factor, which is that there is an observed warming in cities compared with the countryside. This calls into question comparisons with the Southern Hemisphere where there are fewer

cities, and observations earlier in the century.

The observations in the Southern Hemisphere and the earlier observations are not very good. There are no observations in cities there. So, if you put all these things together—errors of the observing system, the natural fluctuations, particularly in the atmospheric system—what has gone on does not indicate that the CO₂ effect is there.

Interview: Fred Wood, Jr.

No signs of reduction in snow cover or glaciers

Dr. Wood is Senior Associate in the Congressional Office of Technology Assessment. This interview reflects his views based on independent research on climate change, and does not necessarily reflect the policy of the Office of Technology Assessment or of the Congress.

Q: The one thing everyone seems to agree with is that James Hansen lacks a scientific basis.

Wood: I think it's fair to say that he has overstated, at least the scientific certainty and scientific consensus in his testimony before Congress. His scientific, refereed papers are not as extreme, but in his public statements, I think you're right. I think he's in a very small minority with his claims that we are 99% certain that we have already detected the greenhouse warming, which I think is his statement.

Q: Yes.

Wood: That is an extreme position not held by most. Most of the scientists that I have talked to, including many mainstream scientists who do their research in detection, do not agree with Hansen. The problem they have is that he and a few other people have most of the air time, and it keeps getting repeated over and over. It suits the purposes of some environmental groups and some government agencies like the Environmental Protection Agency to try to accelerate policy action. As a result, through the conventional media the impression is given that there is no longer any scientific debate over climate change through greenhouse warming, and this is not the case.

I would say though, that most of what these people are saying is dealing with a very important problem, in that these trace gases are at unprecedented levels. People ought to be very concerned about that. Where there is disagreement is that some of us are saying that we don't yet really understand what is happening or what is likely to happen from a scientific point of view.

Q: How can the news media so systematically cover up what most scientists are saying and just limit themselves to a small group that claims the greenhouse effect is here?

Wood: It's not entirely the media. There have been a dozen or more congressional hearings in the last two or three years, and the type of scientists that get invited or tend to participate in these hearings are, in general, people who are prepared to make strong statements, like Hansen—strong, unequivocal statements. Those are the things politicians like to hear because it makes things appear to be easier to understand.

And then the press: Congressional hearings tend to have

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a lot of credibility, even though you know as I do that you can get junk at congressional hearings, nonetheless there tends to be an amplification process from them.

There has not been a hearing to my knowledge that has taken on the scientific issues. Most of the testimony has been either done by scientists like Hansen, Watson or MacDonald, or Schneider. There are several of them who have testified repeatedly on the certainty of the greenhouse effect. There are a number of scientists who testify on the impact. A lot of these people simply accept the scientific input on the actual greenhouse effect. They will just accept what Hansen says, so that you again get an institutionalization.

That's part of it. I think another part of it is that the scientific establishment in the governmental bureaucracies in this area is not fully candid. I'm not going to suggest that there's some kind of conspiracy, although you can't throw that out. I think that people are concerned about getting funding, and the more that they can appear that there is a consensus on the urgency, etc., that may help get more funding. And frankly, some of the people in the controlling positions in the scientific establishment and in the governmental bureaucracies believe that the problem is real.

They are doing what they can to bias the presentation to Congress to help accelerate the degree of urgency. For example, I've talked to one major climate modeler, who as a scientist knows the uncertainties, he admits them, but he is extremely concerned about the trends and he's worried that by the time we find scientific certainty, or close to that, it will be too late to do anything and the problem will be much worse. So some of these guys believe that we've got to take