

Charles Krauthammer

# Global Warming Fundamentalists

*This is nuclear winter without the nukes.*

The world is meeting in Kyoto, Japan, to decide how much wreckage to visit upon the Western economies to prevent global warming. Kyoto aims to seriously reduce greenhouse gas emissions, which would seriously curtail energy use and, with it, economic growth. All under the premise that humans produce global warming and that global warming will produce a human catastrophe. Is this true?

There has been a very slight warming of the earth's atmosphere in this century (although one still has to explain why satellite and balloon data show no net temperature rise in the past 19 years). But first, it is not clear how much is caused by natural variation only. Second, even assuming a substantial human contribution, it is not clear what, say, a doubling of carbon dioxide (CO<sub>2</sub>) emissions would do to temperatures.

You get can get answers by modeling. But scientific models are notoriously subject to the tweaking of underlying assumptions. The predictions of the Intergovernmental Panel on Cli-

mate Change have already been significantly modified. In 1990 it predicted a 6-degree (F) rise by 2100. The prediction now is down to a 3½-degree rise, a 40 percent drop. And there is a huge range of uncertainty: The lower-end estimate is less than 2 degrees F.

But uncertainty is a feeling foreign to global warming fundamentalists, many of them now gathered in Kyoto. Take that great American evangelist, Vice President Gore, a last-minute attendee. Now, Gore may turn out to be the environmentalists' villain because he fears infuriating his labor allies at home if he agrees to serious curbs on U.S. CO<sub>2</sub> (and thus energy) production. But whatever he ends up doing for personal political reasons, it is clear what he believes. Just two months ago, he likened those who question global warming to tobacco executives who with a "straight face" denied that smoking causes cancer. This is a serious charge: not just error, but bad faith.

This attitude is echoed by many scientists. Stephen Schneider, a Stanford scientist and participant at Clinton

and Gore's Global Climate Change Roundtable last July, has said that when it comes to global warming it is "journalistically irresponsible to present both sides."

It is worth noting that 25 years ago this same Schneider was vociferously denying global warming. Even a tenfold increase in human production of carbon dioxide, he wrote, "which at the present rate of input is not expected within the next several thousand years" is "unlikely to produce a runaway greenhouse effect on Earth." Indeed, "the doubling of carbon dioxide"—which is what Kyoto is trying so desperately to prevent—"would produce a temperature change of less than one degree [centigrade]."

Schneider argued then that the real threat was global cooling: The production of aerosols screening earth from the sun could produce "a decrease of the mean surface temperature by as much as 3.5 degrees centigrade," which "if sustained over a period of several years . . . could be sufficient to trigger an ice age."

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This is nuclear winter without the nukes. And this was no offhanded comment. This was a paper in the prestigious journal *Science*, complete with equations containing a gaudy excess of exponents and Greek subscripts.

Nor was Schneider alone. In the 1970s, which were—surprise!—cold, global cooling was the vogue. Nigel Calder, former editor of *New Scientist*, said in 1975 that "the threat of a new ice age must now stand alongside nuclear war as a likely source of wholesale death and misery for mankind." And *Science Digest* declared that "how carefully we monitor our atmospheric pollution will have direct bearing on the arrival and nature of this weather crisis"—i.e., a new "ice age."

All this doom-saying provoked J. Murray Mitchell of the National Oceanic and Atmospheric Administration to remark in 1976 that "whenever there is a cold wave, they [the media] seek out a proponent of the ice-age-is-coming school and put his theories on page one. . . . Whenever there is a heat wave

. . . they turn to his opposite number [for a prediction of] a kind of heat death of the earth."

It is one thing to change your mind. It is another to then, with the zeal of the convert, write the view you have just abandoned out of polite society, as does Schneider by saying that journalists shouldn't even present the non-global warming view, and as does Gore when he makes skeptics into the moral equivalent of tobacco executives. Ironically, as climate change predictions become more malleable and contingent, climate change activists become more inflexible and intolerant.

The ease with which politicians, popularizers and even scientists can be caught up in popular enthusiasms for one doomsday or another should give us pause. This is not a call for ignoring climate change. It is a call for a modicum of humility before we go ahead and wreck the good life we've developed over 200 years in the name of a theory.

# Twisted Revision

The most precious intangible any scientist can earn is a reputation for the courage to change directions when new evidence compels a switch. Similarly, I suspect, respectability for a journalist is the ability to sort the shallow from the deep and to ensure that all quotations have been checked for accuracy and context.

I (along with Vice President Al Gore) am branded by Charles Krauthammer ["Global Warming Fundamentalists," op-ed, Dec. 9] as being "inflexible and intolerant" for my concern over the potential seriousness of global warming. To us "global warming fundamentalists," Krauthammer asserts, "uncertainty is a foreign feeling." For a scientist, that is a pretty serious charge.

The prime evidence for this attack is a few snippets quoted from a 1971 scientific paper of which I—then a graduate student—was junior author. Krauthammer quotes me as saying carbon dioxide from industrial sources "is unlikely to produce a runaway greenhouse effect on Earth" as if that 28-year-old belief refutes my current concerns for the two dozen billion tons of carbon dioxide we humans dump annually into the air.

Ironically, though, this polluting would not have produced a "runaway greenhouse effect" in 1971—nor would it today. Krauthammer seems unaware that "runaway greenhouse" is jargon for conditions on Venus, where oven-like temperatures result from a massive carbon dioxide greenhouse effect. In the context of earth, I have never been such a catastrophist, then or now, as this quotation proves, even if the column turns it upside down to make an opposite point.

Krauthammer goes on to note that in that same paper I calculated that global increases in aerosols (i.e., hazes from industrial and agricultural activities) could cause very large-scale cooling, greater than the warming then projected.

That I did do, but Krauthammer neglects to mention that I explicitly said very little was known about the extent of these aerosols. We simply cited existing literature (not making our own predictions) that suggested that global dust content was increasing significantly. Within a few years, it became clear—in no small measure because of inquiry stimulated by this controversial paper—that aerosols were mostly a regional problem

and that greenhouse gases were more significant a climate threat than I had previously calculated.

Only a few years later this shift toward warming over cooling (and the open admission of a large degree of uncertainty over details) was explicitly noted in another

## Taking Exception

scientific article (*Journal of the Atmospheric Sciences*, 1975). This 1975 correction to the cooling hypotheses that had been current in 1971 was not published by one of today's senior "contrarians"—a group of maybe a dozen scientist-dissenters backed up by millions of dollars from the fossil fuel industry's public relations campaigns—but by me.

All I was doing then was precisely what scientists are trained to do: follow the evidence where it leads, revise our opinions as new data or theories emerge and state the conclusions with uncertainties attached. I have written dozens of scientific papers with uncertainty as a prime theme and have run several meetings on ways to quantify uncertainties so that wild opinions can be separated from more likely estimates to help the policy process proceed more rationally.

This brings me to the worst accusation that Krauthammer hurls: He alleges that I try to suppress opposing views, quoting me as believing it is "journalistically irresponsible to present both sides." This out-of-context quote is a gross distortion of my oft-published views in which I argue that it is irresponsible to cover science as if it were a political contest—that is, quote the Democrat, then get the other side, the Republican. Such balance is appropriate in covering two-party politics, but there are rarely only two sides in science and, more important, not all opinions are equally credible.

To quote a hundred-scientist assessment in one sentence and then "balance" the story by giving equal space and credibility to one of a handful of contrarian scientists who represent a tiny minority of knowledgeable opinions is irresponsible journalism in my opinion. Such false balance projects a distortion of the main-

stream knowledge base of the scientific community because it represents all opinions as somehow being equally credible, even though thousands of scientists have worked for years to sort out the likely from the unlikely—and we're still doing that because science is never 100 percent certain of anything.

Krauthammer's column is subtitled "nuclear winter without the nukes." That's ironic, because in the actual controversy over nuclear winter, it wasn't the contrarians whose scientific work and public outreach convinced a skeptical scientific community (and an even more hostile peace activist community) that the original conception of "nuclear winter" in 1983 needed revision. Rather, it was I and my former students Curt Covey and Starley Thompson. Thompson and I not only did the revisionist science but, in a move rare for scientists, visibly explained (in *Foreign Affairs*, 1985) the revisions to the non-scientific world—and took the political heat for the correction that followed: "nuclear fall."

In short, I am not now and never have been in the ends-justify-the-means club.

Krauthammer ends his column with a call for "a modicum of humility before we go ahead and wreck the good life we've developed over 200 years in the name of a theory." But the vast bulk of published studies in the economics literature (save one consulting company's calculation now being ballyhooed by media ads of the polluting industries—which of course don't say that this study is based on absurdly pessimistic assumptions) suggest that most proposed policy strategies to help mitigate global warming would cost the world economy anywhere from a net benefit to only a percent or so loss of GDP.

I do believe in characterizing uncertainty and in reporting the many sides of a scientific debate, but only if the relative credibility of each position is stated. And, finally, I do believe that global warming, while not certain, is a significant potential threat that deserves some efforts to slow down the rate at which we use the atmosphere as a free sewer.

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