Both the discovery and consequences of the 50- to 70-year temperature oscillation over the North Atlantic Ocean are addressed: a future downswing in the cycle could result in a lack of "political capacity to act [on the issue of global warming] until the sweltering summers of the early 2060s." Criticism of the scope of the recent interview with President Jiang Zemin is answered by the observation that the interview was welcomed by many Chinese scientists and government officials. It is stated that "[i]f broader sharing of organs had been implemented [during 1998], as many as 298 of the most medically urgent patients who did not receive an organ could have received a liver transplant, alleviating substantially the shortage of organs for those most needy patients." And analysis of the tenure of *Science*'s Editors-in-Chief suggests that Donald Kennedy will bid farewell in 2.3 years.

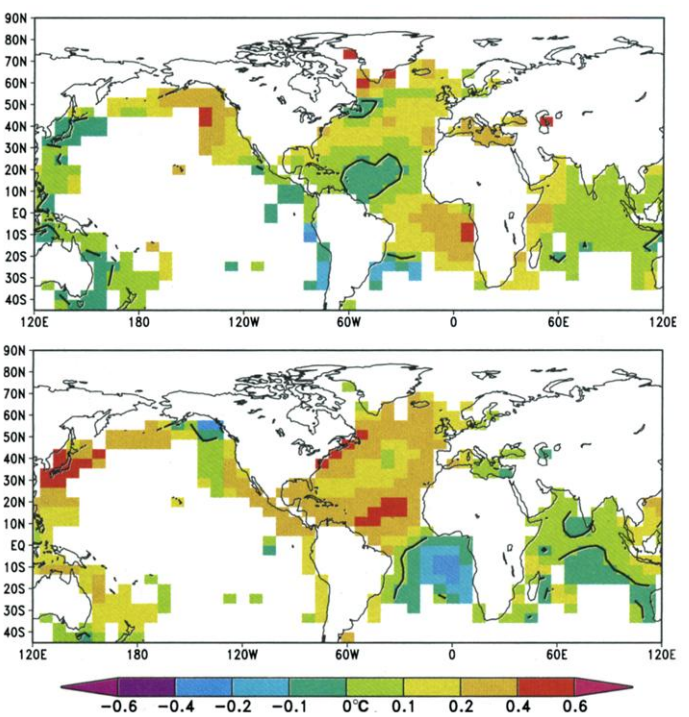
Temperature Oscillations in the North Atlantic

Richard Kerr's News article "A North Atlantic climate pacemaker for the centuries" (16 June, p. 1984) describes a 50- to 70-year temperature oscillation over the North Atlantic Ocean, but did not mention our 1994 *Nature* paper "An oscillation in the global climate system of period 65–70 Years" (*1*) wherein we discovered this multidecadal pan-North-Atlantic oscillation.

In our paper we applied singular spectrum analysis to four observed global-mean surface temperature records spanning 1858–1992 and identified a temperature oscillation with a period of 65 to 70 years. Singular spectrum analysis of a surface temperature record was then performed for 11 geographical regions. This showed that the global 65- to 70-year oscillation is the statistical result of 50- to 88-year oscillations for the North Atlantic Ocean and its bounding Northern Hemisphere continents. We noted that comparison with other observations and climate-model simulations suggests that the oscillation arises from predictable internal variability of the ocean-atmosphere system. Subsequently, we demonstrated that the oscillation was not the result of climatic noise (*2, 3*), as had been contended (*4*).

Our discovery of this oscillation was heralded by *Discover* magazine as one of "The Top 75 Science Stories" of 1994 (*5*). Accordingly, we are astonished that our paper was not mentioned in Kerr's article.

Recently, we simulated the observed temperature changes for different state-of-the-art radiative-forcing models using a simple climate/ocean model (*6*). We found that while the anthropogenic effect has steadily increased in size during the entire 20th century, such that it presently is the dominant external forcing factor of the climate system, there is a residual factor at work within the climate system. This residual factor is quite likely the 65- to 70-year oscillation of the North Atlantic Ocean.



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The North Atlantic oscillates between cool (top) and warm phases.

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2. ———, *Nature* **372**, 508 (1994).
3. ———, *J. Geophys. Res.* **100**, 13,767 (1995).
4. J. B. Elsner and A. A. Tsonis, *Nature* **372**, 507 (1994).
5. C. Zimmer, *Discover* **16**, 77 (1995).
6. N. G. Andronova and M. E. Schlesinger, *Geophys. Res. Lettr.* **27**, 2137 (2000).

Kerr's overview of recent evidence for a 60-year global temperature cycle was an excellent example of the well-written updates for nonspecialists that make *Science* so valuable. The closing paragraph, however, left me puzzled. If the cycle is real, he writes, "the pace of warming could pick up in the next few decades as a naturally warming North Atlantic combines with a stronger greenhouse warming effect."

From the temperature series I have seen (i.e., http://www.globalchange.org/dataall/96may48d.htm), this cycle last peaked around 1940. Description of the cycle earlier in Kerr's article similarly refers to a "warm 1940s." It therefore seems likely that we are now near another peak, so that the pace of warming should slow somewhat for several decades unless greenhouse forcing accelerates.

It is important that we amateurs get this right. At present, those pushing for rapid and aggressive action to combat global warming seem to be relying heavily on the propaganda benefits of each record-setting summer. If we are soon to experience the start of a cyclic retreat from these records, the public will quite rightly feel deceived. We may find ourselves as a result without the political capacity to act until the sweltering summers of the early 2060s are upon us.

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Response

Schlesinger, Ramankutty, and Andronova would certainly figure prominently in any discussion of research on multidecadal oscillations centered in the North Atlantic. However, they and others who noted 70-year variations in North Atlantic climate were handicapped by the shortness of the 140-year instrumental record of climate

variability. Most observers would credit the sum of instrumental and longer proxy record analyses with "discovering" any Atlantic multidecadal oscillation.

Margolis is right, the sense of the statement concerning future work was indeed reversed. Of more immediate concern is the challenge of disentangling greenhouse warming from natural warming during the past 30 years.

Richard A. Kerr

Science's Conversation with Jiang Zemin

Editor Ellis Rubinstein's exclusive interview with Chinese president Jiang Zemin (News Focus, "China's leader commits to basic research, global science," 16 June, p. 1950) covers many interesting topics relating to research and teaching of science, which is appropriate to the journal's focus. Nevertheless, too narrow a focus may cause one to overlook important data. Absent from the article is any mention of China's liquidation of tens of millions of dissidents (*1*), its extensive system of prison camps, its repression of religious minorities, its recent threat to use force against Taiwan, or its cultural and physical genocide in Tibet. Indeed, a Policy Forum by Peichang Zhang *et al.* ("China's forest policy for the 21st century," 23 June, p. 2135) shows a map of China in which Tibet is labeled "Xizang," with "Tibet" in parentheses. In all probability, in a few years both the Tibetan culture and the parentheses will disappear.

It is understandable that Jiang would limit the areas of discussion or edit the transcript, though these restrictions are not mentioned in the article. It is less understandable that the interview would be published without any editorial comment. Are readers to assume that science exists in an ethical vacuum? Are scientists mere technicians, performing complex tasks with no responsibility for how the results will be used? Scientific exchange, like trade, will strengthen China, but to what end? Einstein remarked that humanity's greatest problem is a perfection of means but a confusion of ends. This confusion will not be resolved if the question of ends is not posed.

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Reference

1. J.-L. Margolin and P. Rigoulot, *The Black Book of Communism*, S. Courtois *et al.*, Eds. (Harvard University Press, Cambridge, MA, 1999), chapter 4.

Response

It is gratifying to note that Dr. Stolinsky agrees with the appropriateness of *Science*'s questions for China's president, considering the journal's focus. His implication, however, that we should have asked the president to defend his country's "liquidation of tens of millions of dissidents" and so forth should be put in perspective. There is no agreement—even in Western countries—on what Dr. Stolinsky calls "data." Even if there were, Mr. Jiang has not been found to be personally implicated in the brutal repression during the Mao period, when many of China's current leaders suffered to some degree. Therefore, I believe that it would have been inappropriate for a scientific journal to ask questions of this sort when granted such an unprecedented interview.

I should also point out that there has been an important consequence of the interview that may not be known to many Western readers of *Science*. Nearly every important Chinese newspaper printed a reliable translation of the questions and answers and featured this translation on its front page. As a result, many scientists and government officials in China are grateful to *Science*, viewing the journal as a con-