

## **Session 5 Global Warming What's Up With the Weather?**



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Apprehensions have been multiplying rapidly that we are approaching an unprecedented crisis in our relationship with nature, one that could have potentially catastrophic results for the sustainability of civilization and even the habitability of the planet. Much of the concern is rightfully focused on changes in the atmosphere caused by human activities—energy use, transportation, agriculture, and deforestation. In the second half of the twentieth century we have come to suspect that the gentlest of rains are carrying corrosive acids from far-away power plants. We seek protection from the clear blue sky because of the damage our air-conditioners have inflicted on the stratospheric ozone layer. We have promoted the simple carbon dioxide molecule, one of the basic building blocks of life, into an international symbol of human intervention in the climate system, somehow codifying both affluence and apprehension. Some would say we are facing a cultural as well as an environmental crisis. There has been a rising tide of literature—scholarly works, new journals, textbooks, government documents, treaties, and popular accounts—placing climate change science and policy at the center of an international agenda to understand, predict, protect, and possibly control the global environment. Given that we need all of our cultural resources to deal with such challenges, is it possible that the changing nature of global change—the historical dimension—has not yet received adequate attention?

What was up with the weather? A historian might ask the following types of questions about climate change: How did people (not only scientists) gain awareness and understanding of phenomena that cover the entire globe, and that are constantly changing on time scales ranging from geological eras to centuries, decades, years, and seasons? How was this accomplished by individuals immersed in and surrounded by the phenomena? How were privileged positions created and defined? Without the ability to observe the climate system in its entirety (as an astronomer might view a star or planet) or to experiment on it directly (as a chemist might view a reaction), how did scientific understanding of it emerge? How are climate ideas rooted in more general popular perceptions and cultural assumptions about the environment?

For centuries now, scientists have been constructing massive compilations of data over large areas and extended time periods in the hope of deducing climatic patterns and changes. Individual observers in particular locales dutifully tended to their journals and networks of cooperative observers gradually extended the meteorological frontiers. Beginning in earnest in the nineteenth century, and supported by governments and international associations, scientists tabulated, charted, mapped, and analyzed the observations to provide climatic inscriptions. This process profoundly changed climate discourse and established the foundations of the science of climatology.

New technologies also provide scientists with opportunities to construct privileged perspectives on weather patterns and climate change. Balloon-borne radiosonde flights were instituted in the 1930s, providing regular measurements of the upper atmosphere. After World War II surplus RADAR equipment and airplanes were used in storm studies, radioactive fallout from atmospheric nuclear tests provided worldwide tracers of upper air wind patterns, and weather modification on both small and large scales was attempted using silver iodide and other cloud seeding agents. Computer modeling and satellite monitoring of the atmosphere currently are favored techniques of climate scientists worldwide.

The mix of science, technology, economics, ethics, and international politics is certainly heating up, along with the climate. What is up with the weather? Are the gods (or demons) angry? Are the kings and politicians inept? Will any one scientific result prove, once and for all, that humans are altering the climate for the worse? Is this what it will take to do the right thing? In the 1980s scientists argued that nuclear war was wrong because it could result in a “nuclear winter.” When others criticized the scientific basis of nuclear winter theory, did that make nuclear war somehow more acceptable? It is erroneous to forge such strong causal links between ethical issues and particular scientific results. Is burning unrenewable fossil fuels wrong because it could cause global warming? Or is it just wrong?

Climate apprehensions—awareness and understanding, fear, and intervention—rest on deep cultural foundations. In every era, scientists have created climate narratives, theories, and reconstructions in conformity with their personal experiences, experimental techniques, technical capacities, and philosophical preferences. Some theories have been more convincing than others; some have raised public awareness; some have generated serious social concerns; and some have indicated the need for concerted action. A strong ethical case can be made that polluting the biosphere and depleting the Earth's resources is wrong, period. Cast in a positive light, we do right by treading lightly on the Earth and leaving it better than we found it. This is true for all sorts of environmental issues and is true even if the climate starts cooling!

### **Further Reading:**

- Houghton, John Theodore. *Global Warming: The Complete Briefing*, 2nd ed. (Cambridge Univ. Press, 1997)
- Michaels, Patrick J. and Balling, Robert C. *The Satanic Gases*. (Cato Institute, 2000)
- Roleff, Tamara L., ed. *Global Warming: Opposing Viewpoints*. (Greenhaven Press, 1997)

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