

Well, perhaps. But it is just as likely that the public will grow tired of worrying about overblown catastrophes and crises du jour. When and if the wolf comes, the villagers will have long since stopped listening to the cry of the boy.

While the Edward Abbeys and the David Browers of the world are idealists, however misled, what about the environmental movement as a whole? How much of the hype stems from pure concern for the world? Could it be that, as Dixy Lee Ray has said, "professional environmentalists and others whose jobs depend on the continuing environmental crises want us to think that all's wrong with the world"?<sup>27</sup> A revealing headline appeared in *The Washington Post* in June 1989: "Environmentalists Hope for Scorch; Aim Is to Avert Governmental Complacency on 'Greenhouse Effect.'" The article quotes Dan Becker, director of the Sierra Club's global warming campaign: "If this summer is especially bad, a crisis mentality will take over and Congress will want to pass legislation to show that they're on top of the situation." Irving Mintzer of the World Resources Institute agreed: "If we have another hot summer, it might not mean that the greenhouse effect is here, but it will galvanize political opinion around the issue."<sup>28</sup> (It was the previous summer of 1988, that infamous summer of heat and fires and hurricanes, that had set the stage for Jim Hansen's dramatic proclamation that global warming had arrived.) While the Sierra Club and the World Resources Institute are more or less moderate in their approach, unlike the radical EarthFirst!, let us not forget that they are huge organizations with hungry budgets.

#### *Science: Funding the Research*

Many scientists, for completely different reasons, fuel the fire of hysteria with "data-free speculation," and they have a trusting audience. In the past, it was the scientists who called for calm in the midst of chaos; today many of the scientists themselves are sounding the alarm. Why the shift?

One reason is that career pressures have become very strong in contemporary science. Investigating fraud in science led science

writers William Broad and Nicholas Wade to publish *Betrayers of the Truth* in 1982. What they discovered tells us a lot about these pressures. They point out that "the system rewards the appearance of success as well as genuine achievement. Universities may award tenure simply on the quantity of a researcher's publications, without considering their quality." They go on to say that those "who falsify scientific data probably start and succeed with the much lesser crime of improving upon existing results."<sup>29</sup> There is a fine line between adjusting data and falsifying it, and the line is easily crossed.

This issue of "fitting the data" is problematic in climate model science. Michael Oppenheimer describes this aspect in *Dead Heat*, admitting that scientists occasionally adjust the guesses in the models, which are very crude, so that the predictions of the model agree with the measurements—in other words, so that the model gives the "right" answer. He borrows an analogy from economists, whose methods are similar: "Models are like sausages: you don't want to know what goes into them."<sup>30</sup> The issue of adjusting data in computer models is examined in depth in Chapter 4.

Most scientific research is funded by federal grants from agencies such as the Environmental Protection Agency, National Science Foundation, Department of Energy, and others, and competition for available funds can be intense.

Reid Bryson, one of the climatologists who warned of cooling in the 1970s, referred to the need that scientists have for research money in a sarcastic comment; "Then an important discovery was made. It was found that large amounts of research funding could be generated by worrying about the dangers of a changing climate."<sup>31</sup> An event in the summer of 1994 illustrates this point. The world watched in awe as Comet Shoemaker-Levy 9 struck Jupiter, and fear of a similar occurrence on our own planet offered a splendid opportunity for NASA funding. A \$50-million proposal was presented to Congress to create a comet-watch program. Several questions come to mind: If scientists were able to predict, observe, and photograph the Jupiter collision, are not the equipment and technology already in place for comet watching? And

what are we going to do in the remote chance that such an event becomes imminent? Evacuate the earth?

A major discovery or publication may put undue pressure on a scientist to follow up with more major work. A physics professor at the University of Houston learned this the hard way. In "Trapped in His Own Shadow," *Los Angeles Times* science writer Mark Stein tells how Paul Chu "dazzled the science world" with his discovery of a superconducting material. Fame brought enticing offers from prestigious universities, but Chu, loyal to Houston because of their support, stayed to direct the \$22.3-million research complex built to keep him there. So far he has made no further spectacular discoveries, and, with speeches to make and funding to acquire, Chu lives under tremendous pressure. Both his research and his personal life have suffered.<sup>32</sup> It is easy to see how the pressure to justify and finance one's research could cause one to overemphasize the dangers of a possible catastrophe.

### *Science and Politics—Strange Bedfellows*

The marriage of science and politics is a phenomenon of the twentieth century. In earlier centuries, scientists were often wealthy people who could afford to pursue their love of learning. They did not rely on financing from anyone else. Because most of today's scientific funding comes from government agencies, science has become politicized. As reporter Ronald Bailey says in his book *Eco-Scam*:

Lab directors are not only scientists; they are also public relations officers and politicians who must navigate the dark byways of Congress and government agencies in search of the wherewithal to keep their organizations going. Consequently, they feel enormous institutional pressure to hype the work of their laboratories and to tie it to the solution of some mediagenic crisis.<sup>33</sup>

In other words, scientists must do more than legitimate scientific research. They have to know how politicians think, and they have to create a need for the research on which their livelihood depends.

How does a scientist create this need? In an interview published in *Discover*, Stephen Schneider said, "we have to offer up scary

scenarios, make simplified, dramatic statements, and make little mention of any doubts we might have."<sup>34</sup> Schneider repeatedly points out in his writing that there is great uncertainty in computer climate models. But he is a pragmatist; uncertainties do not inspire research grants.

One of the most obvious examples of this marriage of science and politics is the global warming issue. As Sonja A. Boehmer-Christiansen points out in a 1994 *Nature* commentary, "global warming could not have entered international politics without the support of influential voices from the scientific community." She questions why and how scientists publicized a concern that was strictly in the research stages. This unsubstantiated theory quickly led to an international treaty with strong economic and political ramifications. Boehmer-Christiansen is straightforward in her opinion of why scientists jumped on the global warming bandwagon: "Under pressure, even scientists will deliver what their paymasters prefer to hear."<sup>35</sup> It is unfortunate that science has come to this, that the pressures of research funding can have such a profound political effect.

Another way in which science and politics become closely intertwined is exemplified in the strong environmental activism of individual politicians. Consider Vice President Al Gore's book *Earth in the Balance*.<sup>36</sup> The book takes a scholarly approach to environmental issues, but it comes down heavily on any detractors and calls for Draconian actions. Mr. Gore was heavily influenced in his environmental leanings by one of his college professors, Roger Revelle. Revelle was involved in early carbon dioxide monitoring and was part of the original group of climatologists warning of global warming. Interestingly enough, Revelle backed off from the extremists, coauthoring a paper with Chauncey Starr and S. Fred Singer (we will talk about him in the next section) that suggested that the uncertainties in the global warming theory did not justify drastic reductions in greenhouse gas emissions. There has been quite a controversy about the article, which was published just before Revelle died, and accusations were made by one of Revelle's former students that Singer took advantage of Revelle's advanced