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A Personal Note

"It's pretty gut-wrenching... People say climate change is something for our kids to worry about. No. It's now."

— Forestry scientist Allan Carroll as bark beetles destroy more trees than forest fires and logging combined, in vast areas where it is no longer too cold for them to flourish. (*Washington Post*, 1 March 2006.)

What can we do about global warming, and what should we do?

Faced with scientists who publish warnings, the public's natural response is to ask them for definitive guidance. When the scientists fail to say for certain what will happen, politicians habitually tell them to go back and do more research. That is all very well, but in the case of climate, waiting for a sure answer would mean waiting forever. When we are faced with a new disease or an armed invasion, we do not put off decisions until more research is done. We act using the best guidelines available.

My training as a physicist and historian of science has given me some feeling for where scientific claims are reliable and where they are shaky. Of course climate science is full of uncertainties, and nobody claims to know exactly what the climate will do. That very uncertainty is part of what, I am confident, is known beyond doubt—our planet's climate can change, tremendously and unpredictably. Beyond that we can conclude (with the Intergovernmental Panel on Climate Change in its 2001 report) that it is *very likely* that significant global warming is coming in our lifetimes. This surely brings a likelihood of harm, widespread and grave. (See the separate essay on expected impacts.) The few who contest these facts are either ignorant, or so committed to their viewpoint that they will seize on any excuse to deny the danger.

We are not sure how serious the danger is, but it may well be the greatest threat and greatest challenge of our generation. We may soon have to take vigorous action lest we pass a “tipping point” beyond which nothing could halt disastrous climate change. Fortunately, our civilization holds the means to meet the challenge. We need only muster the will to use powerful technologies that are already in hand. It will not be as hard as defeating Fascism or Communism, and a lot more inspiring.

Thanks to the strenuous labors by thousands of people described in these essays, we have had a warning in time—although just barely in time. If there is even a small risk that your house will burn down, you will take care to install smoke alarms and buy insurance. We can scarcely do less for the well-being of our society and the planet's ecosystems. Thus the only useful discussion is over what measures are worth their cost.

Many things can be done right now that are not only cheap and effective, but will actually pay for themselves through benefits entirely aside from acting against global warming. Americans in particular—the world’s most promiscuous emitters of greenhouse gases and the ones best placed to do something about it—can set an example. A good start would be to remove the government subsidies for fossil fuels, which are huge, mostly hidden, and economically unsound. Another sensible step would be to tax carbon emissions, including gradually raising the tax on gasoline by a dollar or so (comparable to what nearly all other industrial nations pay, and compensated by lowering other taxes). That would also help to cover the actual costs of roads, traffic congestion, accident injuries and illness due to smog. Other economically beneficial policies could improve fuel efficiency in many areas, protect forests, and so forth. Looking beyond carbon dioxide, we can save money while reducing the greenhouse effect by fixing leakage of methane from pipelines, attacking unhealthy smoke emissions, and carrying out various other changes. Such steps can be taken, and in fact are being taken, not only by national governments but by local governments, and by most businesses and individual citizens.

Most important of all, regulation and “price signals” will stimulate development of technologies and practices that can advance human welfare with far lower greenhouse gas emission. A good bit of that development is already underway, but technologies do not magically grow by themselves. According to economic demands, technology may remain stagnant or dash forward to solve problems with remarkable speed. The control of CFCs, for example, turned out to be far easier and cheaper than the regulated industries feared.

To say that such steps are socially or politically “impossible” is to forget that people have made far greater changes once they set their minds to it (think how Americans’ patterns of living and working, even of eating, have changed over the past 50 years!). Citizens can reconsider their personal practices, and put pressure on businesses and governments. This is not a job for someone else, sometime down the road: we have already run out of time. Without delay, nations should join in working out systems for applying standards on the international scale, which is where climate operates. Indeed most nations have already joined in this process, and disdain the United States for standing aside when it should be the natural leader. disparage

The first practical steps, the really cheap and easy ones, will not have a big impact on future global warming. But starting off will give the world experience in developing and negotiating the right technologies and policies. We will need this experience if, as is likely, climate change becomes so harmful that it compels us to make greater efforts.

Like many threats, global warming calls for greater government activity, and that rightly worries people. But in the 21st century the alternative to government action is not individual liberty: it is corporate power. And the role of large corporations in this story until very recently has been negative, a tale of self-interested obfuscation and short-sighted delay. The atmosphere is a classic case of a “commons”—like the old shared English meadows, where any given individual could only gain by adding more of his own cows, although everyone lost from the overgrazing. In such cases only public rules can protect the public interest.

In short: individuals can and should do two things (as I have done). Cut back your greenhouse gas emissions. And at appropriate times let your political representatives know that your vote will be swayed by their actual activity—not meaningless lip service—to push for serious action against global warming. To get advice on both matters, see the links page.

It is now almost certain that global warming is upon us. It is prudent to expect that weather patterns will continue to change and the seas will continue to rise, in an ever worsening pattern, through our lifetimes and on into our grandchildren's. The question has graduated from the scientific community: climate change is a major social, economic, and political issue. Nearly everyone in the world will need to adjust. Citizens will need reliable information, the flexibility to change their personal lives, and efficient and appropriate help from all levels of government. So it is an important job, in some ways our top priority, to improve the communication of knowledge, and to strengthen democratic control in governance everywhere. The spirit of fact-gathering, rational discussion, toleration of dissent, and negotiation of an evolving consensus, which has characterized the climate science community, can serve well as a model.

For more on current developments, see page of links and brief bibliography,
<http://www.aip.org/history/climate/links.htm>