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A Personal Note

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. In the case of climate, waiting for absolute certainty 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 IPCC) that it is *very likely* that serious global warming, caused by human actions, is coming in our own lifetimes. This surely brings a likelihood of harm, widespread and grave (see the 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.

Thanks to the strenuous labors by thousands of people described in these pages, 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. A good start would be to remove all government subsidies for fossil fuels, which are staggeringly large, mostly hidden, and economically unsound. For the United States, another sensible step would be to gradually raise the tax on gasoline by a few dollars (comparable to what most other industrial nations pay, and compensated by lowering other taxes). This would make sense entirely aside from the climate problem, since the money is needed to pay the actual costs of roads, traffic congestion, and medical care for accident injuries and illness due to smog.

A “cap-and-trade” system, which allocates a limited stock of permits to emit greenhouse gases, could be equivalent to a tax on carbon emissions. But the system is prone to abuse, rewarding cheaters and the politically well-connected. The fact that governments favor cap-and-trade points to the widespread corruption of our politics. Still, the system is much better than no action at all.

Governments can also subsidize alternatives to fossil fuels; this too is prone to corruption but often helpful. Most effective over the long run is money spent on research—yet the world's governments are spending much less on energy research today than they did back in 1980.

Other economically beneficial policies could improve fuel efficiency in many areas, protect forests, and so forth. Money can actually be saved while reducing the greenhouse effect by attacking unhealthy smoke emissions and so forth. Such steps can be taken not only by national governments but by local governments, and by most businesses and individual citizens. Americans in particular, responsible for far more of the greenhouse gases now in the atmosphere than any other group, and the people best placed to do something about it, must set an example.

Most important of all, taxation and regulation will create “price signals” that will stimulate development of technologies and practices that can advance national economies with far lower greenhouse gas emissions. Technologies do not magically grow by themselves. According to economic demands, a technology may remain stagnant or dash forward to solve problems with remarkable speed. The control of ozone-destroying CFCs and the emissions responsible for acid rain both turned out to be far easier and cheaper than the regulated industries feared.

To say that strict limits on emissions are socially or politically impossible is to forget that people have made far greater changes once they set their minds to it (think how our patterns of living, 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. The first practical steps, the easiest ones, will not have a big impact on future global warming. But every step will bring experience in developing and negotiating effective technologies and policies. We will need this experience when, as is likely, increasingly grave harm from climate change drives us to greater efforts. If we act now, the job will be far cheaper and easier than it was to suppress Fascism or Communism, and more likely to inspire the best in us too.

Like many threats, global warming calls for increased government activity, and that rightly worries people. But in the twenty-first century, in many areas the alternative to government action is not individual liberty; it is corporate power. And the role of large corporations in this story has been mostly negative, a tale of self-interested obfuscation and short-sighted delay. The atmosphere is a classic case of a “commons”: in the old shared English meadow, any given individual was bound to gain by adding more of his own cows, although everyone lost from the overgrazing. In such cases the public interest can only be protected by public rules.

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 (<http://www.aip.org/history/climate/links.htm>).

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>.