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Climate Change Skepticism: A Virtue or Vice?

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I am especially pleased to have the opportunity to make these remarks at the Paul Nitze School. I first met Paul when he was Secretary of the Navy and I was at the Center for Naval Analyses. By any measure, he was a man of superior intellect and a model public servant.

His approach to problem solving was to work the problem—subject it to exhaustive examination and discussion, to look at it from many different angles, and go over it repeatedly until finally it yielded to a solution. That philosophy is sorely needed in the climate debate.

I have been dealing with the climate change issue since 1992 when I was with the American Petroleum Institute. Obviously, I have a point of view. But, my approach to this or any other problem is based on the belief that problems should be subjected to open minded, rigorous and hard-headed analysis. I believe this has been missing in the climate debate. There has been too much posturing, too much rhetoric, too vitriol and too little working the problem.

Anyone who has followed this issue has heard a lot about so called "skeptics". They are usually described is disparaging terms or as you would the last members of the flat earth society.

I am a skeptic and I welcome the opportunity to explain why. I do not expect that you will accept my perspective, although that would be rewarding. My objective is more modest. I want you to take a hard look at the facts, at the logic behind the different perspectives and to be, at least, a little more skeptical about conclusions that are offered with great certitude. If you do that, I believe that you will conclude that this issue is not a closed book, that healthy skepticism is a virtue, not a vice and that excessive politicization is counterproductive.

We can do better; we should do better.

My major points are:

- Contrary to repeated assertions, the science of climate change is not settled;
- Claims of a "scientific consensus" are a contrivance. Science is not settled by polling;
- I do not know, nor does anyone else, whether climate change over the course of this century will be a scientific curiosity or a serious ecological threat;

The Marshall Institute Policy Outlook series will periodically examine important issues affecting science and public policy. Particularly focused on the use of scientific information in formulating policy decisions, Policy Outlooks will aim to provide clarity and objectivity to policy-relevant discussions.

- Actions have consequences and the consequences of actions associated with the Kyoto Protocol's arbitrary targets and time tables are not trivial;
- The debate is not over action or inaction. It is over actions that match our state of knowledge and can change as new knowledge emerges versus actions that presume an unrealistic level of certainty; and finally
- As former Energy Secretary Jim Schlesinger, recently observed the CO_2-climate change relationship has hardened into orthodoxy that searches out heretics and seeks to punish them.

This climate change issue burst on the public scene in 1989. During a second consecutive, unusually hot summer, a NASA scientist testified before Congress that global warming was taking place and was serious. With that, the apocalyptic bandwagon got rolling. No one paused to consider that just 12 years earlier the National Science Board told the new Department of Energy that the "present time of high temperatures should be drawing to an end…leading into the next glacial age." The fact that scientific opinion could change so radically in little over a decade should have stopped the rush to judgment. And, it should have certainly served as a healthy dose of humility. It did neither. Someone much wiser than me once observed that our greatest problem is not ignorance; it is the presumption of knowledge.

Before turning to the politics and policy issues, I want to comment on the state of climate science. For at least a decade, the foundation of what Jim Schlesinger termed a hardened orthodoxy has been that the "science is settled and that there is a consensus" among scientists that human activities are causing serious ecological problems. These tenets of faith are usually included in skillfully worded statements that imply more than they actually say.

I want to be clear on two facts. And, I stress the word "facts". First, the science on climate change is far from settled. Second, and to repeat myself, I do not know nor does anyone else whether climate change over the course of this century will be the cause of serious ecological damage.

What is settled? We know that global warming is real. It is a good thing because without it the earth's average temperature would be around 0° instead of 59°F. We know that climate changes; it always has and always will. It is accepted that the earth's average temperature has warmed about 1°F over the past century and that atmospheric concentrations of CO_2 have increased as well. It is also generally accepted that human activities have contributed to increases in global temperature, although the magnitude is far from settled. Beyond these few facts, almost everything else is sophisticated conjecture. Most of what we are told by those who claim to be "mainstream scientists" and the media is the result of statistical analyses and the output of climate models which lack a robust scientific foundation and have not been validated.

Are these conclusions fact or the advocacy of someone in denial? My sources are the periodic reports of the Intergovernmental Panel on Climate Change, reports by the National Academy of Sciences, and the Bush Administration's recent climate science strategic plan. That research plan, by the way, involved participation by over 1300 participants in a planning workshop, a public comment period and review by the NAS. What do all of these reports tell us about our state of knowledge? They tell us that what we actually know is far less than what is asserted. What we do not adequately understand is significant and includes:

- natural variability;
- climate sensitivity; which is the effect on temperature from a doubling of CO_2;

- cloud formation;
- water vapor;
- climate feedbacks
- temperature differences between the surface and lower troposphere;
- ocean currents;
- aerosols; and
- solar and lunar influences.

All of these are critical to understanding climate change and to understanding human influence on the climate system. With all of these knowledge gaps, how is it possible to make a case that the science is settled, to identify the human influence on the past century's temperatures or to forecast temperatures 100 years from now? The short answer is that you can't. Those who display a high degree of certitude about the future put too much confidence in models that cannot replicate past temperature and have not been validated. Furthermore, the models that get so much attention produce global projections while what we really need is a capability to make regional assessments. That capability does not exist today.

I want to stress that uncertainty is not an argument against action. Policy makers always make decisions under conditions of uncertainty. But, a clear understanding of the state of science is important because it influences the type of actions taken and the planning horizon that makes sense.

I now want to return to the politics of climate change. I will begin with the correlation of forces that make this the dominant environmental issue.

First, Al Gore, then a Senator, made climate change his primary environmental issue and the basis for his book *Earth in the Balance*.

Second, the 1980s were still a period where predicting impending apocalypse was an effective policy driver. That action forcing strategy may have begun in the 1970s, with the Club of Rome's *Limits to Growth*. Using a sophisticated computer model, *Limits to Growth* predicted impending world wide famine and the exhaustion of resources by the end of the 20th century. That pseudo-crisis was followed by the chemophobia of the 1980s, which was predicated on a growing cancer epidemic caused by the use of chemicals. Climate change then followed. All three predicted catastrophes were grounded in a set of beliefs about industrial activity and economic progress.

Since climate always changes, it is the ultimate apocalyptic issue. Freeze or fry, wet or dry, industrial activity is the culprit and mandates controlling economic activity are the solution. Alarmism is a proven technique for fund raising, gaining recognition and rush to judgment action.

Third, there is a national susceptibility to being misled. This was insightfully documented in 1961 by the eminent historian Daniel Boorstin in his book *The Image: A Guide to Pseudo-Events in America*. Boorstin made the point that there was a growing gap between what an informed citizen needs to know and can know. This gap combined with extravagant expectations, makes us susceptible to being misled and to self deception. We have created a world where reality is tested by images; instead of images tested by reality. Regrettably, it has become easier to exploit problems than solve them.

The response to a growing concern about global warming was the Rio Treaty on climate change. It called for nations to take voluntary actions to reduce CO_2 emissions to 1990 levels, but with the qualifier that actions should take into account national circumstances and economic impacts. It also created a large UN bureaucracy, which by definition, created a strong incentive to make climate change the most serious environmental issue confronting mankind.

To implement the Rio Treaty, the Clinton-

Gore Administration set up about four dozen voluntary climate action programs. However, before they could be fully implemented, the Administration asserted that only mandatory actions would be adequate to address such a global crisis. That conclusion was the result of Al Gore's personal convictions and collaboration with a like minded European Union. The plan of action was the Kyoto Protocol. At the time, I was criticized for stating that the Kyoto Protocol was fatally flawed and would be dead on arrival if it was sent to the Senate for ratification. With the passage of time, its flaws have become more apparent.

During the Clinton-Gore years, I met with people in the Administration, including Vice President Gore, people from the media, environmental groups and representatives from other countries. It was rare to have an open-minded discussion about the case for far reaching global mandates. The case was closed and people like me were not taken seriously, nor were our assessments of economic impacts or the limits of technology. We were dismissed as being naysayers, obstructionists, and tools of industry.

There was no room for accommodation. The middle ground was unoccupied and still is. Efforts to promote cooperative actions were ignored, rebuffed or dismissed as meaningless.

In addition, a number of Clinton Administration officials held the view that technology could be mandated without adverse consequences because industry would make it happen. It always had.

In a meeting that I had with Vice President Gore in Kyoto as chairman of a broad based coalition, I pledged that industry was willing to aggressively support expanded programs on science and technology, increased exports of energy technology to developing countries and expanded domestic climate action programs. That offer was rejected because we were not willing to accept binding emission reduction targets and timetables, which were the foundation of the Kyoto Protocol.

The Kyoto negotiations were a combination of ideology, imagery and political deception. Negotiators were primarily representatives of their nations' environmental ministries, with EU ministers playing the dominant role. Trade, economic and energy ministries were seriously underrepresented. This resulted in a failure to seriously consider the consequences of arbitrary targets and timetables or their practicality.

I believe that one reason for this was the fact that European culture embraces commitments to lofty goals that are pursued pragmatically. This is an important factor. Most European governments work closely with industry in pursuing policies. If good faith efforts at implementation fall short, industry is generally told to keep trying. In the United States, policies are implemented by rigid regulations. Failure to achieve these regulatory requirements leads to fines, enforcement actions and citizen suits. Different cultures and legal regimes lead to different attitudes about mandates.

In addition, Europeans knew that they had a built-in advantage in using 1990 as the baseline for measuring progress. CO_2 emissions in the EU were higher in 1990 than in subsequent years because of the collapse of East Germany and the shift by the UK from coal to gas. And, I am confident that European politicians were well aware that the disproportionate burden of Kyoto on the United States would help them competitively. During the 1990s we were enjoying robust growth, while major European nations were mired in stagnation, and some still are.

The Clinton-Gore Administration knew all of this, but they had their own escape hatch. In July 1997, the Senate unanimously passed an "advice and consent" resolution opposing any treaty that would be economically damaging and exclude developing country participation. When Al Gore told the US negotiators to go beyond President Clinton's bottom line, he knew that the Senate would not ratify the

outcome. What is surprising to me is how many countries did not understand our Constitution or did not believe that it would be taken seriously.

What troubles me more than political game playing is the continued failure to recognize the problems involved in mandating emission reduction targets and timetables, with no real understanding of their practicality or consequences. Even though large developed nations that have ratified Kyoto are not likely to meet their emissions reduction targets, the EU now has adopted a policy to reduce emissions 60% below 1990 levels by 2050. This is a decision to abandon fossil fuels and one that reflects a dangerous mindset.

We have a saying in this country that when you are in a hole, you should stop digging. The EU just seems to keep on digging.

Every independent and credible analysis of the Kyoto treaty has concluded that it would have adverse economic impacts on most nations. The range for the US varies from about a 1% to almost 4% reduction in GDP. That would translate into something between $130 and $500 billion annually or $2000-$5000 per family.

The reason for a large negative impact is simple. Forced reductions in CO_2 emissions involve suppressing energy use. While energy efficiency continues to improve, it is an objective reality that growing economies with growing populations require more energy, not less. Energy per dollar of GDP can continue to decline but there is no way we can grow over time and use less total energy. It also is an objective reality that for the foreseeable future, fossil fuels will remain the dominant source of energy here and most other countries as well.

When I say this, I am often accused of being an apologist for the energy industry. But, last November, a group of distinguished scientists published an article in the peer-reviewed journal *Science* that made the same point. They concluded that the energy needs to support population growth and prosperity were inconsistent with projected stabilization targets. They observed that the "fossil fuel greenhouse effect is an energy problem that cannot be regulated away" and that "since energy is critical to global prosperity… restructuring the global energy system could be the technology challenge of the century."

I believe that the problems afflicting the Kyoto process are more widely recognized than is acknowledged. Politicians and advocates rarely admit error because they believe that the consequences of confession are too great. So, many advocates and their allies stay the course, hoping that something will either vindicate them or provide a bridge to a more rational policy. And, all the while, they remain committed to sanctioning those who challenge the prevailing orthodoxy.

The Middle Ages practice for dealing with heretics is figuratively alive and well. The danger that I see is not policy makers with convictions. We actually need more of those. The danger arises when convictions become arrogant, self-righteousness that is incapable of acknowledging the possibility of error or the possibility of a better alternative.

The late historian, Barbara Tuchman in her insightful book, *The March of Folly*, documented pursuits by governments of policies contrary to their own interest. From Troy to Vietnam, folly has resulted from assessing situations in terms of preconceived notions, ignoring contrary signs and acting according to wish without being deflected by facts.

I believe that a hardened mindset wedded to arbitrary targets and timetables to achieve an arbitrary stabilization goal is what Tuchman termed "wooden headedness". And, I might add, the notion that CO_2 levels have to be stabilized at a level that does not exceed twice the pre-industrial level, a level equated with dangerous human interference with the climate system, is now part of the conventional, mainstream wisdom. There is no scientific basis for this conclusion. But, it has been repeated so often, that it is now accepted as fact

and the reason for the deep cut now philosophy.

There has to be a better way. I have my preference. I just don't know how to get from here to there. President Kennedy in a major foreign policy speech dealing with the then Soviet Union said that peaceful co-existence would come from focusing more on the things that united us and less on those that divided us. If we applied that wisdom to the climate change challenge, I believe that our progress would be greater and so would the level of international trust and cooperation.

What would that involve? If we want facts to matter, we have to distinguish fact from opinion. We have to defend the scientific process vigorously and insist on analytical transparency. We have to encourage healthy debate, not stifle it. We have to acknowledge major gaps in science and focus on programs to fill them. We have to promote greater collaboration on the R&D needed to develop the technology and energy systems that will be needed sometime in the future. We have to focus on the real and serious problems of developing countries. Providing them the technology and private investment they need to achieve reasonable levels of prosperity and well being would have significant environmental benefits and reduce the projected growth in CO_2 emissions. It is also the case that emission reductions are likely to be cheaper in those countries which are also likely to be the most vulnerable. We also need to face up to the reality that virtually nothing we do now will have a major influence on atmospheric CO_2 levels over the next few decades. They will rise and that is a fact.

Finally, we need a healthy dose of humility. It is arrogance to an extreme to believe that we know enough to forecast the distant future with certainty and to put in place specific long term actions to solve potential problems in that distant future, if they materialize. We would be far better to plan only as far as knowledge lets us see and to take small steps, while maintaining the flexibility to adjust actions and policies as we gain new knowledge. In other words, our planning should resemble how Lewis and Clark explored the western territory instead of how we plan an extended global vacation. Uncertainty should determine how far in the future we can plan.

We would also be better off if we abandoned the notion that there is only one way to deal with the climate change risk—The Kyoto target and time table way. Why do all nations have to march down the same road? What is wrong with different approaches tied to specific circumstances but shared objectives? If the EU prefers rigid targets and timetables, it should be free to pursue them. If we prefer a suite of actions that are tied to investing in knowledge and technology and bi-lateral agreements, we should be free to pursue those. Time, transparency and oversight would quickly distinguish effective from ineffective approaches as well distinguish action from rhetoric.

The climate challenge is a long term one—perhaps a century long. Since we do not know and can not know what the world or climate of 2100 will be like, our challenge, and indeed our obligation, should be to create knowledge, to create incentives for using it effectively and to help the world become more resilient. Resiliency, which is associated with prosperity, is the best way to deal with an uncertain future. Promoting long term global prosperity will involve producing and consuming more energy, not less. Eventually we will have to face up to that reality and the fact that dealing with the climate challenge and the challenge of promoting prosperity will involve greater emphasis on technology.

Thank you for letting me share my perspective on the very important issue.