

September 21, 2006

Bob Ward
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Dear Mr. Ward

We are writing to comment on your letter of September 4 that was the subject of a *Guardian* article on September 20 concerning support for groups that do not share your view of climate science.

It is, indeed, unfortunate that the Royal Society is advocating censorship on a subject that calls for debate. The censorship of voices that challenge and provoke is antithetical to liberty and contrary to the traditions and values of free societies. That such a call comes from such a venerable scientific society is disturbing and should raise concerns worldwide about the intentions of those seeking to silence honest debate and discussion of our most challenging environmental issue— climate change.

The foundation of science, as well as its contributions to the betterment of mankind, is based on skepticism and debate. Schools teach that science is the clash of ideas, sharpened by data and observation, and subject to revision and reversal. Political discourse, at least in the United States, rests on the principle that all voices have the right to be heard and that any person is free to associate with whomever they so choose. Science demands those freedoms and scientists ought to embrace them.

The effort to promote and assert a ‘consensus’ on climate change science subverts the basic principles of science and is reaching the point where the very freedoms on which science depends are now in jeopardy – not through action of government but by scientists themselves.

Why we ask is the pursuit of a consensus and a letter such as this required? The letter contends its purpose is to check the spread of misinformation and inaccurate or misleading impression. Yet the proof offered reveals plainly that the debate is really about how different interpretations can arise from the same set of data and studies when different assumptions and models are used. The interpretation of data is not itself a fact. It is simply an opinion and, in a free society, policy makers and the public are free to judge opinions and the weight of evidence that supports them.

The drive for consensus is distorting what the Intergovernmental Panel on Climate Change (IPCC) actually said in its Third Assessment Report. The difference in interpretation reflected in the present debate is more The Royal Society and others not recognizing the uncertainty that was inherent in the IPCC statement. These expert judgments are by their very nature subjective.

Science and the marketplace of ideas for policy are more than capable of separating information and fact from propaganda and pseudo facts. You claim that organizations supported by ExxonMobil are misinforming the public and contributing to “an inaccurate and misleading impression of the evidence on the causes of climate change”. Unfortunately, the Royal Society by its letter is guilty of what it is criticizing others of doing. We document the reason for this conclusion in the attachment which contains specific comments.

You are attempting to stifle that debate and that is dangerous. History contains many examples of the unfortunate consequences of Group Think and censoring dissent. If your call for censorship had been accepted as recently as a few years ago, the serious flaws in the now infamous, peer-reviewed proxy data study by Professor Michael Mann, et al. would not have come to light. That study, as you must be aware, is the main support for the IPCC conclusion you cite about recent temperatures. The shortcomings in the Mann study took at least five years of debate to uncover, yet the study was central to the Third IPCC Assessment. Those shortcomings are now in the peer reviewed literature and just recently an independent methodological review led by Professor Edward Wegman of George Mason University concluded that the “assessment that the decade of the 1990s was likely the hottest decade of the millennium and that 1998 was likely the hottest year of the millennium cannot be supported by their analysis.” In view of the Wegman report, we are puzzled that you chose to cite the 2005 statement by science academies based on that statement since it now has been shown to be invalid.

Clearly, questions about the human impact on the climate are not settled and debate about them and other significant issues about the climate system should be encouraged, not stifled. Our report, *Climate Issues and Questions*, which you must have read in your review of skeptic organizations, documents many of the most important, and, incidentally contains 100 references from the best of the literature, including the IPCC.

The IPCC, the US National Academy of Sciences, and the US Climate Science Strategic Plan, which has been endorsed by the NAS, clearly demonstrate that there are many critical uncertainties in our understanding of the climate system. It is puzzling, therefore, that the Royal Society would endorse shutting off debate. It should logically follow that there are policy alternatives for addressing the climate risk that are consistent with our understanding of the causes of climate change.

Your letter suggests otherwise and implies support for the Kyoto approach and EU policy to reduce emissions 60% by 2050. We believe that approach is most likely to fail and cause unnecessary economic damage in the process. We believe that wise public policy should be flexible, responsive to new knowledge and strike a balance between actions to reduce emissions and the imperatives of promoting economic well-being.

We are also troubled by the fact that your focus on ExxonMobil funding ignores significantly larger funding of environmental advocacy groups that promote the Kyoto mindset and issue inaccurate and misleading statements in pursuit of their policy preferences and agendas.

We would never call for organizations to stop funding them because in free and open societies, free speech and the right of dissent are virtues, not vices. We will not speculate further as to the motives and intent behind this and similar demands for

adherence to a rigid dogma. We can say without hesitation that our organization takes its work very seriously and works diligently toward the realization of a set of actions consistent with our principles and our assessment of the science. We are willing to let the scientific community do its work, generate data, test hypotheses, and educate. We fear others are not.

Sincerely,

William O'Keefe
CEO

Jeff Kueter
President

Comments on Specific Points Raised in the Royal Society Letter

The Royal Society (RS) letter states: “The expert judgment of the IPCC was actually based on objective and quantitative analyses and methods, including advanced statistical appraisals, ...”

■ The IPCC primarily compiles and draws conclusions from that which is in the scientific literature or under the purview of the participants. The IPCC chapter cited in the RS letter speaks about qualitative comparisons, rather than quantitative analyses. As the recent debate over the paleoclimate temperature history has revealed plainly, these studies are subject to numerous and sometimes substantial questions that alter their conclusions significantly. Furthermore, this statement makes clear the point that the debate at hand is one of interpretation of limited available information and data. Expert judgment is not science and neither is the output of models that have not been validated, as opposed to calibrated. The range of possible climate futures produced by running a single scenario through the models relied on by the IPCC make it clear that there is room for differences of opinion and debate.

■ We have no doubt that the authors of Chapter 12 of the IPCC’s Third Assessment Report (TAR) were as objective as they could be, but the RS letter’s claim that the conclusion that Chapter 12 reached “was actually based on objective and quantitative analysis and methods” is not supported by the Chapter. Quite to the contrary, the Chapter’s Executive Summary repeatedly speaks of qualitative consistency between models and observations, but does not give quantitative measures of that consistency. The fact that Chapter 12 of the IPCC cited 167 references, and that its conclusion has been endorsed by a variety of scientific and political bodies does not change the fact that it was based on expert judgment or the degree of uncertainty that it contains.

The RS letter states: “... these statements ... are not consistent with the scientific literature that has been published on this issue” and quotes a conclusion from the TAR.

■ The IPCC reports are solely the product of the scientists who participated in the process and those representatives of government assigned to produce the summary reports. Scientists have declined to participate in the process, citing its overt biases or unwillingness to commit the time and effort demanded. Nevertheless, the chapters themselves detail numerous significant uncertainties. That the participants in the IPCC reached one conclusion does not make that a fact. Fair minded people can reach other conclusions, as the U.S. National Academy of Sciences did when it reviewed this very question and stated: “Because there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases and aerosols, current estimates of the magnitude of future warming should be regarded as

tentative and subject to future adjustments (either upward or downward).” That would hardly be a statement about a field of science that is settled.

The RS letter quotes the IPCC as saying that “most of the observed warming over the past 50 years is likely to have been due to the increase in greenhouse gas concentrations.”

■ The RS fails to explain the important caveats the IPCC uses in assigning meaning to the word *likely*. Footnote 7 in Working Group I’s Summary for Policymakers (SPM) from the TAR reads: “In this Summary for Policymakers and in the Technical Summary, the following words have been used where appropriate to indicate judgmental estimates of confidence: virtually certain (greater than 99% chance of being true) ; very likely (90-99% chance); likely (66-90% chance); medium likelihood (33-66% chance); unlikely (10-33% chance); very unlikely (1-10% chance); exceptionally unlikely (less than 1% chance). The reader is referred to the individual chapter for more detail.”

■ This footnote is appended to every likelihood statement in the SPM. Whenever Working Group I had a basis for providing a statistical measure of uncertainty, they did so and did not use likelihood statements. It is clear from reading the report that anytime a likelihood statement is used, it is the result of expert judgment. And, by choosing *likely* as the term to characterize the evidence supporting attributing climate change to human activities, the Working Group I authors allowed for considerable uncertainty, up to a 33% chance that the statement was not true.

■ These probability estimates make it clear that these are subjective judgments; not probabilities that have been calculated with actual data. Instead, they are no more than the subjective assessments of the people involved in the IPCC process.

The RS letter quotes the IPCC for proof of the claim that temperature effects from anthropogenic activities “can be identified despite uncertainties ... ”

■ There is little question that human activities, that raise people from poverty, allow rising living standards and improve human society, have had an influence on the climate. The question is to what extent and how strongly. As the quote above from the National Academy of Science shows, this is not a settled matter.

■ Further, the Executive Summary of Working Group I Chapter 12 of the TAR contains the following lengthy statement about uncertainties: “A number of important uncertainties remain. These include:

- Discrepancies between the vertical profile of temperature change in the troposphere seen in observations and models. These have been reduced as more realistic forcing histories have been used in models, although not fully resolved. Also, differences between observed surface and lower-tropospheric trends over the last two decades cannot be fully reproduced by model simulations.
- Large uncertainties in estimates of internal climate variability from models and observations, though as noted above, these are unlikely (bordering on very unlikely) to be large enough to nullify the claim that a detectable climate change has taken place.
- Considerable uncertainty in the reconstruction of solar and volcanic forcing which are based on proxy or limited observational data for all but the last two decades. Detection of the influence of greenhouse gases on climate appears to be robust to possible amplification of the solar forcing by ozone/solar or solar/cloud interactions, provided these do not alter the pattern or time dependence of the response to solar forcing. Amplification of the solar signal by these processes, which are not yet included in models, remains speculative.
- Large uncertainties in anthropogenic forcing are associated with the effects of aerosols. The effects of some anthropogenic factors, including organic carbon, black carbon, biomass aerosols, and changes in land use, have not been included in detection and attribution studies. Estimates of the size and geographic pattern of the effects of these forcing vary considerably, although individually their global effects are estimated to be relatively small.
- Large differences in the response of different models to the same forcing. These differences, which are often greater than the difference in response in the same model with and without aerosol effects, highlight the large uncertainties in climate change prediction and the need to quantify uncertainty and reduce it through better observational data sets and model improvement.”

■ The uncertainties listed above are important in considering both the detection and attribution of climate change. Detection of climate change is the ability to say, with some degree of confidence, that the climate has changed. Attribution of climate change is the ability to say, with some degree of confidence, why the climate has

changed. There is little question that in many parts of the world there has been a detectable change in climate in the last century. The IPCC authors are correct in saying that this change can be identified despite the large uncertainties in estimates of internal variability. However, attribution is a more difficult problem, and the high level of uncertainty identified by IPCC gives us reason to question the certainty of their conclusion.

The RS letter contends that “many other papers have been published” in support of the IPCC’s claims.

■ Most of the root causes of uncertainty cited in the quote from the TAR still remain leading one to ask why the Royal Society is having such difficulty accepting that this IPCC conclusion contains a considerable degree of uncertainty, as do many scientific statements.

■ There are many instances where the IPCC reports have been proven wrong, misleading, or overstated as well. The recent book, *Shattered Consensus*, details some of the most significant. The important point is that as our knowledge expands, more data is gathered, and additional creative energy is applied to the questions, what we believe to be true changes. Given such a fluid state of affairs, that reasonable minds might disagree is not only likely, but ought to be encouraged lest we become blind to evidence that challenges the prevailing orthodoxy.

The RS letter claims that the IPCC’s conclusions were endorsed by leading scientific organizations.

■ And, what exactly did this joint statement call for? It demands recognition that climate change is an issue deserving global attention and reaction, which the U.S. has done. In fact, the U.S. is leading real international efforts to curtail emissions growth through development and deployment of new technologies. They also ask for “cost-effective steps” to reduce emissions. The joint statement does not define what those actions are, but the debate over the spectrum of options available is underway.

The RS letter expresses dismay about the spread of “such inaccurate and misleading impressions ...” and urges the condemnation of organizations that, in your view, “have been misleading the public ...”

■ Providing a different interpretation is not misleading the public nor is it providing inaccurate or misleading impressions. To charge otherwise is tantamount to saying that the prevailing belief should never and can never be challenged. We once believed that Pluto was a planet and generations learned of it in that context. Yet, with the expansion of knowledge and sophistication of techniques, we learned that we were wrong and now Pluto is no longer a planet. Is the Royal Society foreclosing the possibility that we will learn more about how the climate functions? Have we reached a point where there is nothing left to learn? The very premises on which science rests reject such views completely and without question.

The RS letter summarizes an ‘ad hoc’ survey of organizations alleged to be providing misrepresentations.

■ Billions of dollars are spent each year by governments, private foundations, and non-profit institutions worldwide in support of the views espoused by the Royal Society on climate change. Perhaps the Society and its allies should look to themselves rather than seek to deny those who question their interpretations the right to speech and the freedom to associate – rights that Americans hold dear.