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Climate Science, Economics and the Orientation of Policies: A Dissenter's Perspective

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Prelude

It is an honour and a pleasure for me to appear today at the Edinburgh Business School of Heriot-Watt University, and it is also a rare and welcome opportunity. I am grateful to the School for inviting me to make this presentation.

First, a personal word. I am not a climate scientist. I am an economist, and a relative newcomer to climate change issues, I became involved with the subject by accident rather than design. To begin with, my main involvement was limited to some economic and statistical aspects of this huge and complex array of topics. Over time, however, my interests and concerns have broadened in ways that I had neither planned nor expected. Increasingly, I have become critical of the way in which the issues of climate change are being viewed and treated by governments across the world, with widespread support from public opinion. I am now a non-subscriber to positions, arguments and policies that find general and often unquestioning support. Today I will outline the minority views – you might well think, the heretical views - that I have come to hold, and my reasons for holding them.

Those views now extend to the subject as a whole not just the economic aspects. In fact, I shall say little about economics as such. Rather, I shall focus more on what economists have said or assumed about climate science, where I am out of step with majority thinking in my profession.

My minority status was brought home to me last Friday (14 November), when I was one of a group of five economists brought together by the *Financial Times* to record a 90-minute exchange of views on climate change issues.[1] It was a good discussion, but I was left with the uncomfortable impression that it would have gone better without me. The other participants were focusing, understandably, on aspects of the subject that I have been less involved with, while my concerns were not theirs. We were on different wavelengths.

My talk is in three parts. In Part 1 I present some background facts by way of setting the scene. Admittedly, this whole subject area is so fraught with controversy that agreement as to the facts is not easily arrived at; but I shall give what I think is a true albeit summary account. I then move on to what are unmistakably matters of opinion and debate, and outline my personal position. In Part 2 I shall be concerned with

[1] An edited version of our exchanges was published on 2 December in a special supplement issued by the FT entitled *Climate Change: Part three: Business*.

diagnosis – that is, with the basis and rationale of current policies relating to climate change. In Part 3 I turn briefly to *prescription* - that is, the actual orientation and content of those policies.

Under both headings, I question what I see as current and pervasive over-presumptions. I present a case for *rethinking*. In doing so, I shall respond in due course to three pertinent questions, three direct challenges, which those who hold views such as mine need to answer.

1 BACKGROUND

A spectrum of opinions

In relation to climate change issues, there exists a widely shared diagnosis and prescription, a body of *received opinion* shared by the great majority of governments and by many of their citizens. Predictably, however, it is not universally shared. Both diagnosis and prescription remain subject to challenge by a varied collection of doubters, sceptics, questioners, critics, non-subscribers, nonconformists – in a word, *dissenters*. Against them, and greatly outnumbering them, are arrayed what I term the *upholders* of received opinion.

Within both groups, again predictably, there are different schools of thought: a whole spectrum of opinions can be identified. At one end, there are what may be termed *strong* or *full-blown* upholders, the dark greens so to speak. Prominent among these are my fellow-economist Nicholas (now Lord) Stern and the team of authors that worked under him to produce the *Stern Review* on the economics of climate change[2]: the *Review* takes the position that global warming arising from human activities 'presents very serious global risks and … demands an urgent global response'. At the other end of the spectrum, strong dissenters – the dark blues - argue that such warming, if indeed its extent can be shown to be significant, is not a cause for alarm or concern: hence 'mitigation' measures designed to curb emissions of (so-called) 'greenhouse gases' should be eschewed - or discontinued, where they are now in place. In between these two far removed positions, there are upholders and dissenters who hold more *limited* or *qualified* beliefs; and in the middle there is often common ground, so that the distinction between the two groups becomes blurred.[3]

Within both broad groups, there are insiders and outsiders. The insiders are qualified to make informed judgements on scientific aspects, while the outsiders are not. I count as an interested outsider.

In commenting on the spectrum, I shall explain why I count myself as a limited rather than a full-blown or strong dissenter. Despite my early affiliations with the University of Oxford, in this context I am not a dark blue.

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[2] Nicholas Stern, *The Economics of Climate Change: The Stern Review,* Cambridge University Press, 2007.

[3] One could alternatively use the terms 'radical' and 'moderate' to distinguish the extremes from the intermediate positions; but the latter term has too favourable a connotation, so that more neutral language seems better. Of course, the above fourfold classification is no more than a first rough approximation.

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An official policy consensus

Received opinion is reflected in an *official policy consensus*. With few exceptions, governments across the world are committed to the view that anthropogenic global warming - from now on, AGW - constitutes a serious problem which requires official action at both national and international level.

This official consensus is not new. Climate change issues, and the extent and possible consequences of AGW, have been on the international agenda for 20 years or more; and it is now over 16 years since governments decided, collectively and almost unanimously, that determined steps should be taken to deal with what they agreed was a major problem. The decisive collective commitment was made in 1992, through the United Nations Framework Convention on Climate Change. The Convention specifies that its 'ultimate objective' is

> 'to achieve … stabilization of greenhouse gas emissions in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.

That agreed objective remains in place today.

In pretty well every democratic country, this official consensus enjoys general cross-party support, not least in the UK. In the world as a whole I can think of only one current political leader who is a convinced and open dissenter, namely, the President of the Czech Republic, Vaclav Klaus. Klaus has brought out a short book on the subject, entitled *Blue Planet in Green Shackles*[4], and he has taken it as the theme for public presentations. However, he does not speak for his government.

Since 1992, many governments have acted, through what is now a wide range of measures and programmes, to curb emissions of CO2. On the international scene, through the Kyoto Protocol, 'Annex I' countries have undertaken to meet specific targets for emissions reductions, and at next year's international gathering in Copenhagen (December 2009) the governments of the world will be considering what further measures, possibly extending to developing countries also, might succeed the Protocol after it expires in 2012.

In taking this course, governments have met with widespread public approval. Backing has come from media commentators, representative scientific bodies including the Royal Society, environmental advocacy groups (the 'NGOs'), and, increasingly, large business enterprises. Further, there is considerable support for the official consensus position among economists. As usual, our profession is far from being of one mind, but I believe that within it upholders outnumber dissenters.

[4] English version published in 2008 by the Competitive Enterprise Institute, Washington, D.C.

The official advisory process

What was it that persuaded governments across the world, over 16 years ago, to take the possible dangers of AGW so seriously, and what is it that has caused them to maintain and even intensify their concerns? I think the answer is straightforward. From the start the main influence was, as it still is, *the scientific advice provided to them.*

That advice can and does come from many sources; but the main single channel for it, indeed the only channel of advice for governments *collectively*, has been the series of massive and wide-ranging Assessment Reports produced by the Intergovernmental Panel on Climate Change (IPCC). The most recent of these, referred to for short as AR4, was completed and published in the course of last year. It chiefly comprises the massive separate volumes issued by each of the Panel's three Working Groups: WGI deals with issues of climate science, WGII with the prospective impacts of possible global warming, and WGIII with mitigation measures. The various documents that make up AR4 come to around 3,000 pages, and some 2,500 experts – authors, contributors and reviewers – were directly involved in preparing them.

The three post-1992 Assessment Reports, including AR4, have served to confirm and reinforce the agreed position that governments arrived at when they adopted the Framework Convention.

The IPCC does not itself undertake or commission research: the Assessment Reports review and draw on already published work. The Panel's own contribution forms only one element in the advisory process. All the same, the IPCC is influential and important in its own right. Its reports carry substantial weight, with public opinion as well as its member governments, because of their wide-ranging coverage of the issues and their extensive and ordered scientific participation. Last year the Panel's work received further and conspicuous recognition through the award of the 2007 Nobel Peace Prize, which it shared with Al Gore.

Through its three working groups, the IPCC covers the whole range of topics relating to climate change, including economic aspects. However, what has chiefly carried weight throughout has been its presentation of climate science in the reports from WGI. For example, the citation for the Nobel award focuses on the way in which the Panel 'has created an ever-broader informed consensus about the connection between human activities and global warming'. Through the whole series of Assessment Reports, the reality of this connection has been taken, by governments and public opinion alike, as the IPCC's central message.

Support for this message, and praise for the IPCC's work, have come from scientists outside the field of climate science and from leading scientific academies across the world. It is often claimed that there now exists a world-wide scientific consensus on climate change issues, sometimes described as 'overwhelming'. For reasons that I will come to, such language leaves me uneasy. Nevertheless, I think it is fair to say that alongside the official policy consensus (which *is* a reality), and providing much of its rationale and support, there exists a body of what I term *prevailing scientific opinion*.

Those who subscribe to it can all be classed as upholders, though as I will note later there are different shades of opinion among them.

To sum up: the core of received opinion, its main ingredient, is that scientific research, as reflected in the WGI reports, has provided increasingly firm and now indisputable evidence of the reality and the serious potential threat of AGW. That belief forms the basis for the official policy consensus and the widespread unofficial support for it.

It is against this background that dissenting arguments have to be viewed and judged. To carry weight, those arguments have to take due account of both the long-established policy consensus and the prevailing scientific opinion which underlies and informs it.

A divided profession

Over the past three years the scope of the official advisory process has been extended: governments have sponsored major studies on the economics of climate change, with coverage and results that go well beyond what can be found in AR4. Leading examples are the 700-page *Stern Review* in the UK, the recent 600-page Garnaut Report in Australia, and published work that has emerged from the IMF.[5]

These various officially-sponsored economic studies count as significant further contributions. In one key respect, however, they have not broken new ground. All of them treat the core of received opinion, as summarised above, as their point of departure. In taking that course, they have confirmed and reinforced the policy consensus, and in fact their authors are to be counted among the strong upholders.

As I have noted, economists, here as elsewhere, are not agreed. Some of our differences on climate change relate to already familiar issues which arise in other areas of policy: a leading instance, and an important one in this context where distant possibilities are in question, is the choice of an appropriate rate of interest for discounting projected future costs and benefits. But the dividing line between upholders and dissenters in economics falls outside the accepted bounds of our subject. It concerns the choice of a point of departure; and this choice depends on a judgement as to what conclusions it is appropriate to draw from arguments and evidence that are scientific rather than economic. Received opinion among economists takes as given what it sees as firm scientific conclusions. Thus the *Stern Review* says at the start that 'The scientific evidence that climate change is a serious and urgent issue is now compelling', while the Garnaut Report take a similar line. For me, such unqualified assertions presume too much. They present as established truth what are in fact no more than arguable propositions which have found expert support. Some of these propositions relate to possible developments decades or even centuries into the future.

Some of my colleagues are apt to view this reaction of mine with a mixture of wonderment and exasperation. Some months ago a distinguished member of the

[5] The *Garnaut Climate Change Review: Final Report* has been published (2008) by the Cambridge University Press. The IMF's flagship publication, *World Economic Outlook*, carried chapters on climate change matters in its issues of October 2007 and April 2008. I have criticised strongly the Fund's work in two articles which appeared in *World Economics* (Vol. 8, No. 4, 2007 and Vol. 9, No. 2, 2008), and the Garnaut Review exercise in a later issue of the same journal (Vol. 9, No. 3, 2008).

profession, whom I will call Professor X, characterised my views, in a friendly email, as 'dotty'. At about the same time another distinguished colleague, Professor Y, wrote to me, with manifest signs of incredulity, as follows:

> 'You have formed the clear and strong view that what is overwhelmingly the opinion of the relevant scientific community in all of the leading countries is wrong. I do not see that there is a rational basis for an outsider to the science taking the view that the weight of established scientific opinion is probably wrong.'

A similar line of argument is to be found on the opening page of the introduction to the Garnaut Report.

Not so: Professor Y and the Garnaut Report share with many others a serious misconception. There is a well recognised difference between questioning and denial, between being an agnostic and being an atheist. The spectrum of dissenters includes both categories. Personally, I count myself as an agnostic, and I have never thought, said or written that 'the mainstream science is wrong'. Among fellow-dissenters, Nigel (Lord) Lawson, takes much the same position. In his recent book on climate change issues, he takes as his starting-point only that 'the science of global warming is far from settled', while noting that there is 'a majority view … which can loosely be called the conventional wisdom' (p. 5).[6]

All the same, my learned friend, and other upholders too, can pose, at any rate to all non-subscribers who share Lawson's position and mine and who count as outsiders, a question which deserves an answer, namely: *Why do you take an agnostic position on scientific aspects, rather than endorsing what appears as considered expert opinion?* This is my Pertinent Question Number One.

In responding to that challenge, I move from facts to matters of debate, and give my reasons for not lining up with received opinion.

[6] Nigel Lawson, *An Appeal to Reason: A Cool Look at Global Warming*, Duckworth Overlook, 2008.

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2 DIAGNOSIS: THE BASIS AND RATIONALE OF POLICY

Unwarranted presumptions

In a word, my case against today's received opinion is that it is seriously over-presumptive. Within it, three distinct but interrelated forms of over-presumption are:

(1) That today's received opinion, as expressed in a range of representative high-level official and unofficial statements, mirrors prevailing scientific opinion and goes no further than that opinion clearly warrants.

(2) That prevailing scientific opinion must now be viewed as no longer open to serious question.

(3) That the process of review and inquiry from which prevailing scientific opinion has emerged, and in particular the IPCC process as its leading element, are professionally above reproach.

In my view, all these mutually reinforcing beliefs are unfounded. They show a lack of awareness of current overstatement, over-confidence, and bias.

Grounds for caution

First, overstatement. Here are some recent and representative high-level specimens of what I call the *sexed-up policy consensus.*

- Tony Blair, as British Prime Minister, together with his Dutch counterpart, in a joint letter of October 2006 to other EU leaders: 'We have a window of only 10–15 years to take the steps we need to avoid crossing a catastrophic tipping point'
- The Secretary-General of the UN, Ban Ki-moon, last year: 'Climate change threatens the whole human family'.
- 150 business leaders, in a double full-page advertisement in the *Financial Times* before last year's Bali conference: 'There is no doubt that the fate of our civilisation hangs in the balance'.
- President Nicholas Sarkozy of France, in a speech made in July this year: 'We now know that we are the last generation that can prevent catastrophe'.
- The International Energy Agency, in its new *World Energy Outlook, 2008* hot from the press: 'Preventing catastrophic and irreversible damage to the global climate ultimately requires a major decarbonisation of the world energy sources'.

These assertions, and many others of their kind, are specimens of currently received opinion. They are put forward as statements of established fact, but in reality they are no more than strongly held beliefs. They do not accurately mirror prevailing scientific opinion, and they go well beyond the more guarded language of AR4.

Interestingly, assertions such as those that I just quoted have been criticised by a leading British climate scientist, Mike Hulme: he described them as constituting 'a discourse of catastrophe [which] is a political and rhetorical device'. Referring to the quotation I just gave from Tony Blair, he described our then Prime Minister as among 'recent examples of the catastrophists', and said: 'The language of catastrophe is not the language of science. It will not be visible in next year's global assessment [AR4] from the world authority of [the IPCC]'.[7] He went on to contrast the respective positions of 'catastrophists' and climate scientists.

[7] In a piece entitled 'Viewpoint: Chaotic world of climate truth', *BBC News World*, November 2006.

I think that Hulme – who, by the way, is no dissenter - was right about the more cautious wording of AR4. But the contrast that he went on to draw does not hold good. Perhaps Blair's and similar positions do indeed deserve to be labelled as 'catastrophist'; but in these matters leading political figures and CEOs are not in the habit of writing their own scripts. In cases such as those I quoted, the wording would have been sanctioned, and in all probability provided down to the last comma, by scientific and environmental advisers. Those persons in turn were drawing on what they saw as established scientific opinion.

The fact is that there is no clear dividing line between 'catastrophists' and climate scientists. It is influential climate scientists, taking a more sombre view than Hulme, who write, or tacitly approve, or provide the inspiration for, the 'catastrophist' scripts and beliefs of leading lay figures. Some of them have made similar pronouncements of their own: a leading example is James Hansen. It was on the basis of views directly conveyed to them by climate scientists that both Stern and Garnaut chose their respective points of departure.

This is not to say that the scientists in question are wrong, nor that the above assertions by leading figures were provably mistaken. The moral to be drawn is twofold.

- First, the alarm-oriented positions widely taken today by political leaders, top international civil servants, eminent scientists in fields other than climate science, leading business executives, influential commentators and media outlets, and an array of NGOs, not to mention some prominent economists, do not mirror the more considered and qualified language of AR4: they go well beyond it.
- Second, in relation to scientific aspects, there is – as one would expect - a range of insider views, even among the upholders, concerning the evidence and the conclusions to be drawn from it. James Hansen and Mike Hulme are located at different points on the spectrum of upholders.

This last observation brings me to my second category of over-presumption.

Grounds for agnosticism

In their 2007 Summit Declaration, the leaders of the G8 countries referred, in a section on climate change, to 'the scientific knowledge as represented in the recent IPCC reports…' Had I been a pre-Summit Sherpa, involved in the drafting of the Declaration, I would have argued strongly, though doubtless in vain, for changing 'scientific knowledge' to 'the weight of scientific opinion'.

In recommending this change, I think I might have had the support of Mike Hulme. In a recent statement he referred to (italics added) '*the limits and fragility of scientific knowledge'* .[8]

The fact is that what is under review here is a climate system of extraordinary complexity which is far from being well understood. The IPCC itself, in its Third Assessment Report of 2001, observed that:

> 'In climate research and modeling, we should recognize that we are dealing with a coupled non-linear chaotic system, and therefore that the long-term prediction of future climate states is not possible'

[8] The statement was headed ''Five lessons of Climate Change', and issued in March 2008.

The same report contained an instructive diagram showing what it described as 'the cascade of uncertainties'.[9] All of those uncertainties remain today, alongside others which, quite properly, were not shown in the cascade diagram;[10] and I would add, as a further aspect, that since 2001 serious questions have been raised about evidence which the Panel has drawn on concerning past temperature changes.

To illustrate the limits of consensus, here is a recent contribution to a climate science blog from an American scientist, Craig Loehle. He wrote:

> 'I am more than a little disturbed by the distinction between climate scientists and sceptics. This implies that no climate scientist has any quibbles with any of the current science. I have a 5 foot tall stack of climate science reprints that begs to differ. I have papers saying Antarctica is gaining and losing ice, that clouds warm and cool (positive and negative feedback), that the calibration of General Circulation Models is iffy, that the dynamical stability of these models is iffy, that the Medieval Warm Period did and did not exist, that the sun is a major and a trivial factor in 20th century climate change, that urban heat islands have and have not been properly accounted for. I only stopped because I got tired of typing. I would suggest that *not one of these issues is "settled" and neither are they trivial for the climate forecasts.*' (Italics added, and I have made a few small editorial changes in the text).

The extent of continuing uncertainty and sheer lack of knowledge about the properties of the climate system, and the wide range of expert views today, form the subject-matter of a notable document brought out a year or so ago by the office of the Republican ranking member of the Environment and Public Works Committee of the US Senate This report is a kind of dissenting anthology: it presents, through summary direct quotation, views of some 400 professionals from different relevant subject areas, all of whom question one or more aspects of prevailing views on climate change issues.[11]

Two leading themes that emerge from the dossier are:

- Since 'the causes of climate change are many, various and very incompletely understood',[12] it is difficult – some would say impossible – to isolate the effects of human activity.
- Natural influences on the climate, as opposed to the consequences of human activity, have continued to predominate. A number of the scientists quoted place special emphasis on solar influences.

For me, the contents of the dossier lend weight to arguments and conclusions in several dissenting pieces relating to climate science that have come my way.

I believe that statements to the effect that 'the science' is 'settled', that the scientific evidence is now 'overwhelming', and that 'the scientific debate is now over', are

[9] The diagram is to be found on p. 79 of the Technical Summary of the report from the TAR's Working Group I.

[10] Additional uncertainties include the behaviour of clouds and aerosols and the properties of the ocean system.

[11] The report is available at http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Blogs&ContentRecord_id=f80a6386-802a-23ad-40c8-3c63dc2d02cb I have to declare an interest here, since I am one of those cited – though not in relation to scientific aspects.

[12] The words here are those of Professor Robert Carter.

unfounded, and not only unfounded but also damaging to the cause of free inquiry. As I have noted, such strong assertions are not drawn direct from the text of AR4. However, they could not have gained such widespread acceptance were it not for the uncritical reliance that is placed on the established official process of review and inquiry, and within it, on the work and role of the IPCC. This brings me to my third aspect of over-presumption.

Grounds for mistrust

Over the past 20 years governments everywhere, and a great many outside observers too, have put their trust in the advisory process as a whole and the IPCC process in particular. I have come to believe that this widespread trust is unwarranted.

Panel and process

Why do people and governments, have so much faith in the IPCC process? I think it is because of the wide and structured expert participation that it provides. People visualise an array of technically competent persons whose knowledge and wisdom are effectively brought to bear through an independent, objective and thoroughly professional inquiry. Indeed, many outside observers identify the Panel with the expert network, as though well-qualified and disinterested experts were the only people involved. The reality is both more complex and less reassuring.

A basic distinction has to be made between the IPCC as such, that is to say the *Panel*, and the IPCC *process*. The two are not the same, and the process involves three quite distinct groups of participants.

The first of these groups comprises the *Panel* itself, along with its two subsidiary bodies. The Panel effectively comprises those officials whom governments choose to send to Panel meetings. They include scientists as well as laymen. Working directly for the Panel is small the IPCC *Secretariat*. A more influential body is the 30-strong IPCC *Bureau*, comprising high-level experts in various disciplines from across the world, chosen by the Panel. The Bureau acts in a managing and coordinating role under the Panel's direction.

A second group is made up of the now 2,500-strong *expert network*, the persons who put together the draft Assessment Reports. This network is separate and distinct from the Panel itself. There is little or no overlap between the two bodies.

Last but far from least, there are the government departments and agencies which the Panel reports to: it is here, and not in the Panel itself, that the ultimate 'policymakers' are to be found. The relevant political leaders and senior officials within these departments and agencies make up the core of what I call the *environmental policy milieu.*

Policy commitment

The IPCC as such has been formally instructed by its member governments, in the 'principles governing IPCC work,' that its reports 'should be neutral with respect to policy'. However, this instruction can only refer to the contribution made by the

expert network through the reporting process. It does not, *and could not*, apply to the other two participating groups. The official Panel members, as also the policy milieu which they report to, are almost without exception far from neutral: they are committed, *inevitably and rightly*, to the official policy consensus. They stand by the objective set out in the Framework Convention and the resulting policy decisions. As officials, they are bound by what their governments have decided. That is the context within which the three successive IPCC Assessment Reports prepared since 1992 have been put together by the expert network and reviewed by member governments. The fact is that departments and agencies which are not—and cannot be—'policy neutral' are deeply involved, from start to finish, in the preparation of the Assessment Reports.

Does that fact in itself put in question the objectivity of the expert reporting process and the draft Reports? As a former national and international official, I would say: No, not necessarily. Policy commitment on the part of member governments could in principle go together with ensuring that the reporting process remained open, thorough, objective and policy-neutral. Many people believe, or presume, that this is the actual situation: they see the reporting process as conducted by an array of disinterested scientists who in their expert capacity are policy-neutral.

I have come to believe that this picture is not accurate, and that the expert reporting process is flawed. Despite the numbers of persons involved, and the lengthy formal review procedures, the preparation of the IPCC Assessment Reports is far from being a model of rigour, inclusiveness and impartiality.

Errors, omissions and lapses

In July 2005 the House of Lords Select Committee on Economic Affairs, in a unanimous report, expressed 'concerns about the objectivity of the IPCC process'. The report was dismissed by Her Majesty's Government, and it finds no place among the 1100 or so references in the *Stern Review*. However, both before and since its publication, critics have drawn attention, in my opinion with good reason, to flaws in the conduct of the process. In this context, I would like to highlight especially the contribution made by two Canadian authors, Stephen McIntyre and Ross McKitrick.[13]

As I noted, it is the reports of the IPCC's Working Group I, on climate science, which have especially carried weight and shaped received opinion. It is the more significant, therefore, that the main criticisms of the IPCC process have related to scientific aspects, as treated in key chapters of the last two WGI reports. The main heads of criticism have been:

- Over-reliance on peer review procedures which do not serve as a guarantee of quality and do not ensure due disclosure of sources, data, and procedures followed in the treatment of data.
- Serious failures of due disclosure in relation to studies which the IPCC has drawn on.

[13] McKitrick's website provides an annotated list of references, while McIntyre's blog, climateaudit.org, is a notable continuing source of analysis, commentary and informed debate.

- Basic errors in the handling of data, through failure to consult or involve trained statisticians.
- Failure to take due account of relevant published work and evidence.
- Failure to take due note of comments from dissenting critics who took part in the preparation of the AR4 WGI report.
- Resisting the disclosure of pertinent documents, despite the formal instruction of member governments that the Panel's proceedings should be 'open and transparent'. And last but not least
- Failure on the part of the Panel and the IPCC directing circle to acknowledge and deal with the above deficiencies.

These basic flaws are spelled out in two recent and notable published papers. The first, by David Holland, is entitled 'Bias and Concealment in the IPCC Process'. The second is by Ross McKitrick.[14] Both papers, with full supporting evidence, put in question, first, the claims to authority of arguments which have been at the core of the IPCC's treatment of the scientific evidence, and second, the objectivity and neutrality of leading IPCC authors and reviewers.

So far as I know, not a single government department or international agency anywhere has taken due note of the work of the various critics and faced up to the issues they have raised. This omission appears to reflect the combined influence of prejudice and inadvertence, in widely varying blends.

I have now come to think – and the thought was not in my mind when I first became involved with climate change issues - that the IPCC process, viewed as a whole and including the expert reporting process, is not professionally up to the mark

The prevalence of bias

How is one to explain the situation that I have just described? I have a straightforward answer. I believe that the flaws in the IPCC reporting process, as in the official advisory process as a whole – *it is not just the IPCC that is in question* - can be largely accounted for by a pervasive bias on the part of the people and organisations that direct and control them. From the earliest days, members of the environmental policy milieu and the IPCC directing circle have been characterised by what my friend Clive Crook, writing in the *Financial Times*, has termed 'pre-commitment to the urgency of the climate cause'.

By way of illustration, here are three high-level public statements made in February last year, following the publication of the draft AR4 WGI report:
- Dr R. K. Pachauri, Chair of the IPCC: 'I hope this report will shock people [and] governments into taking more serious action'.
- Achim Steiner, the Director-General of the United Nations Environmental Programme: 'in the light of the report's findings, it would be "irresponsible" to resist or seek to delay actions on mandatory emissions cuts'.[15]

[14] Holland's paper is in *Energy and Environment,* Vol. 18, No. 7&8, 2007, while McKitrick's piece forms a chapter in a book called *The Global Warming Debate: Science, Economics and Policy*, published in 2008 by the American Institute for Economic Research.

[15] This and the following quotation are taken from a report (3 February 2007) in the *Financial Times*.

- Yvo de Boer, Executive Secretary of the Framework Convention: 'the findings leave no doubt as to the dangers that mankind is facing and must be acted on without delay'.

These are strong assertions. All three top officials went beyond the actual WGI text, to draw their own personal conclusions as to the implications for policy. While they were fully entitled to form and air such opinions, their statements were not just summaries of 'the science', nor of course were they 'policy-neutral'.

In speaking as they did, these officials were conforming to an established pattern. Like their various predecessors in office, they are committed persons; and had this not been the case, and known to be the case, *they would not have attained their leading positions within the environmental policy milieu*. They would not have sought their respective posts, nor would they have been seen by UN agencies and member governments as eligible to hold them, had they not been identified as fully committed to the view that human activities are putting the planet at risk. The advisory process is run today, as it has been from the start, by true believers.

Let me add that it is not only within the environmental policy milieu that this ingrained bias is to be found. Elements within the international scientific establishment appear as strongly committed, rather than neutral and objective, in relation to climate change issues. One aspect of this strong commitment has been a readiness to treat any form of criticism or dissent as 'undermining' established science, while non-subscribers have been portrayed as members of 'an active and well-funded "denial lobby"': they are treated (to use George Orwell's term) as Thought Criminals.[16]

An ill-designed framework.

To conclude my Part 2 argument. In relation to climate change issues, governments generally, and the OECD member countries in particular, have locked themselves into a set of procedures, and an associated way of thinking—in short, a *framework*—which both reflects and yields over-presumptive conclusions which are biased towards alarm. Those conclusions now form the basis of current policies and proposals to go further. They take as their point of departure the results of a flawed process, and they represent a dubious extension of those results

From this critique of the basis and rationale of policy, I turn now, in Part 3, to its orientation and content.

[16] The words quoted are those of Robert (Lord) May, a recent President of the Royal Society, in an article published (6 April 2007) in the *Times Literary Supplement.* The argument of this paragraph is spelled out, with supporting evidence, in a paper of mine entitled 'Governments and Climate Change Issues: The case for rethinking', published in *World Economics*, Vol. 8 No. 2, April-June 2007. The relevant sections are on pp. 206-7 and 219-24.

3 PRESCRIPTION: THE ORIENTATION AND CONTENT OF POLICY

Challenge and response: shades of dissent

Upholders are apt to lose patience with dissenters, viewing them as persons who 'deny' 'the science', favour 'inaction' or 'delay' when it comes to policy, and perversely refuse to see how eminently reasonable it is to pay a modest premium now to avert what expert opinion has identified as a serious long-term threat to the planet. Hence my Pertinent Question Number Two, which gives expression to that point of view:

> *Given that risks of serious damage, and even of outcomes that would be catastrophic, have been clearly identified by expert opinion as possible consequences of AGW in the absence of further strong measures to curb emissions, how can you not accept the case for such measures? How can you justify inaction?*

Not surprisingly, dissenters give different responses to this challenge, and my own response has led some of my non-subscriber friends to feel that, in Margaret Thatcher's memorable phrase, I have been 'going wobbly'. Last March I attended, and spoke at, a well-organised and instructive conference of dissenters in New York convened by the Heartland Institute, an American think-tank; and in the course of the conference a resolution was drafted which participants were invited to sign. This document ends with two recommendations, the second of which is that 'all taxes, regulations, and other interventions intended to reduce emissions of CO2 be abandoned forthwith'. I think that recommendation goes too far, so I did not sign up.

For me, recognising the current over-presumptions and endemic bias for what they are does not entail the conclusion that today's official policy consensus, and the prevailing scientific opinion that it derives from, should be disregarded or rejected with immediate effect. As an agnostic outsider, I hold to the view that prevailing scientific opinion remains open to question; but I do not subscribe to the stronger position, held by some full-blown dissenters, that it has been shown to be ill-founded. This is a judgement that most of us outsiders are not well qualified to make.

In any case, the present situation has to be recognised for what it is. The world is not starting from scratch. Governments everywhere have signed up to the Framework Convention and continued to adhere to it; and many of them have taken action, entered into commitments and created expectations accordingly. They have done so, over a period of more than 16 years, on considered advice which they themselves commissioned and reviewed. All this cannot just be undone or set aside overnight.

What then is my own response to the question of what should now be done? Briefly, I have two proposals for action.

The present case for a carbon charge

Proposal No 1 is familiar, and has a good deal of support among economists. Given the combination of continuing uncertainties, possible risks, past history and the present situation, I am personally inclined to favour the widespread introduction of a moderate carbon tax (or a carbon charge, if you prefer), provided - and these are strong conditions - it can be made to work and is kept revenue-neutral.

As I see it, the case for such a tax (or charge) rests on a number of related grounds.

- First, as things are, and unlike the dark blues, I give some weight to the precautionary case for action to curb emissions.
- Second, and in contrast to other forms of action, a carbon tax is transparent.
- Third, there is something to be said for a tax that (as it appears) a significant number of people would actually view with favour.
- Fourth, a uniform pricing instrument minimises the cost of any given reduction in emissions.
- Last and not least, its adoption might serve to undermine the rationale for the various costly and intrusive forms of intervention – subsidies, targets, prohibitions and regulations - that many governments have already introduced and are keen on taking further: given a tax rate that was judged adequate to the situation, people and enterprises could be left to make their own decisions, without undue prescriptive interference. With luck, a carbon tax could pave the way for getting rid on what my friend Martin Wolf, in his FT column, has aptly described as 'a host of interventionist gimmicks'.

In my scheme of things, such a tax would not necessarily be permanent. Its continuance and level would be subject to continuing review in the light of evidence and experience.[17]

In taking this mildly activist position, I have provided at any rate a partial answer to Pertinent Question Number Two, since I am not denying that AGW could become a problem, nor am I arguing against action of any kind to curb emissions. However, those non-subscribers who are prepared to make these concessions to the upholders expose themselves to a further question, one which my fellow panel members last Friday might have been tempted to put to me had time permitted. The question, my Pertinent Question Number Three, is: *'Why are you making such a fuss?'*

My main answer to this question has already been given in Part 2 above: I have come to believe that the official advisory process is seriously and chronically flawed. In that connection, let me now voice three further thoughts: first, an observation; next, my

[17] Ross McKitrick has put forward the idea of a state-contingent carbon tax. His proposal is that the chosen tax rate should be based on 'the mean tropical tropospheric temperature anomaly, assessed per tonne of carbon dioxide, updated annually'. The logic of this proposal is that 'if greenhouse gases are driving climate change, there will be a unique fingerprint in the form of a strong warming trend in the tropical troposphere … Climate changes due to solar variability or other natural factors will not yield this pattern: only sustained greenhouse warming will do it.' The idea is outlined at the end of the article referred to above in footnote 13.

Proposal No. 2 for action; and last, an additional comment on the bias that characterises official ways of thinking and the advice that reflects them.

The twin faces of risk

First, the observation. It has to be borne in mind that the risks associated with today's policy choices are not on one side only. Upholders characteristically stress the dangers that could arise from AGW and the resulting need for strong, immediate and continuing action to curb emissions. But the stronger and more immediate the actions thus taken, the greater the dangers that they give rise to. Radical programmes to curb emissions could impose heavy and increasing costs on people and enterprises. Further, there is an obvious risk that such programmes will give rise to intrusive restrictions on both freedom of action and freedom of expression. This latter danger is emphasised in Vaclav Klaus's book, which is sub-titled *What Is Endangered: Climate or Freedom?*; and it forms the subject of a recent published piece by a distinguished citizen of Edinburgh, Sir Alan Peacock.[18] What is more, the measures which entail these risks might prove in the event to have served no useful purpose: contrary to received opinion, it could still emerge, in the light of further evidence and experience, that AGW is not in fact a threat.

The possibility should be faced that, in the current state of received opinion, governments will now engage in a speculative, hugely ambitious and potentially damaging world-wide experiment in social engineering, on the basis of what in time will be revealed as over-presumptive beliefs uncritically accepted. It may even be the case that, to quote again Nigel Lawson's book (p. 88), 'mitigation policies [could] turn out to be the greatest misuse of resources the world has ever known'.

Recognising the twin aspects of risk adds weight to the argument and conclusions of Part 2 above. Precisely because the stakes appear so high, there is the more reason for concern about the over-presumptive elements in current received opinion and the professional flaws in the official advisory process. That is why I favour two lines of action, not just one.

Towards a new framework

As to my second proposal, I believe that in relation to climate change issues *a whole new framework of thinking is called for – less presumptive, more inclusive, more professionally watertight, and more attuned to the huge uncertainties that remain*. A leading task of policy should be to establish such a framework and procedures that give effect to it. Let me give you just a flavour of what would be involved.

Specifically, governments could and should take prompt steps to improve the official advisory process. They should insist on proper archiving and full disclosure as a precondition for published work to count, ensure independent expert audit of key results and the evidence and procedures underlying them, and see to it that the IPCC review process actually conforms to their written instruction that it should be objective, open and transparent.

[18] Alan Peacock, 'Climate Change, Religion and Human Freedom', Chapter 6 of *Climate Change Policy: Challenging the Activists*, edited by Colin Robinson (Institute of Economic Affairs, 2008).

More broadly, neither the official policy consensus nor the advice on which it rests should be treated as authoritative or final. Both should be seen, not as established doctrine, but rather as a body of working assumptions. As such, they should be made subject to rigorous testing and review; and it should be a leading concern of policy to ensure that such testing and review takes place. The whole notion of a now-settled consensus should be discarded. Governments should promote open exchanges of view and contrasting informed assessments. It should not be presumed either that 'the debate is over' or that the present official advisory process is fully adequate to its task.

Where so much remains uncertain, unsettled or unknown, policies should be evolutionary and adaptive, rather than presumptive; and their evolution should be linked to a process of inquiry and review which is more thorough, balanced, open and objective than is now the case.

A culture of conformity

As things are, there is little or no chance that such a new framework could emerge in Britain. Policy and research alike are almost entirely in the hands of institutions that appear as firmly committed to currently received opinion. The list of those involved in the advisory and policy process, and spending public money accordingly, includes the new Department of Energy and Climate Change and the relevant segments of some other departments of state, the Office of Climate Change, the Committee on Climate Change, the Meteorological Office, the Hadley Centre, the Tyndall Centre, the National Environment Research Council, the Energy Research Centre, the Carbon Trust, the Environment Agency, and the Sustainable Development Commission.

I do not offer the above list as exclusive; and indeed, sad to say, Her Majesty's Treasury has to be added to it. When I started work on climate change issues, I argued that it was high time for the Treasury to become seriously involved with them. Subsequent events, including the Stern Review, have brought home to me the old adage, 'Be careful what you wish for'.

In all these official bodies, as also in the growing number of non-governmental research centres that have been set up in Britain to work on issues relating to climate change, a common way of thinking prevails. I doubt whether among them there is today, or could ever be as things now are, a single professional staff member who could be identified as even a mild dissenter or non-subscriber: there is no place for such minority thoughts, and no point in voicing them. Her Majesty's Government, with a good deal of unofficial backing, have created and financed a dominant culture of conformity.[19] Some other OECD member governments, and the European Commission, have taken much the same path.

This is not how a leading issue of public policy should be handled.

A final thought

By way of final comment, a brief word on the widely-commended though dubious Precautionary Principle, which forms the rationale for the UN Framework Convention

[19] I took the phrase from a recent lecture by an Australian political scientist, Aynsley Kellow.

and the actions taken to give effect to it. I leave you with a few related thoughts on its use in this particular context,

First, where there are obvious trade-offs, with risks on both sides, the Precautionary Principle should be consistently applied: it may actually point in both directions. The possible costs and risks of action to counter a specified threat should not be neglected or overlooked.

Second, even when the Precautionary Principle appears to have some bearing it should not be given more weight than it deserves, while sexing up is not advisable. Saddam Hussein could indeed have had weapons of mass destruction.

Last, as a rival or parallel guide to thinking and action, let me commend to you what I call *the Eschewing Over-Presumption Principle*. Such a principle in fact forms part of a balanced precautionary approach: to quote Nigel Lawson once more (p. 88), 'perhaps the most important application of the precautionary principle is to the precautionary principle itself'.

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