

THE IPCC: INSTITUTIONALIZED "SCIENTIFIC CLEANSING"

Last year, the Intergovernmental Panel on Climate Change (IPCC) prepared highly publicized reports on the issue of potential global climate change. The scientific portions of those reports originally had presented information and analysis in a reasonably objective and balanced manner. However, after acceptance and approval of the reports by the relevant IPCC bodies, substantial deletions and other significant changes were made to the scientific material that dealt with the highly controversial issue of whether there has been human-induced change in the Earth's climate.

These revisions raise very serious questions about whether the IPCC has compromised, or even lost, its scientific integrity. This is for two reasons. First, the changes were made after formal acceptance of the reports by the relevant IPCC bodies: Second, the changes quite clearly have the obvious political purpose of cleansing the underlying scientific report of important information and scientific analysis that would lead policymakers and the public to be very cautious, if not skeptical, about blaming human activities for climate change over the past century.

Background

The Intergovernmental Panel on Climate Change (IPCC) is an international body of governments that was created by the World Meteorological Organization and the United Nations Environment Program. "The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the risk of human-induced climate change, its potential impacts and options for adaptation and mitigation."¹ In November 1995, the IPCC completed preparation of its "Second Assessment Report" (SAR), which was the first complete IPCC assessment of the issues within its mandate since its first assessment report in 1990. Preparation of the SAR was supposed to occur in the manner specified in the *IPCC Procedures for Preparation, Review, Acceptance, Approval and Publication of its Reports (IPCC Rules)*.

To organize its work, the IPCC created three Working Groups. Working Group I (WGI) deals with science issues. In November 1995, it met in "plenary session" in Madrid. The meeting had two purposes. The first was "acceptance" of the "Full Supporting Material for the Contribution of WGI to the Second IPCC Assessment Report." The "full supporting material," often called the "underlying report," consisted of some 460 pages of detailed discussion of scientific studies on various issues that had been published in the international scientific literature. The second purpose of the meeting was "approval" of a "Summary for Policymakers" of the underlying material.

¹ *IPCC Procedures for Preparation, Review, Acceptance, Approval and Publication of its Reports (IPCC Rules)*, Introduction, p. 1.

Working Group I's underlying report was divided into 11 different subjects, each in a chapter. This material initially was prepared by separate teams of scientists, consisting of lead authors and contributors. It then underwent simultaneous expert and government review. "The objective of this review is to ensure that the reports present a comprehensive, objective, and balanced view of the areas they cover."² "The hundreds of comments received were carefully analysed and assimilated in a revised document that was distributed to countries and NGOs [non-governmental organizations] six weeks in advance of the fifth session of WGI in Madrid, 27-29 November 1995."³

Changes to the underlying reports made by a Working Group are rare, because "the large volume and technical detail of this material places practical limitations upon the extent to which changes to these reports will normally be made by Working Groups . . . at Plenary level. . . ."⁴ For this reason, the IPCC Rules established the concept of "acceptance" of underlying reports by the Working Groups. *Acceptance* "signifies the view of the Working Group" that the objective of the reports' presenting "a comprehensive, objective, and balanced view of the areas they cover" "has been achieved."⁵ At the Madrid meeting of Working Group I, "the underlying 11 chapters of the full WGI report [were] accepted."⁶

The bulk of the Madrid meeting was devoted to Working Group I's review of and debate over a revised draft of a Summary for Policymakers (SPM) of the underlying report. Because SPMs are important summaries designed for policymakers, the IPCC Rules require that they be subjected to "line-by-line approval," which "signifies that they are consistent with the factual material contained in the full scientific and technical assessment accepted by the Working Group."⁷ By far the most contentious part of the debate concerned how to summarize for policymakers Chapter 8 of the underlying report, "Detection of Climate Change and Attribution of Causes."

² *IPCC Rules, Reports Accepted by Working Groups*, p. 1.

³ IPCC Working Group I, *Climate Change 1995: The Science of Climate Change*, Preface by IPCC Chairman Bolin and Working Group I Co-Chairs Houghton and Meira, p. 3 (1996).

⁴ *IPCC Rules, Reports Accepted by Working Groups*, p. 2.

⁵ *Ibid.*

⁶ IPCC Working Group I, *Climate Change 1995: The Science of Climate Change*, Preface by IPCC Chairman Bolin and Working Group I Co-Chairs Houghton and Meira, pp. 3-4 (1996).

⁷ *IPCC Rules, Reports Approved by the Working Groups and Accepted by the Panel*, p. 4.

On November 29, 1995, "the Summary for Policymakers was approved in detail" by Working Group I, and the entire Working Group I report, consisting of the underlying report, a Technical Summary, and the Summary for Policymakers, "were accepted" by the full IPCC at its plenary session in Rome, December 11-15, 1995.⁸

Changes Made to the Scientists' Report After the Report "Accepted" by the IPCC

The printed version of Working Group I's underlying report did not become available until May 14, 1996. The changes made to Chapter 8 of that report, after it was accepted by both Working Group I and the full IPCC, are extraordinary. They change the fundamental character of the chapter, for they obscure, and in several important instances entirely delete, scientific analysis that casts serious doubts about current ability to attribute climate change to human activities.

A few of the most significant changes are:

1) There has been entire deletion of the "Concluding Summary" of Chapter 8, which had contained the following scientific observations, none of which are contained in the new "Summary" at the beginning of the chapter.:

- "Attribution of an observed climate change to a particular mechanism [such as human activities] can be established only by testing competing hypotheses. Thus unique attribution of a 'significant' observed change requires specifying the signals of all likely alternative explanations, and statistical determination that none of these mechanisms is a satisfactory explanation for the observed change. This is a difficult task, *and one that detection studies to date have not addressed in a rigorous statistical way.*"
- "While some of the pattern-based studies discussed here have claimed detection of a significant climate change, *no study to date has positively attributed all or part of that change to anthropogenic [i.e., human] causes. Nor has any study quantified the magnitude of a greenhouse-gas effect or aerosol effect in the observed data - an issue that is of primary relevance to policymakers.*"
- "Any claims of positive detection and attribution of significant climate change are likely to remain controversial until uncertainties in the total natural variability of climate system are reduced."
- "These noise estimates [of natural variability] are the primary yardsticks that must be used to judge the significance of correspondences between modelled

⁸ IPCC Working Group I, *Climate Change 1995: The Science of Climate Change*, Preface by IPCC Chairman Bolin and Working Group I Co-Chairs Houghton and Meira, p. 4 (1996).

and observed changes. They may be flawed on the century time scales of interest for detection of a slowly-evolving anthropogenic effect on climate. The burden of proof that this is not the case lies with climate modellers, experts in the analysis of paleoclimatic data, and with the scientists engaged in detection studies."

These observations were thought to be sufficiently important by the scientists who wrote the original Chapter 8 that they were included in their "Concluding Summary." There was no justification for cleansing the underlying scientific report by means of their wholesale deletion.

2) Scientific analysis that similarly undermined the robustness of conclusions that seek to attribute climate change to human activities also were deleted from the body of Chapter 8. Examples:

- Referring to a number of the so-called "pattern based studies" that considered the possible effect of CO₂ (without regard to sulfate aerosols), Section 8.4.2.1 originally declared without equivocation: *"None of the studies cited above has shown clear evidence that we can attribute the observed changes to the specific cause of increases in greenhouse gases."* This admission has disappeared.
- Referring to studies of changes in global-mean variables, the original Section 8.4.1 of Chapter 8 pointed out: *"While none of these studies has specifically considered the attribution issue, they often draw some attribution-related conclusions, for which there is little justification."* This is now deleted.

3) There have been major changes in the information provided on the issue of "when will an anthropogenic effect on climate be identified?"

- The Chapter 8 accepted by Working Group I and by the full IPCC said: "[I]t is not surprising that the best answer to this question is, *'We do not know.'*" That honest response was eliminated from the revised Chapter 8.
- The Chapter 8 accepted by Working Group I and by the full IPCC pointed out that *"[f]ew if any would be willing to argue that unambiguous attribution of this change to anthropogenic effect has already occurred, or was likely to happen in the the next several years."* The changed version says: *"few would be willing to argue that completely unambiguous attribution of (all or part of) this change has already occurred, or was likely to happen in the next few years."*

- ▶ Eventual attribution of climate change to human activities either will or will not be unambiguous, for "unambiguous" means "not ambiguous."⁹ By now referring to a standard of "*completely* unambiguous," the revisionists have set up a meaningless standard that appears designed to justify a conclusion of human effect on climate, even though the facts and related analysis are not clearly susceptible to such conclusion.
- ▶ Even though the standard for attribution was changed from "unambiguous" to "completely unambiguous," the revised text now suggests that the few scientists who argue that this is possible believe it can be done in a "few" years, rather than having to wait for "several" years, which was the position described for them in original Chapter 8.
- The revisionist version of Chapter 8 now contains a gratuitous attempt to draw a distinction between "practically meaningful" and "statistically unambiguous" attribution. This is an attempt to suggest that policymakers' decisions, to the extent they might be influenced by conclusions on the difficult issue of attribution, need not wait for rigorous scientific analysis. Those who rewrote Chapter 8 had neither the license nor the competence to express any view on whether policymakers should or might base their decisions on a concept of "practically significant" attribution, which they invented after the Madrid meeting of Working Group I.

4) The Chapter 8 accepted by Working Group I and by the full IPCC called attention to important scientific investigations that will be necessary in order to draw conclusions about attributing climate change to human activities. The original Chapter 8 made plain that those scientific investigations had not been undertaken. The revised Chapter 8 downplays the importance of these scientific inquiries or claims they are underway, or both. Examples:

- Section 8.3.3.3 of original Chapter 8 pointed out that "*there are still serious concerns about the longer time scale [natural] variability [i.e., longer than decadal variability] Unless paleoclimatic data can help us to 'constrain' the century time scale natural variability estimates obtained from CGCMs [coupled general circulation models], it will be difficult to make a convincing case for the detection and attribution of an anthropogenic climate change signal.*" The section now has been cleansed of that candor.
- Section 8.3.2 of original Chapter 8 pointed out that "*scientists have been unable to use paleoclimate data in order to reconstruct a satisfactory, spatially comprehensive picture of climate variability over even the past 1,000 years.*" In the new version of Chapter 8, there is no reference to such inability, and,

⁹ Webster's New Collegiate Dictionary, p. 1262 (1979).

instead, it is claimed that "[i]nitial attempts are now being made" to reconstruct the 1,000-year record.

- Section 8.2.5 of the original and revised Chapter 8 points out that "reliable definition of an anthropogenic signal," derived from pattern-based studies, which are the principal basis for current attribution claims, "requires (at the very least!) a reliable estimate of present-day SO₂ emissions and their spatial distribution, and an accurate interpretation of these in terms of a forcing pattern." However, the section admits that the "current magnitude and the historical evolution of the radiative forcing is uncertain" for sulfate aerosols. Originally, the section also admitted: "Current pattern-based detection work *has not attempted* to account for these forcing uncertainties." The revised section claims that such effort "is now beginning."

5) New, argumentative material is completely one-sided and not objective. A good example is the attempt to explain away the significance of the fact – admitted even by the new Chapter 8 – that "[t]o date, pattern-based studies have not been able to quantify the magnitude of a greenhouse gas or aerosol effect on climate." The new text argues that this "does not mean that this fraction [attributable to human activities] is negligible" and asserts that the analysis of the studies "implies that there may be a non-negligible human effect on global climate."

The inability of the sophisticated studies (upon which Chapter 8 is based) to measure the purported human effect on climate certainly raises the serious question as to whether such inability reflects the fact that the human effect is so small that it cannot be measured. The revised chapter offers no explanation as to why a non-negligible effect cannot be measured. If those responsible for this argument – which they did not make to the Madrid meeting of Working Group I – had a commitment to objectivity, one would think they would have acknowledged that admitted inability to measure the perceived human effect at least casts some doubt on whether that effect is "non-negligible."

6) Some of the material added after acceptance of the original report by Working Group I is inconsistent with other facts contained even in the revised report. Noteworthy is the new statement in Section 8.4.1.3 that certain studies "suggest that human activities have had a measurable impact on global climate," even though, as noted, it is conceded that no study has been able to measure the purported human effect.

Changes to the "Accepted" Report Violate the Letter and Spirit of the IPCC Rules

Nothing in the IPCC Rules permits or contemplates that anybody, regardless of position, has the right to change the underlying report of the IPCC scientists once it has been *accepted* by the Working Group. Recall that the Working Group I report was accepted by *both* Working Group I and by the full IPCC, sitting in plenary session.

It may be argued by some that, at the very end of the Madrid session, Co-Chairman Houghton announced that the Lead Authors would "conform" the underlying report to the Summary for Policymakers that had just been approved by the body. His statement was made when the majority of delegates already had left the meeting because of the lateness of the hour (past midnight) and sheer exhaustion. There was no reasonable chance for objection or discussion, because his statement was made at a time when the relatively few remaining delegates¹⁰ were in a rush to adjourn, since they had been warned that the doors to the building were going to be locked at 1:00 a.m.

But the Houghton announcement, with or without objection, is meaningless. This is because Working Group I had no authority to change the IPCC Rules, which had been adopted by the full IPCC at its June 1993 plenary session in Geneva.

It has been suggested that the reason for deleting the all-important Section 8.7 is that no other chapter of the Working Group I report contains a "Concluding Summary." So what? There is nothing in the IPCC Rules or in its established procedures that dictates whether chapters can or cannot have a "Concluding Summary" or whether there has to be rigid uniformity of format among chapters. Note, in this regard, that the underlying reports of Working Groups II and III contain some chapters with, and some without, a "Summary" or "Conclusions" at the end. If somebody legitimately had been concerned about that feature of the original Chapter 8, there was every opportunity to raise the issue at the Madrid meeting, so that Working Group I could have decided whether, in the circumstances, format conformity was more important than anything else. Neither Co-Chairman Houghton nor anybody ever even hinted that "conforming" the underlying scientific report to the Summary for Policymakers would involve ripping out of Chapter 8 the facts and analysis that the authors felt was a fitting conclusion to the extremely complex material in the preceding 17 pages of text.

The argument based on format conformity is nothing other than *post hoc* rationalization for sanitizing Chapter 8 by eliminating the carefully worded "Concluding Summary" that had been accepted by Working Group I.

It also may be claimed that Section 8.7 was deleted to avoid redundancy between the "Summary" at the beginning of the chapter and the former "Concluding Summary." Any such claim is spurious. The revised "Summary" conveniently omits all of the previously identified disclosures that had been set forth in Section 8.7. The effect is to present an entirely different thrust to the scientific analysis. For example, the "Summary" states: "Increasing confidence in the emerging identification of a human-induced effect on climate comes primarily from such pattern-based work." Objectivity and balance would have required that it be accompanied by the disclosure in the former

¹⁰ The ever-diminishing attendance at the meeting, as it wore on into the night, prompted one delegation to mention possible lack of a quorum. However, since IPCC management was unable to state whether a quorum required attendance of one-half or merely one-third of the IPCC nations, the issue was dropped.

"Concluding Summary" that "no [pattern-based] study has positively attributed all or part of that change to anthropogenic [i.e., human] causes. Nor has any study quantified the magnitude of a greenhouse-gas effect or aerosol effect in the observed data - an issue that is of primary relevance to policymakers." Indeed, the inability to quantify the purported human effect is further obscured by the reference in the new "Summary" to "these quantitative studies."

The conclusions of Working Group I on the issue of human attribution were highly contentious. Indeed, because of the differences in points of view expressed at the Madrid meeting, it was not at all clear, late in the evening of November 29, that a consensus could be obtained prior to adjournment as to what the Summary for Policymakers should say about the issue. In this circumstance, it was more important than ever that the underlying report faithfully adhere to the provisions of the IPCC Rules which command "a comprehensive, objective, and balanced view of the areas they cover" and that the IPCC achieve its purpose of assessing "on a comprehensive, objective, open and transparent basis the scientific . . . information relevant to understanding the risk of human-induced climate change"

When important scientific information is deleted from the underlying report prepared by scientists, and when new material is added, in order to conform that report to the political views of those anxious to attribute climate change to human activities, the resulting document is neither comprehensive, nor balanced, nor objective. When this information is deleted from, or added to, scientific reports that previously were *accepted* by governments and there has been no opportunity for widespread government and expert review of the secretly rewritten product, the action is neither open nor transparent.

As is evident, this is not an instance of minor, purely editorial changes that have no substantive significance. In crucial respects, the printed version of Chapter 8 bears little resemblance to the final text that was submitted to Working Group I. That text took into account comments received during the widespread expert and government review of the earlier draft. The debate in Working Group I centered on what the Summary for Policymakers should state, not on possible changes to underlying Chapter 8. Everybody recognized that Chapter 8 contained facts and analyses that were not consistent with each other, but that posed no problem. This was because everybody understood the requirement of the IPCC's Rules that its reports "clearly identify disparities of view for which there is significant scientific or technical support."¹¹ **Working Group I never called for cleansing the underlying report, and any suggestion that the Lead Authors or anybody else were given authority to do so is wholly without merit.**

The IPCC Rules contain an explicit mandate: "It is important that reports describe different (possibly controversial) scientific or technical views on a subject,

¹¹ *IPCC Rules, Organization of Work*, p. 2.

particularly if they are relevant to the political debate."¹² That requirement embodies the simple, ethical concept that scientific reports dealing with issues as to which there is lack of scientific certainty should tell both sides of the story in a straightforward manner, rather than obscuring views for the sake of political expediency.

The IPCC now is faced with an embarrassing situation. On at least the issue that has received more media and public attention than any other, its published report on the science of potential global climate change defies *both the letter and the spirit* of the IPCC's Rules governing its reports.

Unless the management of the IPCC promptly undertakes to republish the printed version of the underlying Working Group I report so as to conform it to the version that formally was accepted not only by Working Group I, but by the full IPCC, the IPCC's credibility will have been lost.

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¹² *Id.*, Review by Governments, p. 3.