The Hand of Government in the Intergovernmental Panel on Climate Change

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FRASER INSTITUTE
2022

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Executive Summary

Since 1990, the Intergovernmental Panel on Climate Change (IPCC) has produced regular assessments of the state of climate science and also provided reports on particular aspects of climate science when requested by the United Nations, its primary sponsoring entity. The IPCC has long advertised itself as an unbiased and objective reporter on the state of climate science, and even otherwise independent-minded people often base arguments about the consequences of climate change on IPCC numbers. By explaining the origins, structure, process, and output of the IPCC, this essay shows that such reliance on the IPCC is badly misplaced. The IPCC is not and has never been an objective science assessment organization. It was created by and has always been controlled by the governments of countries that perceive political benefits from international regulatory action to reduce greenhouse gas emissions. The IPCC is a scientific advocacy organization. It presents science that supports costly regulations to reduce greenhouse gas emissions while suppressing or ignoring entirely scientific work that shows that the costs of such action is likely far higher and the benefits far lower than advertised.

As this study shows, while the IPCC advertises its reports as produced by a process involving peer review by thousands of outside reviewers, not only are many "outside" review comments actually submitted by authors or contributors to IPCC reports, but the IPCC has no mechanism to ensure that outside review comments have any impact. Authors of IPCC reports are overseen only by review editors who are themselves chosen by and responsible not to scientists but to IPCC government officials. In any event, IPCC authors have complete discretion to disregard review editor comments—and any external review comments.

Predictably, this process has generated assessment reports that repeatedly ignore published scientific work that contradicts or qualifies the methodology and conclusions drawn by those reports. For example, in its most recent 2021 report on the the physical science of climate change, the IPCC says with "high confidence" that surface temperatures over the last 50 years have increased at the fastest rate in the last 2000 years. What the IPCC report completely fails to say is that because instrumental surface temperature measurements only became generally available in the

late nineteenth century, "measurements" prior to that time are not measurements but reconstructions from temperature proxies such as tree ring growth records. Different temperature reconstructions vary enormously, and according to several such reconstructions, temperatures today are not higher than temperatures reached during the Medieval Warm Period about 1000 years ago. Even worse, the 2021 IPCC report fails entirely to note that recent surface temperature increases are much larger than trends in the troposphere measured by satellites, a divergence that many scientists take as indicating that surface temperature trends do not reliably measure the influence of rising atmospheric greenhouse gases, but rather have been caused by the vast and rapid urbanization and land conversion that occurred throughout the world in the latter half of the twentieth century.

IPCC reports are highly selective, typically ignoring or dismissing scientific work that questions the methodology or contradicts the conclusions drawn by such reports. Summaries of IPCC reports, which are widely disseminated to the media and general public, are written line by line not by scientists, but by the government officials who comprise the IPCC panel, and such summaries must receive unanimous approval from those officials before release. These summaries often make claims about climate science that are completely unsupported by the full reports they ostensibly summarize and often even contradict material included in the summaries themselves.

For example, in the *Summary for Policymakers* of its 2021 report on the physical science of climate change, the IPCC stated with confidence that "human induced climate change" has caused increases since 1950 in the frequency of both heavy precipitation events and severe drought. But the figures and data in the summary itself do not support these headline claims. The data and figures show that in the vast majority of regions in the world, there has been no increase in the frequency of either type of severe weather event. Likewise, the figures and data actually report that in few if any regions of the world (to be precise, 2 out of 47) is there any evidence of a human contribution. Thus the headline statements in the summary are not even supported by the summary, let alone the full report ostensibly being summarized.

International climate policy should be based on a full and fair assessment of what is known and not known regarding the causes and consequences of global climate change. The IPCC has never produced such an assessment, and its structure and processes ensure that it never will. The IPCC in fact misleads more than it informs, and its continuing existence is harmful to sound policy design.

Introduction

The United Nations and the World Meteorological Organization created the Intergovernmental Panel on Climate Change (IPCC) in 1988. It has now produced six increasingly long and detailed assessments of the state of climate science as well as many special reports on associated subjects. Contrary to popular belief the IPCC is not a scientific organization; it is an administrative entity consisting of delegates from governments of 195 member states. The panel organizes periodic plenary meetings to oversee the work of the IPCC bureau, a 30-member agency headquartered in Geneva that directs the working groups. They, in turn, manage the process of producing assessment reports on scientific and socioeconomic topics related to climate change according to procedures developed by the IPCC. The IPCC itself was created not by scientists but by politicians. While its operating principles declare that its reports should be "neutral with respect to policy," in practice its conclusions must be approved by the sponsoring government delegates, and the drift towards policy advocacy has become steadily more pronounced over time.

Users of IPCC reports, especially policymakers, need to have a clear picture in mind of the kind of entity the IPCC is. Using the analogy of a courtroom it is tempting to suppose that the IPCC is like a judge who listens to both sides then renders a judgment. But a close look at its procedures and the way it has handled numerous controversies in the past suggests that a better analogy is that of an advocate or witness for a particular side. In other words, the IPCC's development and operations, especially over the past two decades, are best explained by supposing that it assembles the evidence and argumentation that serves the interests of its sponsoring entities, who are openly committed to an ambitious climate policy agenda.

In its assessment reports and other publications, the IPCC has, when confronted with conflicting evidence, consistently selected and highlighted that which supports policy action to reduce human greenhouse gas emissions. It has downplayed, and often ignored outright, scientific evidence casting doubt on the need for such action. This is not surprising once users understand the detailed structure of the IPCC, as distinct from its popular image. The IPCC is under the directional control of, and entirely depend-

ent for funding upon, those national governments who, largely for reasons of international competitive strategy, favour immediate action to reduce human GHG emissions. Like any expert witness, the IPCC has served the interests of its clients.

The purpose of this brief study is to demonstrate, as much as the allotted space allows, the truth of these claims. Toward this end, I begin by recounting the historical background of the IPCC's creation. That background is not one in which the world was confronted by disasters due to warming temperatures that cried out for international action. The IPCC was not created to provide a scientific explanation for any actual perceived environmental problem. It was pushed by fossil-fuel-poor countries who wanted evidence that an environmental problem *might someday* arise if developed countries didn't take coordinated action to move off fossil fuels.

The IPCC's structure, process, and output closely mirrors this political goal. Interested government parties control, either directly or indirectly, every aspect of the process by which the IPCC assesses and reports on climate science. While physical and social scientists write the full assessment reports, political appointees who comprise the IPCC bureau choose those scientists. And the final versions of policymaker summaries of the full reports, which are released to the press and public months before the reports that they ostensibly summarize, can be written and must be approved line by line entirely by the political members of the panel, not by scientists.

Given that politicians intentionally control this process, it is to be expected that the assessment reports and other reports and summaries produced serve political, not scientific goals. Such documents marshal scientific evidence in favour of policy outcomes preferred by the client states who fund and control the IPCC. As I demonstrate with a brief discussion of what the IPCC says in its 2021 *Assessment Report* (the sixth such report, which I refer to at times as AR6) about recent temperature change, reports misleadingly ignore or dismiss scientific work that casts doubt on report conclusions. They do not disclose and thoroughly discuss caveats and conditions on the validity of the work they cite as supporting. Standing alone, without rebuttal, the reports do not provide a basis for rational policy, but invite potentially catastrophic policy error.

The Political Origins of the IPCC[1]

The notion that human activities may affect earth's climate dates back at least to Aristotle, who thought that the "vapors and exhalations of a country determined its climate." Thomas Jefferson believed that civilization had caused temperatures to increase in both Europe and the United States. Only in the late 19th century, however, did actual measurements and meteorological data become available so that hypotheses about weather and climate could be mathematically formulated and tested against evidence. In 1895, Svante Arrhenius, a Swedish electrochemist who won the Nobel Prize in chemistry for his discovery of the mechanism of electrolytic dissociation, published a paper setting out a mathematical model proposing how changes in the concentration of atmospheric carbon dioxide might cause fluctuations in the earth's climate. Using experiments and observations done by scientists such as Anders Ångström, Arrhenius predicted that the general relationship between temperature and atmospheric carbon dioxide was logarithmic (linear increases in carbon dioxide cause less than linear increases in temperature), and predicted that a doubling of atmospheric CO2 would cause a 3 to 4°C increase in global average temperature.

In many ways, Arrhenius's analytical model was path-breaking. The logarithmic relationship that he found of atmospheric CO_2 concentration to global temperature (holding all else constant) is still today a foundation for computer models of climate. Many of the sixth generation suite of computer models that the IPCC used for its 2021 Assessment Report still generate Arrhenius' 3 to 4°C prediction for temperature sensitivity (the increase in global temperature due to a doubling of CO_2). But in in other ways, Arrhenius has been proven to be way off the mark.

What Arrhenius was really interested in was not prediction, but explanation. By the late 19th century, scientists had accumulated geologic evidence that over very long time scales (millions of years), the earth's climate has undergone enormous variation—from 8 or 9°C warmer than the present during the Tertiary period that ended 2.5 million years ago, to 4 to 5°C colder during the last ice age, which ended about 12,000 years ago

[1] This section draws from and at points reproduces small passages from chapter 11 in Johnston (2021).

with the onset of our present Holocene era. Arrhenius believed that variations in atmospheric CO_2 could explain such massive climate variation. But Arrhenius also knew that CO_2 absorbed electromagnetic radiation only in a relatively narrow bandwidth. For CO_2 to have been the driver of such radical changes, atmospheric CO_2 would have had to undergo similarly enormous variations.

Unfortunately for Arrhenius's theory, evidence of such vast variations in atmospheric CO_2 never turned up. By the 1950s, prevailing scientific opinion held that the ice ages and other major changes in the earth's climate had been caused by some combination of variations in the earth's orbit, solar activity, and mountain building due to tectonic shift. As for CO_2, by the mid-twentieth century, it was well known that CO_2 and water vapour absorb radiation mostly in the same spectral (wavelength) regions, and also that water vapour is by far the more powerful absorbing gas. Scientists believed that atmospheric CO_2 was already accomplishing its maximum absorption so most scientists doubted that CO_2 could have much independent effect on the earth's climate.

Of course some scientists believed differently, arguing that variations in CO_2 were an important driver of contemporaneous observed climate change. In 1958, the US Geological Survey reported that the Arctic ice pack was 40 percent thinner that year than in 1944 and that the sea level was rising at a rate of two feet per century, several times greater the previous estimate of only half a foot per century. Two years earlier, physicist Gilbert Plass had stated his view that "[i]f at the end of this century, measurements show that the carbon dioxide content of the atmosphere has risen appreciably at the same time the temperature has continued to rise throughout the world, it will be firmly established that carbon dioxide is an important factor in climate change" (Fleming, 2005: 132).

In stating merely that the correspondence of rising CO_2 with rising temperatures established CO_2 as an "important factor in climate change," Plass' statement epitomizes the caution characteristic of scientific statements about the physical world. There was no mid-twentieth century flurry of scientific interest in the impact of rising levels of atmospheric CO_2. Governments became interested in contemporaneous climate change well before large scale scientific interest in the topic. During the 1970s, scientists were still focused on finding an explanation for long term climate fluctuations. Governments saw no urgent need to fund such research. Nor was there contemporaneous public concern over global warming. Indeed, the 1970s was a decade of falling temperatures, making it in many regions of the world the coldest decade of the entire 20th century. In the US it was concern over "severe climatic anomalies" such an early frost in the US

Midwest in 1974 and the coldest winter ever recorded in the US in 1977 that led Congress in 1978 to create the National Climate Program.[2]

It wasn't, however, cold weather that accounted for rising international interest in climate during the 1970s. It was the perception of an "energy crisis." The infamous "stagflation" of the 1970's—simultaneous inflation and recession—was triggered by the Arab oil embargo of 1973-1974 and subsequent overnight quadrupling in the price of oil engineered by the global oil cartel OPEC. The "crisis" of the 1970s was not a climate crisis, but an energy crisis, the fear that economies in the developed world would soon run out of the fossil fuels that had created the industrial age.

The world's nations were then and are now not equally at risk from a global shortage of fossil fuels. Some countries, such as the United States and Canada, have abundant domestic supplies of oil, coal, and natural gas. Others, in particular most European countries and Japan, have highly developed, fossil fuel-dependent economies but have much more limited national fossil fuel resources. From the point of view of such fossil fuel poor countries, moving away from fossil fuels has been viewed as a necessity. But it is a costly one, with potentially devastating consequences for international economic competitiveness and national economic growth. Since the 1970s, fossil fuel importing countries have had a national policy imperative to ensure that all major developed countries bear the costs of an energy transition away from fossil fuels. An international agreement to move away from fossil fuels has long been the end goal.

As early as 1974, various international organizations began to work toward the goal of reducing reliance on fossil fuels. In 1974, the International Energy Agency (IEA) created the Coal Working Group. That group's purpose was to explore the "means by which countries interested in minimizing their dependence on imported oil could cooperate" (Smith, 1978). It was this institutional goal that motivated the Coal Working Group to report in 1978 on possible causes of long term fluctuations in climate.

Around the same time, other international governmental organizations became interested in climate change. In 1974, the World Meteorological Organization (WMO), a body consisting of the directors of government meteorological offices, created the first climate change expert panel. As interpreted by one climate historian, the WMO "recognized technological and political opportunities" presented by climate change and charged a panel to "consider the possibility of global warming in preparation for the 1975 WMO World Congress" (Boehmer-Christiansen, 1994:

[2] National Climate Program Act of 1978, P.L. 95-367, 92 Stat. 601 (1978) (as amended at 15 U.S.C. §§2901-2908). See 15 U.S.C. §2904(d) for the mission of the new office.

154). In 1975, the United Nations General Assembly validated the new WMO panel by formally asking the panel to "prepare a definitive statement on the climate change issue and to develop plans for an integrated international effort to study climate changes and the implications for man's natural environment and for world food production" (Boehmer-Christiansen, 1994: 154).

Thus by 1975, a pattern had been set that directly led to the creation of the IPCC: the UN would request and support an "international effort to study climate changes and the implications for man's natural environment" (Boehmer-Christiansen, 1994: 154). The UN already had an agency, the United Nations Environment Program, that could direct such an effort. UNEP is not a scientific organization. It is governed by a board ("bureau") consisting of a small number of rotating United Nations ambassadors. UNEP's mission is to not only to assess global, regional, and national environmental conditions, but to foster the development and growth of environmental regulation, both in the form of international agreements and at the national level.

The skyrocketing oil prices of the 1970s prompted a massive worldwide explosion in oil exploration and production. With oil coming online from the North Sea and Mexico during the mid-1970s, by the early 1980s it was clear to many people that the world's oil was not going to run out anytime soon. This made pursuit of the climate change issue perhaps the only justification for a global agreement to move away from fossil fuels. As the WMO had several times failed to advocate a clear climate change policy, UNEP took the lead. After all, its leader Mustafa Tolba had already spoken at the First World Climate Congress in 1979 of an "uncontrolled experiment" with global climate and the UNEP began "using the climate change threat… to advance its own more policy-oriented research agenda and to draw attention to global mutuality and therefore questions of development" (Boehmer-Christiansen, 1994: 155).

During the 1980s, with strong support from the German government in particular, UNEP and the WMO sponsored a series of conferences on the role of carbon dioxide and other greenhouse gases in explaining climate variation. With participation numbers steadily growing over the decade of the 1980s, these meetings further developed the template for the future IPCC. The scientists who attended a conference in Villach, Austria in 1985, for example, were selected by UNEP and WMO officials, and included many government scientists and scientists on contract with governments. The meeting's output was a set of scientific papers, the so-called SCOPE 29 Report, that was "peer-reviewed" by participating scientists. It was so similar to subsequent IPCC Assessment Reports in both "substantive and presentational ways," that "a senior British IPCC coordinator

and scientist has called the [SCOPE 29 Report] the bible of the IPCC" (Boehmer-Christiansen, 1994: 157). Yet the conference had a distinct focus not on science but on policy. Its WMO and UNEP organizers, many of whom were involved in policy research, urged participants to encourage "a 'wider debate on such issues as the cost and benefits of a radical shift away from fossil fuel consumption'" (Franz, 1997: 14, citing WMO, 1986: 17). As policy historian Sonja Boehmer-Christiansen has described it, "the meeting can be seen as having been called by scientists from energy-poor, pro-nuclear European countries jointly with environmental activists from the USA and members of the UN scientific bureaucracies" (Boehmer-Christiansen, 1994: 156). After the 1985 meeting in Villach, UNEP Director Mustafa Tolba "began active consultations for a possible convention with WMO… He also wrote to then U.S Secretary of State George Schultz urging the U.S. to take appropriate actions" (Agrawala, 1998: 609).

By the end of the 1980s the WMO and UNEP jointly sponsored climate change meetings had grown in size, including, for example, 341 delegates at the 1988 Toronto meeting. But they also became more openly political. Of the 341 delegates at the 1988 meeting, only 73 were physical scientists, versus 20 politicians and ambassadors, 118 legal advisors and senior government officials, and 50 environmental activists, with 15 agencies of 24 international organizations also represented (Franz, 1997: 27). The conference report's recommendations were "drafted by a committee composed mostly of environmentalists and discussed in less than a day" (Bodansky, 1994: 53). Those recommendations differed strikingly from the science-focused recommendations of conference reports from the early 1980s. They stridently recommended "immediate action… to counter the ongoing degradation of the atmosphere… An Action Plan for the Protection of the Atmosphere needs to be developed, which includes an international framework convention" (Franz, 1997: 28). Thus by 1988, the year of the IPCC's creation, the purpose of such an international organization was clearly not to foster scientific inquiry into climate change, but to marshal evidence supporting international policy action on climate change.

Politics All the Way Down: The IPCC's Structure, Process and Output[3]

It was against this backdrop—the burgeoning success of a concerted effort by environmentalists, a relatively small group of scientists, and key international organizations to put global warming on the agenda for international policy action—that the IPCC was created in 1988. The 1988 UN resolution on climate change (UN General Assembly Resolution 43/53) called for the IPCC both to provide "internationally coordinated assessments of the magnitude, timing and potential environmental and socio-economic impact of climate change" and "to initiate action leading as soon as possible to… the identification and possible strengthening of relevant existing international legal instruments having a bearing on climate; [and] elements for inclusion in a possible future international convention on climate" (Bodansky, 1994: 53). As this resolution makes clear, since its inception the IPCC's mission of "assessing" climate change has been inexorably linked to the goal of future international policy action on climate.

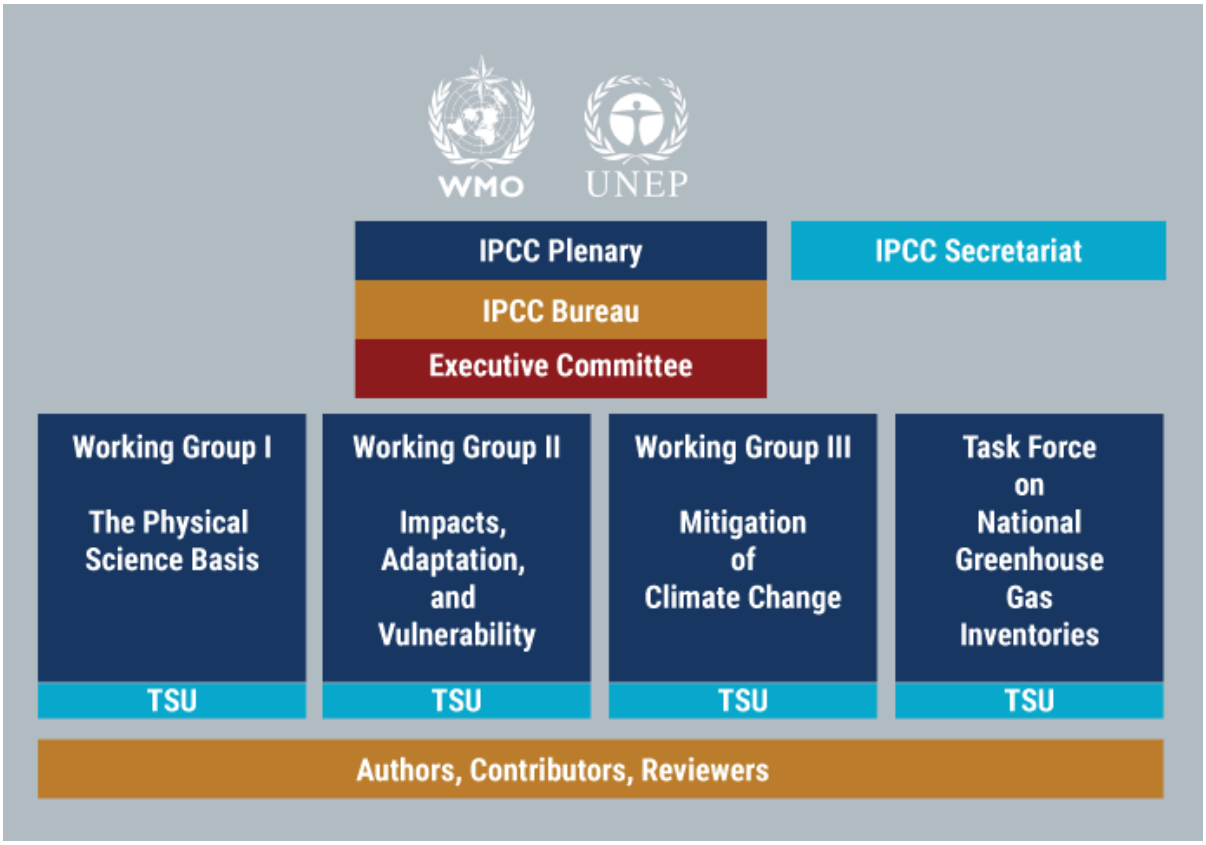
The IPCC structure and process

By vesting ultimate control over virtually every aspect of the process by which IPCC reports are produced not to scientists but to government appointees, the IPCC's structure and process directly reflects its mission of producing science that supports the international political goal of climate change policy action. The government appointees who comprise the IPCC panel have ultimate control over every aspect of the process by which IPCC assessment reports are created.[4] The panel sets guidelines for assessment report production and chooses the members of the bureau, a group that directly supervises the assessment report production process. The bureau is composed of the IPCC chair, several IPCC vice chairs, and

[3] This section draws from and at points reproduces small passages from chapter 12 in Johnston (2021).

[4] My discussion here is based on Johnston (2012: 17).

Figure I: IPCC Structure



Source: IPCC, 2022a.

other IPCC leaders. The actual assessment reports are produced by three working groups that produce three separate reports: The Physical Science Basis working group (WGI), the Impacts, Adaptation and Vulnerability working group (WGII), and the Mitigation of Climate Change working group (WGIII). The bureau selects the lead authors who are in charge of producing these working group reports. The bureau does not give notice of its choice of coordinating lead authors and lead authors for the IPCC assessment reports. Although the IPCC says vaguely that the choice of coordinating lead authors and lead authors is based on "their publications and works," the Bureau does not make public the criteria by which these choices are made (McKitrick, 2012: 61). Figure 1 graphically depicts the IPCC's structure (IPCC, 2022a).

While the main output of the IPCC process is full assessment reports, a *Summary for Policymakers* is written for each working group report. While scientists who have written the full working group report write the first draft of each *Summary for Policymakers*, governments then comment upon and revise that draft. Then, over several days, a plen-

ary session of the entire IPCC panel of government representatives goes through the summary line by line. During this review, although scientists responsible for the full working group reports and initial summary drafts are involved, governments may insist that portions of the summary be completely re-written or deleted entirely. This barebones description of the IPCC structure and process indicates generally how the entire IPCC process of science "assessment" is subject to top-down control by the government representatives who control the IPCC. The way in which this process operates to produce science advocacy, rather than science assessment, comes into sharper relief when we look at two key stages: production of the *Summary for Policymakers* and the expert review process.

The IPCC Summaries for Policymakers as political propaganda

Over the years, the full IPCC assessment reports have increased in length from a few hundred pages each to well over a thousand pages for each working group report. Summaries are much shorter and are made widely available to the media, environmental interest groups, and politicians across the world. The summaries make various assertions about climate science that are backed up with citations to the full reports. Up until the 2021 *Sixth Assessment Report* (AR6), if a curious reader wished to compare the content of a section of the full report with its summary discussion, she could not do so. The reason is that until 2021, the IPCC released the *Summary for Policymakers* many months before the report it summarized was made publicly available.

This changed with the AR6 in 2021, when the IPCC released the *Summary for Policymakers* at the same time it released the full report being summarized. What did not change was the dominant role of governments in producing the summary. As was the case for previous assessment reports, working group lead authors wrote drafts of the summary and they were exposed to outside review. But governments then reviewed every draft of the summary.

Moreover, while the IPCC panel of government appointees must formally endorse all IPCC working group reports, the panel takes a much more direct role in producing a *Summary for Policymakers*. The panel may simply "accept" material in a full report, where "acceptance" means that the panel does not unanimously agree on every line or section but nevertheless unanimously agrees that the material "presents a comprehensive, objective and balanced assessment of the subject matter" (IPCC, 2022b). But for a *Summary for Policymakers*, the procedure is radically different.

The full panel of government, not scientific, officials goes over each and every line in a summary and a summary is not released to the public until the panel "approves" it. As the IPCC explains, "'approval' means that the material has been subjected to detailed line-by-line discussion and agreement. Hence whereas scientists produce each *Summary for Policymakers* draft, every final *Summary for Policymakers* has been produced and unanimously approved, on a line by line basis, by the politicians who comprise the IPCC panel.

To be more concrete, consider the process by which the IPCC produced the *Summary for Policymakers* of its most recent *Working Group I Assessment Report* on the physical science of climate change. The full IPCC panel set aside eleven days of virtual meetings, from July 26 to August 6, 2021, to produce this summary. All members of the panel, plus working group chairs and vice chairs could participate in these meetings. Crucially, the panel did not issue the summary until every line in it—including every headline statement, supporting statement, table, and figure—received consensus, *unanimous approval* by all panel members. To achieve such consensus, the IPCC set up a complicated multi-step process under which after presenting the draft summary (actually a revised draft in light of a first round of panel member comments), its scientist authors met with members of the bureau to respond to all comments. If their responses did not resolve country objections, then so-called "contact groups" and "huddles" were arranged. These were meetings, chaired by bureau members, during which objecting countries were to "clarify concepts and advance consensus," meaning that they would "reach agreement on wording for specific text" (IPCC, 2021c: 4-5).

The content of IPCC policymaker summaries is thus determined, line by line, not by scientists but by IPCC government representatives. Ever since the first IPCC *Assessment Report* in 1990, critics have charged that the policymaker summaries produced via such a process contain exaggerated claims that are unsupported not only by the full *Assessment Reports*, but even by the information contained in the summaries themselves. For example, the AR6 summary produced in the July-August 2021 sessions contains the dramatic headline statement that:

> [t]he frequency and intensity of heavy precipitation events have increased since the 1950s over most land area for which observational data are sufficient for trend analysis (high confidence), and human-induced climate change is likely the main driver. Human-induced climate change has contributed to increases in agricultural and ecological droughts in some regions due to increased land evapotranspiration (medium confidence). (IPCC, 2021a: 8)

Yet the figures[5] and data presented in the summary itself actually show that drought has only increased in 12 out of 47 regions, and that in 45 out of these 47 regions, there is no evidence of a human contribution. As for "heavy precipitation events," the figure accompanying the summary headline sentence shows that only 19 regions out of 47 even experienced an increase in heavy precipitation events since 1950, and that in 45 out of 47 there is only low confidence of a human contribution. There is, moreover, no explanation as to why the year 1950 was chosen as a baseline when throughout the report itself, the baseline is the entire period 1850-1900.

As an example of divergence between the summary and the AR it supposedly summarizes, consider what was said in the 2013 AR5 about the observed pause or hiatus in warming surface temperatures that occurred over the period 1998-2011. A crucial problem in climate science is how to distinguish slow natural cycles in climate from long term secular changes due to a buildup of atmospheric CO_2. The 2013 *Summary for Policymakers* to the Working Group I report on climate science said the panel had "medium" confidence that a pause in global warming that occurred between 1998 and 2011 was due in part to natural internal climate variability (IPCC, 2013: 15). But the summary went on to say (IPCC, 2013: 17) that over the longer period 1951-2010, it was "likely" that natural internal climate variability had contributed only between -.1 and .1°C—or 0°C on average—to global temperature change. The section of the full report that was supposedly being summarized in this passage actually says that the climate models being referred to have no ability to reproduce any of the long term climatic cycles that generate internal variability.[6] Thus the underlying IPCC report does not support a statement, with any degree of confidence, about the contribution of internal climate variability to 1951-2010 global temperature change.

Outside "review" of IPCC Assessment Reports: Not thousands of disinterested scientists, but self-review by science advocates

By whatever system the authors of IPCC assessment reports may be chosen, the widespread faith in these reports flows primarily from the belief that they are subject to rigorous peer review. As recounted by Johnston (2012, 17-18) by advertising its careful two stage review process involving thousands of experts, IPCC leaders have convinced many scholars that

[5] In particular, IPCC, 2021a: 10-11, Figure SPM.3.

[6] With citations to the IPCC, 2013: 801-807, in Johnston, 2021: 415-417, I detail the IPCC's explanation for the models' failure to explain the major ocean-atmosphere cycles.

the IPCC's review process is "exhaustive." After such review, the IPCC says, "normally" two review editors then "make sure that all comments are taken into account" (McKitrick, 2012: 62). The reality about such peer review may be much different, however, and even the best peer review is irrelevant if authors are free simply to ignore what peer reviewers say when they publish.

As for the type of peer review to which IPCC assessment reports are subjected, consider chapter 9 of the IPCC's 2007 *Working Group I Assessment Report* on the physical science of climate change. This is a very important and controversial chapter on the attribution of climate change to human GHG emissions. There were 56 contributing authors for this chapter and 62 reviewers. Seven of the reviewers were also authors, three of the reviewers were authors of other IPCC chapters, and 26 were authors or coauthors of papers discussed in that chapter, 10 of whom argued in favour of their own papers in their review comments. Thus a majority of the reviewers for this chapter, 32 out of 62, were either IPCC chapter authors or authors of papers being reviewed. Reviewing one's own work, "self review," is not what is meant by peer review. Peer review means that an expert in the field other than the author reviews the author's work. If we remove "outside" reviewers of this attribution chapter who were self-reviewing their own work, there were only 30 truly independent outside reviewers of the 2007 attribution chapter. Of these, only four expressed general support for the chapter (McKitrick, 2012: 63).

Even negative outside reviews of a chapter, however, can be completely ignored by lead authors of such a chapter. In this, the review process for IPCC reports is completely unlike the process employed by peer-edited scientific journals. Under the IPCC process, it is the authors themselves, not editors or reviewers, who determine whether to make revisions in light of outside comments. Once the authors have written a chapter, there is no outside scientist who can deem it unpublishable, and the authors have sole discretion over its contents, regardless of how negative may be any comments by outside scientist reviewers.

Up until 2000, the IPCC gave the job of "evaluating and incorporating" outside peer reviewers' comments to chapter lead authors. This flips the peer review process on its head. Peer reviewed journals have editors who send articles out for outside peer review, and the editors then determine whether in light of such outside reviews, the articles should be accepted, required to be revised, or simply rejected. Up until 2000, the IPCC gave a very limited editor's job to chapter authors, making authors responsible not for deciding whether to publish their chapter—that decision had already been made when the chapter was written—but whether to modify it in light of outside comments.

Since 2000, members of the bureau who serve as working group co-chairs select two scientists to be "review editors." Review editors are supposed to "advise lead authors on how to handle contentious/controversial issues and ensure that genuine controversies are reflected adequately in the text of the Report" (IPCC, 2010: 89). However, one of the two review editors "normally" should be a member of the working group that produced the report or of the bureau in charge of the working group, while the other should be an "independent expert" chosen from a list of experts put together by IPCC governments (IPCC, 2010: 87). Thus the two review editors consist of an individual involved in producing the report and an expert taken from a list put together by the governments in charge of the entire process. Procedurally, this is akin to limiting the choice of the editor of a peer-reviewed journal to members of the article author's own department or school.

It is important to see that such review editors have a completely different job than that undertaken by journal editors who make the decision whether to accept or reject or request revision of an article. The task of IPCC report review editors is limited to ensuring that lead authors "take account" of critical outside reviews. Lead authors are free to simply reject critical outside comments. Review editors can only ensure that lead authors considered such comments; they cannot overrule the lead author's rejection decision (McKitrick, 2012: 64).

In the fall of 2009, thousands of emails were leaked from the University of East Anglia's Climate Research Unit (CRU), an organization that produces one of the two or three most widely used datasets on historical surface temperatures around the globe, the so-called HadCRUT dataset. The emails revealed leading establishment climate scientists continuously communicating with one another about how to make sure their work and opinions on climate science and policy would defeat the views of scientists whose work conflicts with the establishment view. This incident was dubbed "Climategate" by some in the media.

Concerned that Climategate had weakened public confidence, in 2010 the IPCC and the UN together enlisted an outside institution, the InterAcademy Council, to review the IPCC's processes and procedures. The InterAcademy Council criticized virtually the entire process by which the IPCC produces its assessment reports, ranging from the "lack of criteria" for selecting key participants in the assessment process to failure to follow its own rules requiring that non-peer reviewed sources be clearly identified as such (Johnston, 2012: 38-39). The council's report pointedly called the role of IPCC review editors "weak," observing that "Review Editors do not fully use their authority to ensure that review comments receive appropriate consideration by Lead Authors and that controversial

issues are reflected adequately in the report" (IPCC, 2010: 52). The Inter-Agency Council encouraged review editors to "fully use their authority" to ensure that reports reflect "adequately" ongoing genuine scientific controversies.

The council cautioned, however, that while this reform would "strengthen the review process," it wouldn't create actual independent review of IPCC reports. To be independent, review editors would need to be chosen by and report to some individual or organization not involved in writing the report; instead, review editors are chosen by the working group co-chairs who have "overall responsibility" for the reports.

The council was not optimistic about the prospect for such truly independent review, concluding that there was no "scientific body [with] the recognized scientific legitimacy and capacity" to carry out independent review of IPCC reports (IPCC, 2010: 23). This dismal observation was inevitable. The IPCC assessment report process was designed so that governments could control and influence the scientific assessment process to produce reports consistent with the activist goals that gave birth to the IPCC in the first place. Selecting lead authors whose chapters accomplish this goal would be completely subverted were the lead authors subject to being overruled by "review editors" chosen by independent scientists rather than politicians.

The IPCC's output: Distorting the scientific literature to find "consensus"

Given the flaws in the IPCC process, it would be unexpected if the IPCC produced reports that provide a balanced assessment of what is in the scientific literature. Instead, IPCC reports are only fulsome in regards to the evidence supporting the position that recently observed climate change is unprecedented, attributable to human GHG emissions, and will cause harm unless immediate steps are taken to reduce such emissions. While mention of contrasting evidence can sometimes be found in the reports, it is typically handled in a brief, argumentative, and dismissive manner. IPCC working group reports support the IPCC's preferred policy outcome: immediate and costly steps to reduce GHG emissions.

IPCC reports employ advocacy techniques that are familiar not just to lawyers and regulators but to anyone who has tried to persuade someone to take action based on what is supposedly the best evidence. Fifteen years ago, I posted a paper online, *Global Warming Advocacy Science: A Cross Examination*, cataloguing such advocacy techniques. More recently, in *Climate Rationality: From Bias to Balance*, I have presented a more

detailed discussion of the many, many ways in which IPCC assessment reports present a misleading picture of what is actually in the peer-reviewed scientific literature.

Here, I have space for just a single example of such misleading science advocacy. The case for costly action to reduce GHG emissions is much stronger if people believe that temperatures today are higher and increasing faster than ever before. According to the IPCC's most recent *2021 Working Group I Assessment Report 6*, this is true. The report says that "since around 1950, GMST [global mean surface temperature] has increased at an observed rate unprecedented for any 50-year period in at least the last 2000 years" (IPCC, 2021b: 317). The report spends about 15 pages heralding all the new data that has become available that allows it to speak with "high confidence" about temperatures from thousands (and even millions) of years ago.

Of course, relatively dense sets of instrumental temperature measurements go back only to the late 19th century. Nowhere does the IPCC mention that the temperature "reconstructions" that it relies on—created by using proxies for temperature such as tree ring data and fossilized pollen—are contradicted by many other temperature reconstructions in the peer-edited scientific literature, and have been shown by some such studies to likely be statistical artifacts. This work flatly contradicts the statement that the IPCC makes with "high confidence." Instead of presenting and discussing such contradictory work and explaining why the work that the IPCC favours is more accurate and reliable, the IPCC *Assessment Report 6* ignores or dismisses it.

Perhaps even worse, in focusing on the last 50 years of instrumental measures of surface temperature change, the IPCC fails to disclose that many scientists believe that surface temperature records for the last 50 years are biased and unreliable. Satellite-measured temperatures for the lower atmosphere, the troposphere, have been available since 1979, and since 1958 from weather balloon records. These also show warming, but at a rate below the increase in surface temperatures. Also suggestive of biases in surface temperature trends is the fact that measurements of the heat content of the upper ocean show much less warming than recorded in the IPCC's surface temperature data. The IPCC presents a very long and dramatic discussion of recent trends in surface temperature without discussing evidence that the surface temperature trends may significantly overestimate recent warming.

There are many well-known reasons why the trend of rising surface temperatures broadcast by the IPCC is likely biased upward. Among these are the steady and continuing trend of land development and urbanization. Such land development is known to increase average daily temperatures by

increasing nighttime temperatures in particular. For many regions of the world, in particular Africa, the vast majority of weather stations where the IPCC gets its surface temperature measurements are in urban areas that have undergone massive increases in developed land area and population since 1950. The IPCC's AR6 has no discussion of this at all, saying there is nothing new in the literature since its 2013 AR5, but even if that were true (which it isn't) the topic wasn't settled in 2013 so the discussion needs to be carried forward. The temperature change measures that the IPCC has relied on attempt to correct for urbanization bias by comparing temperature increases in urban areas to those in nearby but rural locations. But for many regions of the world—much of Asia, South America, and Africa, for example—there are simply *no* high quality weather stations outside of the urban areas, so there is no reference series from which to compute an urbanization bias adjustment. While it once at least acknowledged the many published scientific papers explaining these problems, the IPCC's latest assessment report now ignores the issue entirely, relying on its own prior decision to ignore previous work as permanently settling the question.

The IPCC Process as Anti-Science: Obfuscating and Misleading in the Pursuit of "Consensus"

Since its inception, the IPCC has claimed that it finds and expresses the scientific "consensus" regarding climate change. But on important and interesting scientific questions one should never assume there is a consensus. That is why the questions are considered to be important and interesting. A process that offers a guarantee of finding and declaring a consensus runs the risk of fabricating one even if it doesn't exist. As argued by many others over the years (see, for example, Curry and Webster, 2011), IPCC reports systematically fail to acknowledge key uncertainties and contradictions, ignoring published scientific work that casts doubt on important, policy-relevant report conclusions. Given the governance structure of the IPCC, the assessment process is not appreciably different from what we would see if the IPCC explicitly ordered its author teams to marshal evidence supporting a set of pre-ordained conclusions.

Climate policy has largely moved past the IPCC. Compared with earlier reports, the 2021 AR6 attracted very little media and public attention. This may be because people have come to assume they already know what the IPCC reports will say so there is no need to look at them anymore. Indeed, the political discussion and media coverage of the most recent reports frequently used alarmist language not found in either the report or the summary. For example, UN Secretary-General António Guterres declared the 2021 Working Group I report to be a "code red for humanity," with "greenhouse-gas emissions from fossil-fuel burning and deforestation… putting billions of people at immediate risk" (Climate Discussion Nexus, 2021, August 18). Media commentators completely failed to point out that nowhere had the IPCC Working Group I itself made any such assertions.

Nor need climate activists worry that the IPCC or the scientists who produce IPCC Reports will ever challenge such distortions and exaggerations of what is actually known about climate. The IPCC's status and authority can freely be invoked by progressive socialist politicians across the world when they declare the existence of a "climate crisis" neces-

sitating precipitous global policy responses, knowing that the IPCC will never produce a report, or even draw attention to the contents of its past reports, critical of such rhetoric no matter how much it contradicts the science. Because the mission of the IPCC—the government entity, not the scientific working groups—has been since its inception to provide evidence supporting climate change policy action, to conclude that the evidence does not show a "climate crisis" would run counter to the reason for the IPCC's existence. The fact that the IPCC could never produce a report countering alarmist excesses and misrepresentations shows that the panel exists primarily to serve the international political goals of a majority of UN member states. It is, and always has been, a political not a scientific organization. It is not an impartial observer of scientific progress; it is an advocate for one side in a longstanding policy movement and the apparent triumph of that movement has diminished the panel's ongoing relevance. Ironically, however, the IPCC approach strengthens the need for an assessment process that would actually do what people have long, and wrongly, assumed the IPCC does, namely, provide a balanced and accurate assessment of the scientific literature on climate change.

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Acknowledgments

The author thanks the anonymous reviewers for helpful comments on an earlier draft. Any remaining errors are the sole responsibility of the author. As the researcher has worked independently, the views and conclusions expressed in this paper do not necessarily reflect those of the Board of Directors of the Fraser Institute, the staff, or supporters.

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Date of issue

September 2022

ISBN

978-0-88975-707-3

Citation

Johnston, Jason Scott (2022). *The Hand of Government in the Intergovernmental Panel on Climate Change*. Fraser Institute. <http://www.fraserinstitute.org>.

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