

ERRORS COVERTLY CORRECTED BY THE
I.P.C.C. AFTER PUBLICATION
AND
UNCORRECTED ERRORS BY AL GORE

BY

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EXAMPLES OF ERRORS COVERTLY CORRECTED BY THE
I.P.C.C. AFTER PUBLICATION
OF ITS 2007 *SUMMARY FOR POLICYMAKERS* ON THE
SCIENCE OF CLIMATE CHANGE

ERROR 1

A 10-FOLD EXAGGERATION IN THE EFFECT OF MELTING ICE-SHEETS ON
SEA-LEVEL RISE

The first table of figures in the UN's *Summary for Policymakers* as first published, Table SPM-0, sets out four sources of sea-level rise, and quantifies each of them:

TABLE SPM-0

*Observed rate of sea-level rise and estimated contributions
from different sources*

Source of sea level rise	Rate of sea level rise (m per century)	
	1961 – 2003	1993 – 2003
Thermal expansion	0.042 ± 0.012	0.16 ± 0.05
Glaciers and ice caps	0.050 ± 0.018	0.077 ± 0.022
Greenland ice sheets	0.05 ± 0.12	0.21 ± 0.07
Antarctic ice sheets	0.14 ± 0.41	0.21 ± 0.35
Sum of individual climate contributions to sea level rise	0.11 ± 0.05	0.28 ± 0.07
Observed total sea level rise	0.18 ± 0.05 ^a	0.31 ± 0.07 ^a
Difference (Observed minus sum of estimated climate contributions)	0.07 ± 0.07	0.03 ± 0.10

It is at once evident that the fifth row of the table, entitled *Sum of individual climate contributions to sea-level rise*, has not been added up correctly:

<i>Metres per century</i>	1961-2003	1993-2003
1. Thermosteric expansion	0.042	0.160
2. Glaciers and ice-caps	0.050	0.077
3. Greenland ice-sheets	0.050	0.210
4. Antarctic ice-sheets	0.140	0.210
UN sum of lines 1-4:	0.110	0.280
Correct sum of lines 1-4:	0.282	0.657

The UN has now quietly corrected Table SPM-0, and has relabelled it Table SPM-1:

TABLE SPM-1

Observed rate of sea-level rise and estimated contributions from different sources

Source of sea level rise	Rate of sea level rise (mm per year)	
	1961 – 2003	1993 – 2003
Thermal expansion	0.42 ± 0.12	1.6 ± 0.5
Glaciers and ice caps	0.50 ± 0.18	0.77 ± 0.22
Greenland ice sheet	0.05 ± 0.12	0.21 ± 0.07
Antarctic ice sheet	0.14 ± 0.41	0.21 ± 0.35
Sum of individual climate contributions to sea level rise	1.1 ± 0.5	2.8 ± 0.7
Observed total sea level rise	1.8 ± 0.5 ^a	3.1 ± 0.7 ^a
Difference (Observed minus sum of estimated climate contributions)	0.7 ± 0.7	0.3 ± 1.0

Units have been changed from *metres per century* in the first version to millimetres *per year* in the corrected version. The error in the original table had been caused by a tenfold exaggeration of the contributions of the melting of the Greenland and Antarctic ice-sheets to sea-level rise. This error may perhaps have arisen from the inadvertently incorrect positioning of four decimal points in the table.

Why did the IPCC's 2,500 scientists fail to spot so serious an error?

Because *the table did not appear at all* in the version of the *Summary for Policymakers* that the Scientific Assessment Working Group sent to governments for approval. The table was inserted by the IPCC bureaucracy *after* the scientists had reached their conclusions on the science.

The reason for the insertion may have been the revelation by the Science Correspondent of the *Sunday Telegraph*, some weeks before publication of the *Summary for Policymakers*, that the UN had halved its high-end projection of the rise in sea level to 2100.

Note that the UN *fails* to state that its reduced best estimate of a 30cm sea-level rise (just 1 ft per century) is *less than a third* of the average centennial rise in sea level since the end of the last Ice Age.

Note also that the last-minute list of contributions to sea-level rise does not include an item quantifying the effects on sea level of the extraction of groundwater in all parts of the world. Since groundwater levels have fallen substantially in most places where pumping occurs, this item on its own could in theory be sufficient to make a substantial contribution to the continuing rise in sea level. Yet the UN has omitted it.

- *Morner (2004), the world's foremost expert on sea-level change, has written: "There is a total absence of any recent 'acceleration in sea level rise' as often claimed by IPCC and related groups."*

ERROR 2

A 20-FOLD EXAGGERATION OF THE CLIMATIC EFFECTS OF RISING CO₂ CONCENTRATIONS

Another example of elementary arithmetical inaccuracy occurs on page 3 of the *Summary for Policymakers* as originally published. The 2,500 scientists of the IPCC make the following alarmist statement, which has been widely and uncritically quoted by journalists worldwide:

"The carbon dioxide radiative forcing increased by 20% from 1995 to 2005."

In December 1995 CO₂ concentration at Mauna Loa was 360ppmv, and in December 2005 it was 379ppmv, an increase of 19ppmv. That is not 20%. It is **5%**. However, the forcing from this increase is considerably less than 5%, because each additional quantum of CO₂ concentration in the atmosphere has less warming effect than its predecessors: the temperature effect of increased carbon dioxide concentrations is not *linear* but *logarithmic*. Using the UN's own logarithmic CO₂ forcing formula, $\delta F = 5.3 \ln(C / C_0)$ (IPCC, 1995, 2001, 2007) and taking **C₀** as unity, the total natural and anthropogenic forcing from CO₂ to 1995 was **5.3 ln(360 / 1) = 31.20** w^m⁻², only one-fifth of the 148-w^m⁻² natural greenhouse effect. CO₂ forcing to 2005 was **5.3 ln(380 / 1) = 31.48** watts per square metre. The increase in forcing was thus just 0.28 w^m⁻², or just over **1%**. We may summarize the breathtaking magnitude of this erroneous exaggeration as follows:

1995-2005:	UN's stated increase in CO₂ forcing:	20%
1995-2005:	Increase in concentration of CO₂:	5%
1995-2005:	Increase in CO₂ forcing effect:	1%

This *20-fold exaggeration* of the increase in the radiative forcing effect of atmospheric CO₂ has been *quietly removed* from the revised version of the *Summary for Policymakers*.

THE ATTRIBUTION QUESTION

Note that the IPCC's 2007 report has *reduced* its estimate of the entire anthropogenic contribution to climate change since 1750 to just 1.6 watts per square metre. This is little more than 1% of the natural greenhouse effect, which contributes 20C to global temperatures. Since 1% of 20C is 0.2C, it is legitimate to deduce that *about three-quarters of the 0.8C rise in temperature over the past 100 years is attributable to natural causes*.

- Solanki *et al.* (2005) have reported that in the past 50 years the Sun has been hotter, for longer, than at any time in the previous 11,400 years.
- Khilyuk and Chilingar (2006), from a geological perspective, have calculated that the total climatic influence of humankind to date amounts to a warming of about 0.1C.
- Buentgen *et al.* (2006) have concluded that the anthropogenic effect on climate has been so small that it cannot be clearly distinguished from the background of natural climatic variability.

These conclusions in the peer-reviewed literature *differ* startlingly from the UN's conclusion that "most of the observed increase in globally-averaged temperatures since the mid-20th century is very likely [to have been] due to the observed increase in anthropogenic greenhouse-gas concentrations."

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SOME OF THE ERRORS IN AL GORE'S MOVIE *AN INCONVENIENT TRUTH*

The IPCC's exaggerations and errors parallel those of Al Gore in his notorious sci-fi horror film *An Inconvenient Truth*, now being peddled to schoolchildren worldwide. A referenced list of some of the dozens of fundamental scientific errors in Gore's film:

- Gore, aiming to undermine the significance of previous warm periods such as that of the Middle Ages, promoted the 1,000-year "hockey stick" temperature chart (McIntyre & McKittrick, 2005).
- Gore showed heart-rending pictures of the New Orleans floods and insisted on a link between increased hurricane frequency and global warming that has no basis in scientific fact (IPCC, 2001, 2007).
- Gore asserted that today's Arctic is experiencing unprecedented warmth while ignoring that Arctic temperatures in the 1930s and 1940s were as warm or warmer (Briffa *et al.*, 2004).
- Gore did not explain that Arctic temperature changes are more closely correlated with changes in solar activity than with changes in atmospheric CO₂ concentrations (Soon, 2005).
- Gore did not explain that the Sun has been hotter, for longer, in the past 50 years than in any similar period in at least the past 11,400 years (Solanki *et al.*, 2005).
- Gore said the Antarctic was warming and losing ice but failed to note, that is only true of a small region and the vast bulk of the continent has been cooling and gaining ice (Doran *et al.*, 2004).
- Gore mentioned the breakup of the Larsen B ice shelf, but did not mention that the maximum ice shelf limit may date only from the Little Ice Age 300 years ago. (Pudsey & Evans, 2001, 2006; Vaughan *et al.*, 2001).
- Gore hyped unfounded fears that Greenland's ice is in danger of disappearing. In fact its thickness has been growing by 2 inches per year for a decade (Johannesen *et al.*, 2005).
- Gore falsely claimed that global warming is melting Mt. Kilimanjaro's icecap, actually caused by atmospheric dessication from local deforestation, and pre-20th-century climate shifts (Cullen *et al.*, 2006).
- Gore said global sea levels would swamp Manhattan, Bangladesh, Shanghai and other coastal cities, and would rise 20ft by 2100, but the UN estimate is just 8in to 1ft 5in. (IPCC, 2007; Morner, 1995, 2004).

- Gore implied that a Peruvian glacier's retreat is due to global warming, failing to state that the region has been cooling since the 1930s and other South American glaciers are advancing (Polissar *et al.*, 2006).
- Gore blamed global warming for water loss in Africa's Lake Chad, though NASA scientists had concluded that local water-use and grazing patterns are probably to blame (Foley & Coe, 2001).
- Gore inaccurately said polar bears are drowning due to melting ice when in fact 11 of the 13 main groups in Canada are thriving, and polar bear populations have more than doubled since 1940 (Taylor, 2006).
- Gore said the ocean absorbs heat from the Sun, when in fact the ocean takes nearly all of its heat from the atmosphere, without which the ocean would freeze over (Houghton, 2002).
- Gore said a review of 928 scientific papers had shown none against the "consensus". In fact only 1% of the papers were explicitly pro-"consensus"; almost 3 times as many were explicitly against (Peiser, 2006).
- Gore implied that changes in temperature followed changes in CO₂ concentration in the past 500,000 years, but in fact temperature changes *preceded* changes in CO₂ concentration (Petit *et al.*, 1999; Mudelsee, 2001).

Were these and other serious errors accidental? It is unlikely. Every single one of the errors magnifies, overstates, or exaggerates the supposed problem. Not one of the errors understates it.

WHAT GORE SHOULD HAVE SAID, BUT SOMEHOW FAILED TO SAY

The film also omits to make any of the following balancing points (for which I am grateful to Marlo Lewis, writing for the Competitive Enterprise Institute):

- Gore never acknowledges the indispensable role of fossil fuels in alleviating hunger and poverty, extending human life spans, and democratizing consumer goods, literacy, leisure, and personal mobility.
- Gore never acknowledges that there are many environmental, health, and economic benefits of climatic warmth and the ongoing rise in the air's CO₂ content.
- Gore neglects to mention that aggregate mortality and mortality rates due to extreme weather events declined dramatically during the 20th century.
- Gore neglects to mention why America is the biggest CO₂ emitter: the world's largest economy, abundant fossil energy resources, markets integrated across a continents, and a mobile population.

- Gore impugns the motives of so-called global warming skeptics, but fails to point out that the scientific method requires constant skepticism. Any scientist who is not a skeptic is a mere politician.
- Gore never acknowledges the special-interest motivations of those whose research grants, industrial privileges, regulatory power or political careers depend on keeping the public scared about the climate.
- Gore never addresses the obvious criticism that the Kyoto Protocol, *if* all signatories complied, *might* reduce temperature to 2050 by a climatically-insignificant 0.07C, at a cost of hundreds of billions.
- Gore fails to mention the societal factors that nearly always overwhelm climatic factors in determining the risk of injury or death from hurricanes, floods, droughts, storms, wildfires, or diseases.
- Gore says 48 Nobel-laureate scientists accused President Bush of distorting science, but omits that the scientists were members of a political group set up to promote a Democrat presidential candidate.

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*For further details, please contact Lord Monckton's office: +44 1882 632341:
monckton@mail.com*