Critical Ethical Issues in the Debate on Climate Change: the “Amazongate” case

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National Institute for Space Research-INPE
Brazil

I BRISPE - National Meeting on Research Integrity, Science and Publication Ethics
São José dos Campos, Brazil
16 December 16 2010
Integrity: the quality of being honest

Research integrity

Fabrication, falsification, plagiarism

Integrity in Journalism reporting on research results
Retractions in the Scientific Literature: do authors deliberately commit research fraud?

G. Steen, J Med Ethics, 2010

Results:

Journal IF was higher for fraudulent papers (p<0.001).

Conclusions:

This study reports evidence consistent with the 'deliberate fraud' hypothesis. The results suggest that papers retracted because of data fabrication or falsification represent a calculated effort to deceive. It is inferred that such behaviour is neither naïve, feckless nor inadvertent.
Ásia já responde por um terço dos erros graves na ciência

Estudo mostra padrões de fraude em artigo científico; Brasil é 20º do ranking mundial

As principais noções do Extremo Oriente, somadas, chegam perto de empatar com os EUA em termos de artigos “despublicados”: 237 contra 260. (Em números absolutos, porém, os EUA têm cerca de cinco vezes mais estudos no PubMed.)

“Não examinei diretamente essa questão de taxa de publicação versus taxa de retração, mas creio que há uma correlação, embora ela possa ser bastante fraca”, disse Steen à Folha. Segundo ele, o Brasil se sai relativamente bem no ranking, com só cinco artigos “retratados” no período — nenhuma por fraude.

A pesquisa mostrou outros padrões interessantes, envolvendo fraudes científicas. Estudos fraudulentos miram, em geral, revistas científicas de alto impacto em seu meio, o que acaba sendo natural: riscos altos, retornos idem.

As distorções não costumam ser isoladas. Quem adultera um estudo em geral faz isso com vários.

Based on data from Steen, 2010
“In depth, it’s not different from what Max Weber said in the famous lecture on Politics as a Vocation, in which he starts to describe the difference between the ethics of responsibility and the ethics of ultimate ends. In fact, many times, the politicians, in order to be responsible, has to be silent. They should not lie, but maybe they may not speak, because if they do, this will lead to a third party will act, and at the end, it may not allow what they desire – which is aligned with their conscience, with their values and maybe with the good – may find obstacles.
The conducts are different. The scientist proclaims the truth immediately. The politician needs to be conscious of the consequences of their actions. And the consequences of their actions and the actions provoked by what he said or did not say, because he is responsible for the actions of the third parties as well. He ends up having to assume the responsibility which is not morally chargeable, but politically he is responsible, even though he has not participate or wished that happened. But, if he, many times, proclaims what he wants before the time to do it, he does not reach an end.”

Fernando Henrique Cardoso, 1995.

ETHICS OF PRINCIPLES OR CONVICTIONS: ABSOLUTE, NOT NEGOTIABLE – SCIENTIST

ETHICS OF RESPONSIBILITY: MUST TAKE INTO ACCOUNT THE CONSEQUENCES OF THE ACTION S – POLITICIANS.
### Calculation of Riparian Areas in the Forest Act

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São José dos Campos/SP

A case of Research Misconduct: falsification
Calculation of Riparian Areas in the Forest Act
Embrapa researcher used a large buffer to increase the area of protected riparian vegetation.
Background on IPCC AR4 2007 x the media
‘Amazongate’

The sentence which started the trouble...
Up to 40% of the Amazonian forests could react drastically to even a slight reduction in precipitation; this means that the tropical vegetation, hydrology and climate system in South America could change very rapidly to another steady state, not necessarily producing gradual changes between the current and the future situation (Rowell and Moore, 2000). It is more probable that forests will be replaced by ecosystems that have more resistance to multiple stresses caused by temperature increase, droughts and fires, such as tropical savannas.

Up to 40% of the Brazilian forest is extremely sensitive to small reductions in the amount of rainfall. In the 1998 dry season, some 270,000 sq. km of forest became vulnerable to fire, due to completely depleted plant-available water stored in the upper five metres of soil. A further 360,000 sq. km of forest had only 250 mm of plant available soil water left (Nepstad et al. 1999). → 630,000 km² affected or ≈ 15% (Global Review of Forest Fires by Andy Rowell and Dr. Peter F. Moore)

Peter Moore is a Forest Fire Management Specialist and Andy Rowell is a writer and Investigative journalists on environmental issues.
“Amazongate” Timeline

2007
IPCC Report

November 2009
Hacked Emails

January 2010
WWF Report

January 25, 2010
“Amazongate” Blogosphere

Richard North

“Glaciergate”

“Climategate”

“Amazongate”
“The IPCC also made false predictions on the Amazon rain forests, referenced to a non peer-reviewed paper produced by an advocacy group working with the WWF. This time though, the claim made is not even supported by the report and seems to be a complete fabrication”.

“Thus, following on from "Glaciergate", where the IPCC grossly exaggerated the effects of global warming on Himalayan glaciers – backed by a reference to a WWF report - we now have "Amazongate", where the IPCC has grossly exaggerated the effects of global warming on the Amazon rain forest.”
"Amazongate" Timeline

- IPCC Report
- Hacked Emails
- WWF Report
- "Climategate"
- "Glaciergate"
- "Amazongate" Blogosphere
- Richard North
- "Amazongate" hits the press

2007
November 2009
January 2010
January 25, 2010
January 31, 2010

The Sunday Times
A STARTLING report by the United Nations climate watchdog that global warming might wipe out 40% of the Amazon rainforest was based on an unsubstantiated claim by green campaigners who had little scientific expertise.

“The source for its claim was a report from WWF, an environmental pressure group, which was authored by two green activists. They had based their “research” on a study published in Nature, the science journal, which did not assess rainfall but in fact looked at the impact on the forest of human activity such as logging and burning. This weekend WWF said it was launching an internal inquiry into the study.”
“Amazongate” Timeline

IPCC Report

2007
November 2009
January 2010

“Climategate”

“Glaciertgate”

Hacked Emails
WWF Report

Richard North

January 25, 2010
January 31, 2010

“Amazongate” hits the press

The Sunday Times

“Amazongate” Blogosphere

January 31, 2010

March 11, 2010

“Amazongate” Offspring

BU Press Release
New study debunks myths about Amazon rain forests

They may be more tolerant of droughts than previously thought

"The way that the WWF report calculated this 40% was totally wrong, while [the new] calculations are by far more reliable and correct," said Dr. Jose Marengo, a Brazilian National Institute for Space Research climate scientist and member of the IPCC.
“Amazongate” Timeline

- IPCC Report
- WWF Report
- hacked emails

Timeline:
- 2007
  - November 2009
  - January 2010
- January 25, 2010
  - “Amazongate” Blogosphere
  - Richard North
- January 31, 2010
  - “Amazongate” hits the press
- March 11, 2010
  - BU Press Release
- March 14, 2010
  - “Amazongate” Offspring
  - Telegraph
  - Offspring
  - Prints the story

The Sunday Times

“Climategate”

“Glaciertgate”
Dr Jose Marengo, a climate scientist at the Brazilian National Institute for Space Research and a member of the IPCC, said the study on the Amazon's response to drought highlighted errors in the previous claims.

"The way the WWF report calculated this 40 per cent was totally wrong, while [the new] calculations are by far more reliable and correct," he said.
“Amazongate” Timeline

- IPCC Report
- “Glacierrgate”
- “Climategate”
- Hacked Emails
- WWF Report
- BU Press Release
- The Sunday Times
- “Amazongate” Blogosphere
- Richard North
- “Amazongate” hits the press
- “Amazongate” Offspring
- Prints the story
- Boston University
- Sentence mysteriously disappears

Timeline:
- 2007
- November 2009
- January 2010
- January 25, 2010
- January 31, 2010
- March 11, 2010
- March 14, 2010
- March 16, 2010
The sentence was removed on March 16 after Dr. Marengo complains to Boston University that he was completely misquoted.
“Amazongate” Timeline

IPCC Report
November 2007
“Climategate”
WWF Report
January 2010
“Glaciergate”
Hacked Emails
2009

“Amazongate” Blogosphere
January 25, 2010
Richard North

“Amazongate” hits the press
January 31, 2010

“Amazongate” Offspring
March 11, 2010

The Sunday Times
March 14, 2010

“Amazongate” Offspring
March 14, 2010

Boston University Press Release
March 16, 2010

The Telegraph
March 16, 2010
Sentence mysteriously disappears

Prints the story
Sentence is modified by Richard Gray

The Sunday Times
March 14, 2010

“Amazongate” Offspring
March 14, 2010

Boston University Press Release
March 16, 2010

The Telegraph
March 16, 2010
Sentence mysteriously disappears

Prints the story
Sentence is modified by Richard Gray

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Sentence is modified by Richard Gray
Dr Jose Marengo, a climate scientist with the Brazilian National Institute for Space Research and a member of the IPCC, said the latest study on the Amazon's response to drought highlighted the variations on the previous claims.

He said: "In 2005, some parts of the Amazon were affected by the drought and others were not. In some regions, dryness was high and the number of fires was high. In other areas, the forest was not affected."

"As part of its standard processes, the IPCC assesses new papers in each assessment cycle. New literature that has appeared since the 2007 report will be reviewed for the next report."
Now Dr Jose Marengo, a climate scientist with the Brazilian National Institute for Space Research and himself a member of the IPCC, says: “The way the WWF report calculated this 40 per cent was totally wrong, while (the new) calculations are by far more reliable and correct.” These calculations were done by researchers at Boston University and were published in the scientific journal Geophysical Research Letters. They used satellite data to study the drought of 2005, when rainfall fell to the lowest in living memory, and found that the rainforest suffered no significant effects.
“Amazongate” Timeline

IPCC Report

November 2009

WWF Report

January 2010

“Glaciergate”

2007

“Climategate”

Hacked Emails

Richard North

January 25, 2010

“Amazongate” Blogosphere

January 31, 2010

“Amazongate” hits the press

March 11, 2010

“Amazongate” Offspring

March 14, 2010

Prints the story

March 16, 2010

Sentence mysteriously disappears

March 16, 2010

Sentence is modified by Richard Gray

March 2010

Sunday Times Complaint

Simulation by Simon Lewis

Boston University

Telegraph

BU Press Release

The Sunday Times

Sentence mysteriously disappears

Prints the story

Sentence is modified by Richard Gray

Simulation by Simon Lewis

Boston University

Telegraph

BU Press Release

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Sentence mysteriously disappears

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Simulation by Simon Lewis

Boston University

Telegraph
Simón Lewis, an expert on tropical forests at the University of Leeds in the UK, says the Sunday Times’ "inaccurate, misleading and distorted" story by Jonathan Leake in January left readers under the wrong impression that the 2007 IPCC AR4 report made a false claim by stating that reduced rainfall could wipe out up to 40% of the Amazon rainforest.

Lewis filed a formal complaint this week with the UK Press Complaints Commission. (Guardian.co.uk, March 24)

"Specifically, I consider this article to be materially misleading. I am the scientific expert cited in the article who was asked about the alleged “bogus rainforest claim”. In short, there is no “bogus rainforest claim”, the claim made by the UN panel was (and is) well-known, mainstream and defensible science, as myself and two other professional world-class rainforest experts (Professor Oliver Phillips and Professor Dan Nepstad) each told Jonathan Leake"
The apologies from the Sunday Times on The Independent (U.K.) (6 May 2010)

Johann Hari: Deniers - apologise for Climagegate

Thursday, 6 May 2010

At last! The controversy is over. Forget the general election for a moment; this is even more important. It turns out the "scientific" claims promoted for decades by willy-nilly self-righteous liberals were a lie, a fraud, a con - and we don't need to change after all. The left is humiliated; the conservatives are triumphant and exultant.

The year is 1954, and the "science" that has been exposed as a "sham" by conservatives is the link between smoking and lung cancer. Welcome to Tobaccogate, as Fox News would call it. The conservatives are championing professor Clarence Cook Little, who says he has discovered insurmountable flaws in the use of statistics and clinical data by "anti-tobacco" (and quasisci-) scientists. The press reports the "controversy," usually without mentioning that Cook Little is being paid by the tobacco industry. A relieved nation lights up - and so, over the next few decades, millions of them die.

It is happening again. The tide of global warming denial is now rising as fast as global sea levels - and with as much credibility as Cook Little. Look at the deniers' greatest moment, Climagegate, hailed by them as "the final nail in the coffin" of "the theory of global warming." Several patient impartial studies have now pore over every e-mail from the Climate Research Unit at the University of East Anglia and interviewed everyone involved. The findings? The House of Commons Select Committee on Science found the "evidence patently fails to support" the idea of a fraud; the scientists have "no case to answer"; and all the analyses "have been repeated and the conclusions by other scientists. That's science-speak for "it was a pack of lies."

"In his case to the Press Complaints Commission Dr Lewis says that the paper ignored the bulk of his comments and mangled his quotes to make it sound like he agreed that the IPCC had been talking rubbish – and ran the "story" under the headline "UN Climate Panel Shamed by Bogus Rainforest Claim." The article ended with credit for "research by Richard North."

The story was then zapped all over the world as "Amazongate", and as a result millions of people are now under the impression that the Amazon is in no danger."
The article "UN climate panel shamed by bogus rainforest claim" (News, Jan 31) stated that the 2007 Intergovernmental Panel on Climate Change (IPCC) report had included an "unsubstantiated claim" that up to 40% of the Amazon rainforest could be sensitive to future changes in rainfall.

A version of our article that had been checked with Dr Lewis underwent significant late editing and so did not give a fair or accurate account of his views on these points. We apologise for this.
“I welcome the Sunday Times’ apology for failing to accurately report my views and retract the Amazon story. As several experts told them – their story was baseless. What I find shocking about this whole episode is that an article read out [loud] and agreed with me was then switched at the last minute to one that fit with the Times’ editorial line that the IPCC contained a number of serious mistakes, but actually ignored the scientific facts.”

That is tropical forest researcher Simon Lewis in an email to me this morning after the Sunday Times finally retracted their bogus story and issued this too-rare apology (emphasis added):

The article “UN climate panel shamed by bogus rainforest claim” (News, Jan 31) stated that the 2007 Intergovernmental Panel on Climate Change (IPCC) report had included an “unsubstantiated claim” that up to 40% of the Amazon rainforest could be sensitive to future changes in rainfall. The IPCC had referenced the claim to a report prepared for the World Wildlife Fund (WWF) by Andrew Rowell and Peter Moore, whom the article described as “green campaigners” with “little scientific expertise.” The article also stated that the authors’ research had been based on a scientific paper that dealt with the impact of human activity rather than climate change.

In fact, the IPCC’s Amazon statement is supported by peer-reviewed scientific evidence. In the case of the WWF report, the figure had, in error, not been referenced, but was based on research by the respected Amazon
Researchers often grouse about the press—but it's rare for scientists to successfully challenge the accuracy of a media report and win public apologies. But scientists have recently won battles against one British reporter whom they say is biased, and another fight is ongoing.

The loser in the first two cases is science reporter Jonathan Leake of The Sunday Times. In February he wrote a story alleging that the Intergovernmental Panel on Climate Change (IPCC) had published "bogus" data on the rainforests and climate change."
Correction of the Year
2010’s correction of the year is the result of a 2009 report by the Sunday Times (U.K.). The story related to a series of leaked emails from climate scientists that caused a huge amount of (mostly inaccurate) outcry, as well as allegations that key climate data had been, to use the parlance, sexed up. The episode was dubbed “Climategate.”
“Amazongate” Timeline

IPCC Report

2007
November 2009
January 2010

“Glaciergate”

2007

“Climategate”

“Amazongate” Blogosphere

2009

“Amazongate” hits the press

January 25, 2010
January 31, 2010
March 11, 2010
March 14, 2010
March 16, 2010
March 16, 2010
March 16, 2010
March 2010
June 20, 2010
July 12, 2010

“Amazongate” Offspring

“Amazongate” Press Release

The Sunday Times

Richard North

Prints the story

Sentence mysteriously disappears

Sentence is modified by Richard Gray

Simon Lewis Complaint

Retraction

Assessment of IPCC regional chapter

The Sunday Times Complaint

Dutch Review

Boston University

The Telegraph

BU Press Release

The Sunday Times

Wednesday

Sentence mysteriously disappears

The Telegraph

2010

The Telegraph

2010

The Sunday Times

2010

The Sunday Times

2010

The Sunday Times

2010

The Sunday Times

2010

The Sunday Times

2010

The Sunday Times

2010
A: IPCC 2007
• Up to 40% of the Amazonian forests could react drastically to even a slight reduction in precipitation; this means that the tropical vegetation, hydrology and climate system in South America could change very rapidly to another steady state. (C6; minor)

B: Dutch Review 2010
• We have a minor comment to make on this statement, which originates from Section 13.4.1 of Chapter 13 (page 596). The statement was based on Rowell and Moore (2000), which is a peer-reviewed report by the World Wide Fund for Nature and the International Union for Conservation of Nature (WWF/IUCN) on a global review of forest fires, and not a study on changes in vegetation due to climate change. That report, in turn, was mainly based on Nepstad et al. (1999) (in Nature). In our opinion, both documents were not the most obvious choice of references. More adequate peer-reviewed, scientific journal literature would have been available to support this statement, such as Cox et al. (2000; 2004) (C6). This minor comment has no consequences for the IPCC conclusions in the various Summaries for Policymakers.

A: IPCC 2007
• By mid century, increases in temperature and associated decreases in soil water are projected to lead to gradual replacement of tropical forest by savanna in eastern Amazonia. Semi-arid vegetation will tend to be replaced by arid-land vegetation.

B: Dutch Review 2010
• This statement is fully supported by the underlying material.

A: IPCC 2007
• There is a risk of significant biodiversity loss through species extinction in many areas of tropical Latin America.

B: Dutch Review 2010
• This statement is fully supported by the underlying material.
George Orwell, “1984”

- “Speaking the Truth in times of universal deceit is a revolutionary act.”

- "The great enemy of clear language is insincerity “
How to do science in such an argumentative area and under new levels of scrutiny, especially from a largely hostile and sometimes expert blogosphere?

(From the Economist, about the important issues raised by two committees; the Climatic Research Unit (CRU) and The Dutch environmental-assessment agency)

Science behind closed doors, published on Jul 8th 2010
http://www.economist.com/node/16537628?story_id=16537628
Research Integrity

Research Communication Integrity
“I would also like to emphasize that enhanced media interest in the work of the IPCC would probably subject you to queries about your work and the IPCC. My sincere advice would be that you keep a distance from the media and should any questions be asked about the Working Group with which you are associated, please direct such media questions to the Co-chairs of your Working Group and for any questions regarding the IPCC to the secretariat of the IPCC.”
Clarification Letter by IPCC Chair, 15 July 2010

First of all, the IPCC does not seek in any way to discourage you from engaging in discussions with the media about your own work. To the contrary, we see such interaction as an important way of making your research more accessible to the public.

Second, all of us at the IPCC are immensely proud of our author team and have no interest in micro-managing your interactions with the media. I only remind you that the AR5 process is in its beginning stages and our final report is several years away. No one, including me, can speak to the likely findings of the AR5.

Lastly, we ask that you forward all media inquiries about official IPCC policies to the Working Group co-chairs or the IPCC Secretariat. This protocol is not an attempt to muzzle anyone. It is a standard procedure for large inter-governmental organizations and is intended to draw a distinction between the official work of the IPCC and your own work or that of your institution.
Lessons to IPCC

- The self correction nature of scientific activity process is not sufficient to counteract the denialist bias from an important part of the media.

- Scientists (associated to IPCC or not), should be more (pro-) active, honest and transparent to the public front on a continuous manner (instead of subsiding IPCC reports every 5 or 6 years.)

- The IPCC author selection process should be an open and transparent process.

- Complexity is a key word. Neither journalists nor scientist should be scared of it. On the contrary, they should emphasize even more uncertainties and knowledge gaps against the background of very complex and interacting natural and social systems.