



Science for everyone: The Global Warming myth Polar ice (really) explained

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NEGATIVE FEEDBACK IN THE POLAR ICE SYSTEM

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**Anfiteatro
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(Edifício 1)
Universidade do Algarve
Campus de Gambelas

Stallinga.org

Non-profit science organization

'Money'. Disclaimer

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Prof. Assoc. Agr. Dr. Peter Stallinga:
(physics, electronics, informatics, telecom)

- not paid by oil companies
- not member of any political movement
- not member of any NGO or board of directors of companies
- not funded by any grant (all project proposals rejected)
- not even member of a sports club, religious sect, or secret society, not even *sócio* of Benfica

"It is difficult to get a man to understand something, when his salary depends on his not understanding it"

– Upton Sinclair



It is all psychology! Pascal's Wager

Moral reward table
(in moral euros)

	Imagination	
	Person believes it	Person does not believe it
Reality	AGW is true	+10
	AGW is false	-1000
	Ignoramus (50% - 50%) expected yield	-0.1
	$+10 \times 50\% - 0.1 \times 50\% = +4.95$	$-1000 \times 50\% + 10 \times 50\% = -495$

Severe punishment for unbelievers. Destruction of Earth on your conscious!

Winning strategy!

"If it turns out to be false, no harm's done"

"Can be true or can be false (who am I to tell?!), 50%, so I'd better bet on it to be true!"

"I can even win more moral euros by convincing others!"
(passive belief vs. active belief. Stake multiplied by 10! 49.5 euros reward)

So many fanatic (and **ignoramus**) alarmists in the world!

Then, if you come with **scientific arguments**, they attack the person **ad hominem** ("He is crazy". "He is a communist". "He is paid by oil companies") or just ignore it altogether (**cognitive dissonance**)

Overview

Part I: Some short comments about the state of science in 2017

Part II: What *is* science?

Part III: The Scientific Method applied to Global Warming

IIIb: Example: Negative Feedback in Polar Ice Cycle

This presentation is based on our publications:

“Negative feedback in the polar ice system”

Atmosph. Clim. Sci. 7, 76 (2017)

“The scientific method in contemporary (climate) research”

Energ. Environ. 25, 137 (2014)

“Science in 2014”

UDC 001:167/168

“The state of science in 2013”

Euro. Scientific J. 4, 385 (2014)

“Perception of anthropogenic global warming modeled by game theory decision tables”

Euro. Scientific J. 12, 427 (2016)

“Application of signal analysis to the climate”

Int. Schol. Res. Not. (2014)(doi: 10.1155/2014/161530)

“Consensus in science”

Monte Carlo Meth. & Appl. (2015)

Part I

The state of affairs

Science (definition)

Science = knowledge

Science is the search for knowledge

Science is the love for knowledge (philo-sophy)

Knowledge, and only knowledge (not important for whom, how, why or what)

A better (self referential) definition:
Science is research that uses the Scientific Method

How would Einstein write his project proposals in 2017?



“Anyone who thinks science is trying to make human life easier or more pleasant is utterly mistaken”

- Albert Einstein

Oops, there goes 99% of modern (pseudo)science ...

What science is not

- Science is not “knowing how to make things”
(that is technology and engineering)
- Science is not “advanced (intelligent) research”
(ex. tallying of fish stock, “knowing how many sardines in Algarve waters”)
- Science is not “solving problems” of society
(ex. new solar panels to fight climate change)
- Science is not “highest level of intellectual activity”
- Political correctness has no place in science

“Philosophy is not a strategy”
- anonymous

Funny example

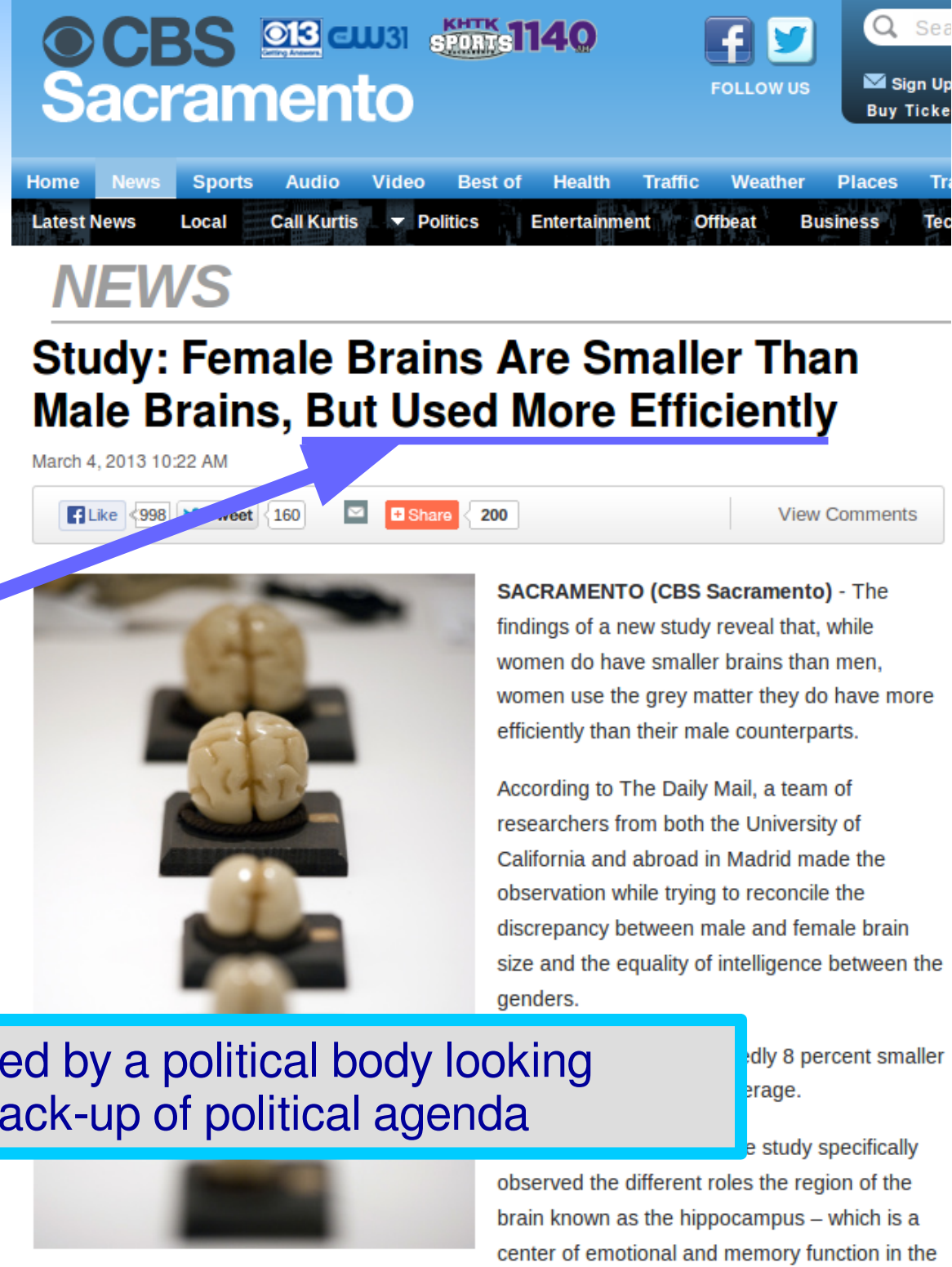
In 2017, science has to be 'politically correct'

Ex. Women have 8% smaller brain

Politically correct!

Imagine writing "women have 8% less brains and are more stupid"

Pseudoscience! Ordered by a political body looking (paying) for scientific back-up of political agenda

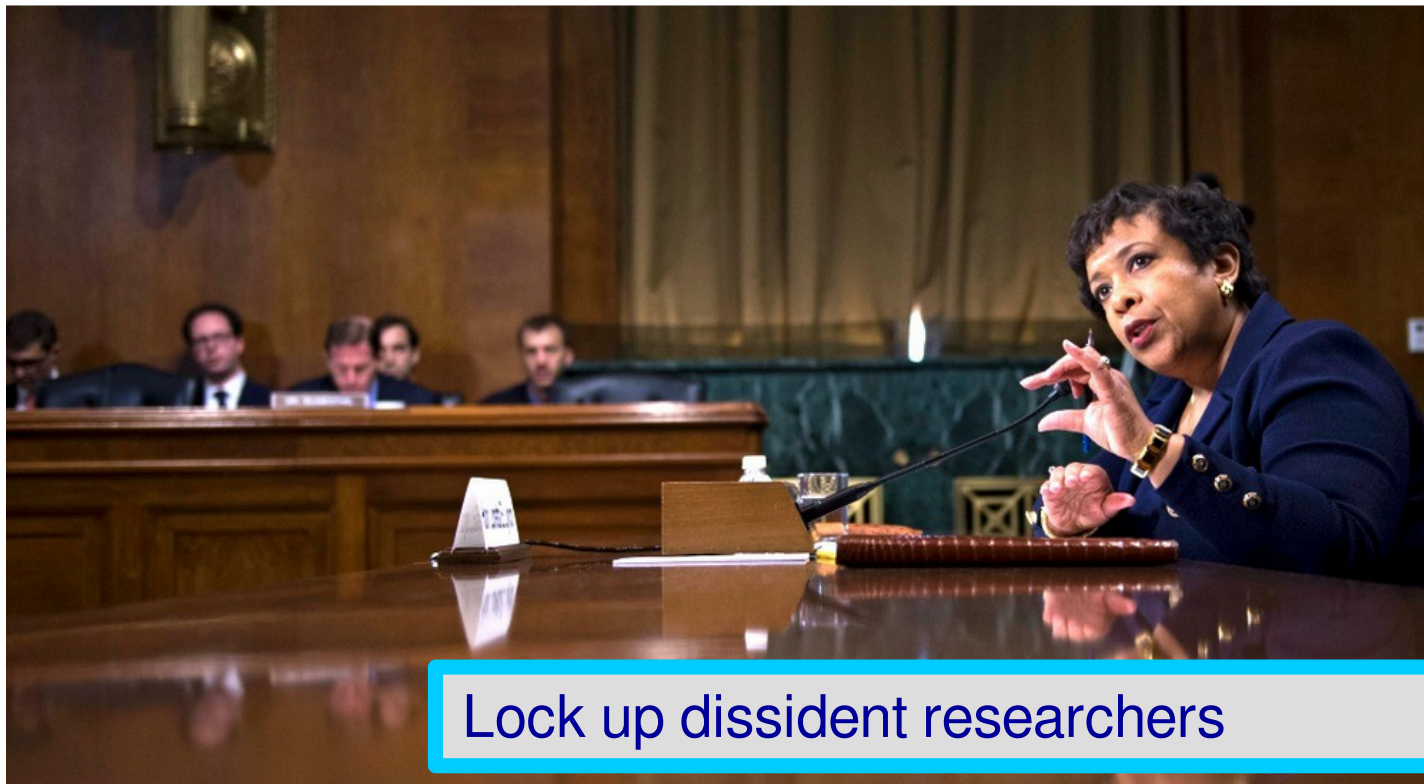
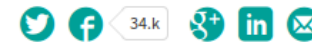


Politics. The 'law'



Attorney General Lynch Looks Into Prosecuting 'Climate Change Deniers'

Hans von Spakovsky / @HvonSpakovsky / March 10, 2016 / 355 comments



Lock up dissident researchers

Denying Global Warming is like denying the Holocaust. (Anyway, being skeptic is not the same as denying).

Politics+money = science funding

Now, imagine two groups of climatologist. Which one gets funding?

- 1) “The end of the world is coming. The planet will heat up. You have to fund my research, or we are all doomed!!!!”
- 2) “There is nothing wrong with the climate. My work is therefore rather irrelevant, except to satisfy (my personal) curiosity. Can you please fund my research?”

Funded scientists (publications): 97% consensus* that AGW is true.
(Yes, well, you paid for it, duh!)

(*By the way, the 97% consensus idea is a carefully constructed myth)

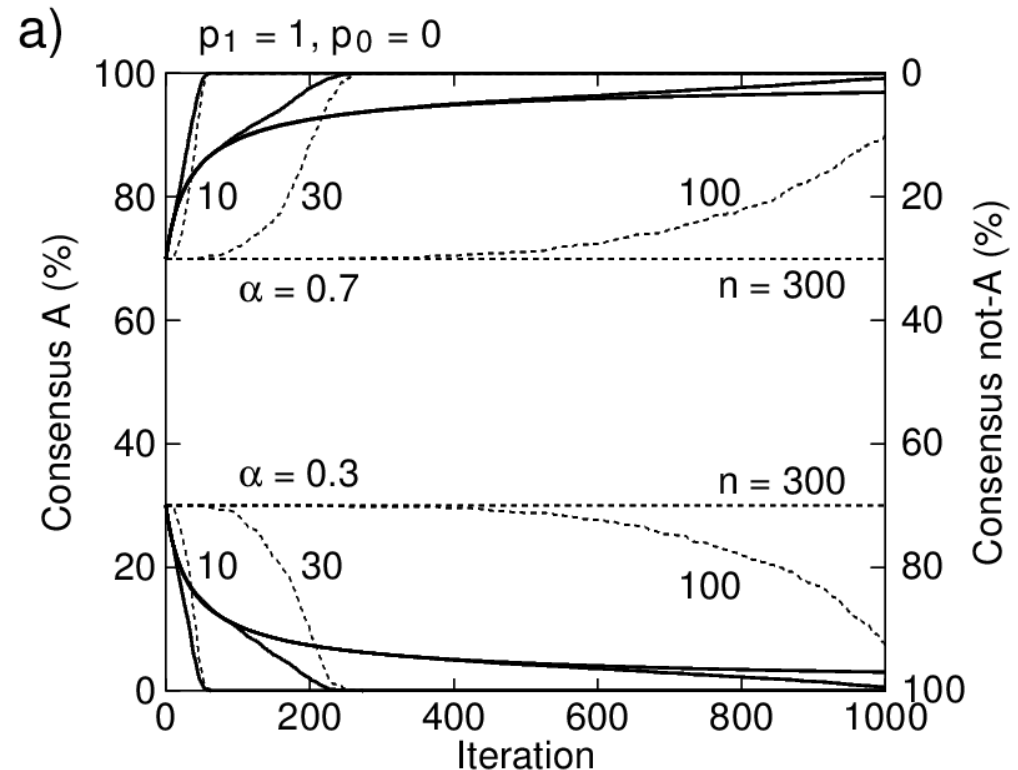
Peer reviewing ==> Consensus

- 1) Referees are randomly taken from literature. More papers published, more chance of being selected for refereeing
- 2) Referees, with (allowed!) cognitive biases ignore scientific reasoning and accept papers in favor of their beliefs more readily than those against them

Result: **Positive feedback:**

If 'belief A' has a slight advantage over contradicting 'belief B', B will be filtered out completely in a Darwinistic way
Belief B, without publications, will get no funding and will be without a job

Note: A does not have to be true nor B false.

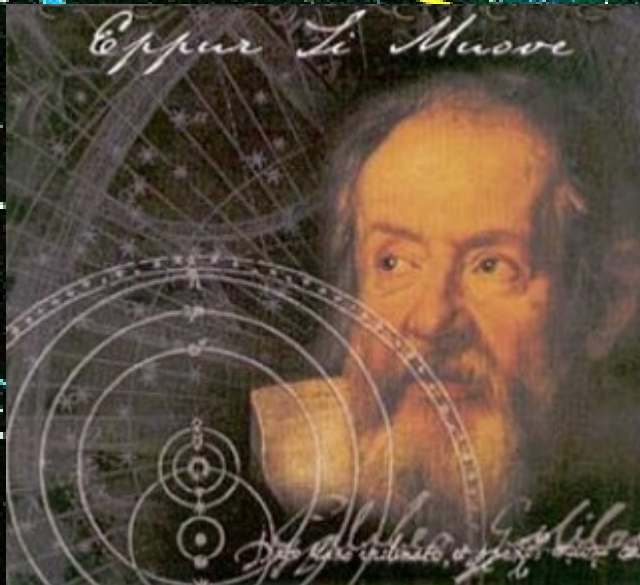


*: Monte Carlo Methods and Applications 21, 69 (2015). DOI: 10.1515/mcma-2014-0008

Peer reviewing = peer pressure

Consensus is not a scientific argument

People going against the consensus are scientific heroes.
Never the ones who repeat the consensus dogmas!



“Eppur si muove!”

- Galileo

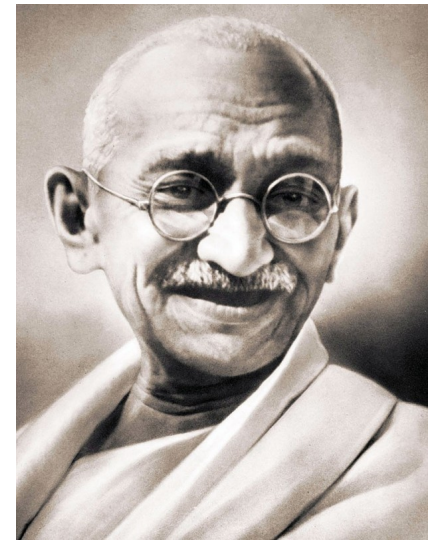
(“And yet, it moves ...”)

Part II

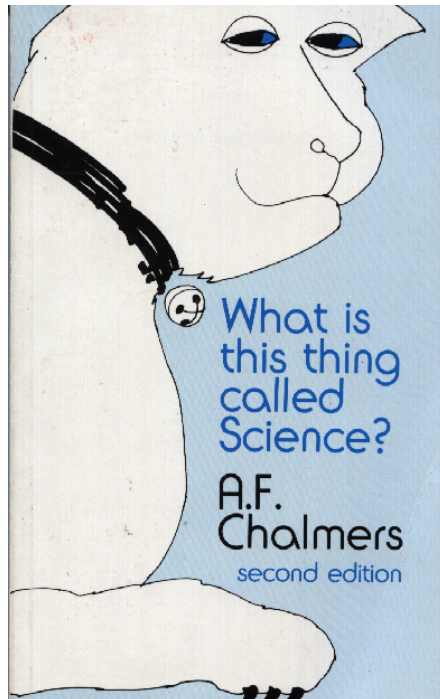
What ***is*** science?

*“A truth is a truth even if nobody believes it.
A lie is a lie even everybody believes it”*

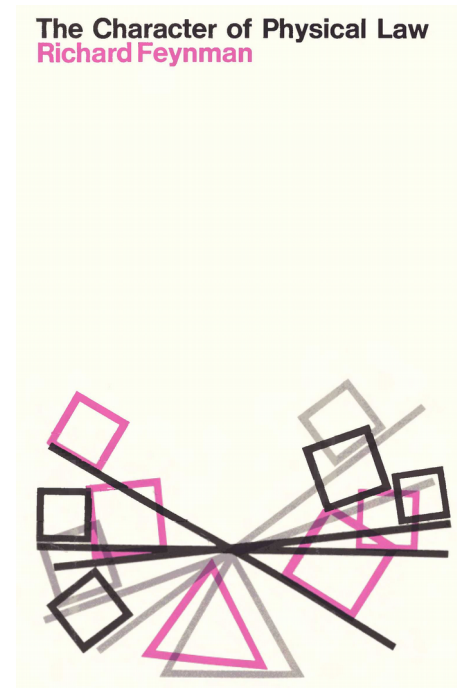
– Mahatma Gandhi



Definition of science (mid 20th century)



ISBN: 0-335-10107-0



ISBN: 978-0262560030

The basic principles of the Scientific Method (of Karl Popper)

1: Study the **natural world**



The Scientific Method. Natural world

2. Collect data. **Reduce** data. Correlate data. **Deduce** patterns. **Induce** ideas



The 'Scientific Method'. Hypothesis

3. A '**hypothesis**' (model) is developed (based on observations, deductions, inductions and reductions)



KEEP
CALM
AND
FORM A
HYPOTHESIS

Example

- A scientist shouts to ants “go”, and the ants walk
- Scientist cuts of legs, shouts “go” and the ants don't walk

Conclusion (induction & reduction):
Ants hear with their legs!



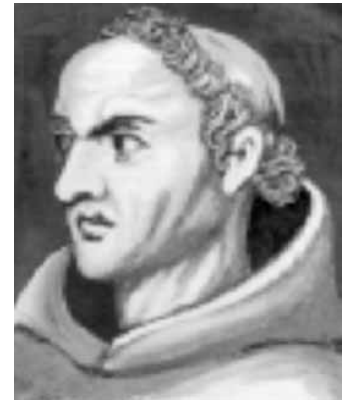
Ladies and gentlemen, we have a hypothesis



The 'Scientific Method'. Uniqueness

4. Isolation. Creators of the model should convince the readers that it is the **only** model that explains the observations

And if two models are equally good at explaining, the simpler model is correct. 'Ockam's Razor'.
(Constant before linear. Linear before quadratic, etc.)



William of Ockam

The 'Scientific Method'. Falsification

5.

Model should include a way to disprove it!

Effort is spent (first by the author) on proving it wrong.

Falsification*

Wrong ('Affirming the consequence')^o:

If P then Q. Find Q, therefore P!

**: "In other words, we are trying to prove ourselves wrong as quickly as possible, because only that way we can find progress"*

- Richard Feynman

^o: Don't design your experiment "If I am right then ...", but "If I am wrong then ...".
Look for any theory where it is wrong.

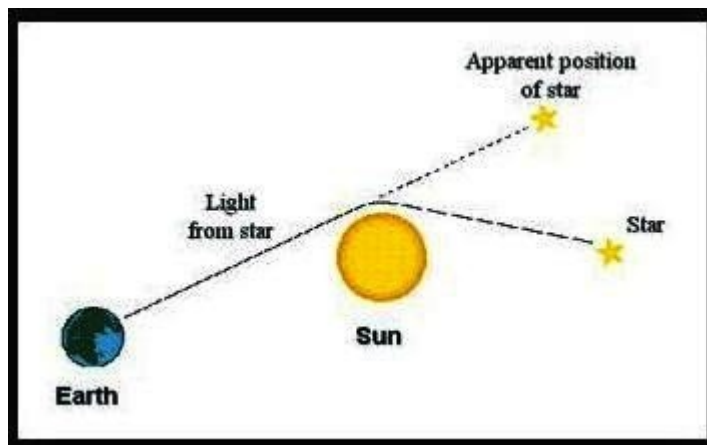
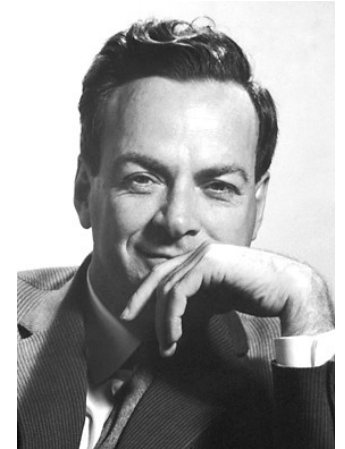
WRONG: If CO₂ then warming. We find warming, thus CO₂ model is correct!

The 'Scientific Method'. Prediction

6. **Experiment.** The model should contain a **verifiable prediction** for a **future** experiment (It should be possible to apply #2, falsification)

“Science is only useful if it tells you about some experiment that has not been done, it is no good if it only tells you what went on”

- Richard Feynman



Ex.: prediction by Einstein of light ray bending by sun. Observed at solar eclipse

The 'Scientific Method'. Replication

7. **Replication.** Other scientists can repeat the work presented

After you have tried to destroy your own theory and haven't managed, publish your work and let others have a go at it, for that they need:

- the description of the techniques used
- the logic / reasoning used
- the raw data

The 'Scientific Method'

No mention of

- Political correctness
- Consensus
- Benefits and outcomes(*)
- Peer reviewing (in first step)
- Restriction of subjects to study
- Guilt or other emotional state of scientist

Science is (like) art!

**repeat: “Anyone who thinks that science is to make the world a better place is utterly mistaken”*

- Albert Einstein

Science in 2000

Foundations of Science (2006) 11: 275–286
DOI 10.1007/s10699-004-5922-1

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SVEN OVE HANSSON

FALSIFICATIONISM FALSIFIED

ABSTRACT. A conceptual analysis of falsificationism is performed, in which the central falsificationist thesis is divided into several components. Furthermore, an empirical study of falsification in science is reported, based on the 70 scientific contributions that were published as articles in *Nature* in 2000. Only one of these articles conformed to the falsificationist recipe for successful science, namely the falsification of a hypothesis that is more accessible to falsification than to verification. It is argued that falsificationism relies on an incorrect view of the nature of scientific inquiry and that it is, therefore, not a tenable research methodology.

KEY WORDS: falsification, falsificationism, verification, hypothesis testing, explorative research, Karl Popper

Out of 70 papers of the journal *Nature* in 2000, only **one** (1) used the Scientific Method that includes a falsification of a hypothesis

Part III

The scientific Method
applied to the Anthropogenic
Global Warming hypothesis

Hypothesis of Global Warming



Humans burn fossil fuels



This produces CO₂ (carbon-dioxide)



CO₂ is a greenhouse gas



The temperature will rise

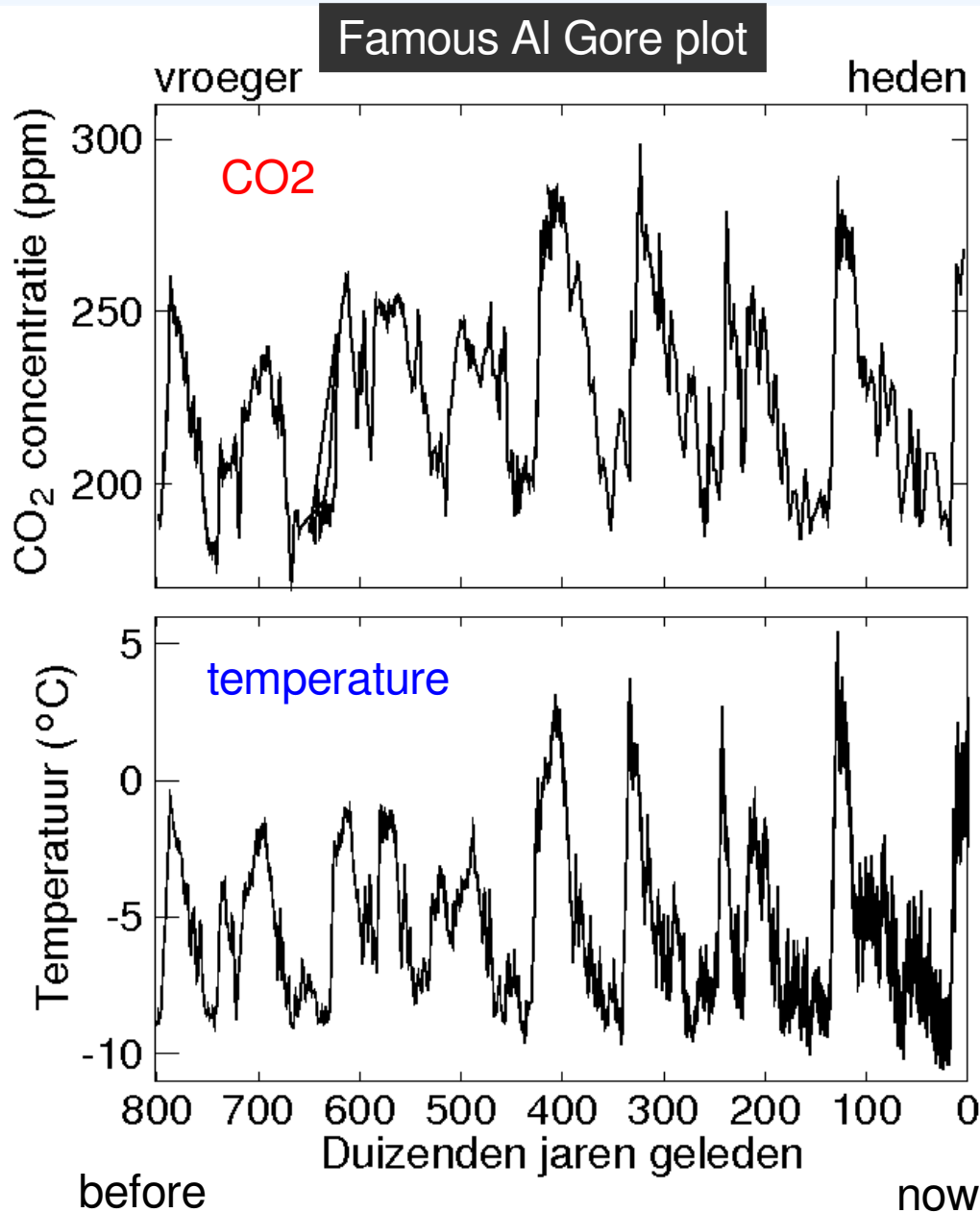


This will **destroy our planet**

(NB: Classical doomsday thinking!)

← Sentimental images (as if they prove AGW)

Al Gore plot



The biggest proof of AGW comes from statistics

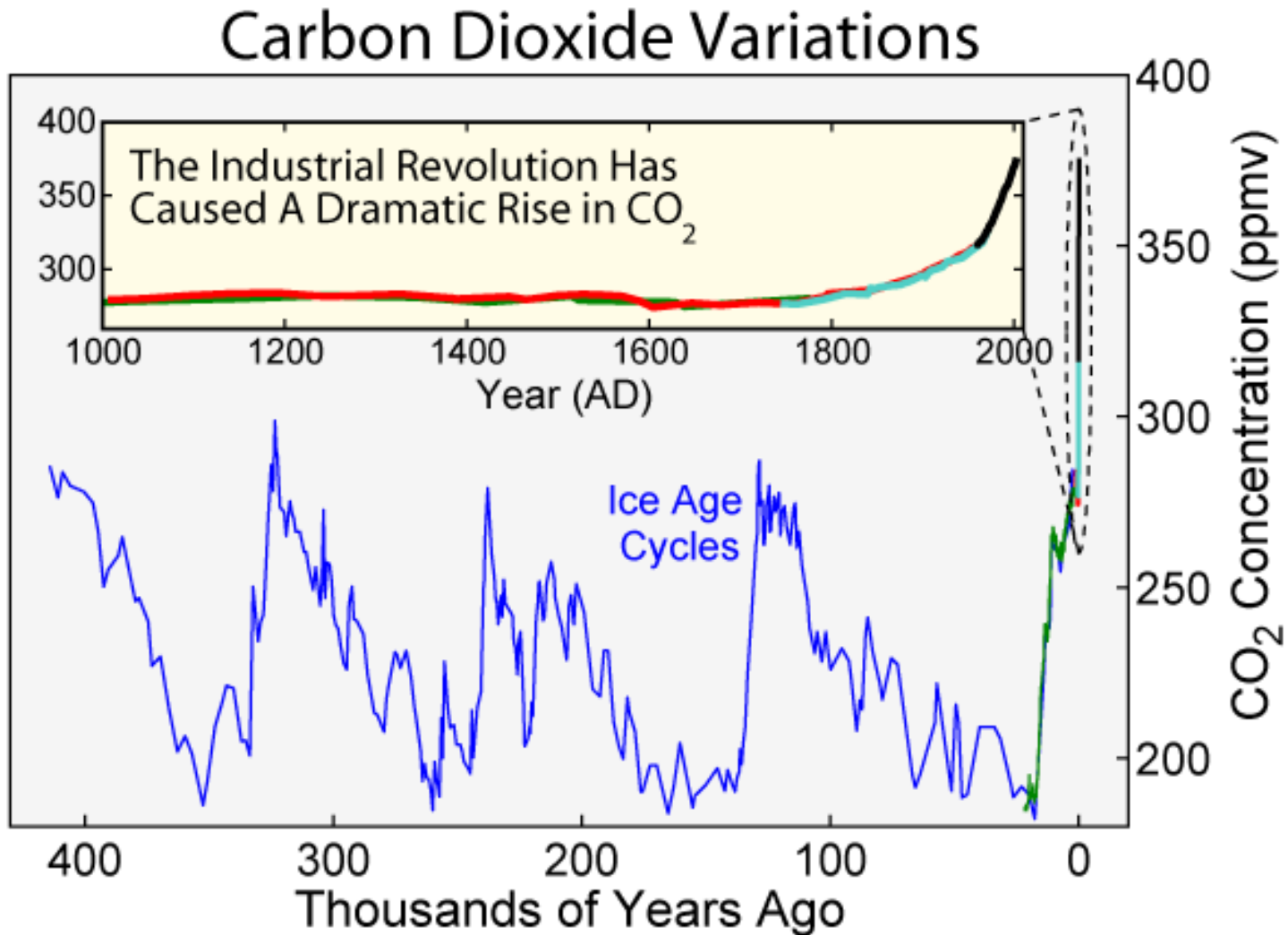
There is a correlation between T and CO_2 in history

Very convincing

Use the Scientific Method!

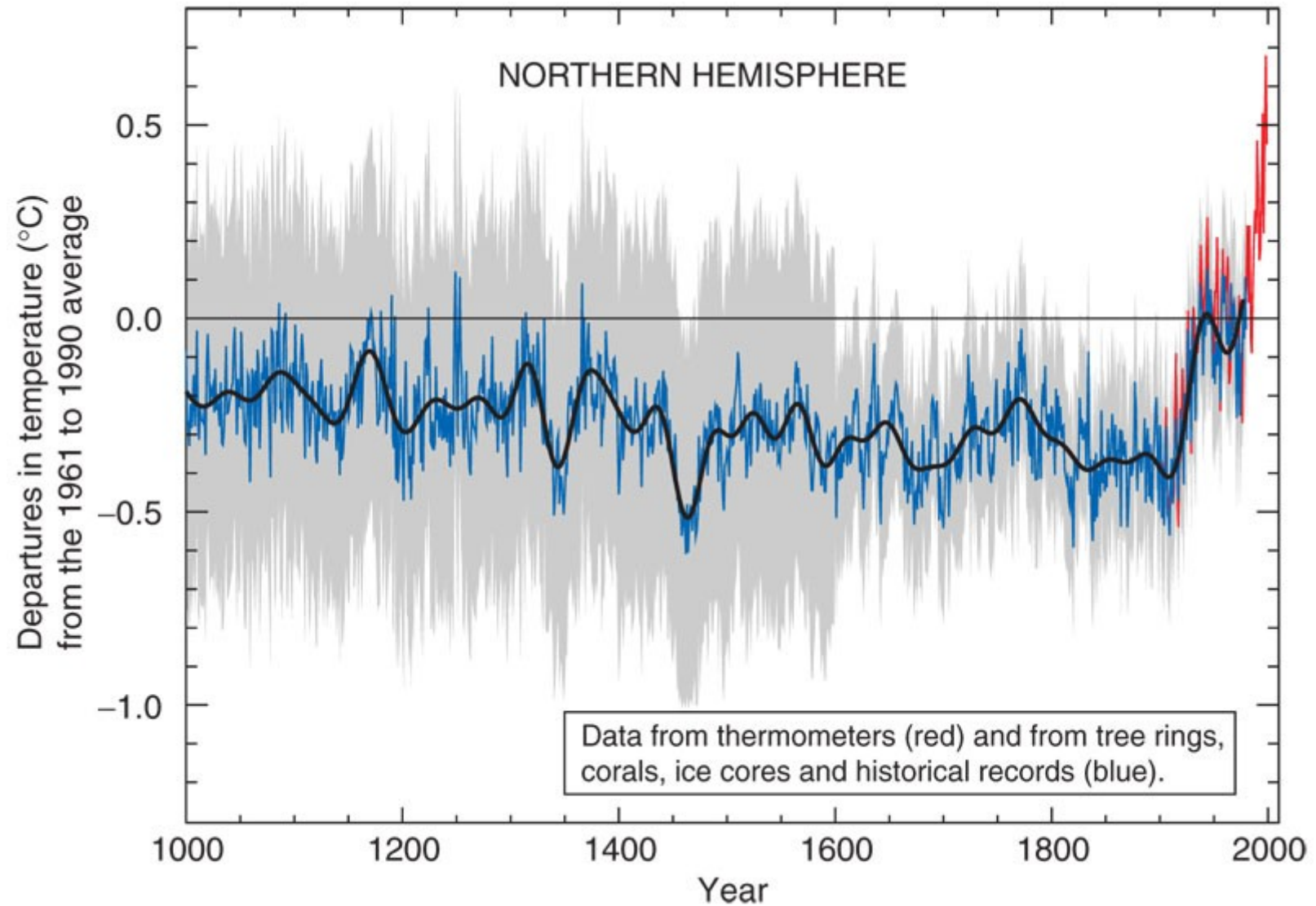
(Al Gore has a Bachelor in Arts; I am sure you can do better than he did)

CO2 history



source: Wikipedia Atmospheric CO2

Hockey Stick



Global Warming

- CO2 and temperature are correlated
- CO2 is rising rapidly (due to humans; not shown)
- Temperature is rising rapidly

“Who needs more proof?!!”
“We need to act NOW!!”

Science and AGW

Let's apply the (rest of the) Scientific Method

(... and don't worry being called Antichrists)
(we are not emotionally involved, or financially depending
on our conclusions)

Observation, induction, reduction and deduction

- CO₂ and temperature are correlated
- CO₂ is rising rapidly (due to humans; not shown)
- Temperature is rising rapidly

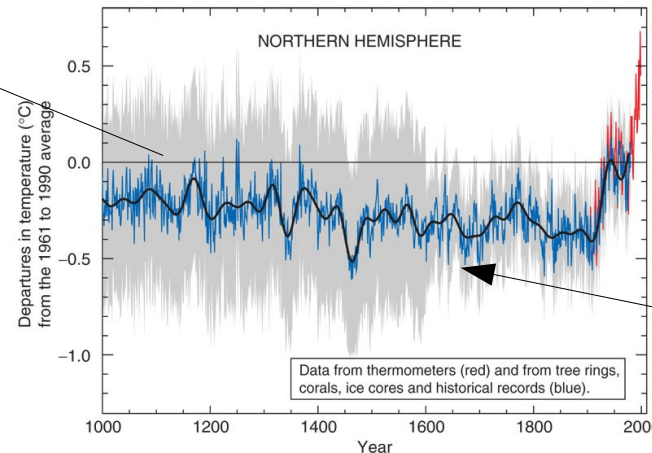
#1: Natural world? OK

#2: Measurement, etc? OK

#3: A hypothesis is formed? OK

Hockey Stick falsified

Medieval warm period removed?



Gluing different measurement methods together (red and blue)

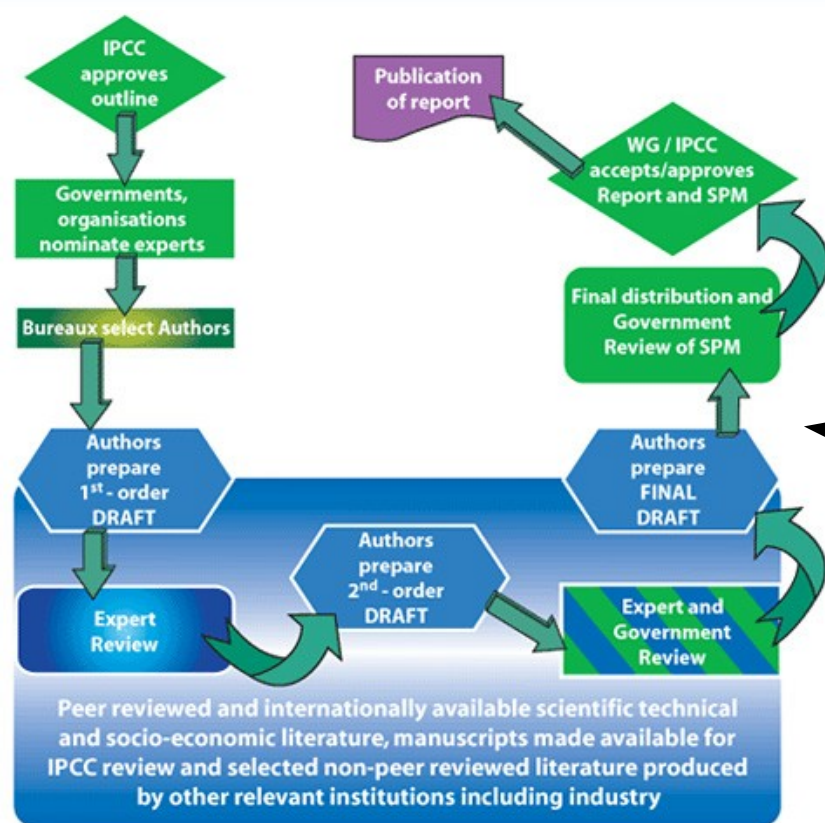
Little Ice Age removed?

- Steve McIntyre asks Mann for data and method
- Mann refuses (**Violating Rule #7 of science: Replication**)
- McIntyre puts university of Mann in court and wins
- McIntyre shows that **any data plugged into method of Mann results in a Hockey Stick**
- Hockey Stick (based on tree rings) has no statistical significance

Hockey Stick is a scientific error (if not fraud)

see: climateaudit.org

ClimateGate scandal



Scientists show they work towards acquiring convincing data to **support** their thesis, not trying to find anything against it.

Violating Rule #5, falsification

IPCC workflow (starts with approving the outcome of the research!)

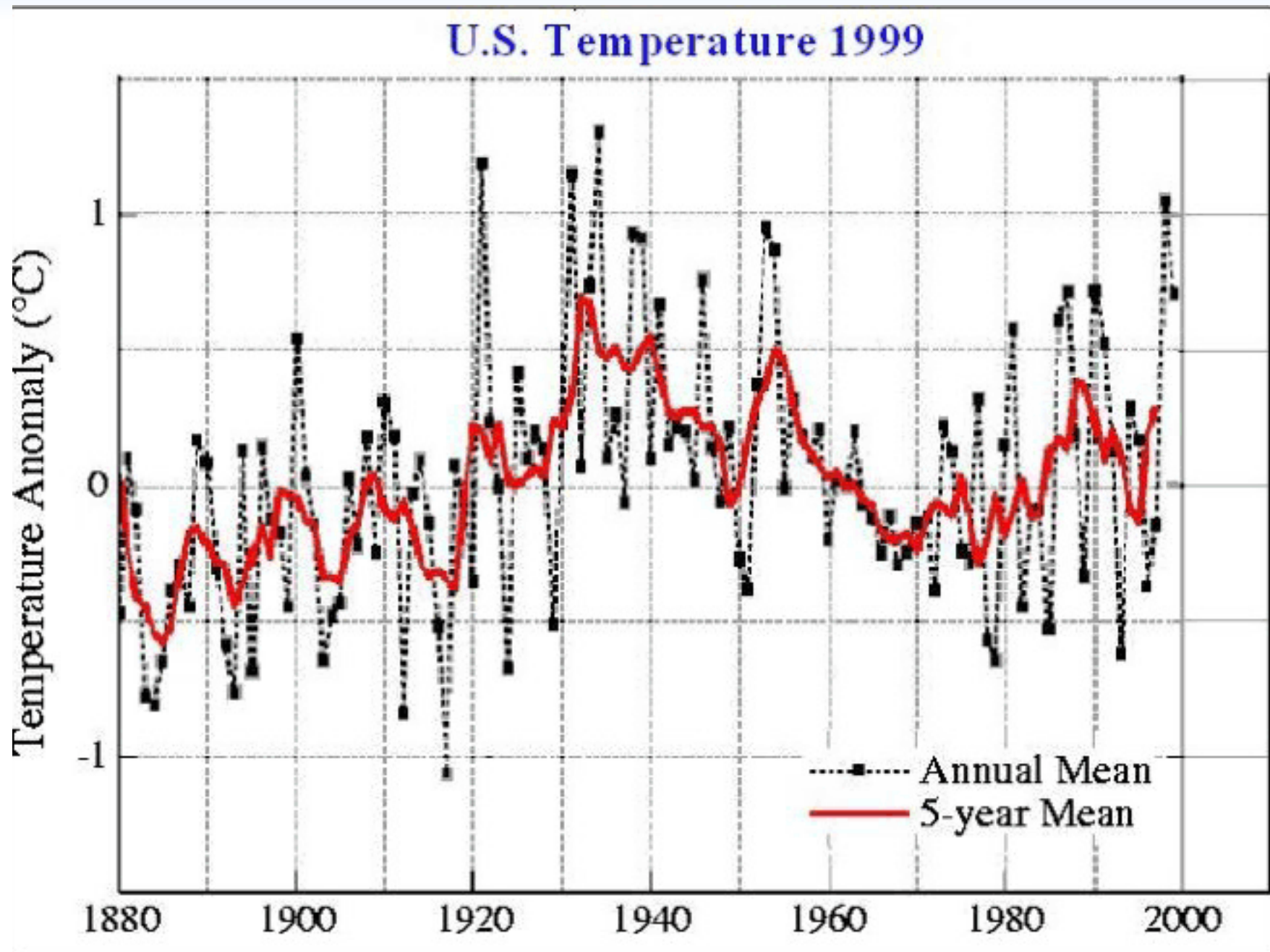
Kevin Trenberth (one of the biggest players in AGW):

"The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't."

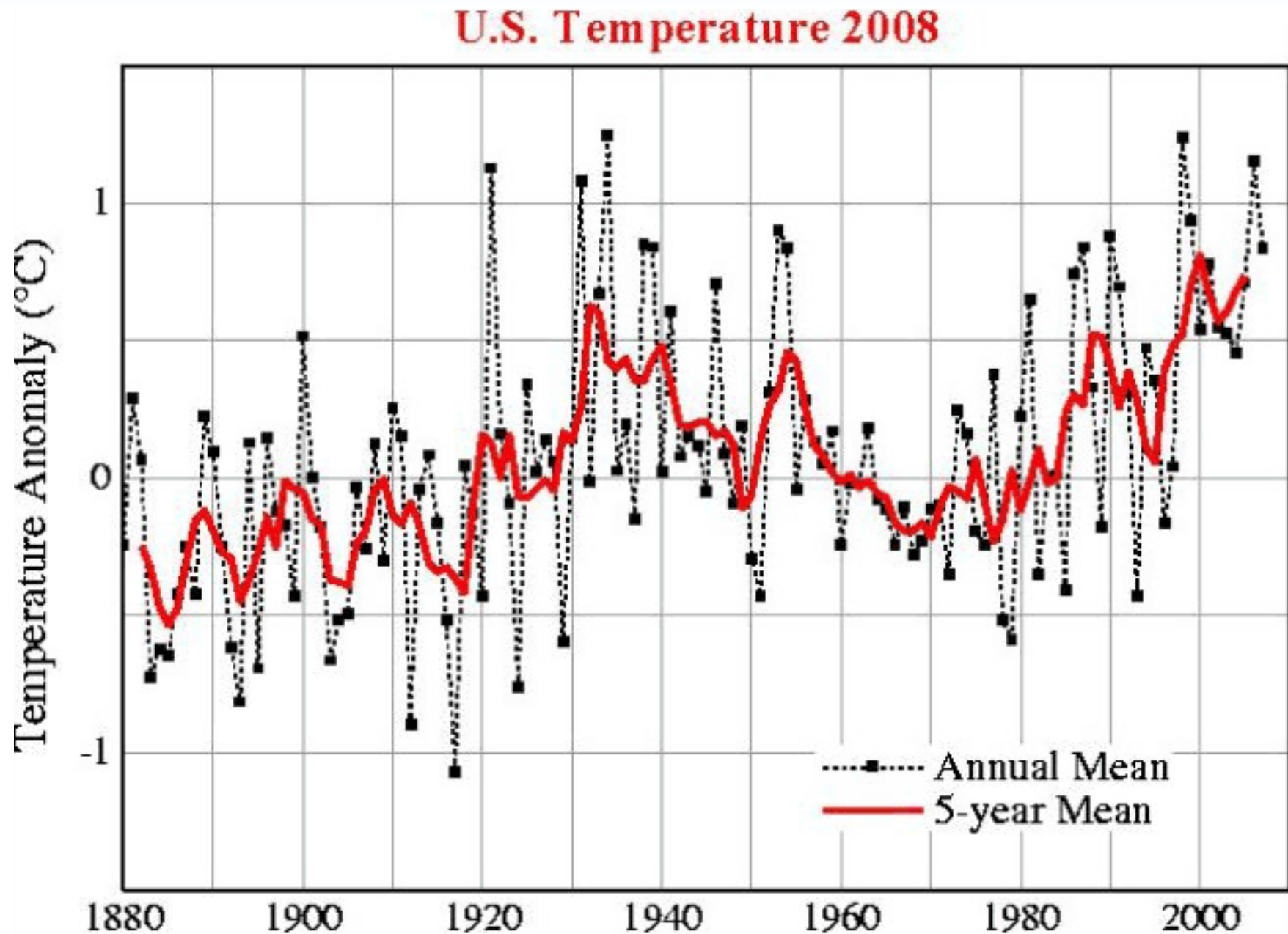
Reuters, 23 november 2009, Timothy Gardner

Politicians ordered scientists to shut up and demand data that prove AGW. "We need to act now!" Politicians have a need to make the world a better place (scientists do not!).

Modification of data

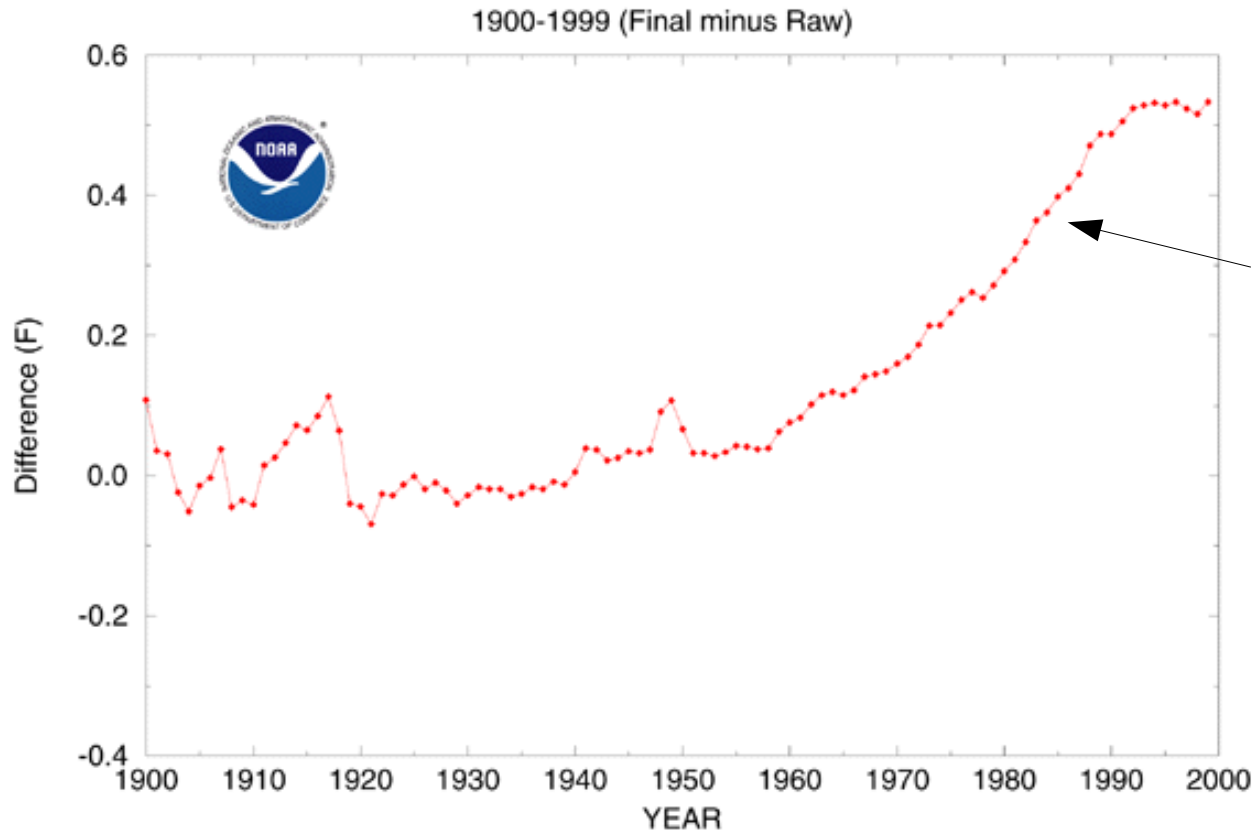


Modification of data



Modification of data

DIFFERENCE BETWEEN RAW AND FINAL USHCN DATA SETS



A fudge factor is an ad hoc quantity or element introduced into a calculation, formula or model in order to make it fit observations or expectations (Wikipedia)

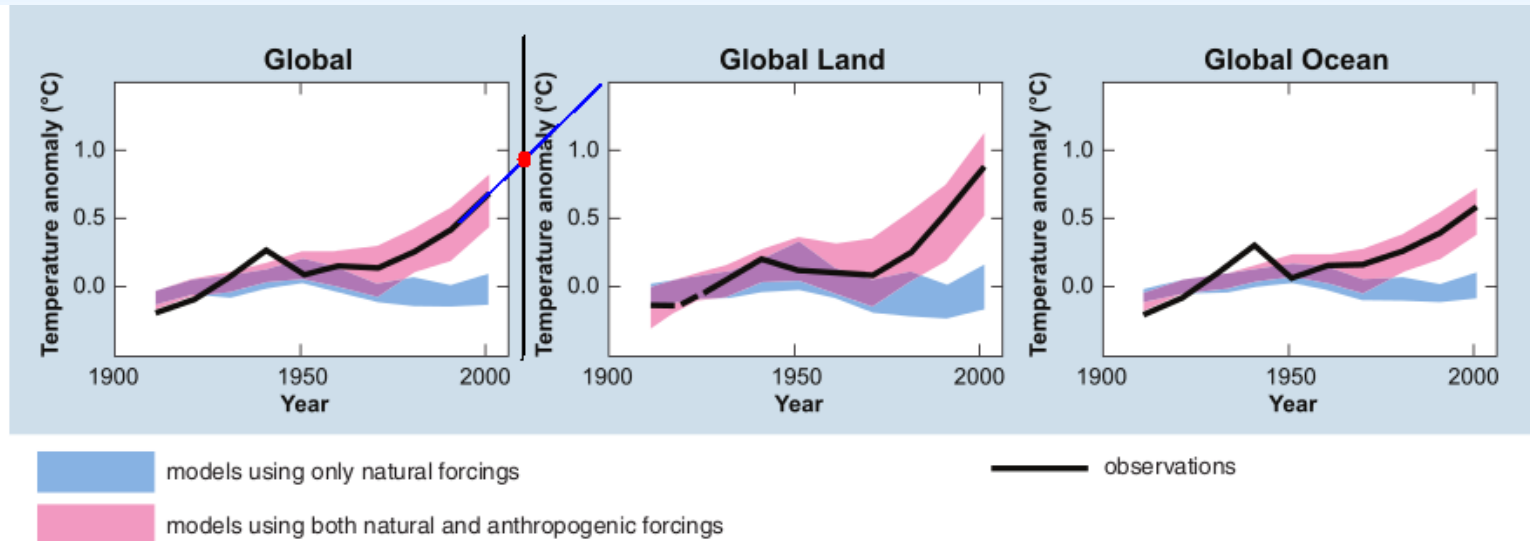
https://www.ncdc.noaa.gov/img/climate/research/ushcn/ts.ushcn_anom25_diffs_urb-raw_pg.gif

Trust your model, facts can be altered.

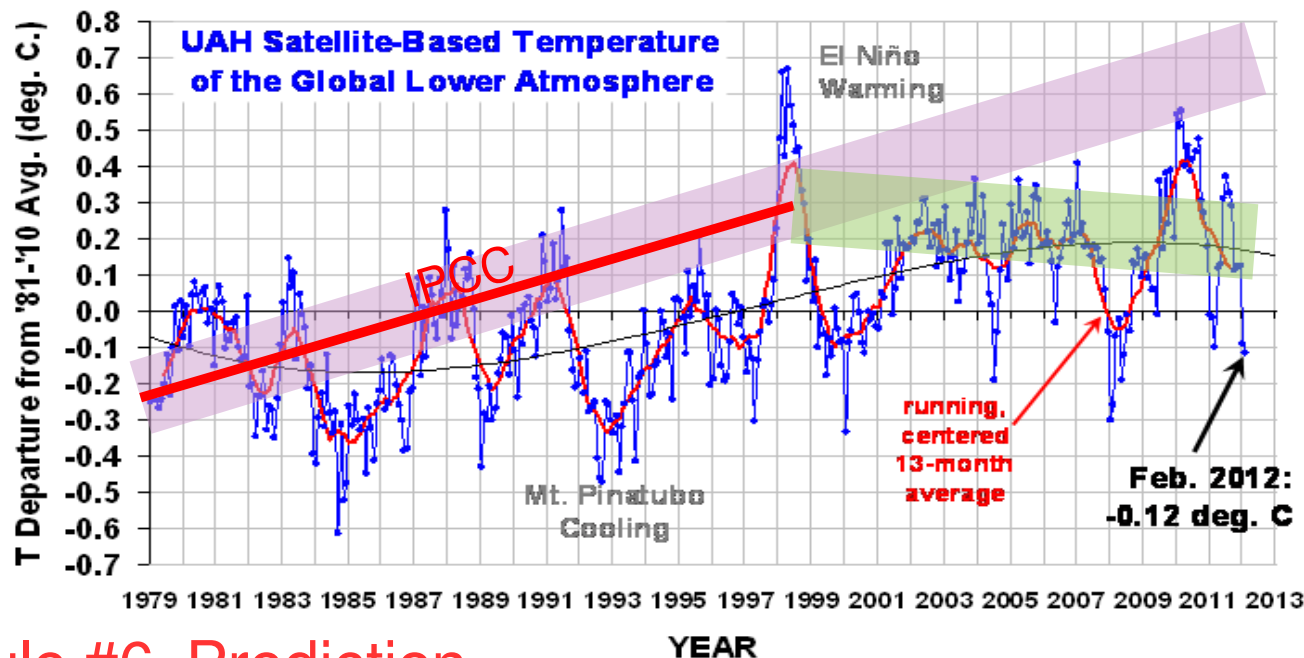
Violating rule #2 after all. Acquiring truthful data.

6: Prediction and reality; AGW rejected!

IPCC model
(2000):



Reality
(2012):



prediction

reality

sources of data: Top:
IPCC report, The
Scientific Basis.
Bottom:
wattsupwiththat.org.

Violating Rule #6. Prediction

Rule #3. Only model

Lack of warming (new data) is now used to adjust hypothesis. Called a pause (2013). Then pause removed from data altogether (2016). Even that is wrong:

Global Warming now marketed as 'Climate Change'

Violation of Rule #6: need of a possibility to prove model wrong

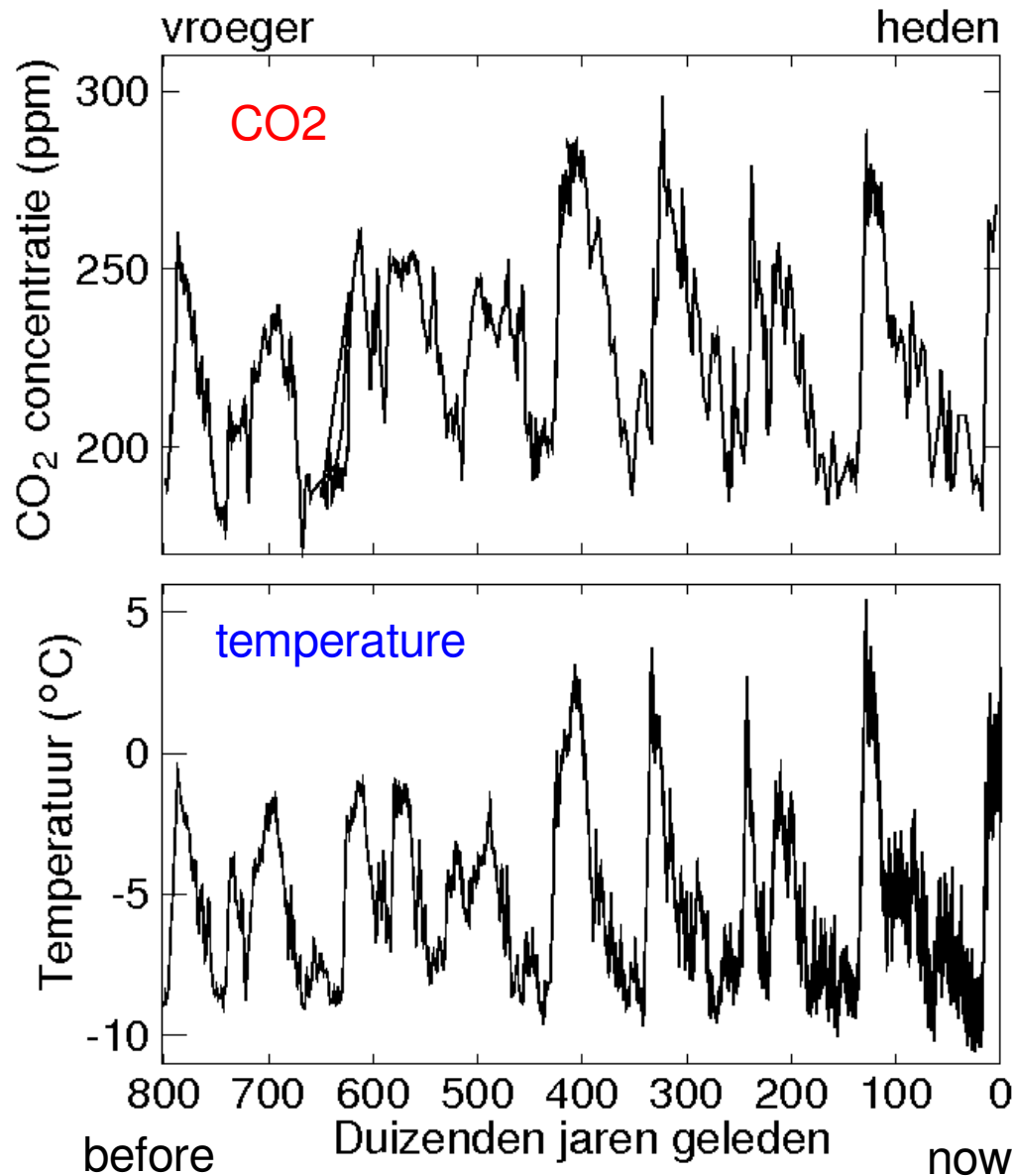
(now any weather event can be used to 'prove' the model!. Cold, warm, dry, wet, windy, “extremely average weather”, etc.)

Adjusted model is Bayesian (=constantly adjusted); **Cannot be rejected. Ever!** By definition of Bayesian character.

Violation of Rule #4, isolation: Authors should show that model is the *only* model

Every change to the model consistent with earlier data show that the approach is unscientific

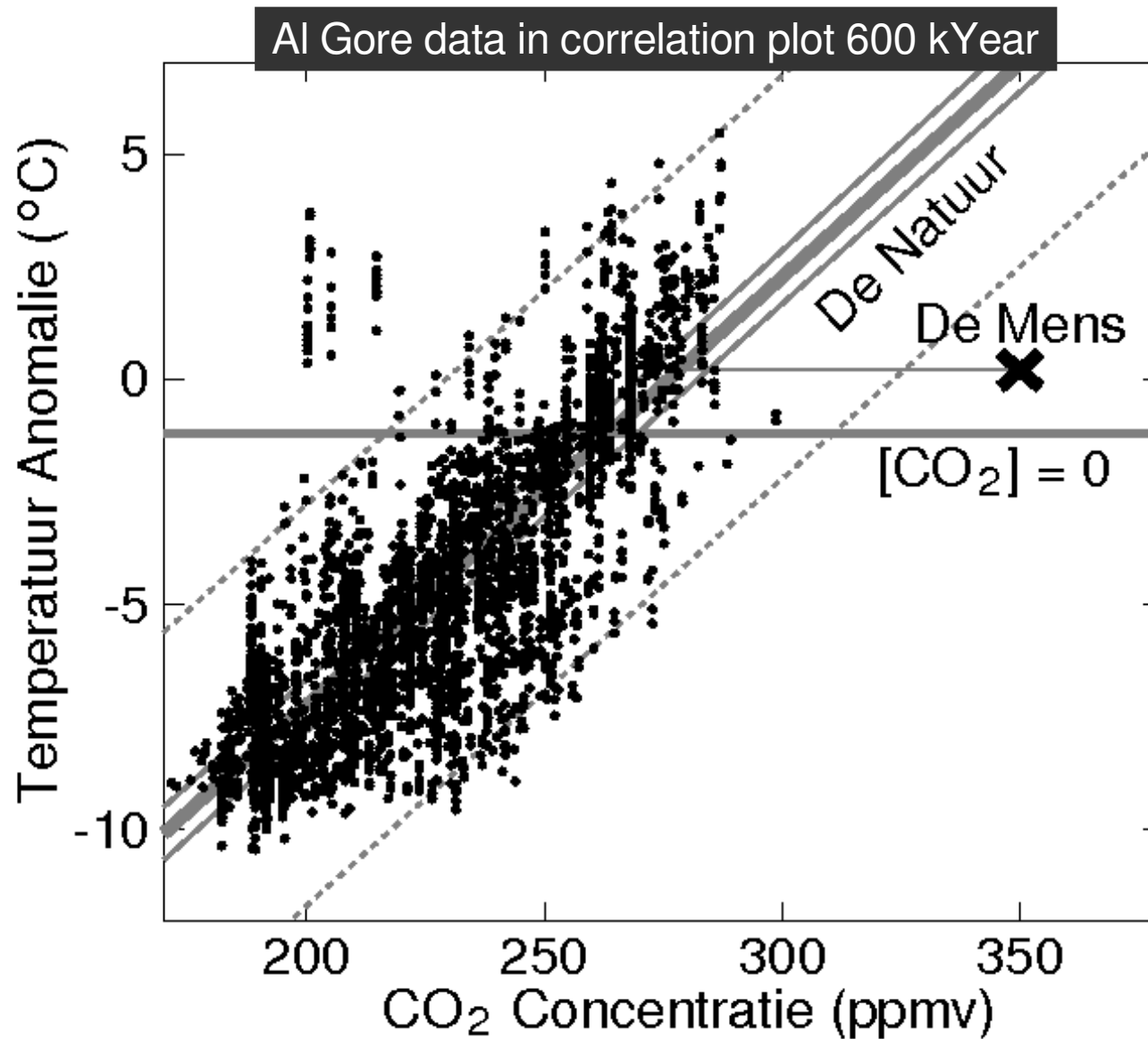
Going back to Gore



Correlation:

50 ppm = 10 °C

Correlation plot



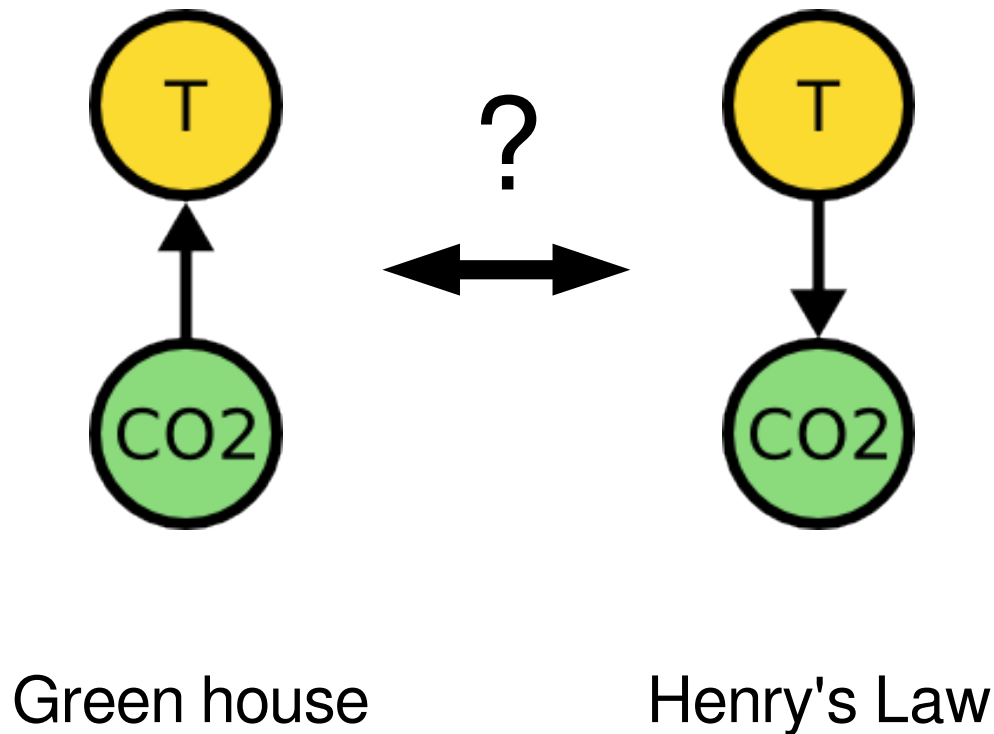
?

2012

We are here now in 2012
Why we did not heat up?

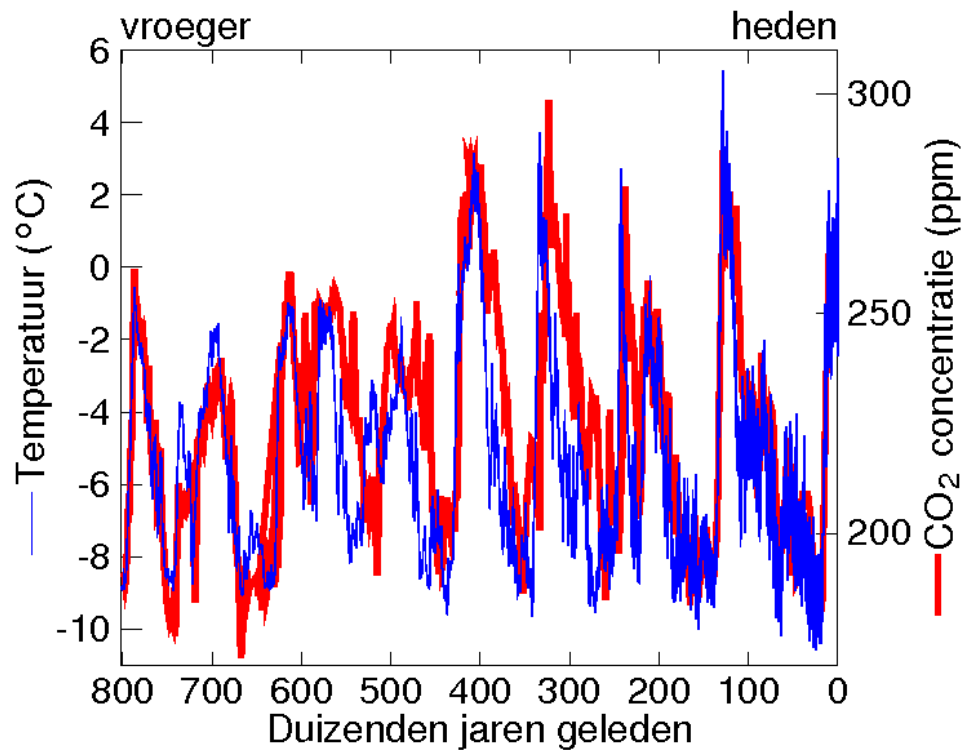
Cause and effect

“Correlation does not imply causation!!!”. Cause vs. effect

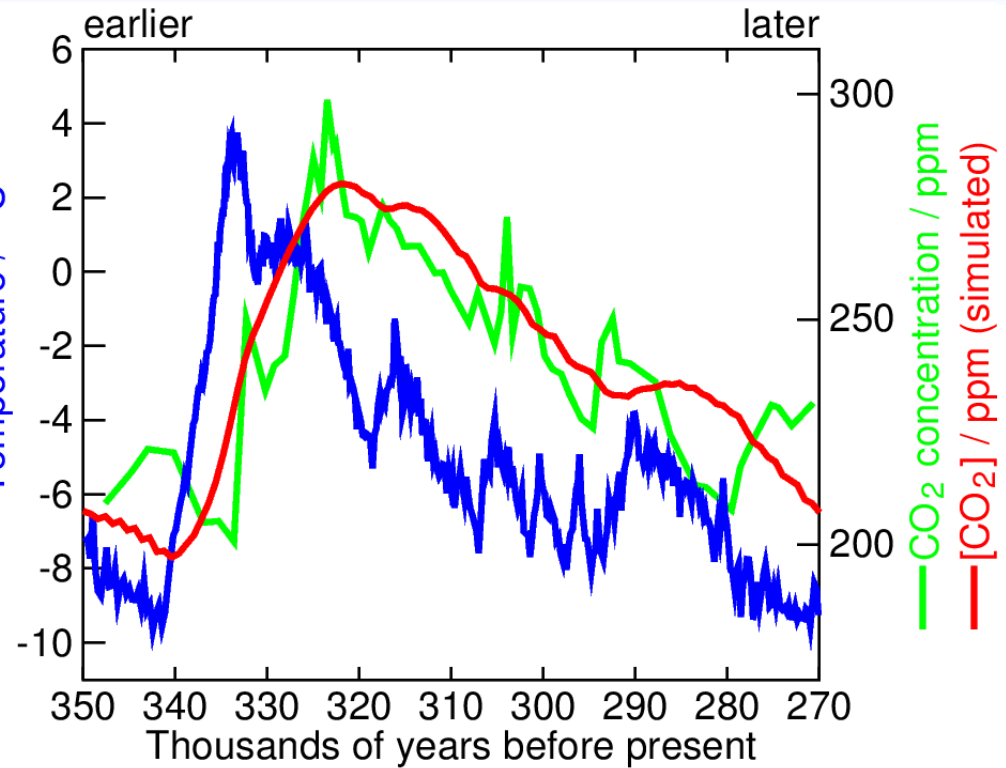


Violation Rule #4. Excluding alternative explanations
(they never even considered it)

Al Gore revisited



time →



time →

CO2 lags behind the temperature, about 600-1500 years!

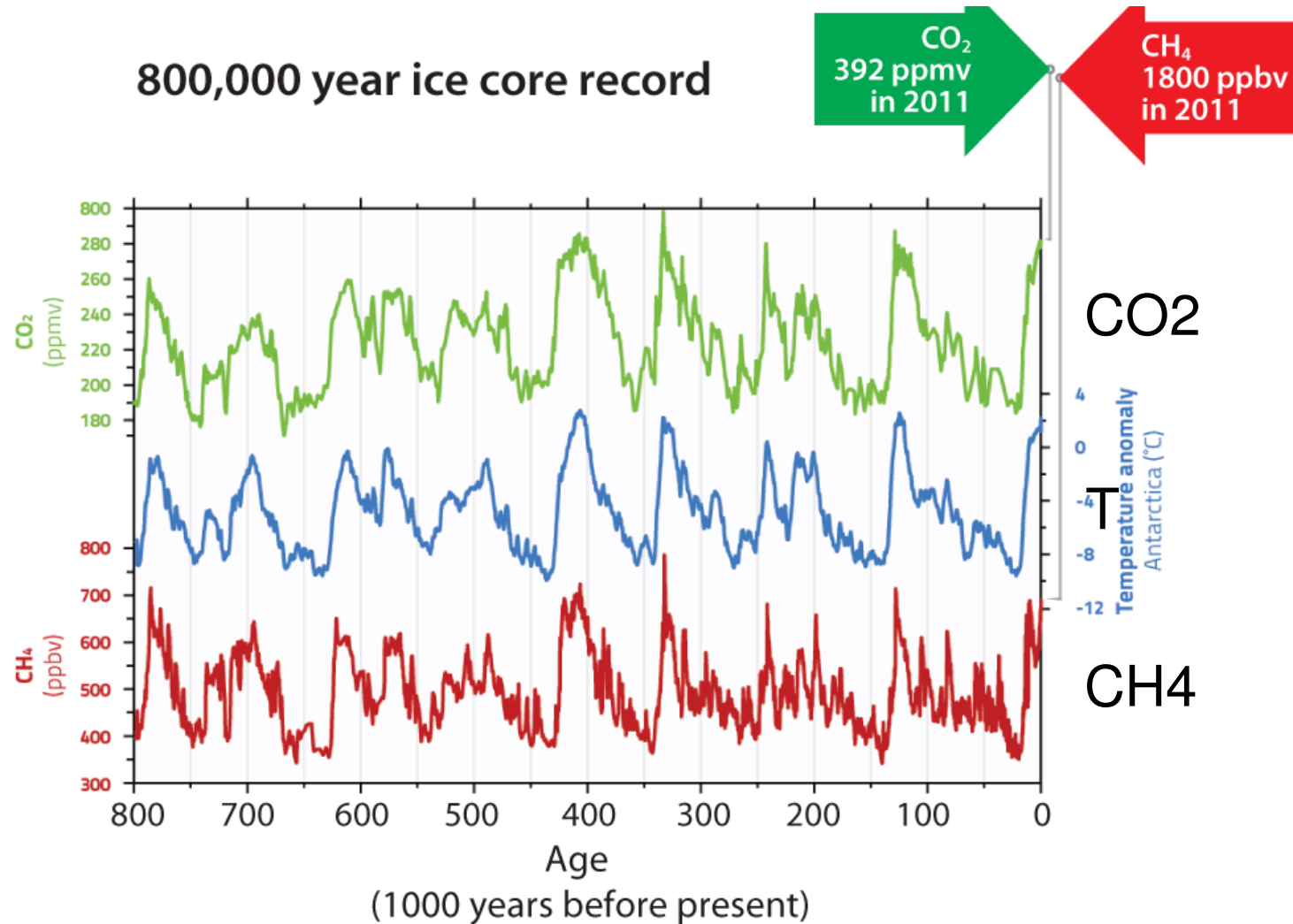
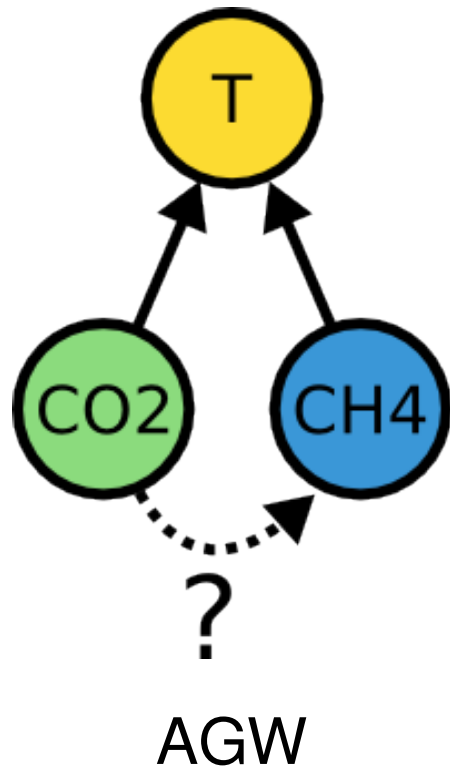
Indermühle et al.(*): 900 years

(this makes sense, actually. Henry's Law)

Stallinga & Khmelinskii (Int. Schol. Not.)

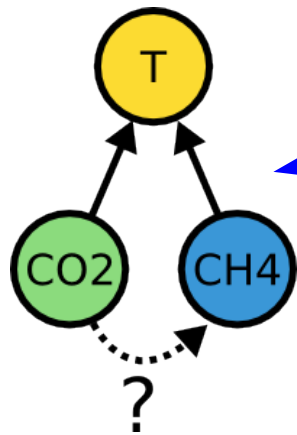
*: Indermühle, Geophys. Res. Lett. 27, 735 (2000).

Methane: It starts smelling bad!



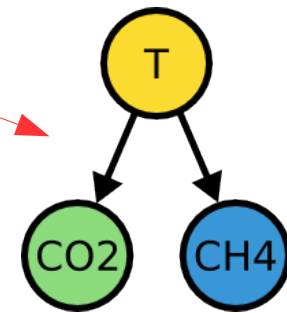
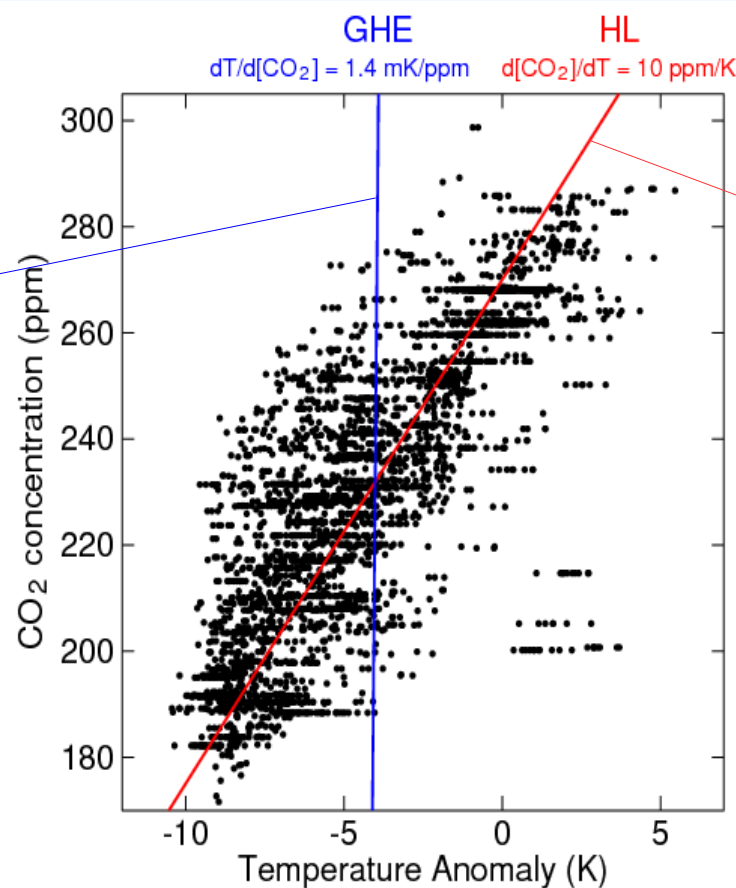
How did the 'information' pass from CO₂ to CH₄?

Cause and effect



Green House Effect

Wrong



Henry's Law
(out-gassing of oceans)
(time scale: 1 kyr)

Correct

This alternative explanation was never considered seriously
Violating rule #4 of the Scientific Method (isolation)

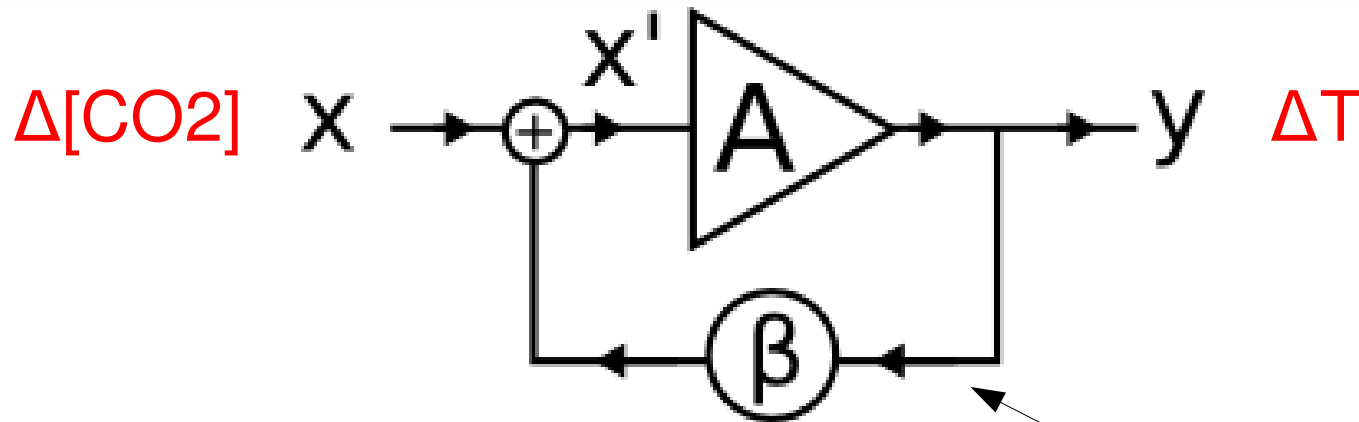


What does adding CO₂ above a glass of water do to its temperature?



What does changing the temperature do to the CO₂ above a glass of water?

Positive feedback; electronics 101



Open loop gain is of order $A = (0.05^\circ\text{C})/(400 \text{ ppm})$

The total gain with feedback is given by

$$G = \frac{\Delta T}{\Delta[\text{CO}_2]} = \frac{A}{(1 - A\beta)}$$

With one additional parameter, β , **any desired temperature** rise can be simulated (the mother-of-all fudge factors)

Step 2: **Assuming all ΔT is caused by $[\text{CO}_2]$. Fit curve and extrapolate!**

For instance white ice that melts and liberates CO_2

Black box (magic) research

Researchers say “Well, it warms up, and the cause is CO₂, because that comes out of our computers” (ex. Met Office Hadley Centre in London with their costly supercomputers).

This is ‘Oracle science’ (a.k.a. ‘magic’)

Violating Rule #7. Replication. Explain how it works so that peers can check it.



The Oracle of Delphi in ancient Greece

Black box (magic) research

Researchers say “Well, it warms up, and the cause is CO2, because it comes out of our computers”

This is ‘Oracle science’ (a.k.a. ‘magic’)

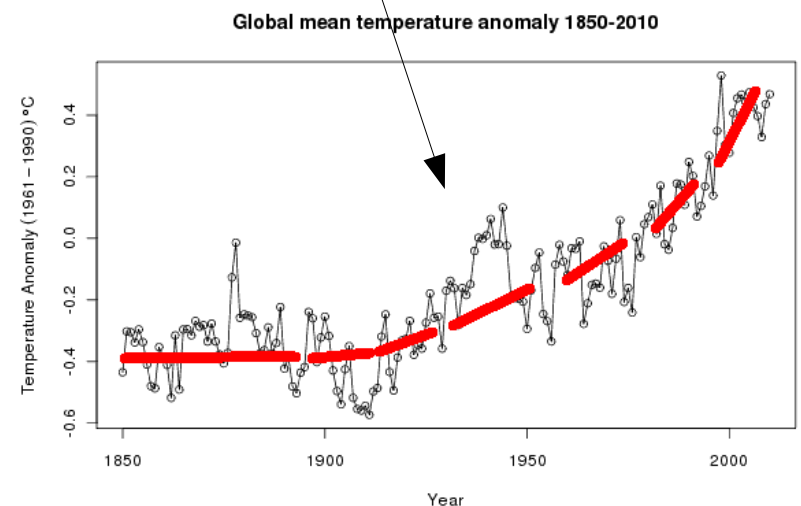
Violating Rule #7. Replication. Explain how it works so that peers can check it.

My black box computer program. (Which you are not allowed to see)

```
if year=1850 then temperature = 21.6 °C
else if year=1851 then temperature = 21.8 °C
|
else if year=2100 then temperature = 31.6 °C
```

Warming up dramatically. We are all going to fry!

Can explain the data, so I am right, duh!



The Scientific Method and AGW:

- 1: Subject: OK
- 2: Measurement: FAIL. Fraud, data manipulation and cherry picking
- 3: Hypothesis: OK (but rejected, see #6)
- 4: Isolation: FAIL. Bayesian adjustment
- 5: Falsification: FAIL. Search for proof
- 6: Prediction: FAIL
- 7: Replication: FAIL

There *is* room for doubt!

Climate change is not (I repeat **NOT**) a fact

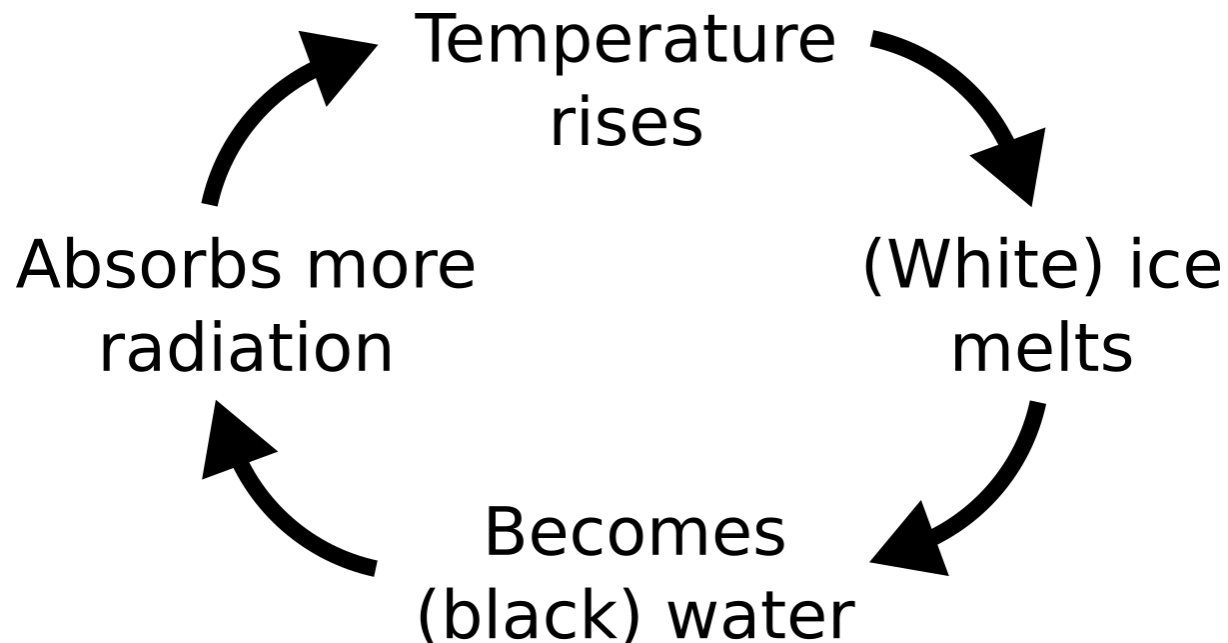
North Pole ice: positive feedback

“North Pole [will be] ice free in 2010” (New Scientist, 25 April 2008)

“North pole ice free in five years” (Al Gore, 2009)

<https://www.youtube.com/watch?v=Msiolw4bvzI>

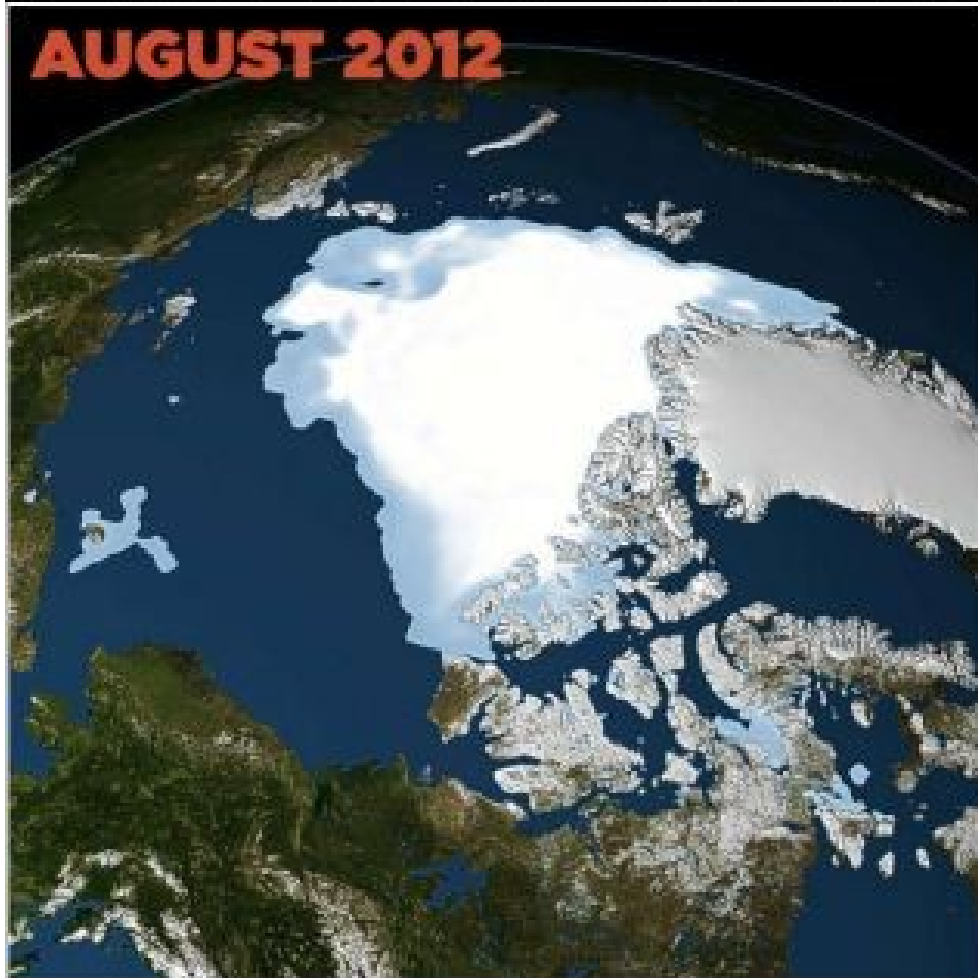
Albedo positive feedback effect:



North Pole ice

Erm ... how can ice grow 60% in one year?!!!

HOW ICE SHEET GREW 920,000 SQUARE MILES IN A YEAR



CONTRACTION: This Nasa satellite image shows the ice at the smallest extent on record, with much of the Arctic Ocean uncovered



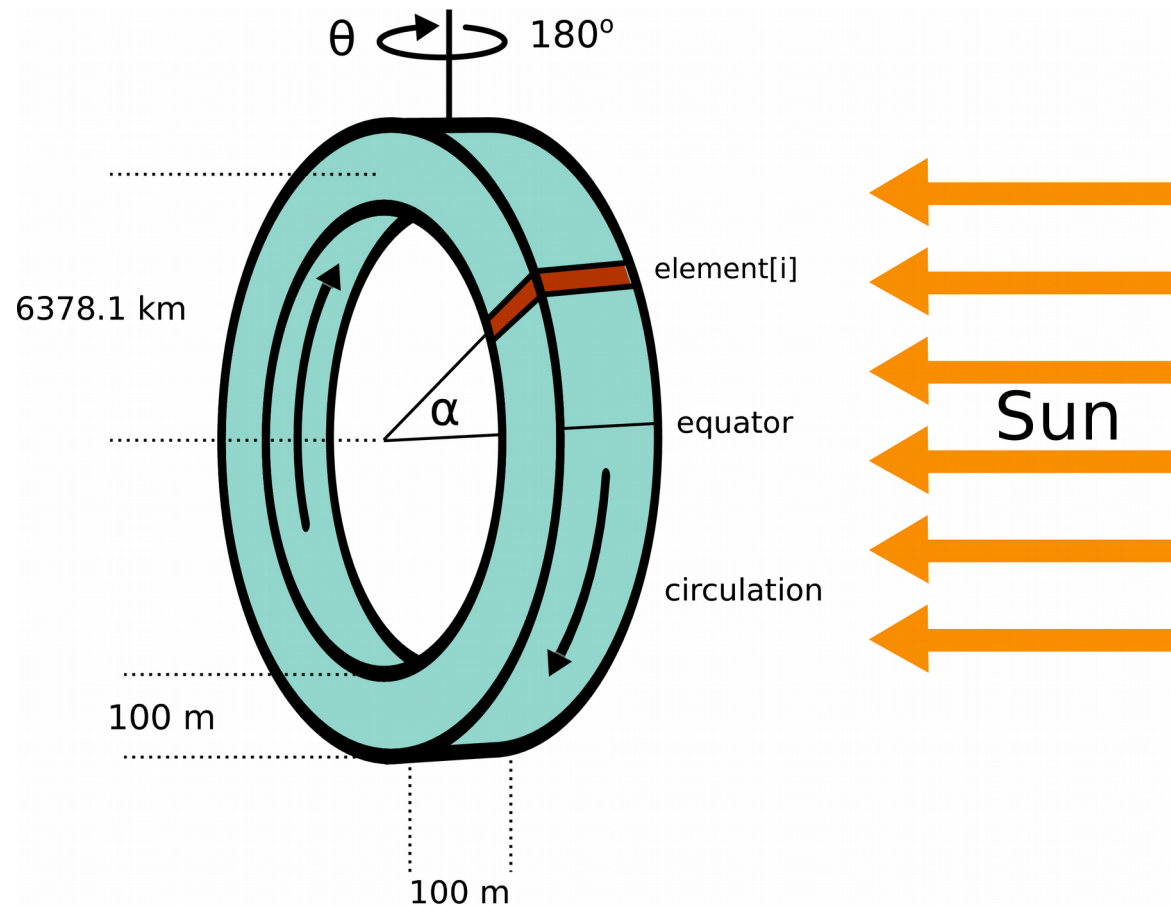
RECOVERY: Contrary to predictions that the ice would have vanished by this summer, it has actually increased by 60 per cent from last year

Finite-elements calculations

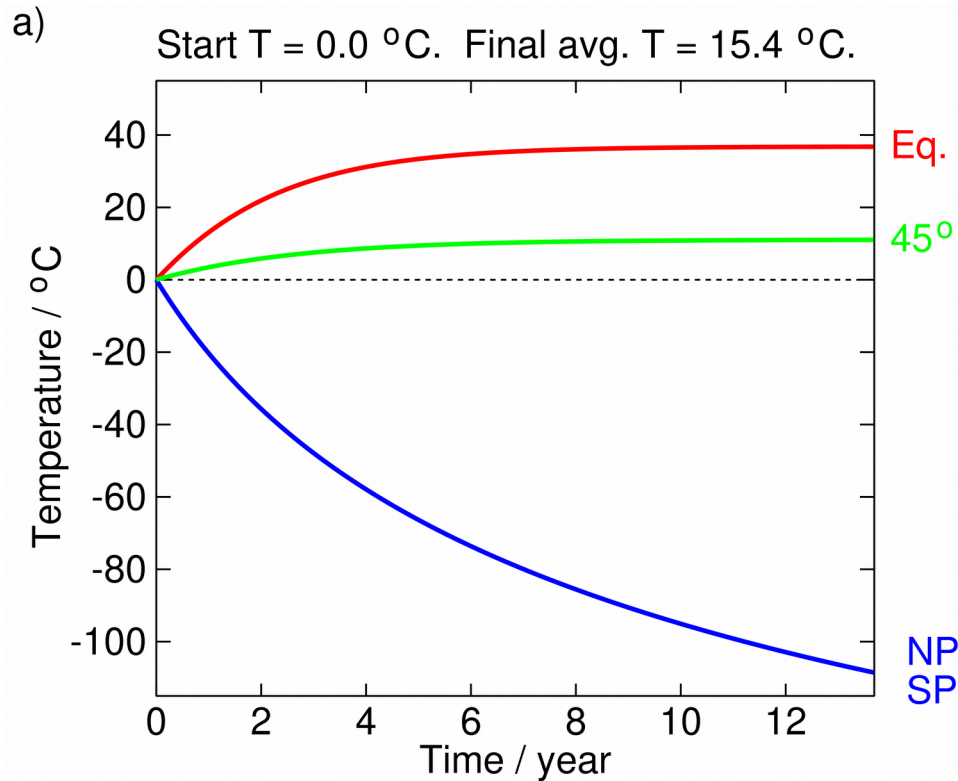
“Negative Feedback in the Polar Ice System”

Peter Stallinga, Igor Khmelinskii

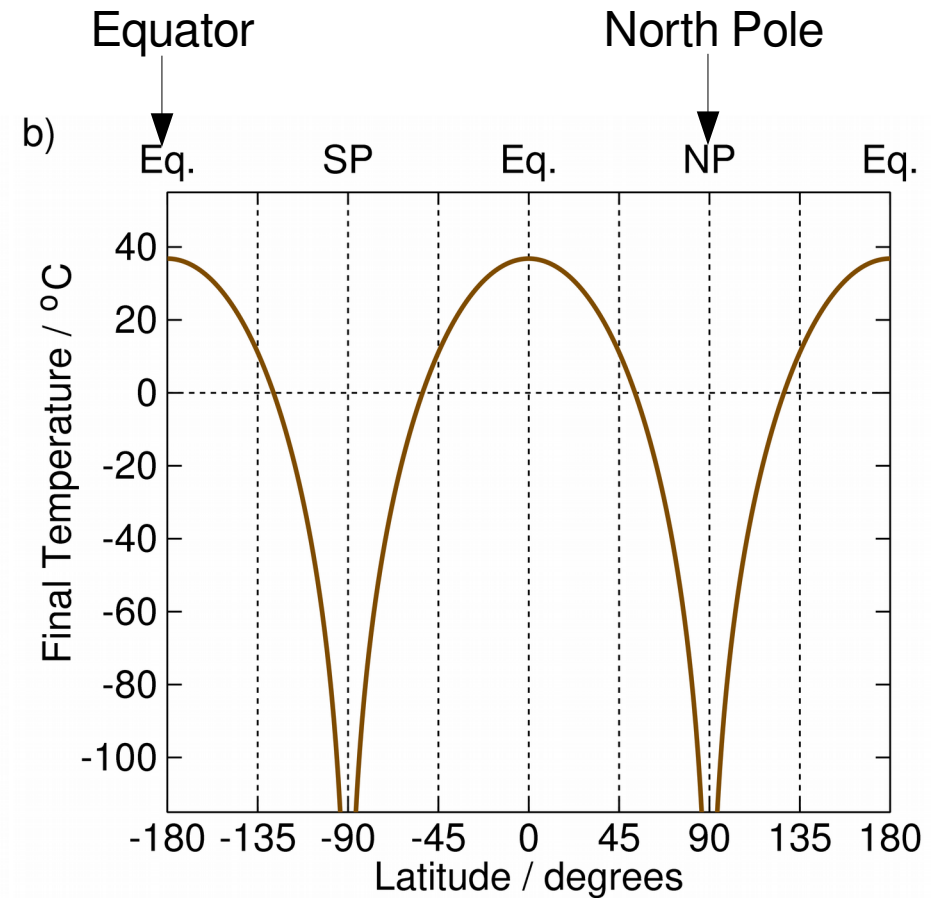
Atmospheric and Climate Sciences 7, 76 (2017)



No albedo effects, no current



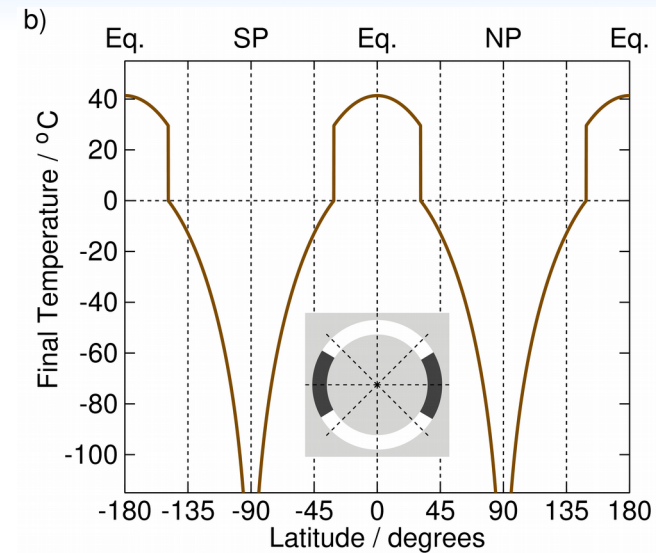
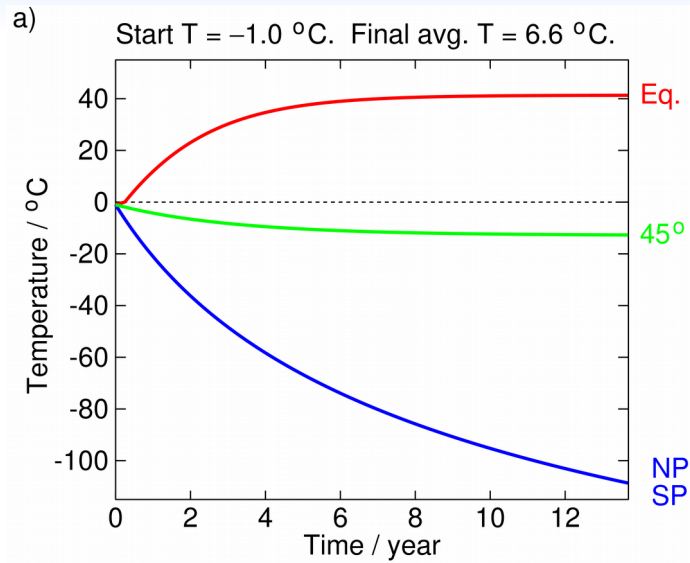
Evolution



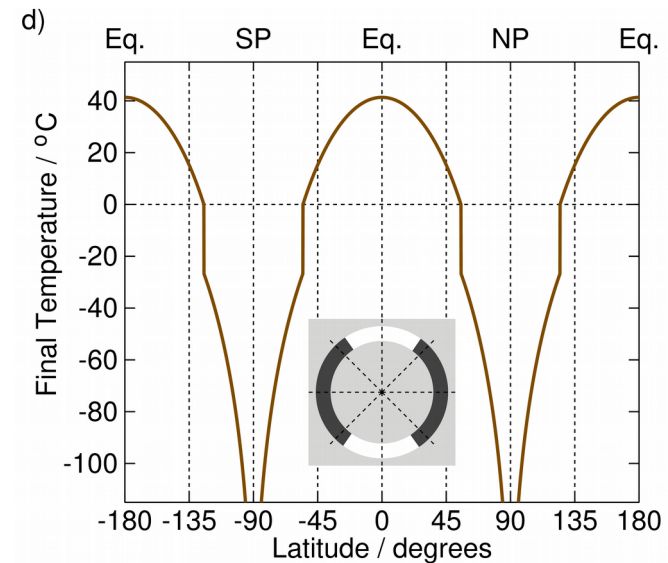
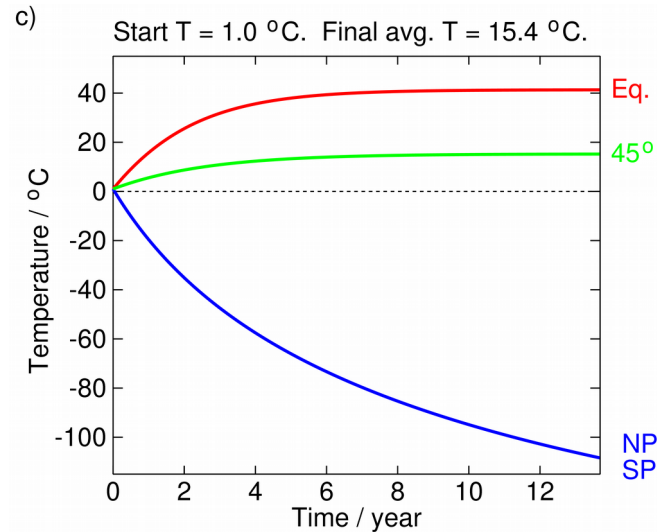
Final state

Albedo effect. Hysteresis

Starting all as ice

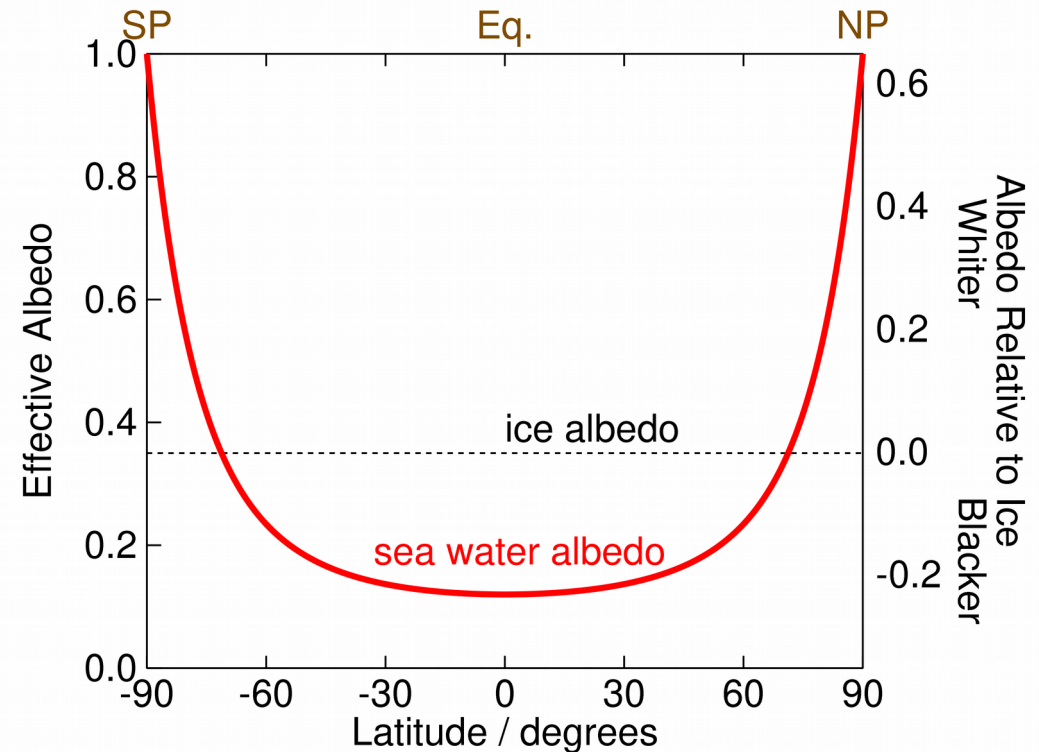


Starting all as water



It can indeed be that all ice permanently disappears!

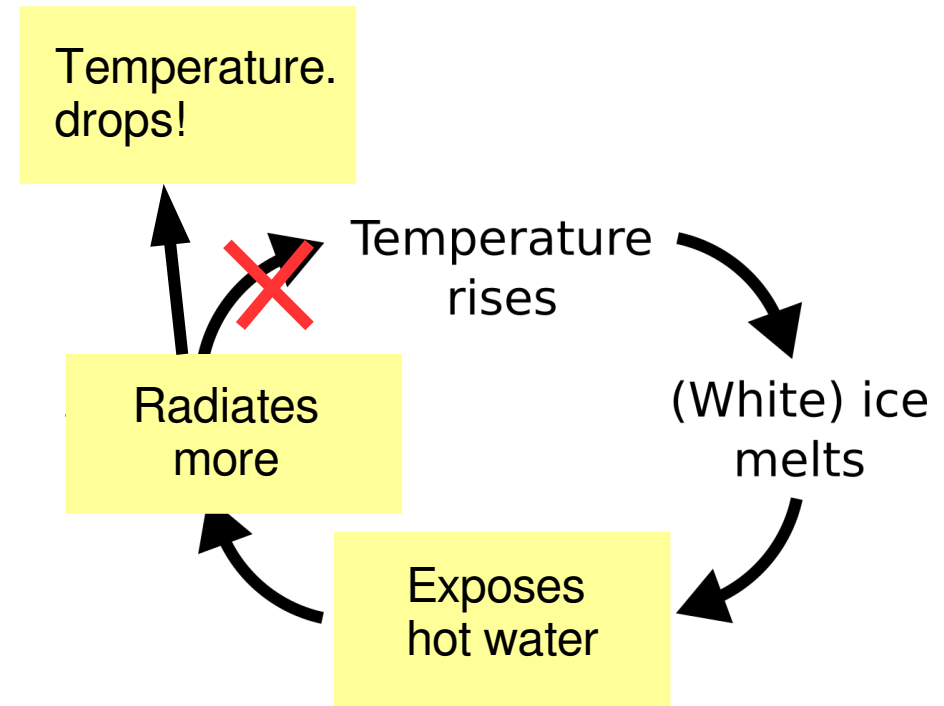
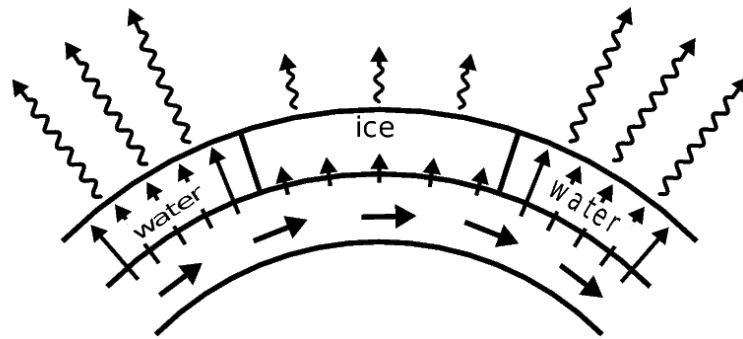
But ... water is white!



Water is less reflective than ice at low angles
(Fresnel reflection)

So, the albedo effect only works for ice at the equator (sic)

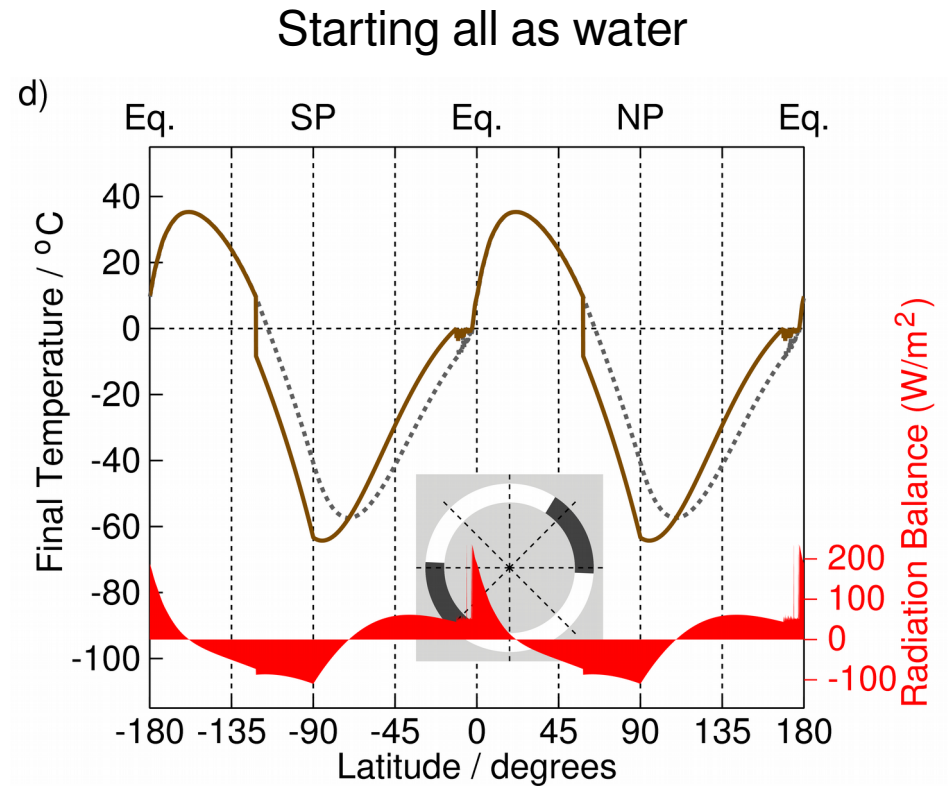
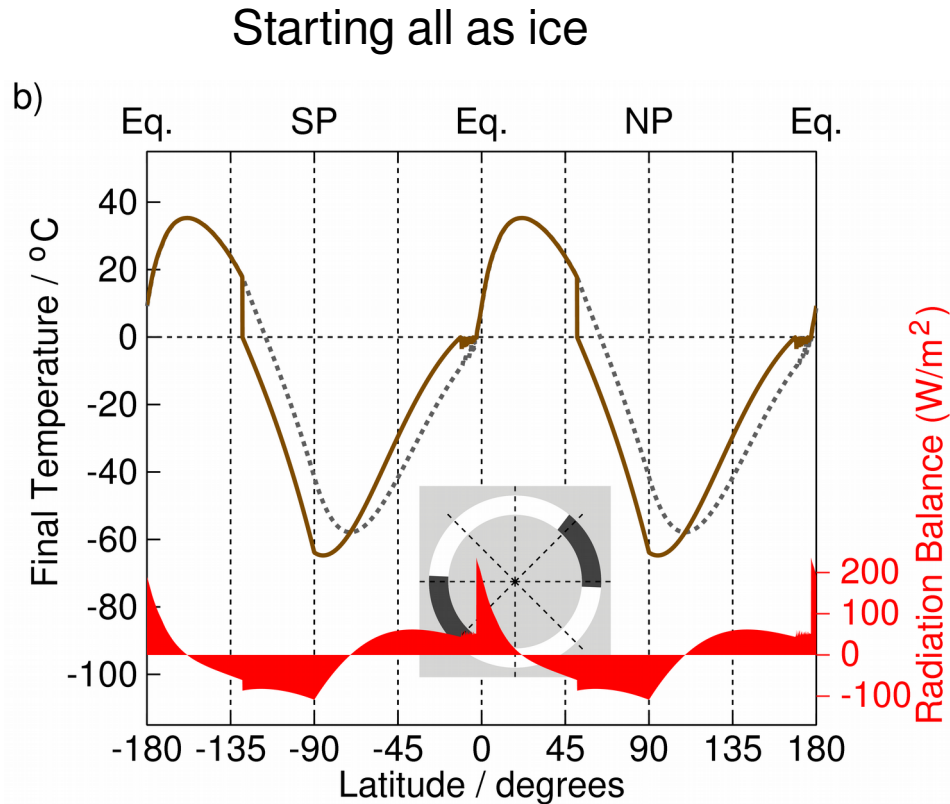
Transport of heat (horizontal & vertical)



Ice works like a blanket. Surface can cool down very much and this blocks radiation. Planet will heat up and melt ice. That exposes 'hot' water to the surface, increasing radiation

Negative feedback! This might (!) explain the observations

No albedo effects, no current



No difference. No longer hysteresis.
The planet auto-regulates itself!!!

General summary

Science is dead (not performed by professionals), especially in Global Warming subject

The **Global Warming model has scientifically been debunked**

Observed behavior of **polar ice can be explained** by including ice-blanket (and Fresnel) effect

Continuing to insist on calling it science is a fraud. Because money is made, it can even be called a **swindle**.

Science is alive. You cannot stop people to think and come up with beautiful ideas

Don't be ashamed of your own ideas. Really think out of **their** box. Don't be afraid being politically incorrect, or to go against dogmas. Be a skeptic! Be agnostic! Don't be intimidated by politicians and religious leaders! Don't be a sucker!

Final words. It is all politics!

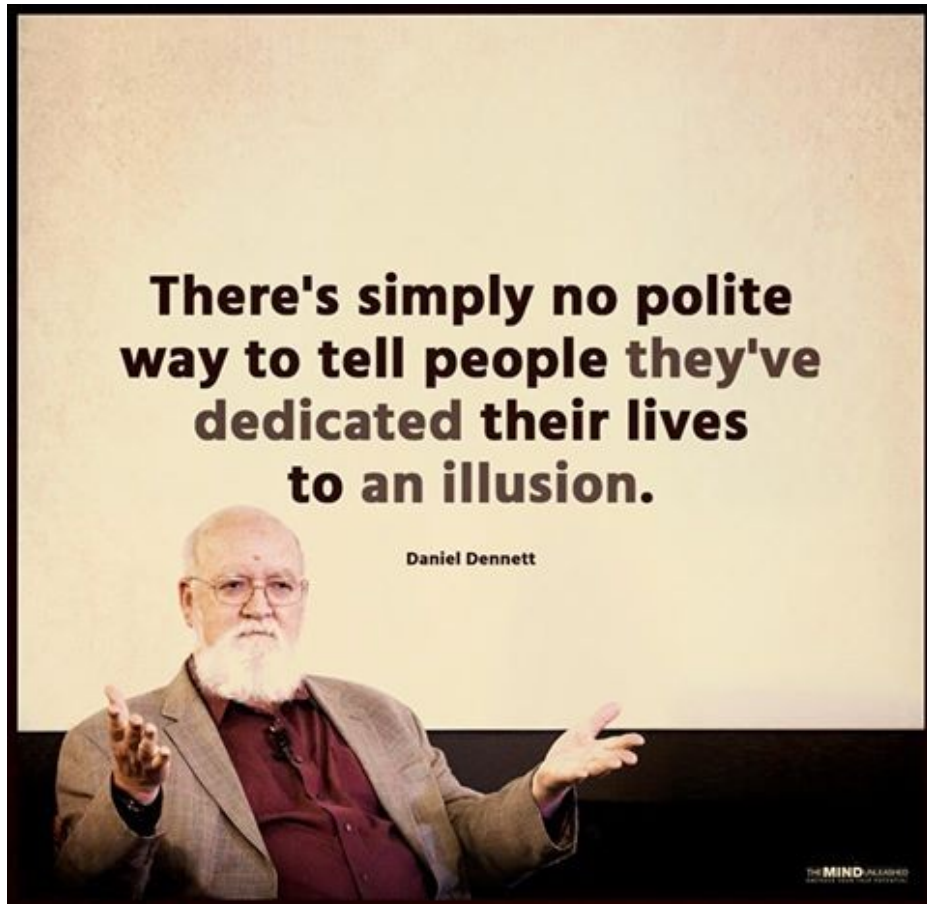
“In searching for a new enemy to unite us, we came up with the idea that pollution, the threat of global warming, water shortages, famine and the like, would fit the bill. [...] The real enemy then is humanity itself”

– The Club of Rome, 1991

“We’ve got to ride this global warming issue. Even if the theory of global warming is wrong, we will be doing the right thing in terms of economic and environmental policy”

– Timothy Wirth, President of the UN Foundation

End



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