



# **The End of Enlightenment?**

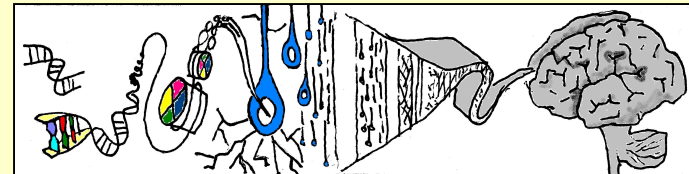
By: The Strategically Evil Scientists

[www.BillHowell.ca](http://www.BillHowell.ca), Ottawa, 25 September 2009

# Disclaimers

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The contents do not necessarily reflect the opinions of the authors, either.

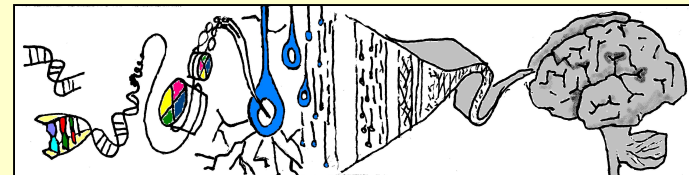


# Keep in Mind - This paper is NOT...

If your readings skills and thinking are poor, you might mis-interpret the thrust of this presentation.

This presentation is NOT:

- An attack on science – I am very pro-science, but where the necessary preconditions for science to work effectively are understood (they are NOT, even by top scientists).
- An attack on the profession of science - There is certainly a need for scientists doing science , and more importantly “strong” thinking. But the point here is that isn't what society seems to be getting from the huge populations of scientists.

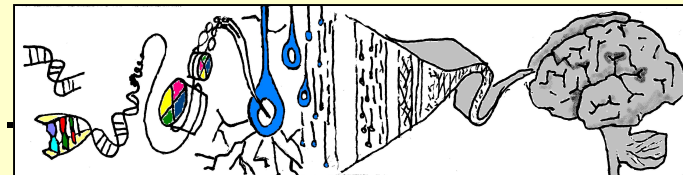


# Keep in Mind - This paper IS...

If your readings skills and thinking are poor, you might misinterpret the thrust of this presentation.

## This presentation IS:

- An attack on the misrepresentation, by the vast majority of scientists, that they are practicing very high quality, professional thinking that is rational, logical, or scientific.
- An attack on the oxymoron “consensus science” applied to politically-correct concerns of the public (notably health and the environment, but other areas as well) - it is the rule, rather than the exception, that consensus science is hugely Dishonest AND Dysfunctional AND Delinquent (D-cubed).
- A lead-in to future work explaining the limits on rational, logical, and scientific thinking, and descriptions of approaches that can handle complexity and ill-understood systems (the humanities do this much better than scientists).



# I. Introduction

Is modern Enlightenment in danger?

- POSSIBLY – and there is historical precedence. But the greatest threat to modern science is the scientists themselves
- We're pro-Science, but critical of scientists and wary of the limitations of “classical science”
- Where might post-classical-science tools be heading?

Outline:

- II. The Kyoto Premise - Ignoring the 800 pound gorilla
- III. CO2 is a good guy
- IV. The Kyoto Premise - other crumbling scientific pillars
- V. How do scientists really think and behave?
- VI. My self-delusional model for the rise & fall of Enlightenment
- VII. Beyond calculus, symbolic processing, and science (future)
- VIII. Conclusions – inward-looking skepticism, evolution (future)



# I. Introduction (continued)

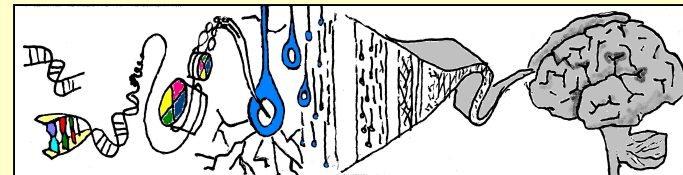
Kyoto Premise – is the presumption that anthropogenic GHGs [have, are, will] have a catastrophic impact on the climate, ergo the environment, ergo mankind

Quip:

*The Kyoto Premise is a fraud by government and academic research scientists, amplified by government policy analysts, and taken to a lunatic scream by environmentalists and the media.*

Ian Plimer's 2009 "Heaven and Earth" very good recent reference, there have been dozens of others over the last decade

Ian Plimer Mar09 "Heaven and Earth, Global warming the missing science" Taylor Trade Publishing, 503pp



## II. The Kyoto Premise - Ignoring the 800 pound gorilla

# THE most important Green House Gas!!

We've known since the mid 1800's what, BY FAR, the most important GHG is.

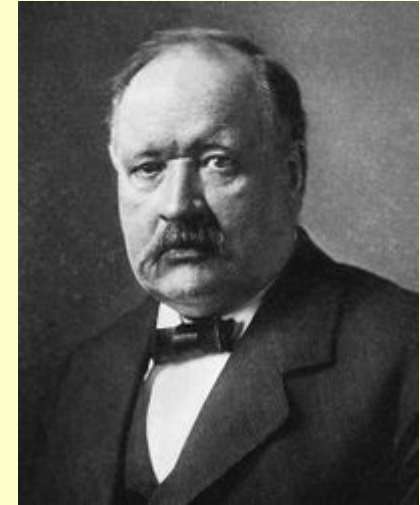
## What is it?



Joseph Fourier  
1824 paper



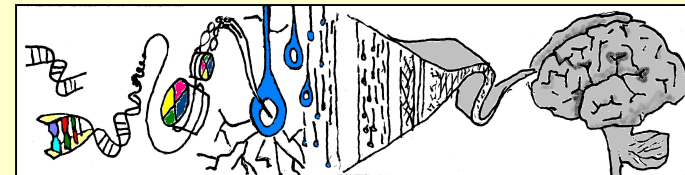
John Tyndall  
1859 paper



Svante Arrhenius  
1896 paper

<http://en.wikipedia.org/wiki/Arrhenius>  
[http://en.wikipedia.org/wiki/Joseph\\_Fourier](http://en.wikipedia.org/wiki/Joseph_Fourier)  
[http://en.wikipedia.org/wiki/John\\_Tyndall](http://en.wikipedia.org/wiki/John_Tyndall)

(he also pushed  
Wallace & Darwin's  
work on evolution)



## II. The Kyoto Premise - Ignoring the 800 pound gorilla

# Water vapour - King of GHGs!!!

## John Tyndall, 1859:

...The answer he received was that water vapour, among the constituents of the atmosphere, was the strongest absorber of radiant heat and was the most important gas controlling the Earth's surface temperature.

## A leading Canadian scientist:

GHG #1 : water vapour

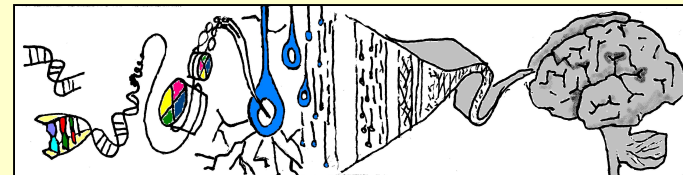
GHG #2 : water vapour

GHG #3 : water vapour

GHG #4 : water vapour

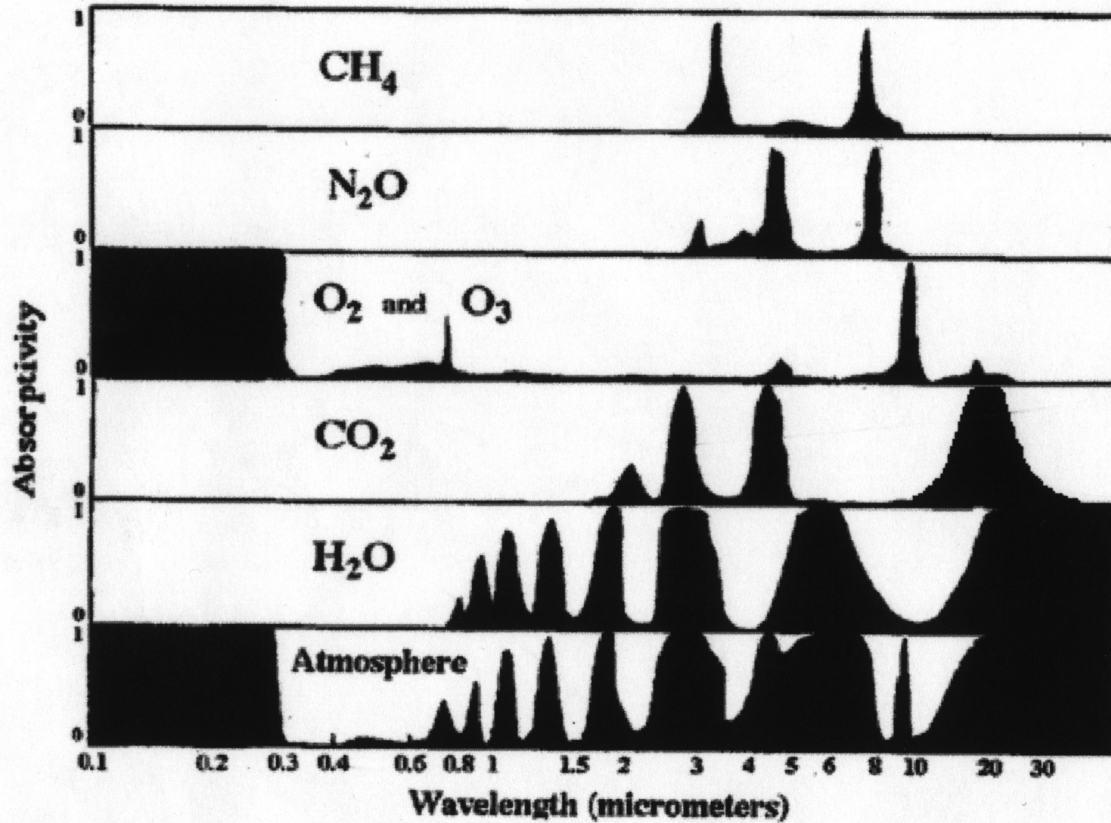
GHG #5 : carbon dioxide

James Rodger Fleming "John Tyndall's Research on Trace Gases and Climate" in "Historical Perspectives on Climate Change (New York and Oxford: Oxford University Press, 1998)



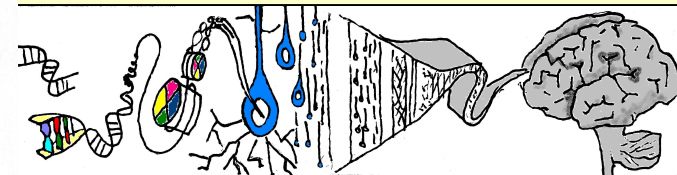


# III. The Kyoto Premise - Ignoring the 800 pound gorilla CO<sub>2</sub> as THE major GHG? Nyet



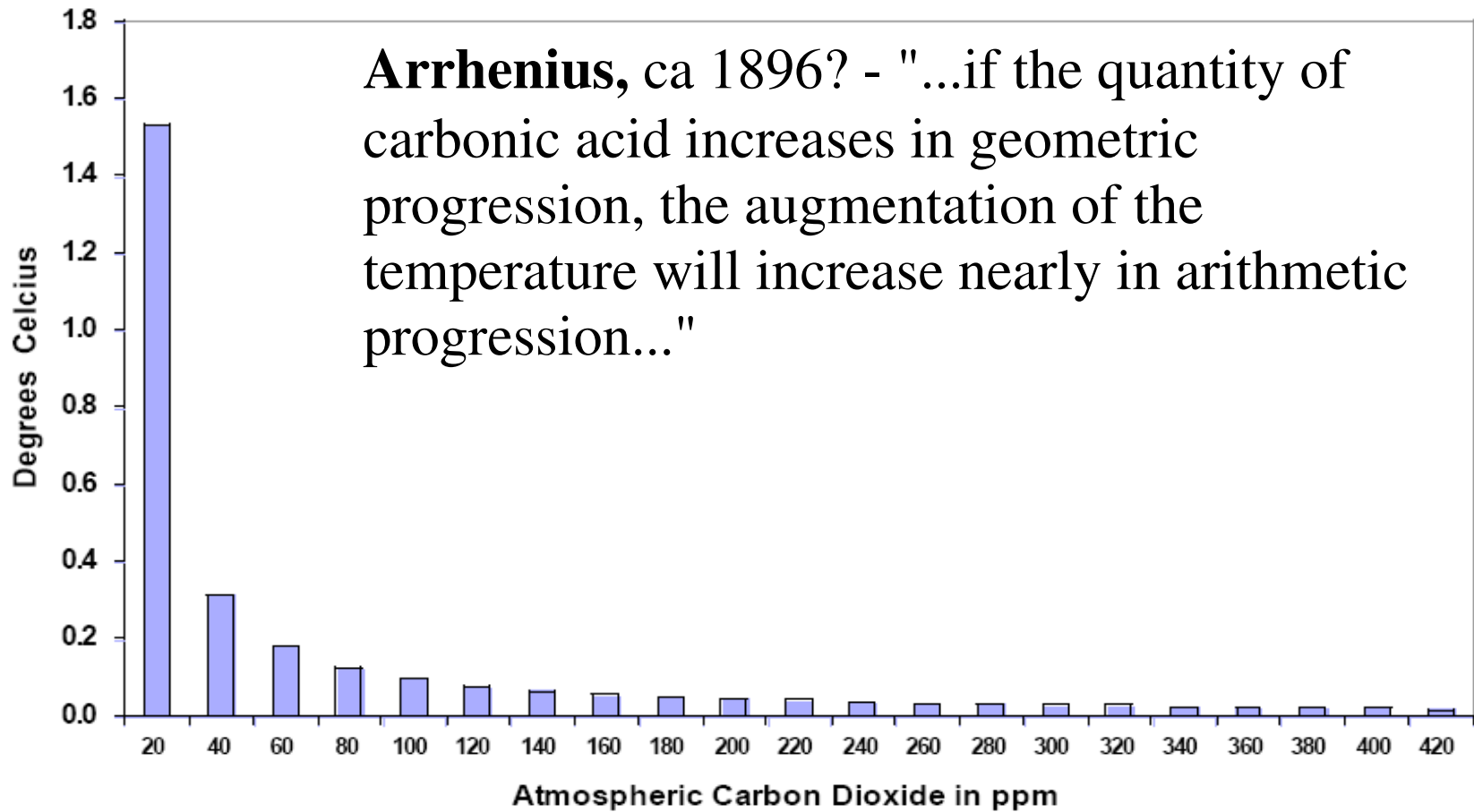
?Reference

Absorptivity of various gases of the atmosphere and the atmosphere as a whole as a function of the wavelength of radiation. An absorptivity of zero means no absorption while a value of one means complete absorption. The dominant absorbers of infrared radiation are water vapor (H<sub>2</sub>O) and carbon dioxide (CO<sub>2</sub>). Oxygen (O<sub>2</sub>) and ozone (O<sub>3</sub>) absorb much of the sun's ultraviolet radiation.

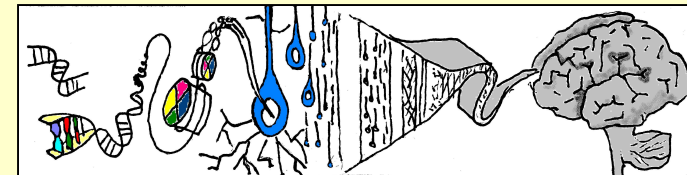


## II. The Kyoto Premise - Ignoring the 800 pound gorilla

# CO<sub>2</sub> as THE major GHG? Nyet

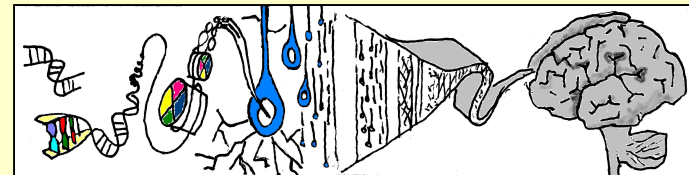


?Reference Lindzmann of MIT?



# The climate as a system of water cycles

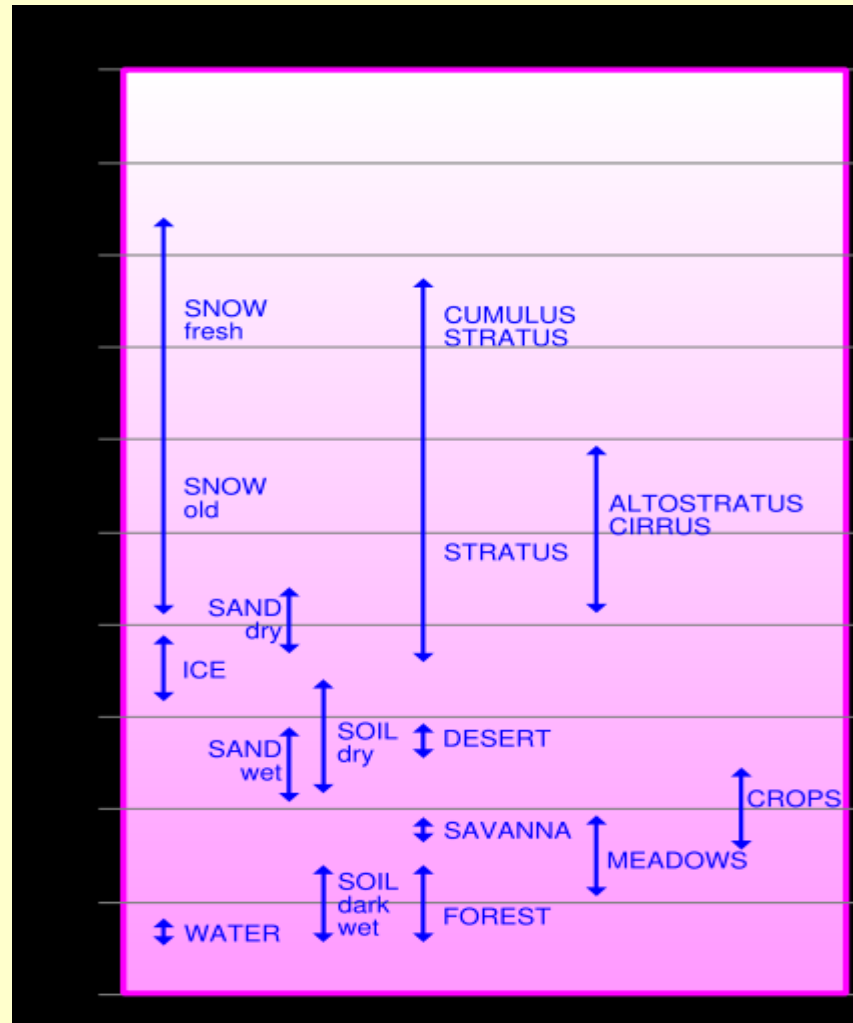
- Green-House Gas (GHG) **#1** !!!
- Atmospheric heat transport across the globe (evaporation/ precipitation)
- Ocean currents around the globe
- Temperature changes seem muted compared to precipitation effects
- **Albedo - water / ice / cloud**



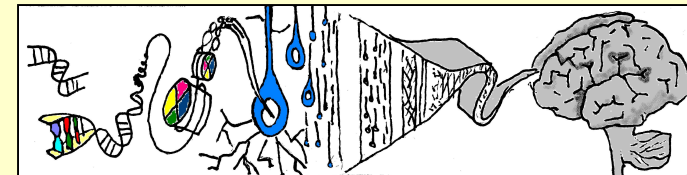
# II. The Kyoto Premise - Ignoring the 800 pound gorilla

## Albedo - reflection of sunlight

100%  
90%  
80%  
70%  
60%  
50%  
40%  
30%  
20%  
10%  
0%

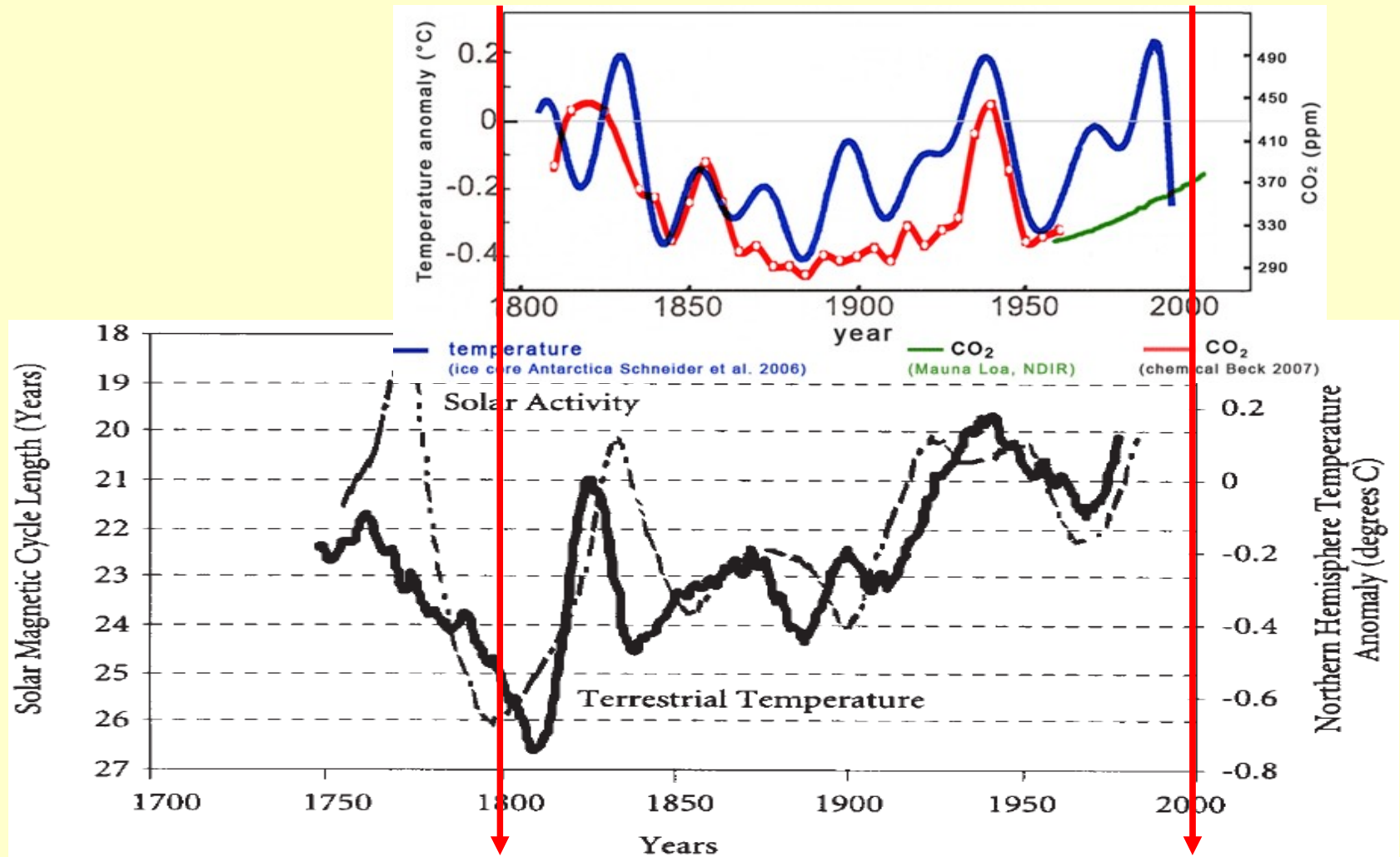


? Reference - ?Wikipedia?

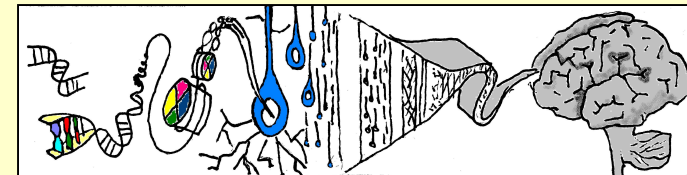


## II. The Kyoto Premise - Ignoring the 800 pound gorilla

# CO<sub>2</sub> is a time-lagged, fuzzy thermometer



Ernst-Georg Beck [http://www.biokurs.de/treibhaus/180CO2\\_supp.htm](http://www.biokurs.de/treibhaus/180CO2_supp.htm)  
Willie Soon, Sallie Baliunas "The Varying Sun and Climate Change"  
Fraser Forum, January 2003 pp11-13



III. CO<sub>2</sub> is a good guy

# CO<sub>2</sub> is HUGELY beneficial!!

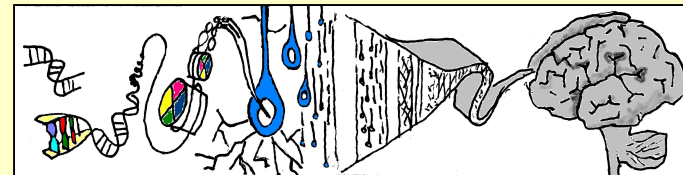
## Average Growth Enhancement due to a 300 ppm increase in atmospheric carbon dioxide

C3 Cereals (eg wheat)	49%
C4 Cereals (eg corn)	20%
Fruits and Melons	24%
Legumes	44%
Roots and Tubers	48%
Vegetables	37%

Source: Idso May 2007

David Archibald "The Past and Future of Climate" May, 2007 A presentation to The Lavoisier Group's 2007 Workshop 'Rehabilitating Carbon Dioxide' held in Melbourne on 29-30 June 2007

CO<sub>2</sub> Science website on plant productivities



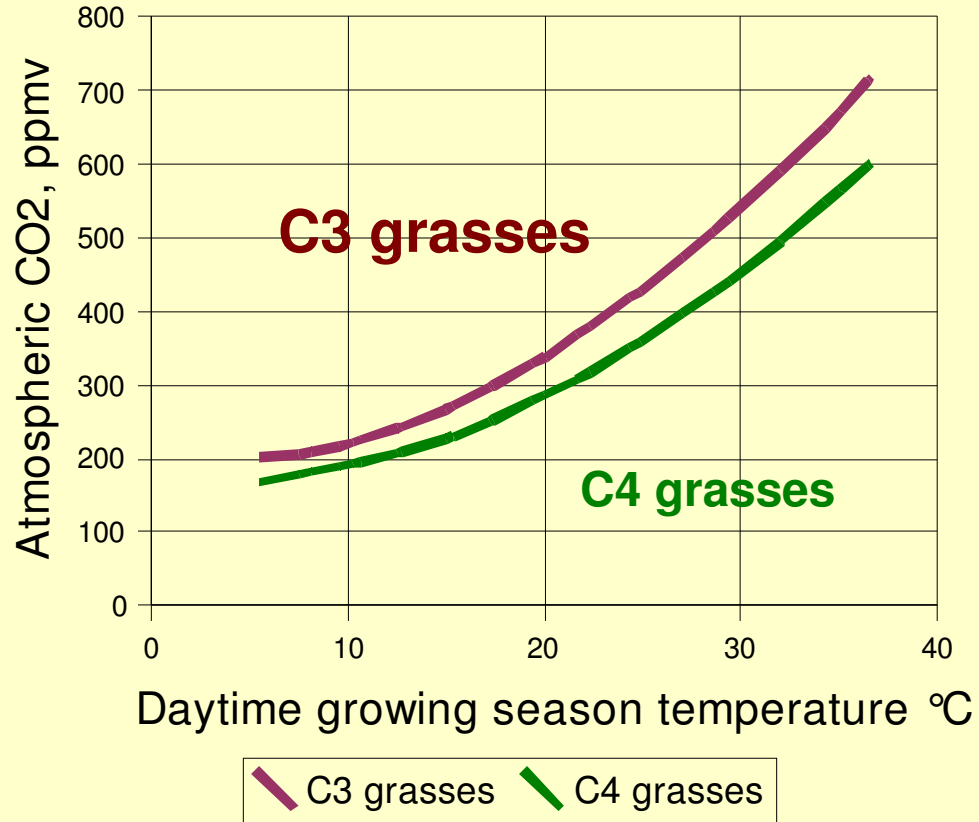
### III. CO<sub>2</sub> is a good guy

# Plant mediation of atmospheric CO<sub>2</sub>?

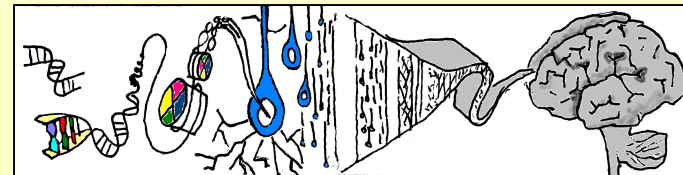
Crossover model of C3/C4 photosynthesis based on quantum yield of C3 and C4 plants.

Note: Humidity levels are not considered!!!

It appears to me that marine/ land photosynthesis may help set the atmospheric CO<sub>2</sub> concentration, even in modern times. Ocean solubility is considered to be the dominant factor.



T.E. Cerling, J.R. Ehleringer, J.M. Harris "Carbon dioxide starvation, the development of C4 ecosystems, and mammalian evolution" Phil TransRSocLondB vol 353, pp159-171, 1998



III. CO<sub>2</sub> is a good guy

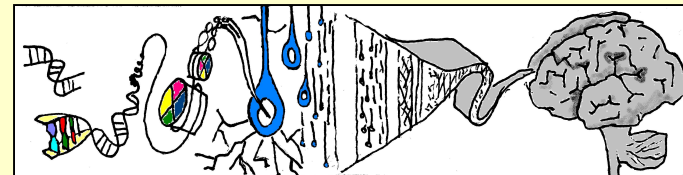
**CO<sub>2</sub> is HUGELY beneficial!!**

- food for plants
- helps plants better utilise water!
- higher agricultural productivity

Calling CO<sub>2</sub> a toxic gas is **INSANE!**

(we're all guilty of breathing it out)

**CO<sub>2</sub> is a time-lagged, fuzzy thermometer**

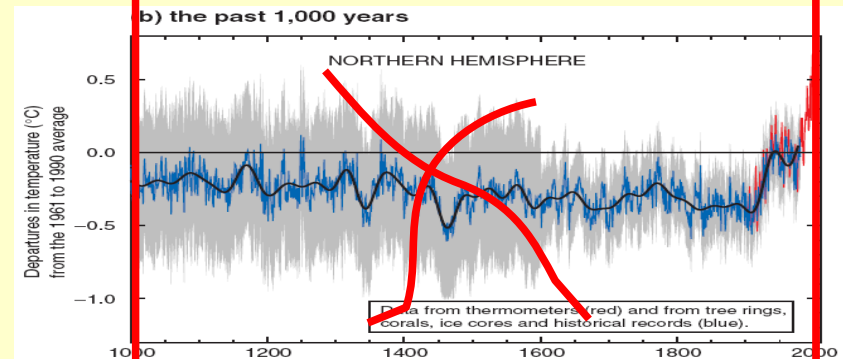
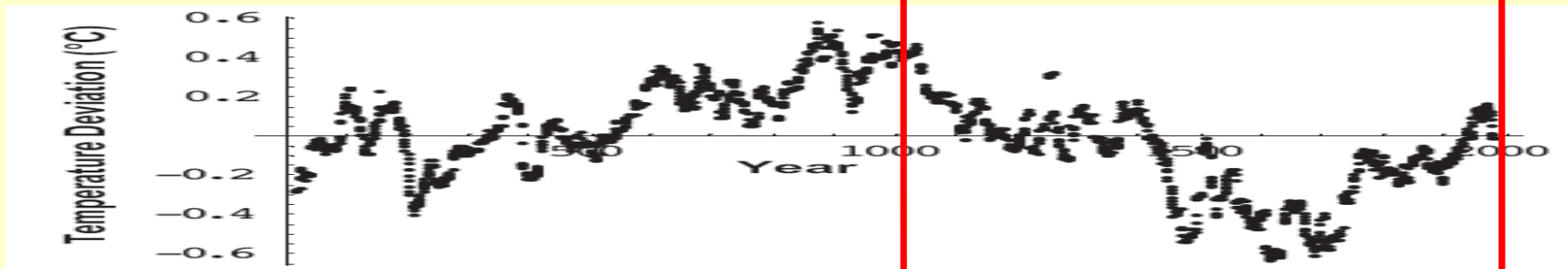




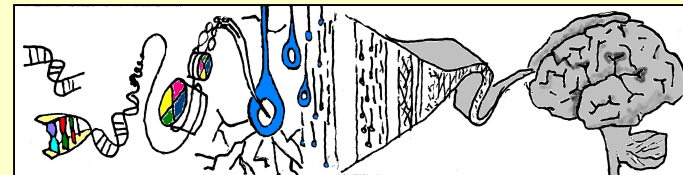
# IV. The Kyoto Premise - other crumbling scientific pillars

## Hockey stick temperatures

Is the "Scientific Consensus" on the hockey stick the greatest fraud in scientific history? (notice the splicing of proxies & modern data)



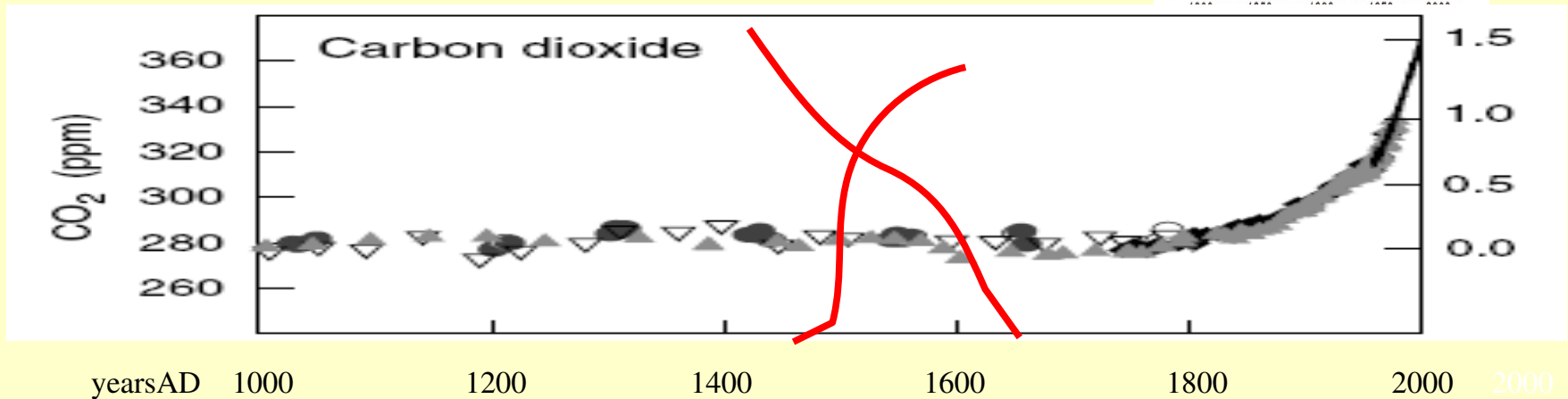
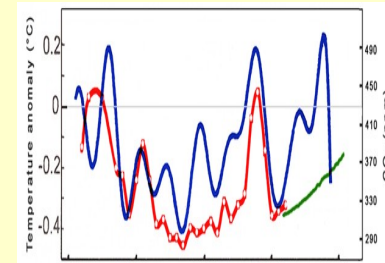
Note - the proper term is "D-cubed thinking",  
Fraud not at the individual level, but collectively in how it is used  
Upper: Craig Loehle 2007 "A 2000-year global temperature reconstruction based on non-treering proxies" Energy & Environment, v18 n7+8 2007  
Lower: UN-IPCC 1st Assessment Report, Lower 3rd AR



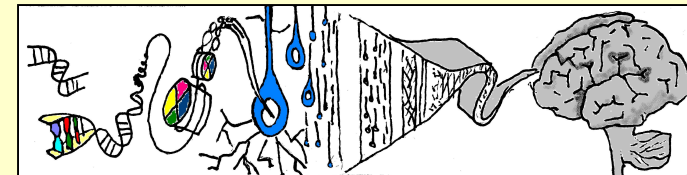
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## Hockey stick CO<sub>2</sub> concentrations

...or is the "Scientific Consensus" on recent CO<sub>2</sub> even worse?



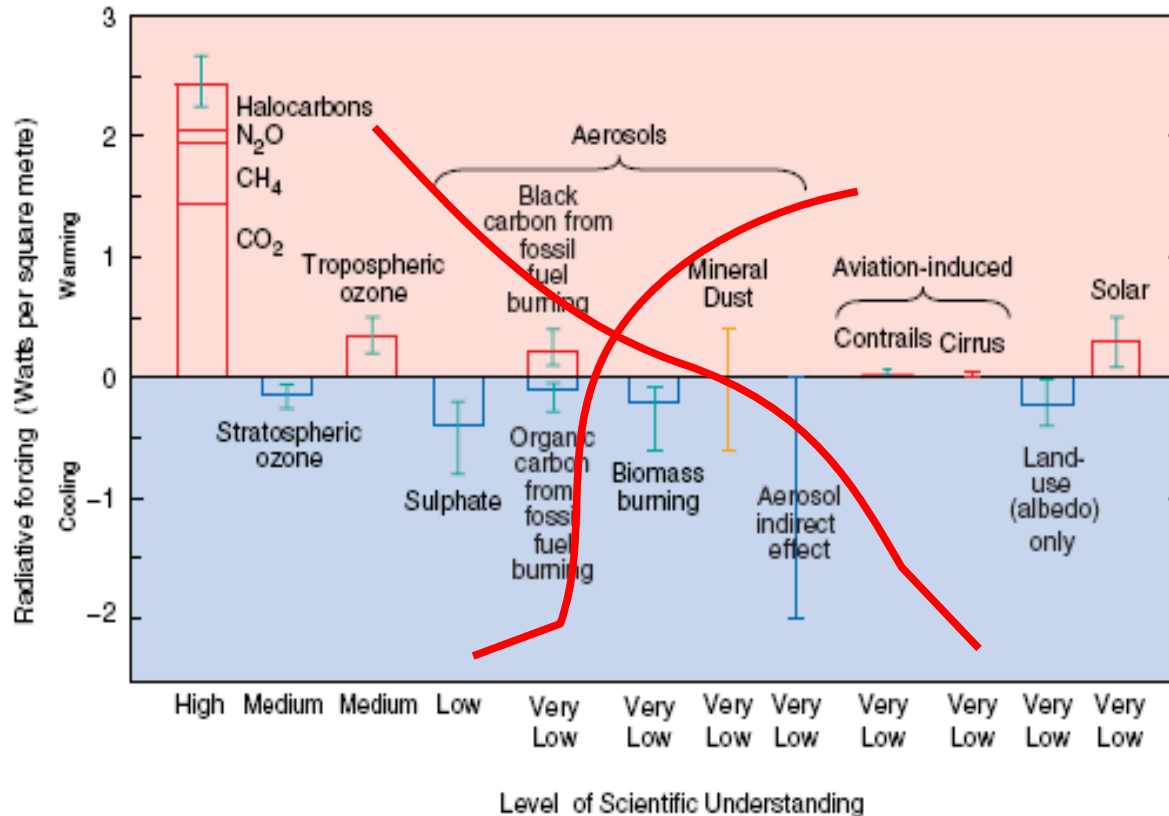
Ernst-Georg Beck "180 Years of atmospheric CO<sub>2</sub> Gas Analysis by Chemical Methods" Energy & Environment, v18 n2, 2007  
[http://www.biokurs.de/treibhaus/180CO2\\_supp.htm](http://www.biokurs.de/treibhaus/180CO2_supp.htm)  
UN-IPCC 3rd Assessment Report



# IV. The Kyoto Premise - other crumbling scientific pillars

## Key Climate Factors

The global mean radiative forcing of the climate system for the year 2000, relative to 1750



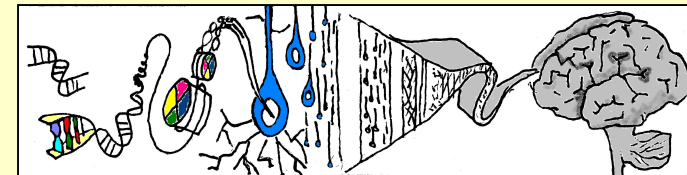
UN-IPCC man-made effects, missing:

- water vapour
- cloud
- now galactic rays
- etc, etc

### My opinion:

1. CO<sub>2</sub> effect exaggerated ~5 times?
2. Solar effects de-emphasized by a factor of ~10 ???

UN-IPCC Third Assessment Report, 2001



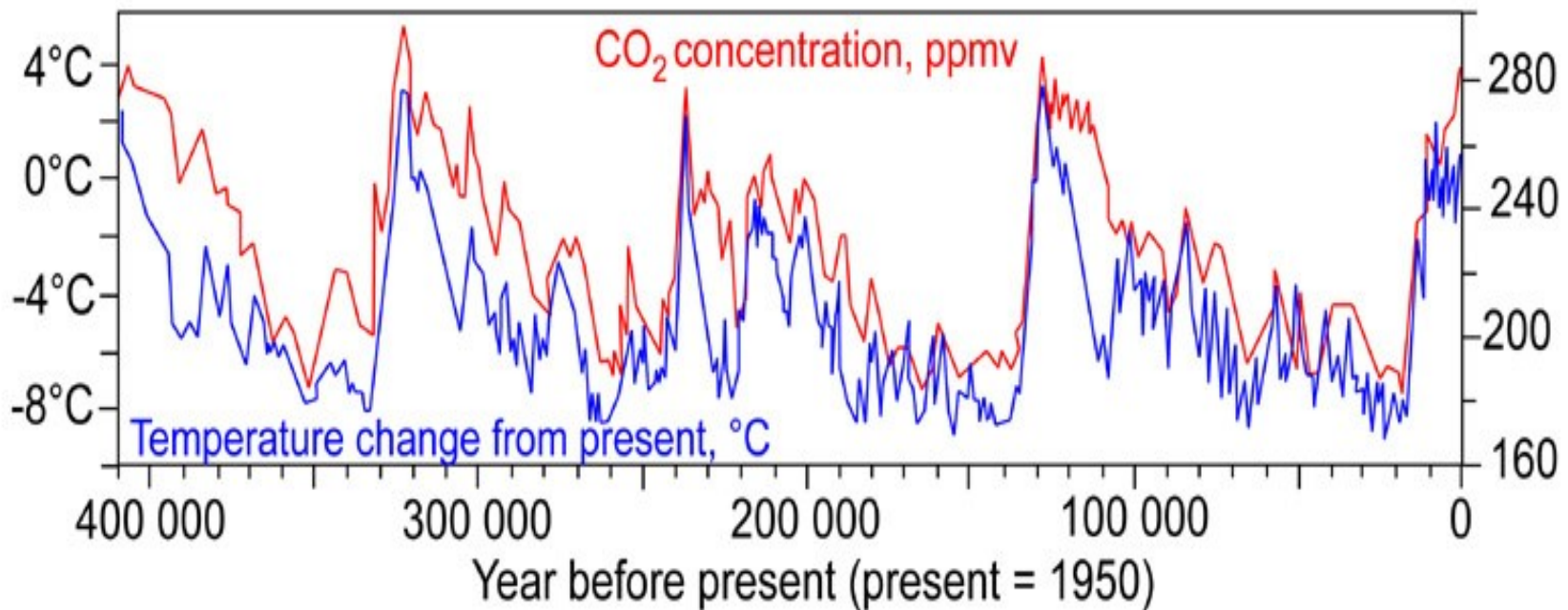


## IV. The Kyoto Premise - other crumbling scientific pillars

# CO<sub>2</sub> is a time-lagged, fuzzy thermometer

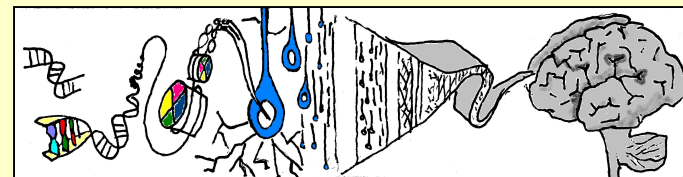
Al Gore's favourite graph? Why do so many scientists have difficulties recognizing causation arguments?

Temperature and CO<sub>2</sub> levels in the atmosphere over the past 400 000 years  
(from the Vostok ice core)



Because CO<sub>2</sub> does track temperature, and given the measurement uncertainties, the GHG theory should be retained as a potentially significant climate driver, as part of a mindset of “multiple conflicting hypothesis”.

?Reference?



ニール・ハウエル

**Climate Change:**

**It's the Sun, Stupid!**

V. How do scientists really think and behave?

# Catastrophic failure of rational, logical, and scientific thinking

The real issue behind the Kyoto Premise has nothing to do with the climate at all. The real issue is:

How does one explain the genesis and propagation of

**Dysfunctional AND/OR Dishonest AND/OR Delinquent**

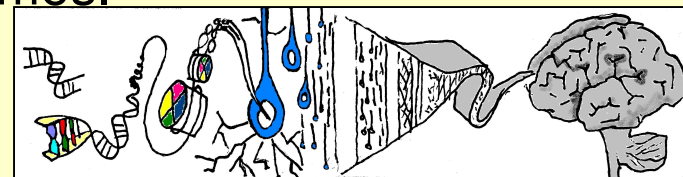
thinking by individual or small groups of scientists, and why does this become, to a high degree of probability,

**Dishonest AND Dysfunctional AND Delinquent**

thinking for sufficiently large and diverse groups?

For individuals, at least one trait is present in extremes, and there is a strong likelihood that the traits are associated.

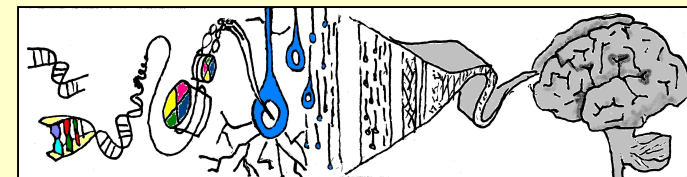
For groups, all three traits are present in extremes.



V. How do scientists really think and behave?

# Catastrophic failure of rational, logical, and scientific thinking (2)

- *All* scientists in *All* subject areas – climate, physics, geology, chemistry, math & statistics, engineering, medicine, biology, ecosystems. The “polling” has exceptionally broad and near-complete coverage. Furthermore, Nobel prize-winners, Directors / Chairs of some of the largest and most respected R&D institutes in the world, top cited scientists, etc, etc
- Scientists are mostly government and academic employees – “can't be fired”, well paid, extreme stability of employment and benefits. “motivation” is a tremendously misunderstood factor in human behaviour.
- Simplest, initial stages – forget complexity. Scientists can't handle the simple stuff (**perhaps science itself cannot handle the complexities!**).





V. How do scientists really think and behave?

# Climate Trends in Modern Times

## A New York Times-line

"MacMillan Reports Signs of New Ice Age"

Sept. 18, 1924

"America in Longest Warm Spell Since 1776; Temperature Line Records a 25-Year Rise"

March 27, 1933

"Scientists Ponder Why World's Climate is Changing; A Major Cooling Widely Considered to Be Inevitable"

May 21, 1975

"Past Hot Times Hold Few Reasons to Relax About New Warming"

Dec. 27, 2005

## A Time Magazine Time-line

"The discoveries of changes in the sun's heat and the southward advance of glaciers in recent years have given rise to conjectures of the possible advent of a new ice age."

Sept. 10, 1923

"Gaffers who claim that winters were harder when they were boys are quite right... weather men have no doubt that the world at least for the time being is growing warmer."

Jan. 2, 1939

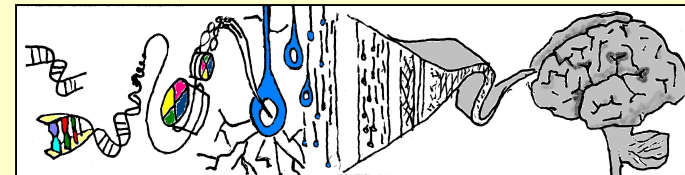
"Climatological Cassandras are becoming increasingly apprehensive, for the weather aberrations they are studying may be the harbinger of another ice age."

June 24, 1974

"[S]cientists no longer doubt that global warming is happening, and almost nobody questions the fact that humans are at least partly responsible."

April 9, 2001

?Reference



V. How do scientists really think and behave?

## World-class Canadian "Climate Scientists"

- typically, many aren't scientists...

Steve McIntyre, financial guy, Toronto

Ross McKittrick, economist, Uof Guelph

Tim Ball, climatologist, Uof Winnipeg

Albert Jacobs, retired geologist, Calgary

Jan Veizer, geologist, Uof Ottawa

Tim Patterson, geologist, Uof Carleton

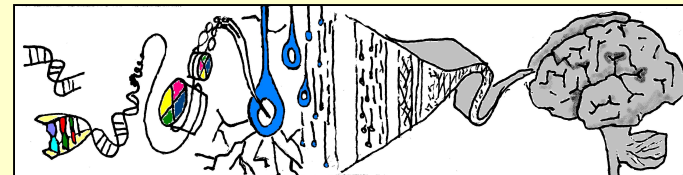
Ian Clarke, geologist, Uof Ottawa

Madhav Khadekar, retd climate, Envmt Canada

New kid on the block:

Ken Gregory, Petroleum Reservoir Eng, Calgary

Notice: NO active government  
scientists!! (Tad McMurty)



V. How do scientists really think and behave?

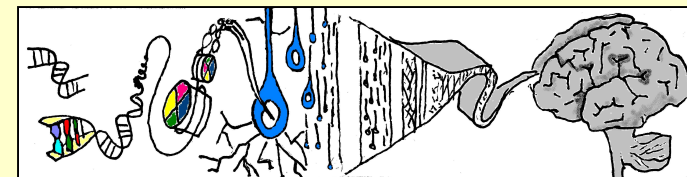
## Vancouver Sun journalist - finally understands what scientists are about!?

Recently Jonathan Manthorpe, a writer for the Vancouver Sun newspaper, wrote an article expressing qualified agreement with some of the arguments against GW raised by Ian Plimer in his book Heaven and Earth. In a follow up article, on 5 August 2009, Manthorpe reported that he had received around 100 e-mails about his Plimer piece. About two-thirds were from ordinary people who agreed with Plimer. Another healthy portion was from scientists who agreed with Plimer's overall contention about natural variabilities in climate on which humans have little or no influence. However, they disputed various specific claims and details made by him.

Manthorpe also noted that, "...the disturbing letters were from the scientist believers in man-man global warming."

He then went on to say, "I have met a lot of unpleasant people in the course of my life, but I have never seen such a torrent of nasty, arrogant and downright stupid abuse as has been aimed at me this week by people who aggressively sign themselves "PhD" as though it were a mark of divine right that is beyond challenge or question."

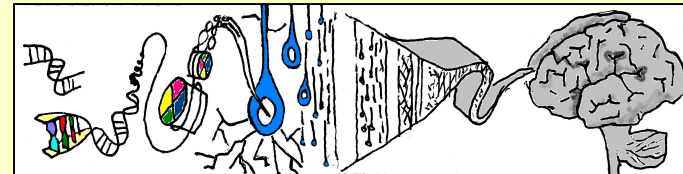
Walter Starck 11Aug09 "ETS Forum - The Climate Craze" <http://www.quadrant.org.au/blogs/doomed-planet/2009/08/walter-starck>



## V. How do scientists really think and behave?

# Personal observations

1. Many of the best climate scientists aren't climate scientists. - Many aren't even scientists: eg. truck drivers, economists, historians, engineers, teachers, politicians. Climate science is a great example of where professional institutes and scientists, benefitting from huge funding and other resources, are bested by "amateurs" on the web.
2. Exclusive domain of privileged incompetence - Often, the argument is to discount everything that non-scientists say. This is hugely dishonest.
3. Open access to information - as with politics, we now see how vital this is in science. The internet may have a lot of junk, but its the ONLY "reliable" source of useful information.
4. There has been almost NO formal scientific debate - only the blogs, and unofficial magazines. Scientific journals are next to useless (Nature, Science, Scientific American etc).



## V. How do scientists really think and behave?

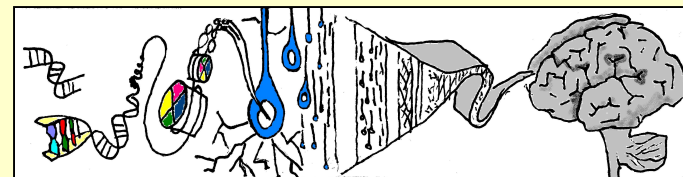
# How to explain “non-rational” Scientists?

These are NOT the main reasons!! (I differ from skeptics)

- Funding
  - Conspiracy theory -
  - Media
  - Environmentalists -
- .....Contributors, yes. Main drivers, NO.

The REAL issues

- **MindCode: What you think you think may be irrelevant** – you are pre-programmed at conception
- **Game/cheating theory** - is what makes you, your organisation, society competitive and successful
- **Belief systems** – blowing in the politically-correct winds
- **Honesty, competence, diligence** – is good for society as a whole.  
It's counter-productive for you!



V. How do scientists really think and behave?

## Game/cheating theory

Evolution is a powerful programmer of complex systems that function in complex & highly non-stationary environments. It's a deeply rooted part of your behaviours and personality. Logic cannot function at this level of complexity and performance.

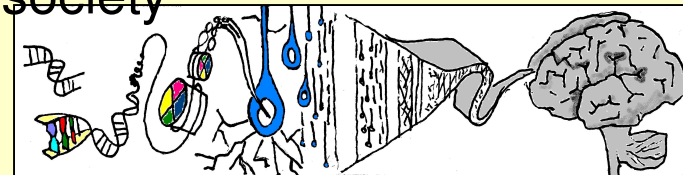
Game theory – how to survive/ succeed

Loyalty - Those who challenged the king's opinion tended to contribute less to the gene pool.

**Teamwork** – More important than whether we are right or wrong?

More to the point – most effective to have a diversity of groups, only a few of which will succeed. Again, logic isn't really terribly useful here.

The Seven Horsemen – and the culling of society



V. How do scientists really think and behave?

# Believers *and* Scientists

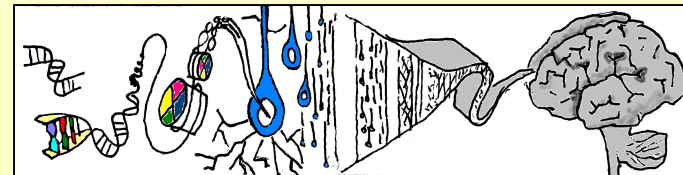
*Science fashions, become science cults, become science religions...*

Typically, in scientific discussions for which scientists have a very strong opinion, to the point of castigating/persecuting others:

- They are unaware of issues related to the key data, analysis underlying their beliefs
- They lack an ability to rationally and critically assess whether data and analysis make sense or not (eg finding inherent inconsistencies, errors).
- They walk away angrily because they KNOW what you are saying is stupid and wrong.
- As with religious beliefs, logic is a losing approach to discussions with them:

*The same people who inhabited the monasteries, now populate the government and academic corridors?*

..... It sure looks so..



V. How do scientists really think and behave?

## **Blowin' in the politically correct winds...**

The Media as a substitute for scientists' thinking?

Many top skeptics in the world started off as adamant pro-Kyotoists for years before “realizing the error of their ways”, and actually looking closer at the data, the analysis and the papers.

But why did they **EVER** believe the Kyoto Premise?

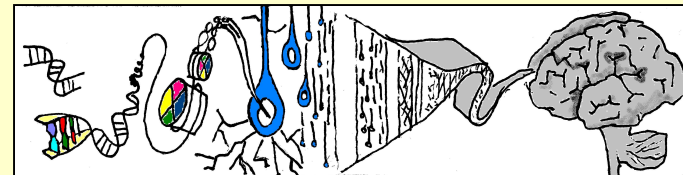
Marshall MacLuhan: “... The medium is the message. ...”

More importantly:

“...the message (belief) has **NO CONTENT!...**”

We don't need scientists just to parrot the TV and blogs.

*...Scientists as Intellectual robots...*





V. How do scientists really think and behave?

# Blowin' in the winds of politically-correct science

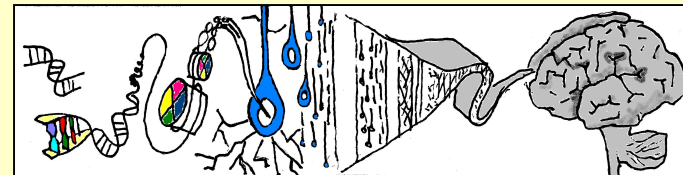
*Most scientists really don't know what they think, if they think at all  
And if the politically correct winds change in speed and direction,  
they are immediately onto it*

*Not realizing that their thinking has flipped in radically  
different directions,*

*They believe they've always thought the new way, or  
that it was they who anticipated or invented it.*

*But they have no more basis for their new thinking than their old.*

...Perhaps over time those who would dare challenge the king or the consensus disappear from the gene pool, throughout human history.



V. How do scientists really think and behave?

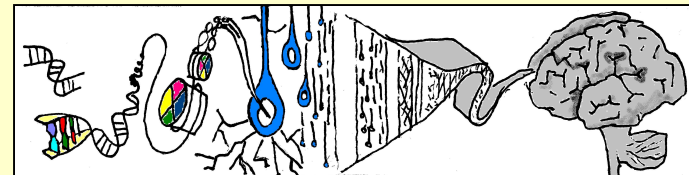
## The Political/ Philosophical basis of Scientists' thinking

Political allegiance basis to the thinking of most scientists – eg George Bush versus Clinton or Europeans doing the same thing

*If you say nice things with noble objectives,  
we believe you.*

*If you speak of harsh realities and decisions,  
we don't believe you.*

*If you speak of the end of the world,  
then it must be true...*



# Conclusions (1)

1. The vast majority of scientists fail catastrophically at [rational, logical, scientific] thinking when tackling non-routine issues for their areas of expertise, and these “thinking failures” occur at the initial, simplest levels of concepts.
2. It is the rule, rather than the exception, that consensus science is hugely [dysfunctional AND dishonest AND delinquent], particularly when dealing with politically correct issues of great interest to the public.



# Conclusions (2)

3. Much of the identification, correction, and leadership in correcting errors in consensus scientific thinking comes from non-scientists, who often easily beat scientists in their own area of expertise. (This should NOT be a surprise if you think about the history of science).
4. Government scientists contribute almost nothing conceptually to the great debates over junk consensus science, - but they do provide good data (and data is **CRITICALLY important**).



# Conclusions (3)

5. The long-term success and “survival” of science is more dependant on non-scientists than on scientists, and is mostly threatened by the scientists themselves!
6. The “genesis” of science, only requires 1 to 10 people. Huge numbers of science may actually have a negative marginal impact, as the vast majority will be believers, suffocating the critical thinkers.
7. Consensus Science - is an oxymoron! Essentially all great ideas are from madmen. Much of science was developed by amateurs before the modern era.



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**Climate Change:**

**It's the Sun, Stupid!**

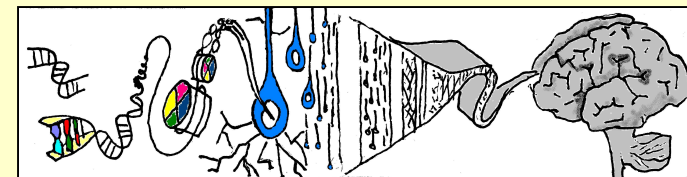
## VI. My self-delusional model for the rise & fall of Enlightenment

# What is Enlightenment?

Science focus: Only one other period of “real science” during all history – ancient Greece, post Plato & Aristotle, pre-Roman conquest (100 – 300 years duration)?

- Egyptian “technicians” - Engineering excellence surpassed capabilities of Greek logic.
- Greek argumentation, deductive logic - Plato & Aristotle
- Fusion: from Data, with Love – scientific method and thinking, ?”phaenomenun”? - Greek term
- Writing - Economic availability of papyrus, Alexandrian “book confiscate/copy/return”

Lucio Russo 2004 "The forgotten revolution: How science was born in 300 BC and why it had to be reborn" English edition, Springer-Verlag, Berlin Heidleberg, 2004, 487 pp

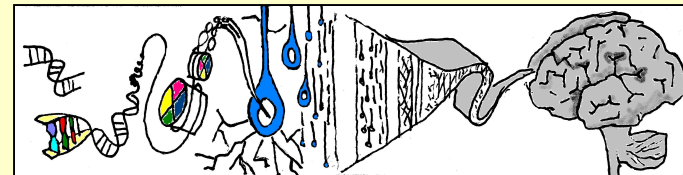


# VI. My self-delusional model for the rise & fall of Enlightenment

## Historical context for Enlightenment

I suspect (coincidental in timing, ca. 3,000 B.C.) :

- Early Egyptian science & Enlightenment? Pre-Great Pyramid period
- Mesopotamia
- Indus Valley
- Meso-America - ?Moche pre-Inca?
- Stonehenge
- The idle rich? (eg Amateur scientists of current Enlightenment)

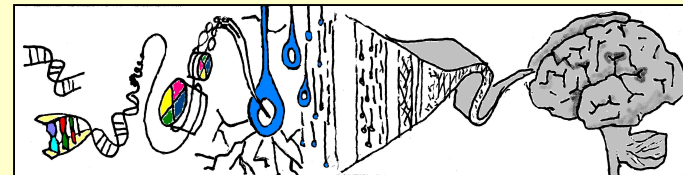




## VI. My self-delusional model for the rise & fall of Enlightenment

# What **ELSE** is Enlightenment?

- **Multiple conflicting hypothesis** – Perhaps some of the Greeks thought like this, or am I coloring this (eg Sigmund Freud's work)?
- **Pro-Active Tolerance** - Not just tolerating, but driving different ideas, and listening.
- **Bright, but not yet famous** — People are in it for the interest, inspiration, and excitement not so much the money, glory, and power.
- **Enlightenment isn't us** — it's not a property of any individual nor sub-group, it's extremely sparse ( $< 1e-4$ ), and may be only a fleeting, rare property of the thinking of any individual (i.e. perhaps NO individual is consistently enlightened, and those that are enlightened are only so in an extremely limited temporal/subject fashion)

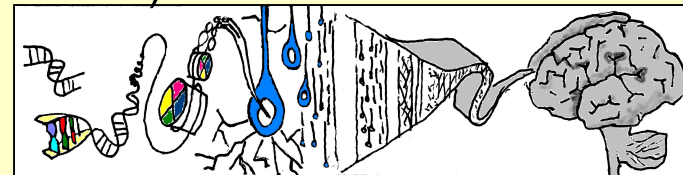


## VI. My self-delusional model for the rise & fall of Enlightenment

# Traditional Killers of Enlightenment

- Greeks: Conquered by the Romans, burned the Alexandrian Library
- Romans, Persians - Why didn't they pick this up?  
Greek architect/ slaves to Roman project managers and statesmen
- ~1,500 years lapse until Renaissance in Europe
- Muslims protected the teachings – but pursued only in a limited fashion
- Constraints of the Churches?
- The Collapse of Complex Societies (Joseph Tainter)/  
Enviro-Destruction (today – Jared Diamond)

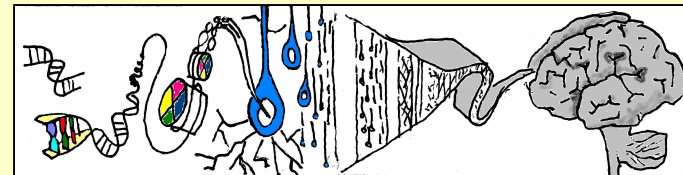
Luccio Russo, many others....



# VI. My self-delusional model for the rise & fall of Enlightenment

## Alternative Killers of Enlightenment

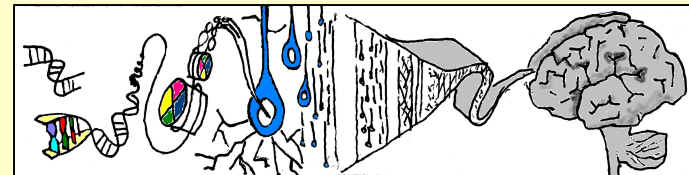
- **Betrayal by the Professional Scientists:**  
Game / cheating theory leads to “science suffocation” by those diametrically anti-thetical to Science/ Enlightenment (eg almost all of today's scientists would have been monks in the Middle Ages, memorizing & re-interpreting the Bible to suit politics of the day)
- **Sun & History** - Crazy, one-dimensional historical analysis for a “solar signature” based on Ivanka Charvatova's work on sun barycenter movements (identifies ALL major climate cycles 1.6 through 2402.2 years!). Very suggestive of pre-Old Egyptian Kingdom Enlightenment
- **Loss or suffocation of the Amateur Scientists** — who may be the true “fire of Enlightenment”, even today, especially today. Historical impact of sun, collapse of complex societies...



# VI. My self-delusional model for the rise & fall of Enlightenment

## When & How will our Enlightenment End?

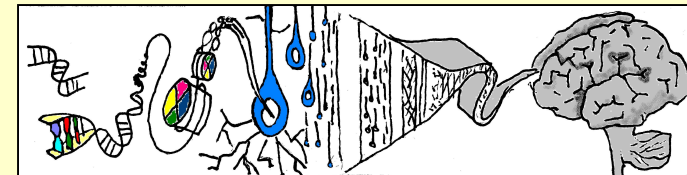
- **Soon:** The OTHER period of “real science” only lasted 100 – 300 years. Ascendant powers (India and China, Islam) are NO guarantee of Enlightenment
- **Quickly:** - Crazy, one-dimensional historical analysis for a “solar signature” based on Ivanka Charvatova's work on sun barycenter movements (identifies ALL major climate cycles 1.6 through 2402.2 years!).
- **Routinely:** Every 200-400 years globally there is a huge turnover of societies and civilisations (the latter in the sense of Arnold J. Toynbee)
- **Charvatovan warm period:** Could precipitate this? Careful – as with Toynbee's civilisations, times of trouble should also be a major driver for the RISE of Enlightenment!



# VI. My self-delusional model for the rise & fall of Enlightenment

## A Scenario for the End of Our Enlightenment?

- 1. Consistent, Persistent Lies by Scientists:** and the smothering of the tiny fraction of “strong thinkers”.
- 2. Negative Societal Impacts:** - The diversion of huge resources and attention to grossly mis-prioritized themes consequently pulls attention and priorities from real problems..
- 3. Time of Troubles, Thinking that doesn't work:**  
Every 200-400 years globally there is a huge turnover of societies and civilisations (the latter in the sense of Arnold J. Toynbee)
- 4. Politics of Scientists versus the King :** Could precipitate the end? Careful – as with Toynbee's civilisations, times of trouble should also be a major driver for the RISE of Enlightenment!



# VI. My self-delusional model for the rise & fall of Enlightenment

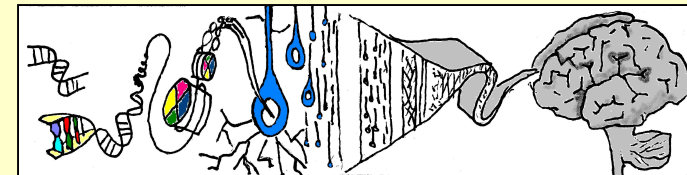
## A Scenario for the End of Our Enlightenment?

**5. Pissed off once too many times:** It's likely that bad scientific advice, and political involvement (as with today), will cause embarrassments and political failure of leaders, who won't be happy.

**6. Fire of the scientists:** - Taken far enough, the influence of scientists could be strongly net-negative. Coupled with the point above... the argument to cull the ranks becomes convincing for everyone except the scientists.

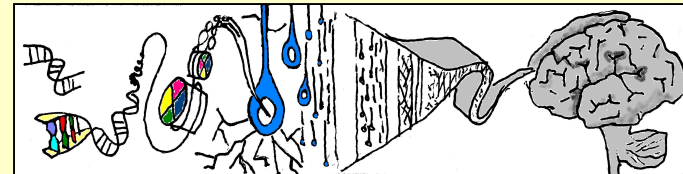
**7. Wait – save one or two:** Don't go too far – we still need architecture and arts etc?

**8. Memories of the Stupidity, Dishonesty, and Delinquency of Scientists:** As extreme as religion can be, they knew the scientists were far more wacky and politically manipulative!



# VI. My self-delusional model for the rise & fall of Enlightenment Dark Ages, or New Enlightenment?

- Historically – Dark Ages: “Conquer & kill” is a different set of skills from science, but you need both.
- History doesn't have to repeat itself - We may not be vulnerable to Societal collapse?
- Evolution of Minds, Evolution of Meta-Thinking
- Sorry for us – Conquest by the better bio-minds! )  
(Neanderthals, and successive emigrations)
- AND – Enlightenment is not a property of the masses, scientists or not.



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