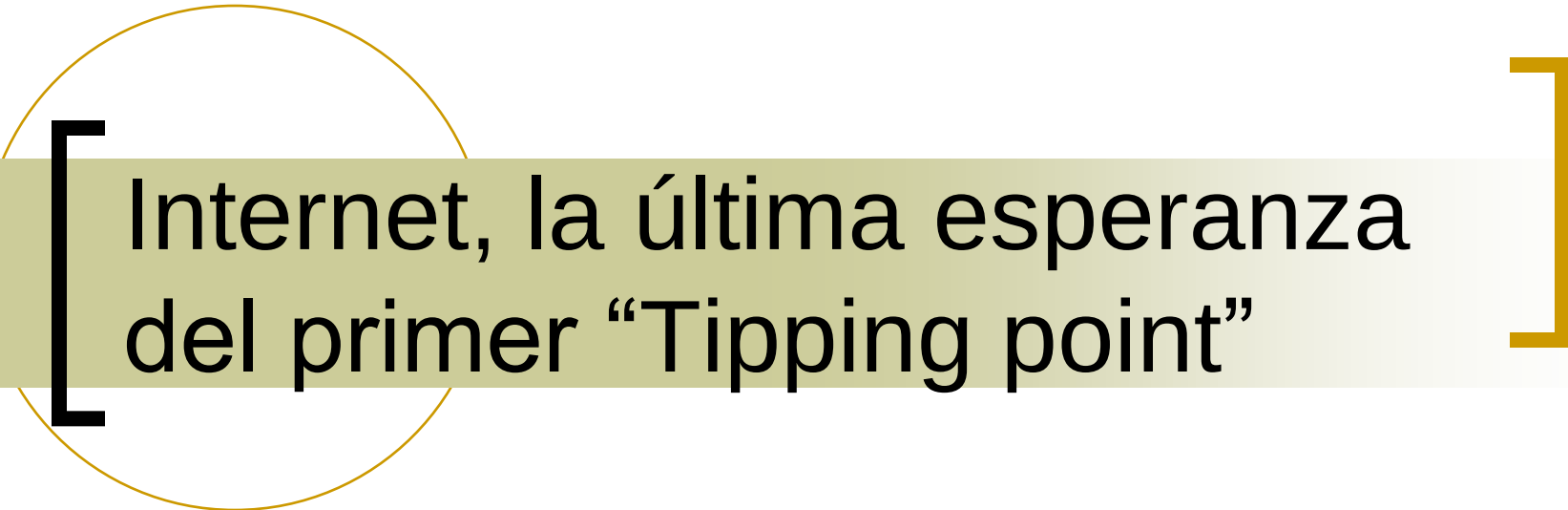




Internet, la última esperanza del primer “Tipping point”

Ferran P. Vilar

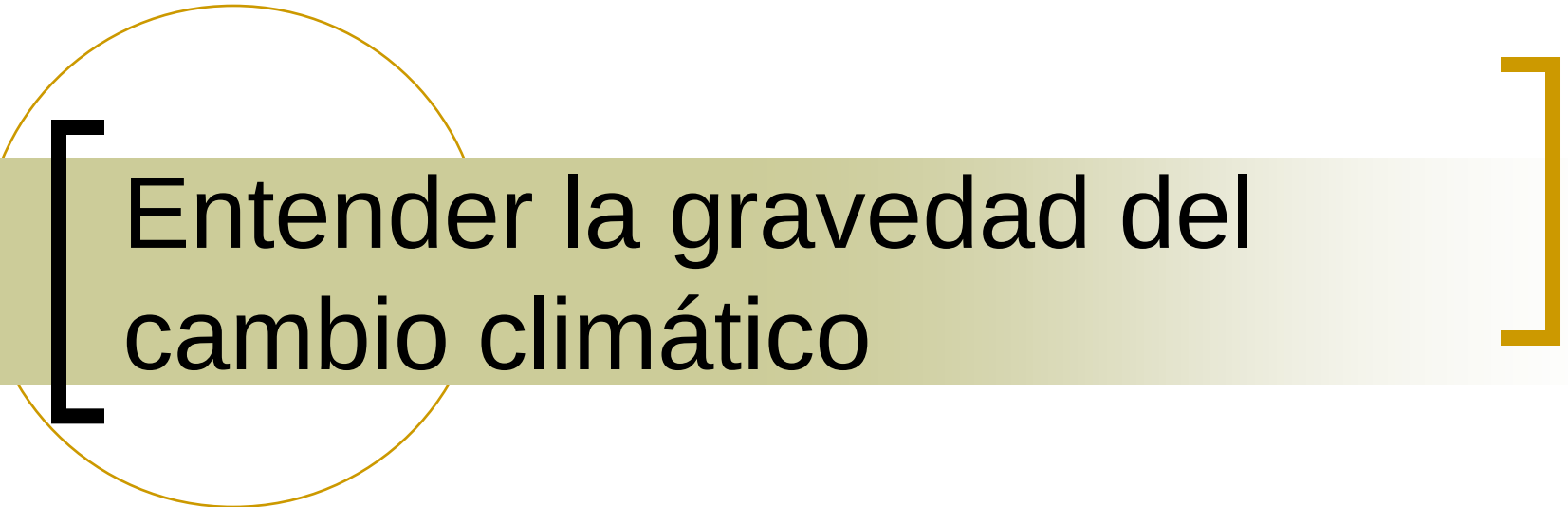
Valsaín (Segovia), 14/04/2010

[¿Quién es éste?



- Ingeniero de Telecomunicación: 1978 – 3 cursos de ingeniería industrial - Doctorado interrumpido
- Cetisa Editores
 - Chico del almacén: 1968 -
 - Director de Publicaciones (1982-1989)
 - Director General: 1989 -1992
- Vicepresidente de la Asociación Iberoamericana de Periodistas Especializados y Técnicos (AIPET): 1984-1988
- Presidente de la Asociación de Prensa Profesional APP (1988-1996)
- Miembro del Consejo de Administración y del Comité Ejecutivo de la OJD (1993-1997)
- Distintos puestos, por cuenta propia y ajena, de edición de revistas profesionales, organización de jornadas y salones (1993-2007)
- Director de Publicaciones de Cetisa Editores: 2003-2004
- Dedicación al cambio climático: 2004-2005; 2008-2010
- Tiene una hija de 18 años: María





Entender la gravedad del cambio climático

Sistemas

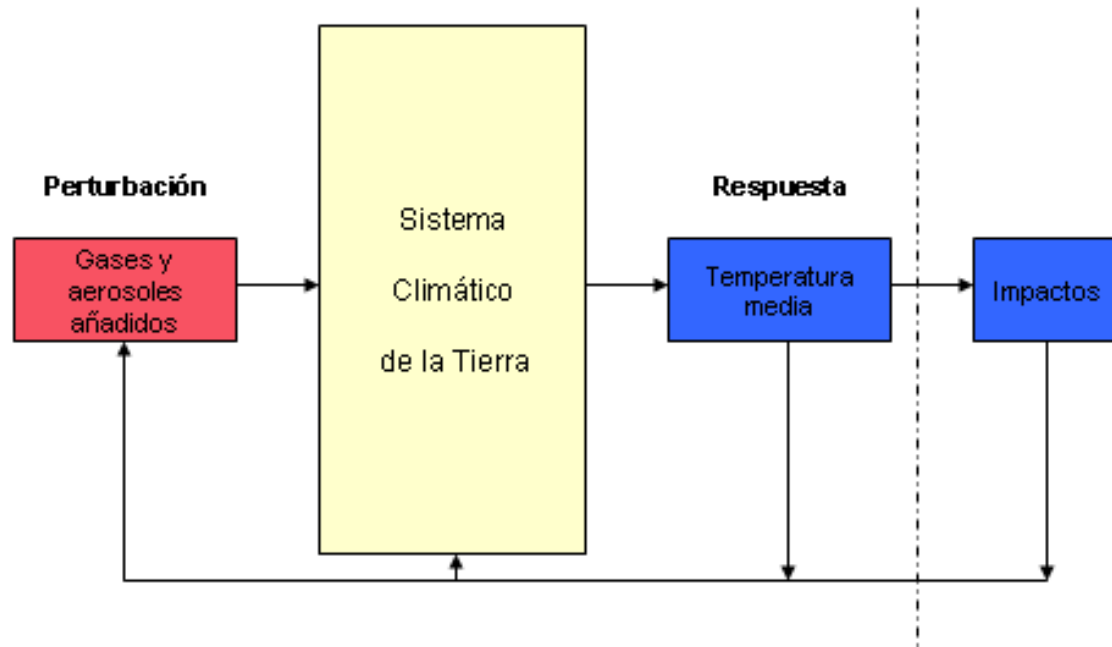
La amplificación polar

Reduccionismo científico

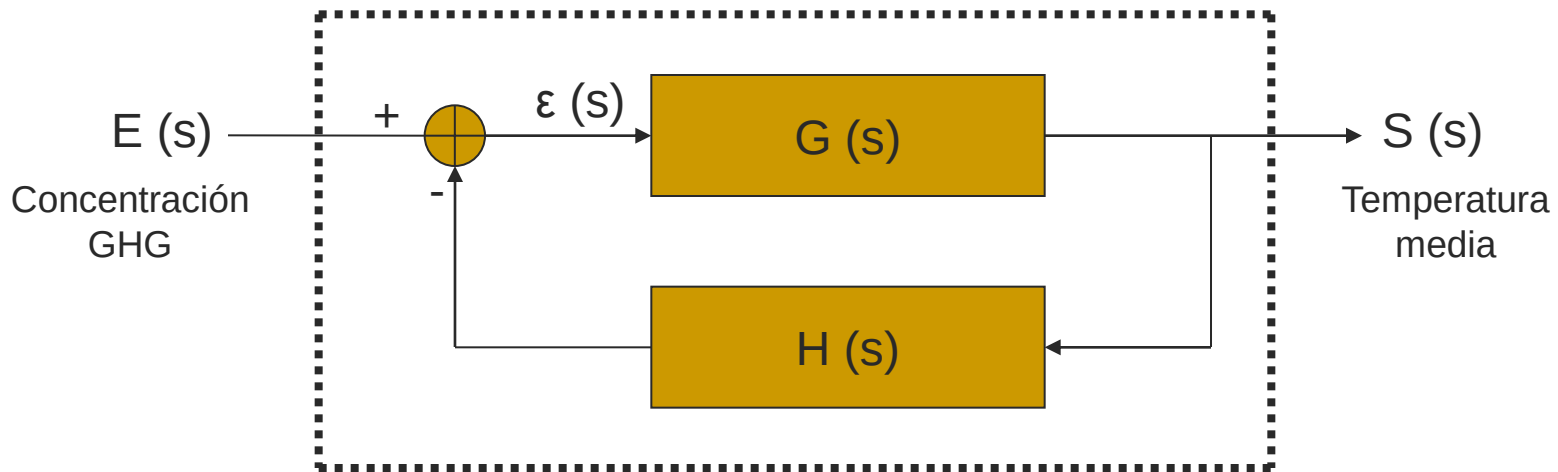


1. Los sistemas

[Perturbació - Resposta]



Realimentación



$$S(s) = \epsilon(s) \times G(s) \longrightarrow \begin{aligned} \epsilon(s) &= G(s) / S(s) \\ \epsilon(s) &= E(s) - S(s) \times H(s) \end{aligned}$$

$$S(s) = \frac{G(s)}{1 + G(s)H(s)} \times E(s)$$

[Características 'dinámicas']

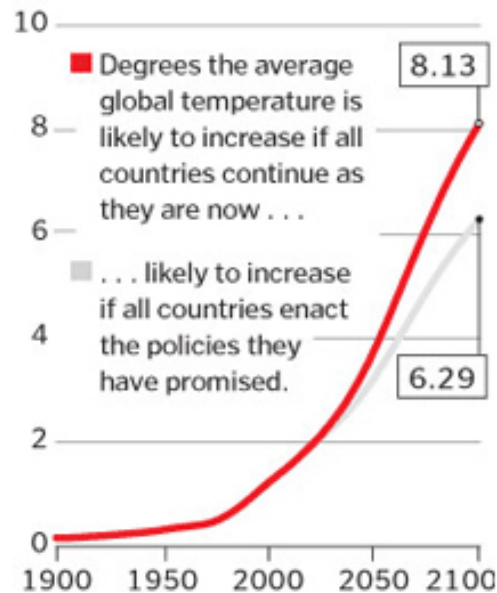
- Amplificación (si realimentación positiva) o reducción (si realimentación negativa) de la perturbación
- Respuesta exponencial (no proporcional)
- Posible retardo entre perturbación y respuesta (casi siempre)
- Existencia de un umbral de estabilidad
- 'Vida' propia si ha entrado en zona inestable

Respuesta exponencial

Warming Trend

Researchers say global temperature is likely to rise more than six degrees by the end of the century even if every country enacts all climate legislation it has promised to enact to date.

Temperature increases, in degrees Fahrenheit



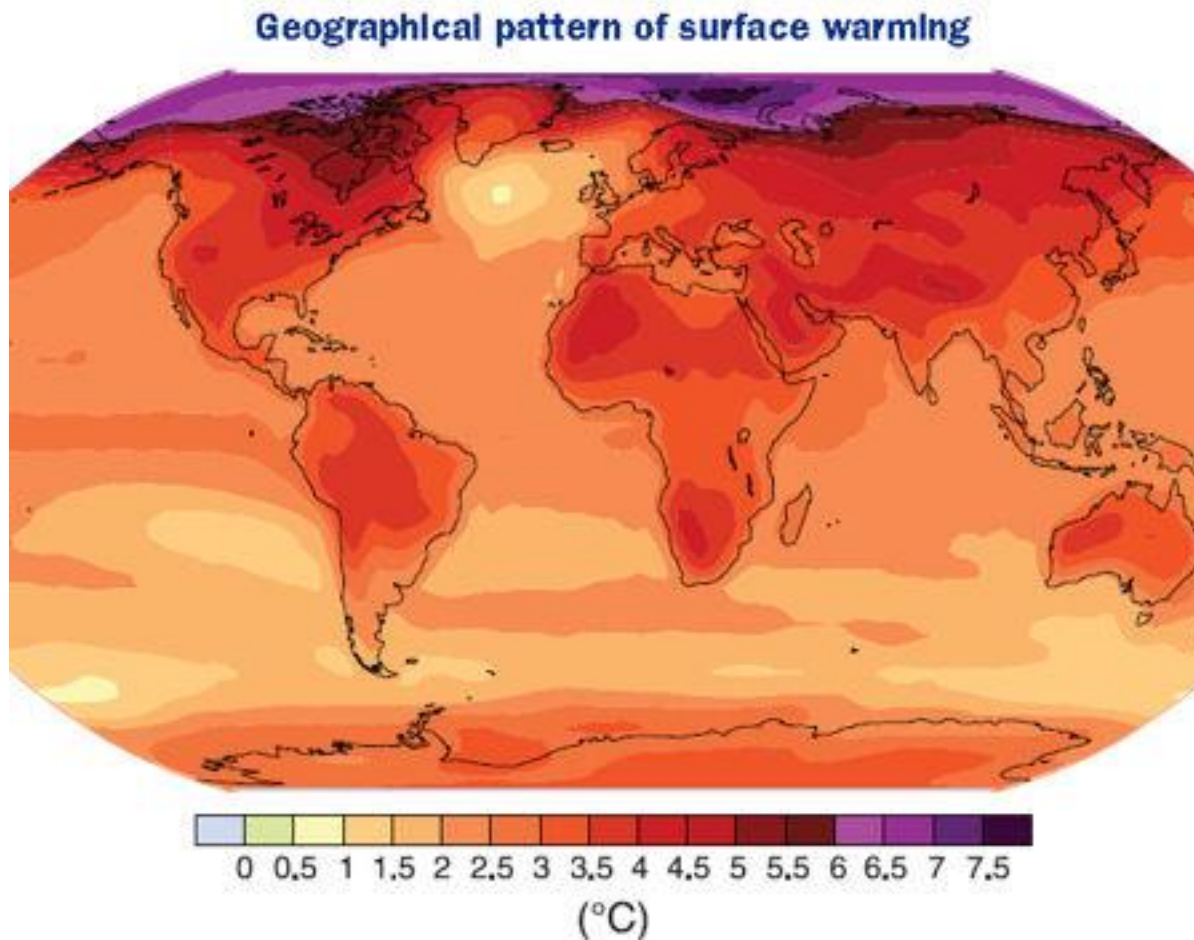
Source: Sustainability Institute
The Washington Post

The Washington Post, 2009



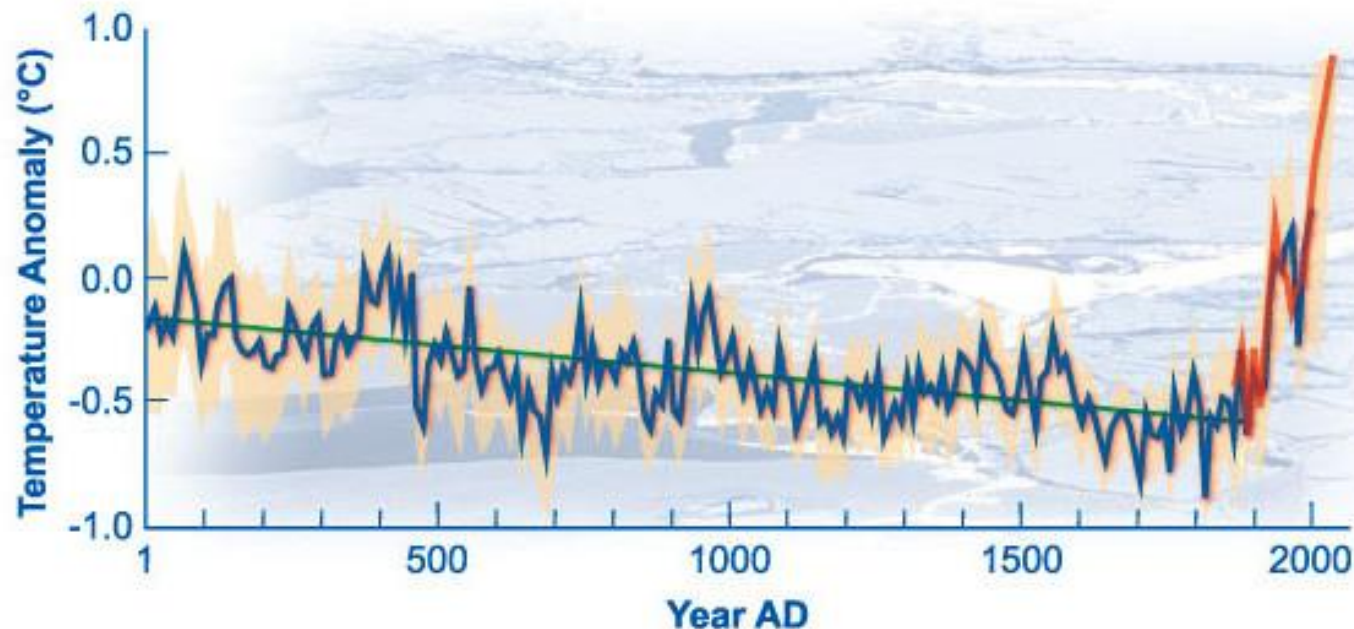
2. La amplificación polar

[Amplificación polar]



IPCC, 2007 – 4AR

Ártico: cambio de tendencia



Darrell S. Kaufman et al (2009) – Recent Warming Reverses Long-Term Arctic Cooling – Science: 325 – 11 authors

[Groenlandia (por ejemplo)]

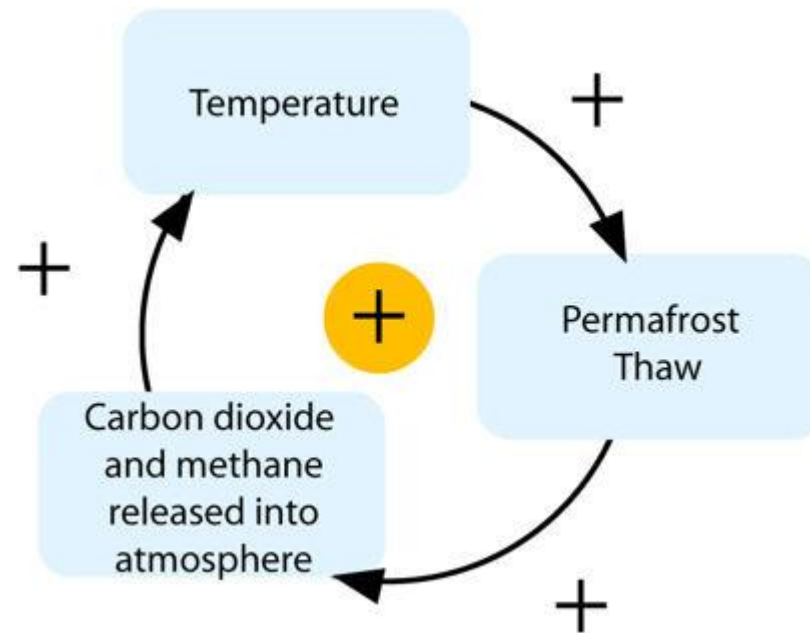


Disminución del albedo



Genera un pozo que a su vez genera una lámina fluida en la base, que ejerce de patín

[Círculo vicioso (realim. +)]

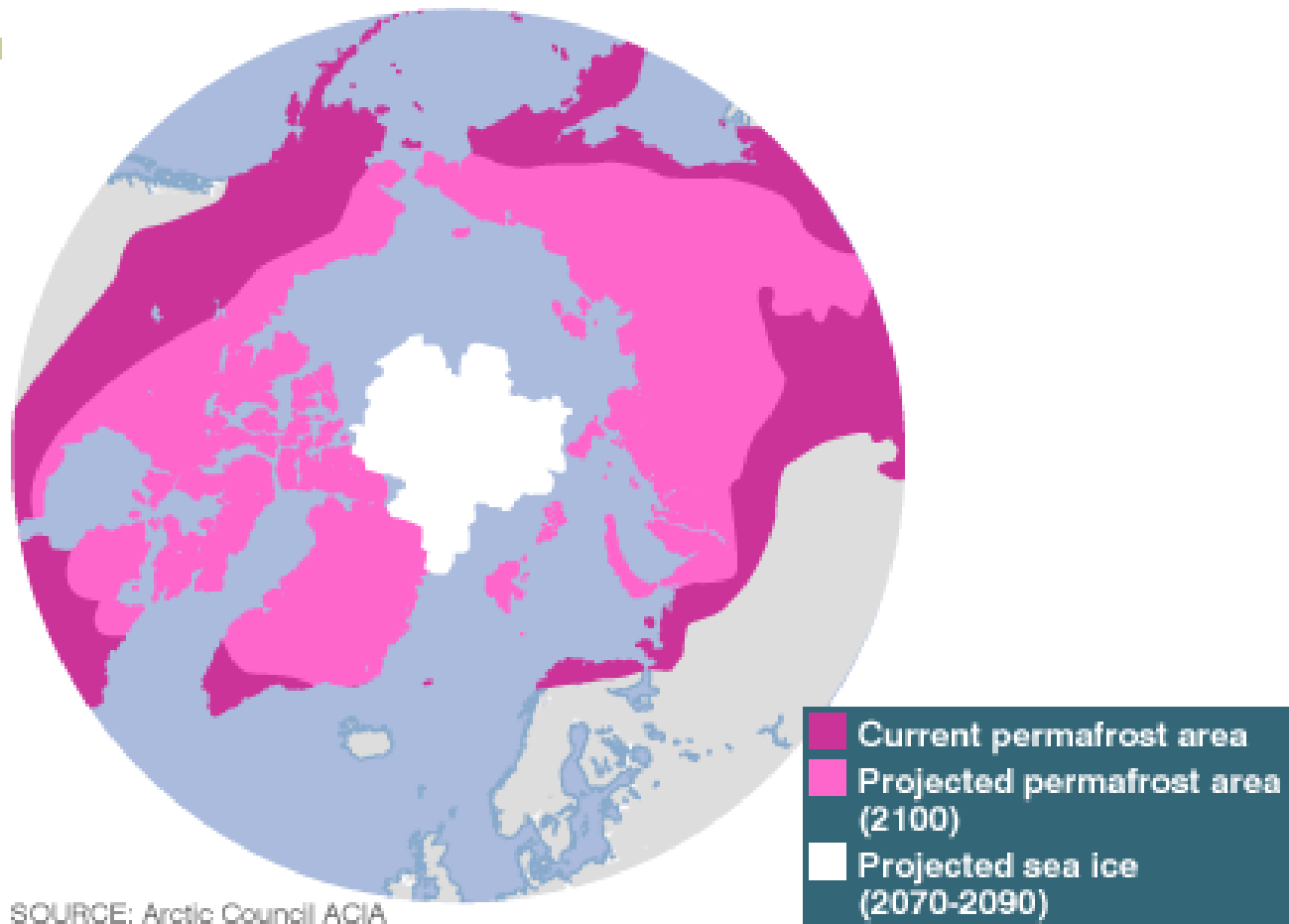


[

]



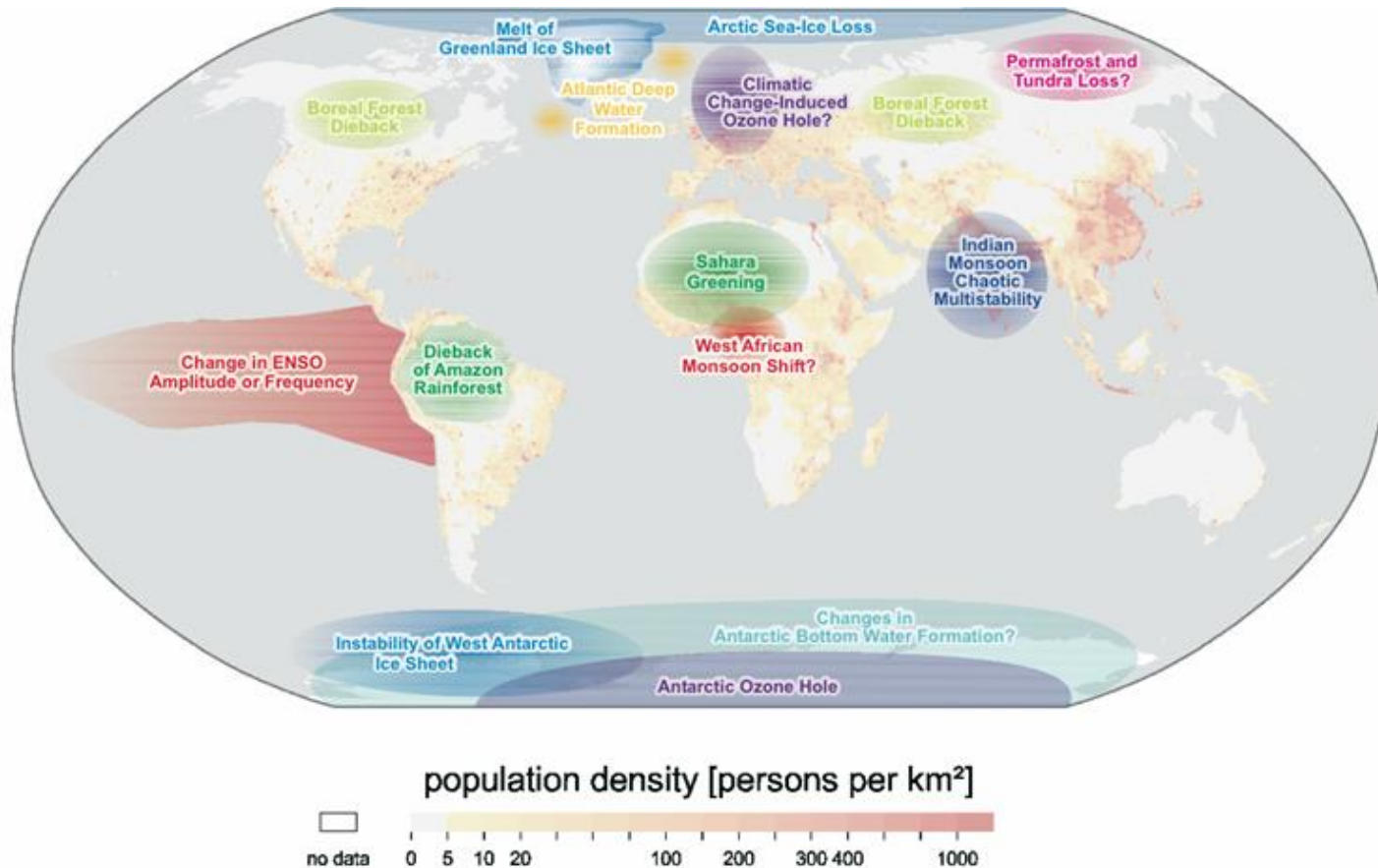
PROJECTED CHANGE IN ARCTIC PERMAFROST BY 2100



[Tipping Point]

- The term “tipping point” commonly refers to a critical threshold at which a tiny perturbation can qualitatively alter the state or development of a system (Tim Lenton)
- Origen del término: Malcon Gladwell (2000)
 - The tipping point is “that one dramatic moment in an epidemic when everything can change all at once. . .” ... “sudden change,” not “steady progression” or “proportionality” that characterizes shifts in social behavior and beliefs. Most significantly, such change is epidemic and contagious in nature. There are thresholds of extreme sensitivity where the slightest perturbation can result in vastly different social trends.
 - Cultural prejudice blocks this realization. We fail to think in terms of thresholds and sensitivity to rapid change.

['Tipping elements']



Timothy M. Lenton et al (2009) - Tipping elements in the Earth's climate system – Proceedings of the National Academy of Sciences doi:10.1073/pnas.0705414105 – 7 authors



Reduccionismo

Intergovernmental Panel of Climate Change



Evaluación exhaustiva

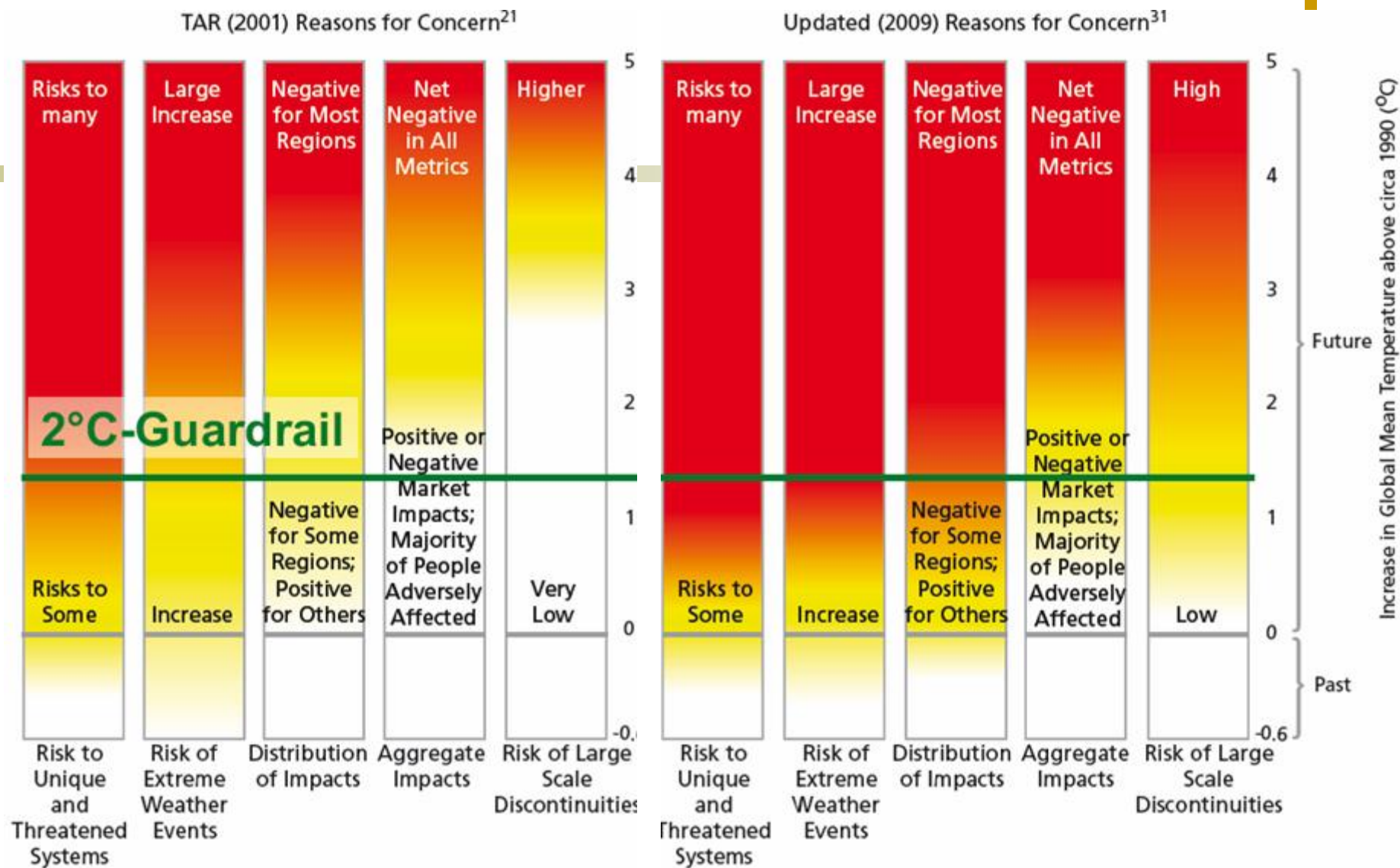
Multiplicidad de niveles de revisión
experta

Aprobación por consenso de los
gobiernos (+ aceptación
científicos)

- **1995:** “The balance of evidence suggests a discernible human influence on global climate”
- **2001:** “There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities”
- **2007:** “Warming of the climate system is unequivocal.... Most of the observed increase in globally-averaged temperatures since the mid- 20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”

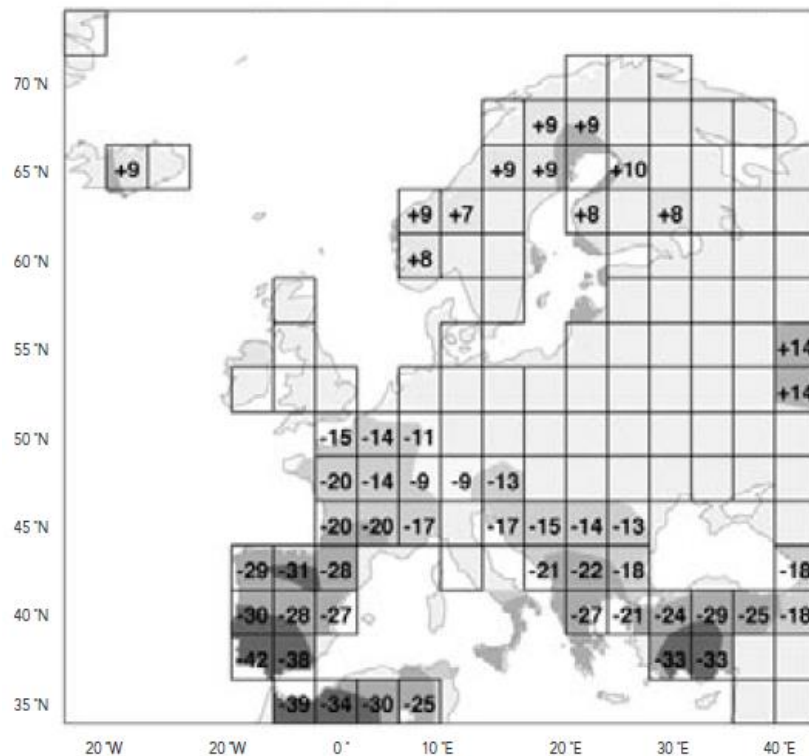
[Correspondencias]

	Ahora	1995	2007	2009	
Temperatura	> 0,8	2	2	1,8	°C
Concentración	> 391	550	450	350	ppmv
Emisiones	~ 8			< 0	GtC /año



Joel B. Smith et al (2009) – Assessing dangerous climate change through an update of the Intergovernmental Panel on Climate Change (IPCC) ‘reasons for concern’ - Proceedings of the National Academy of Sciences PNAS 106:4133–4137 doi:10.1073/pnas.0812355106 – 15 autores líderes

[¿Y nosotros?]

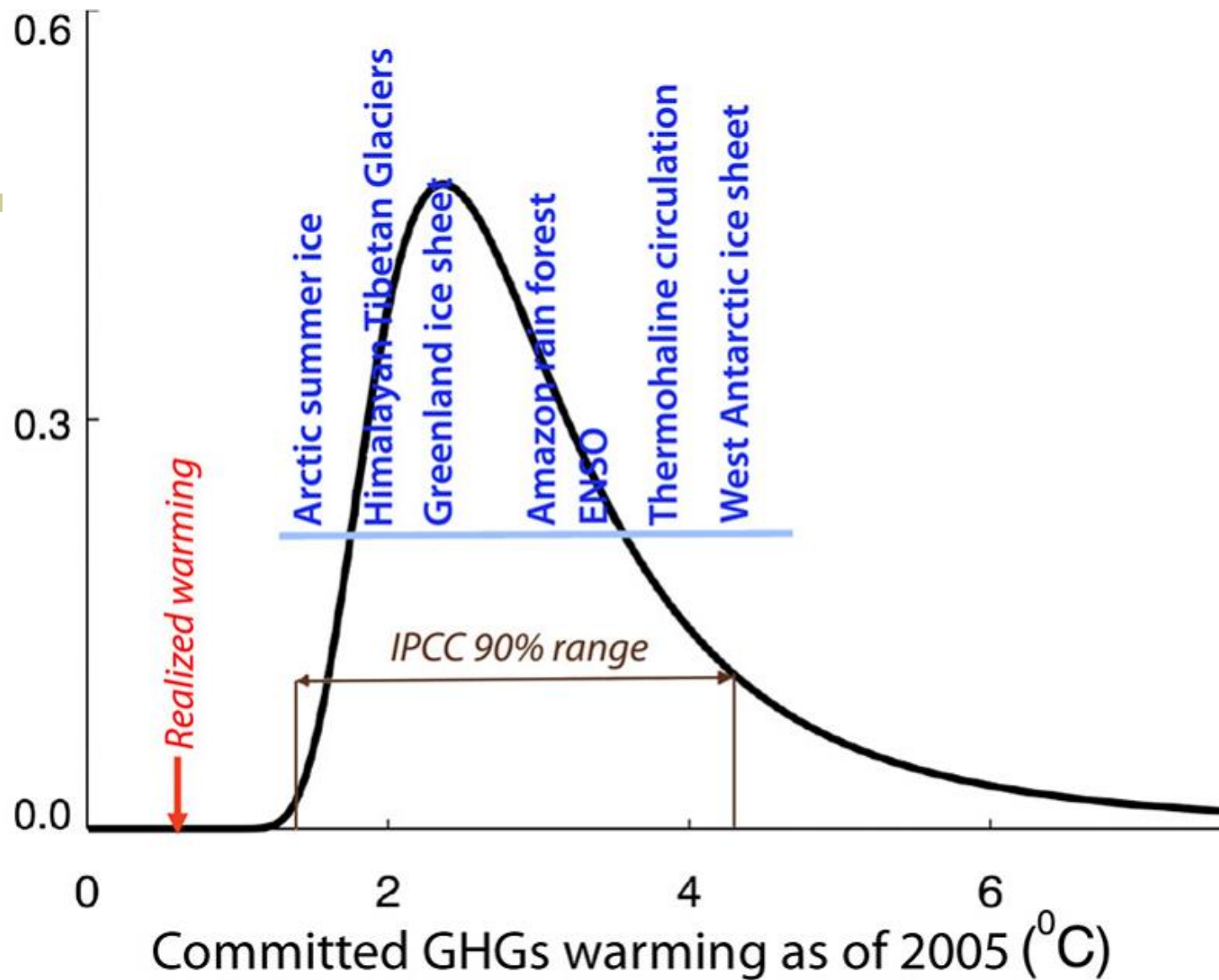


Note: Summer precipitation change (%). Relative to average precipitation in the period 1961–1990. Intermediate ACACIA scenario in a broad range of possible future emissions.
Source: IPCC, 2001b; Parry *et al.*, 2000.

Within Europe, **the warming is estimated to be greatest over southern countries (Spain, Italy, Greece)** and the northeast (e.g. western Russia) and less along the Atlantic coastline (ref). **In southern Europe, especially, this may have severe consequences** such as increasing drought stress, more frequent forest fires, increasing heat stress and risks for human health. The European trend that winters will warm more rapidly than summers will continue (**with the exception of southern Europe**)."

Under high emission scenarios every second summer in Europe will be as hot or even **hotter than 2003** by the end of the twenty-first century (Luterbacher *et al.*, 2004). In southern Europe, these changes are projected to occur even earlier (**in Spain by the 2020s**) (Parry, 2000).

Impacts of Europe's changing climate - European Energy Agency, 2004



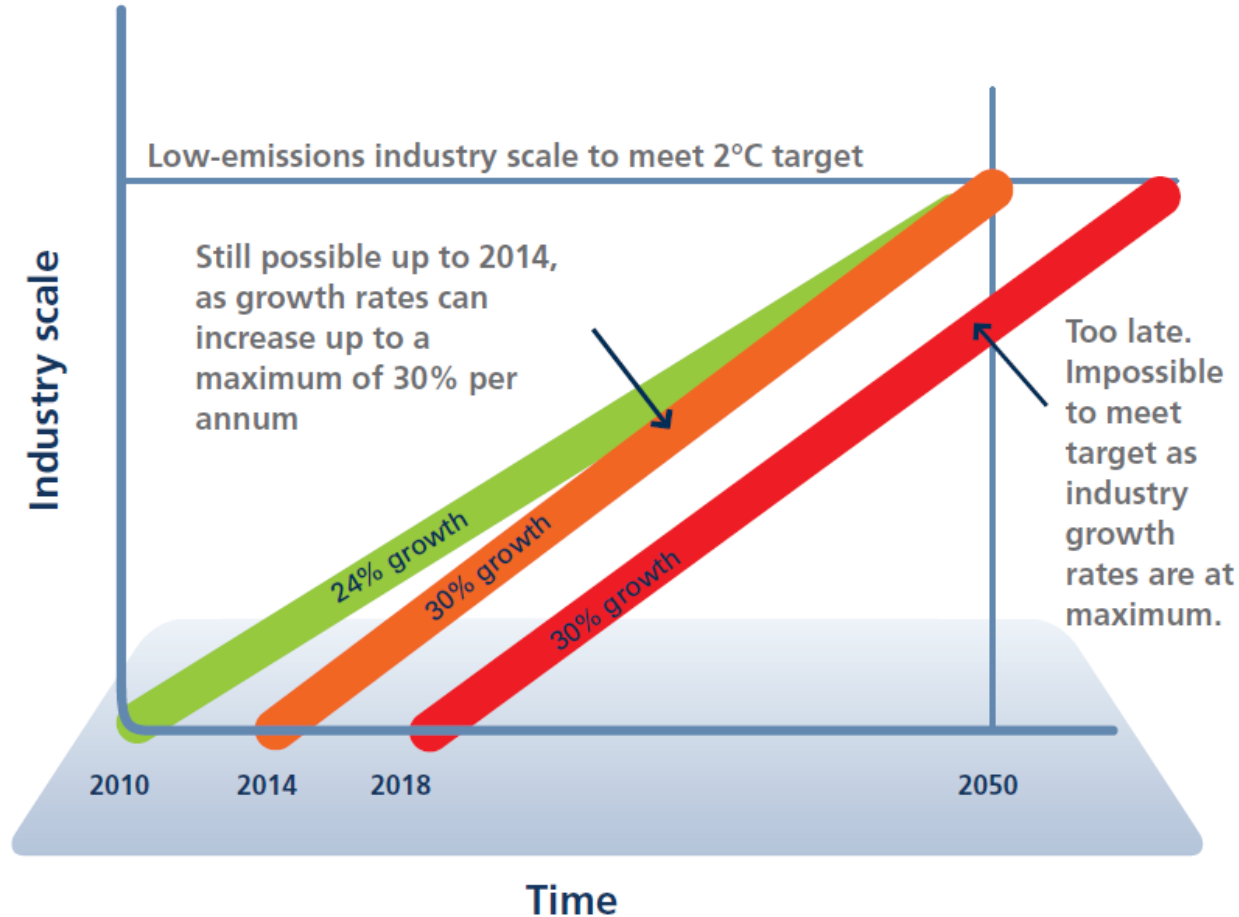
Veerabhadran Ramanathan and Y. Feng (2008) - On avoiding dangerous anthropogenic interference with the climate system: Formidable challenges ahead - Proceedings of the National Academy of Sciences PNAS 105:14245-14250
 doi:10.1073/pnas.0803838105 - Scripps Institution of Oceanography, University of California at San Diego

[Probabilidades ΔT a 2100]



Andrei Sokolov et al (2009) - Probabilistic forecast for 21st century climate based on uncertainties in emissions (without policy) and climate parameters - Journal of Climate 22:5175–5204 doi:10.1175/2009JCLI2863.1 - Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology

[Reindustrialización]



[News](#) | [Sport](#) | [Comment](#) | [Culture](#) | [Business](#) | [Money](#) | [Life & style](#) |

[Environment](#) > [Climate change](#)

World will not meet 2C warming target, climate change experts agree

Guardian poll reveals almost nine out of 10 climate experts do not believe current political efforts will keep warming below 2C

David Adam, environment correspondent

[The Guardian](#), Tuesday 14 April 2009

[Article history](#)

[El canario en la mina]



The canary has died!
Jay Zwally, Glaciologist, NASA, December 2007

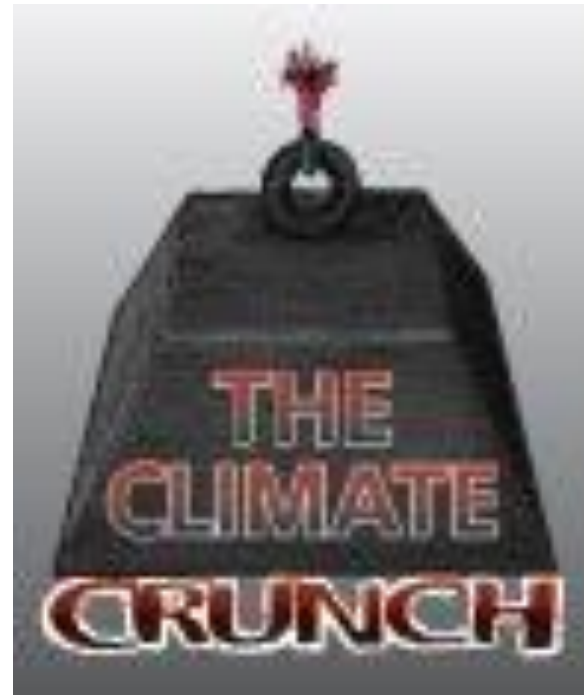
[The climate ...]



Març, 2009

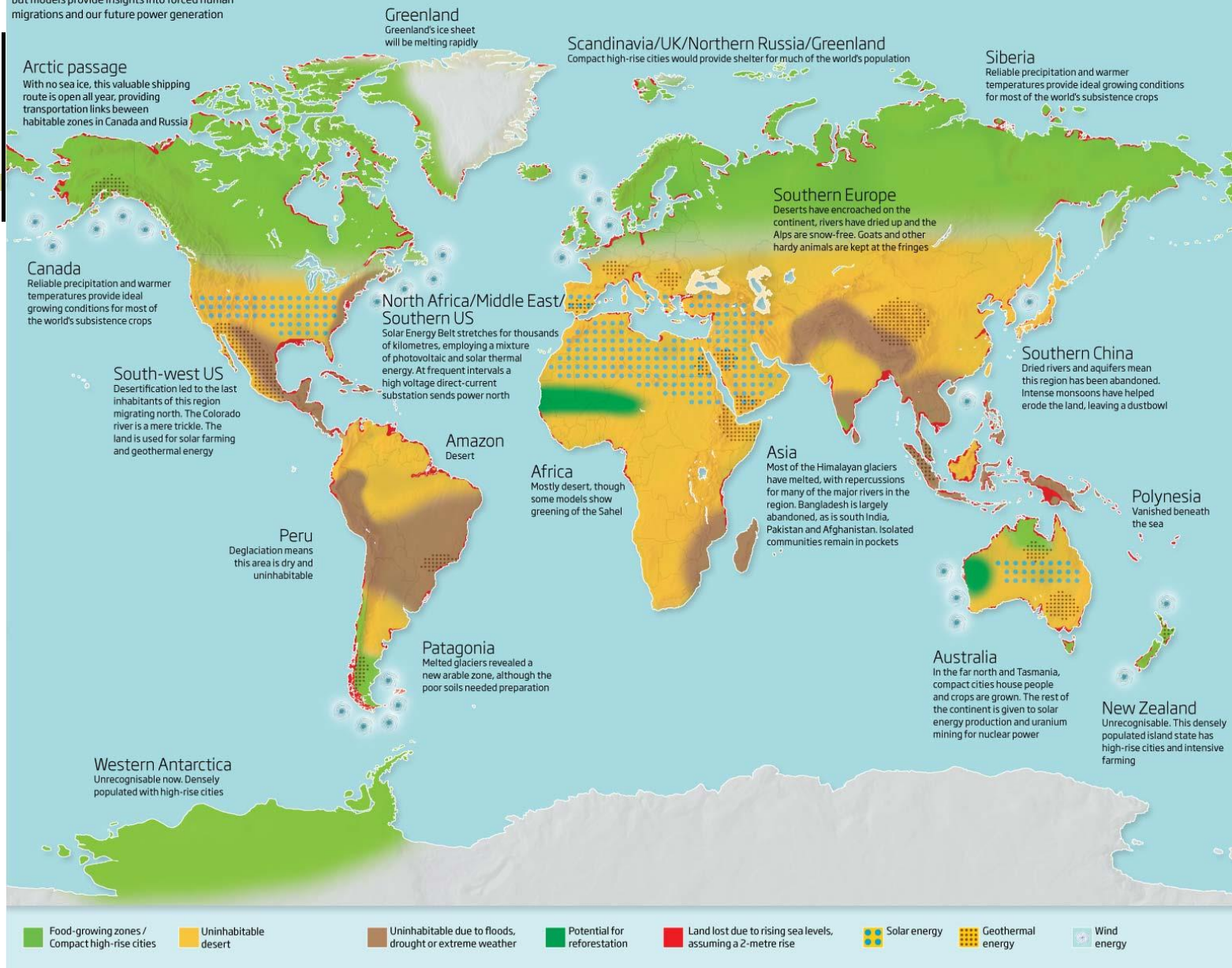


[Crunch!]



The world: 4°C warmer

No one knows exactly what this world will look like, but models provide insights into forced human migrations and our future power generation



A decorative graphic consisting of a thin yellow circle on the left side, partially overlapping a horizontal bar. The bar has a yellow-to-white gradient and is flanked by large black and yellow brackets.

La carga de la Tierra

Población

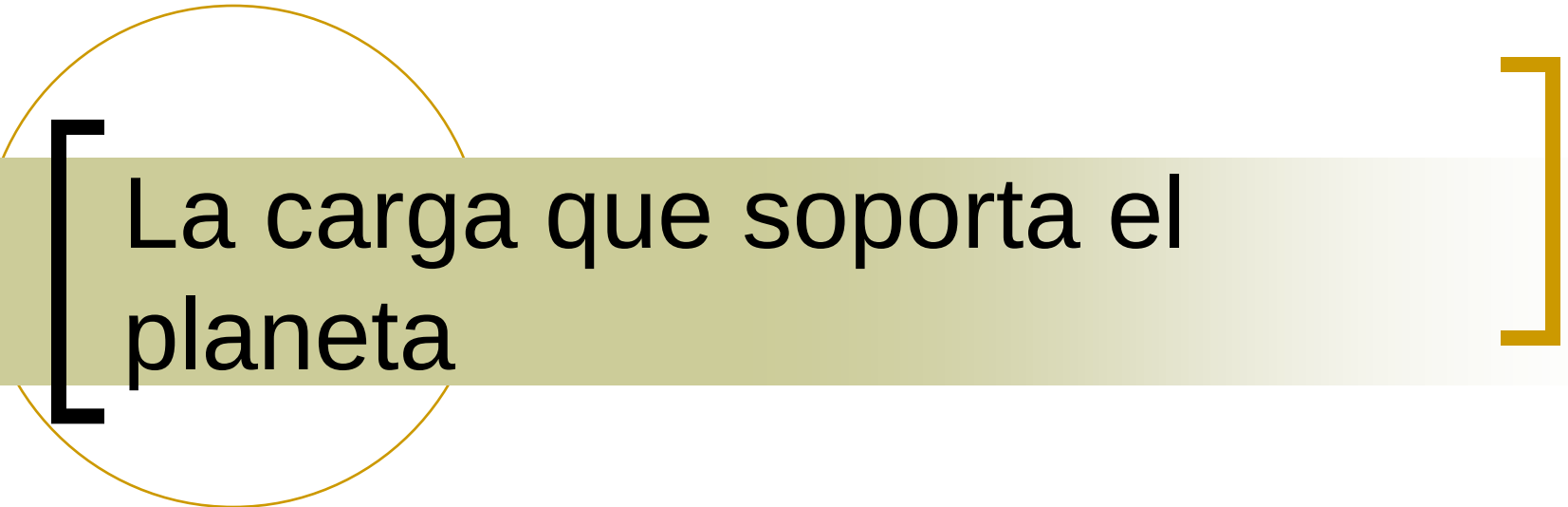
Economistas

Negacionismo

Elites incapaces

Ecologistas amortizados

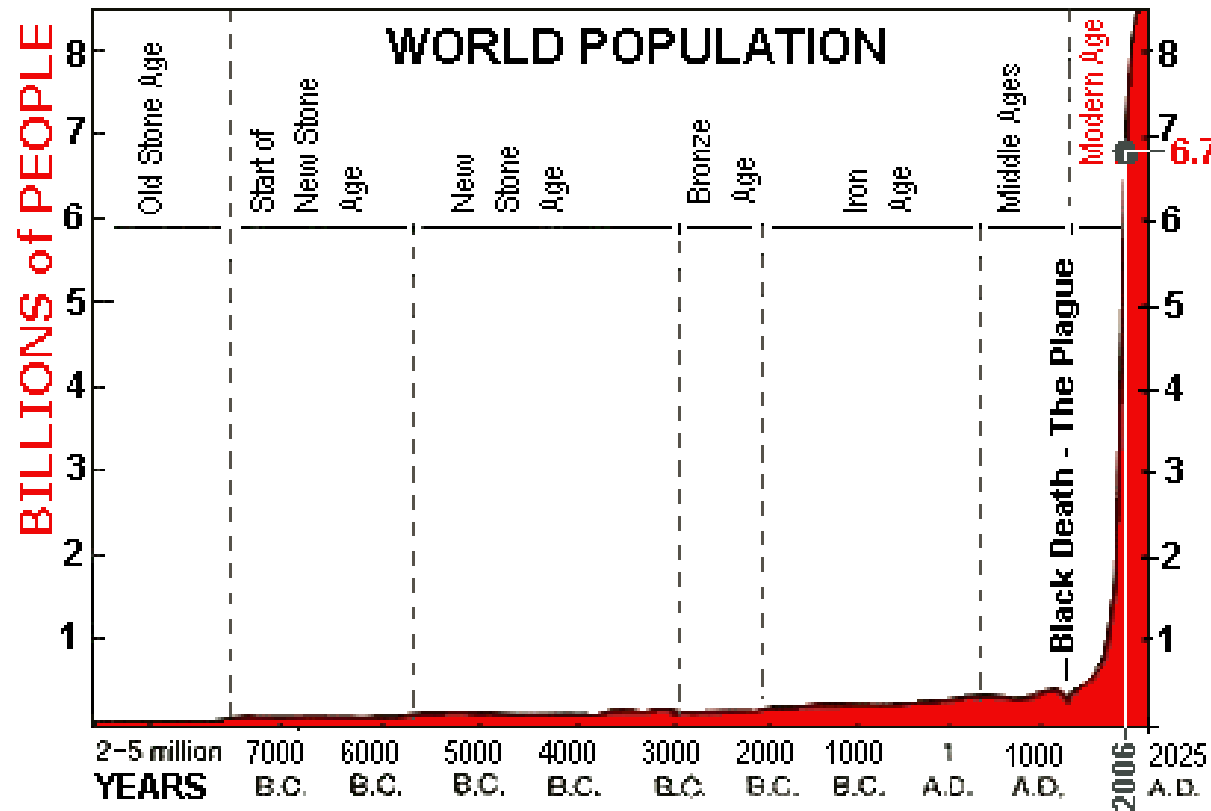
Medios secuestrados



La carga que soporta el planeta

1. Población

Somos muchos



[¿Cuántos somos?]

■ Emisiones amo
(2.500 Kcal/dia/persona)

○ 90 kgC/persona/año

■ Emisiones esclavos:

○ 1.260 kC/persona/año

Esclavos: $1,26/0,09 = 14$ por amo

Población amos: 7.000.000.000 personas

Población total equivalente: $\approx 100.000.000.000$ personas



2. Economistas

[Economistas]

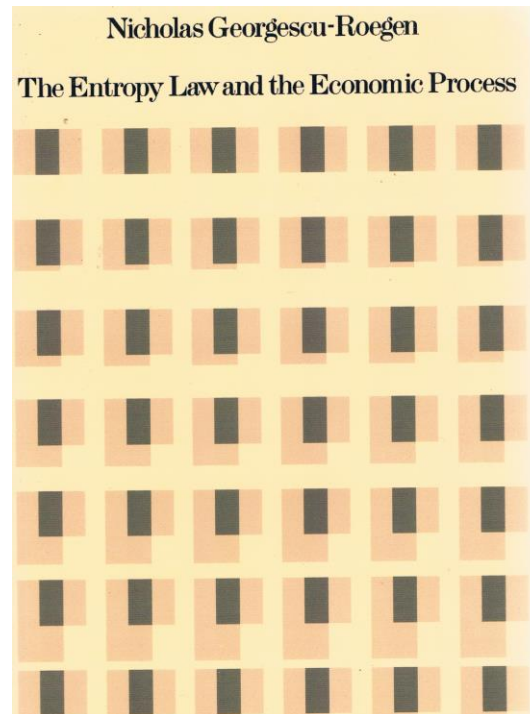
- Acción vía análisis coste-beneficio:
 - Teoría del equilibrio
 - Recursos no finitos
 - Contabilización valor vidas
 - Tasa de descuento
- Modelos integrados econo-climáticos:
 - Negishi weighting
 - Sin esta restricción, los IAM que maximizan el bienestar mundial recomiendan una igualación de la riqueza de los países como política óptima
 - Con la restricción recomiendan trayectorias que son óptimas sólo en un mundo donde la redistribución no pueda darse – ni se diera.

[¿Exceso de riqueza?]

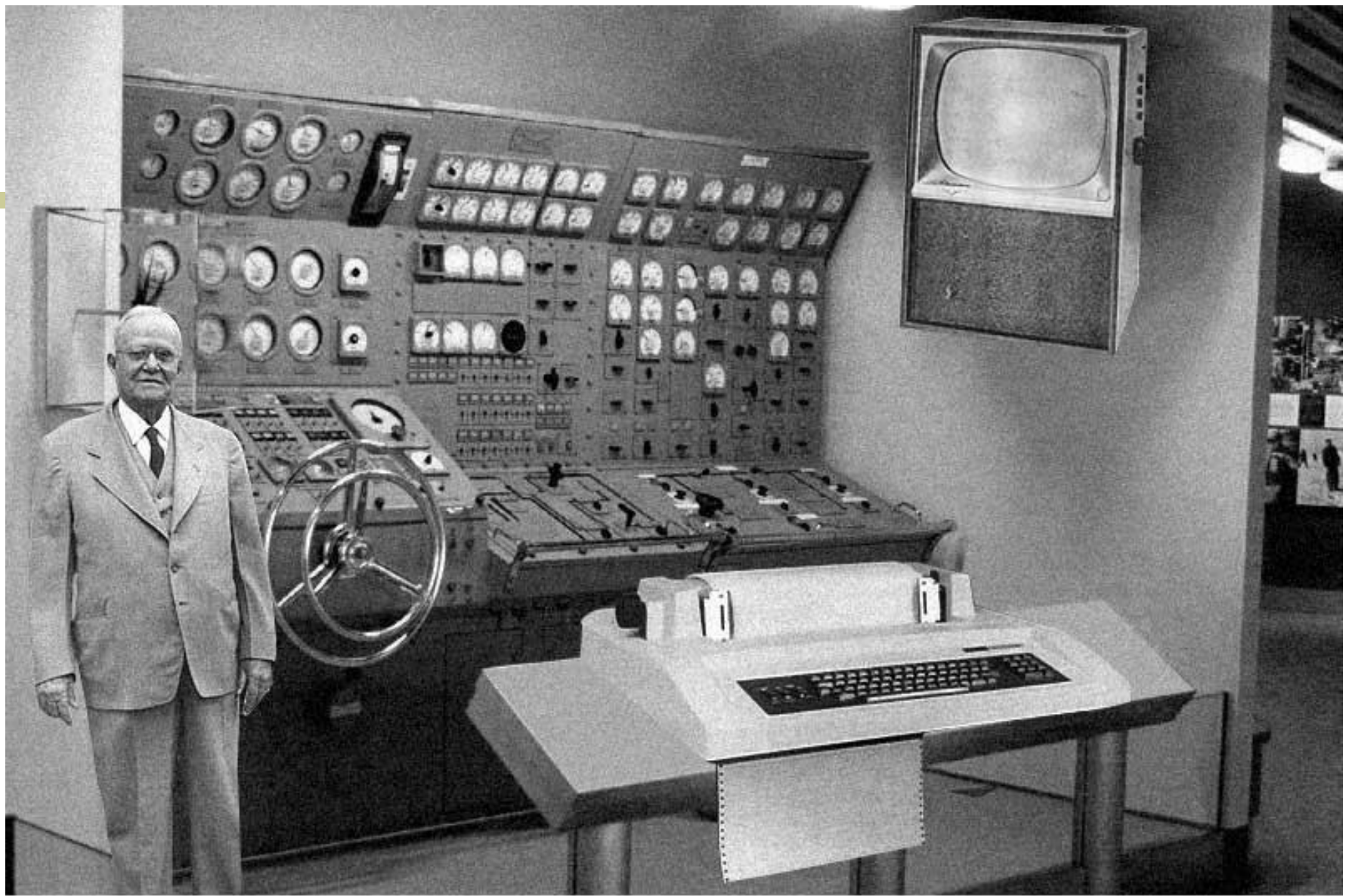


100.000 ricos $\equiv$ 10.000.000.000 africanos

[¿Y la termodinámica?]



1971

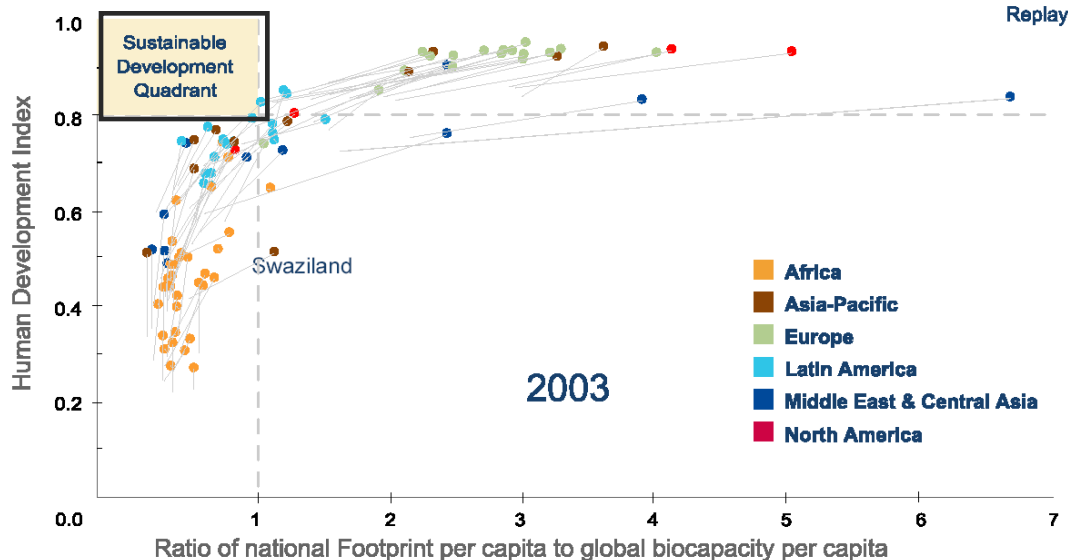


Scientists from the RAND Corporation have created this model to illustrate how a "home computer" could look like in the year 2004. However the needed technology will not be economically feasible for the average home. Also the scientists readily admit that the computer will require not yet invented technology to actually work, but 50 years from now scientific progress is expected to solve these problems. With teletype interface and the Fortran language, the computer will be easy to use and only

¿Desarrollo sostenible?

SUSTAINABLE DEVELOPMENT: 1975-2003

Human Development Index and Ecological Footprint of Nations



Sustainable development can be assessed using the Human Development Index (HDI) as an indicator of socio-economic development, and the Ecological Footprint as a measure of human demand on the biosphere. The United Nations considers an HDI of over 0.8 to be "high human development." If the ratio of a country's per capita Ecological Footprint is less than or equal to the biocapacity land area available per capita (<1 on the X axis), that country's level of consumption is globally replicable. Despite growing adoption of sustainable development as an explicit policy goal, most countries do not meet both minimum requirements.

Daniel D. Moran et al (2008) -
Measuring sustainable
development - Nation by nation -
Ecological Economics 64:470-474
doi:10.1016/j.ecolecon.2007.08.017



2. La maquinaria de negación

[¿Desde cuándo lo sabemos?]



Roger Revelle, 1961 – Senado EE.UU.

En los primeros 1960 mucho había cambiado. Muchos científicos comenzaron a preocuparse seriamente por el hecho de que este calentamiento no fuera una mera fase de un modesto ciclo natural sino el inicio de un ascenso acelerado, descontrolado y sin precedentes. Este cambio en la comprensión y en la atención **puede algún día ser visto como uno de los avances científicos cruciales del siglo** (Spencer Weart (2003) – The Discovery of Global Warming – Harvard University Press)

Esta generación ha alterado la composición de la atmósfera a escala global mediante ... un incremento sostenido de dióxido de carbono procedente de la quema de combustibles fósiles ... [que pueden generar] **cambios importantes en el clima** (Lyndon B. Johnson, 1965)

Carbon Dioxide Exchange Between Atmosphere and Ocean and the Question of an Increase of Atmospheric CO₂ during the Past Decades

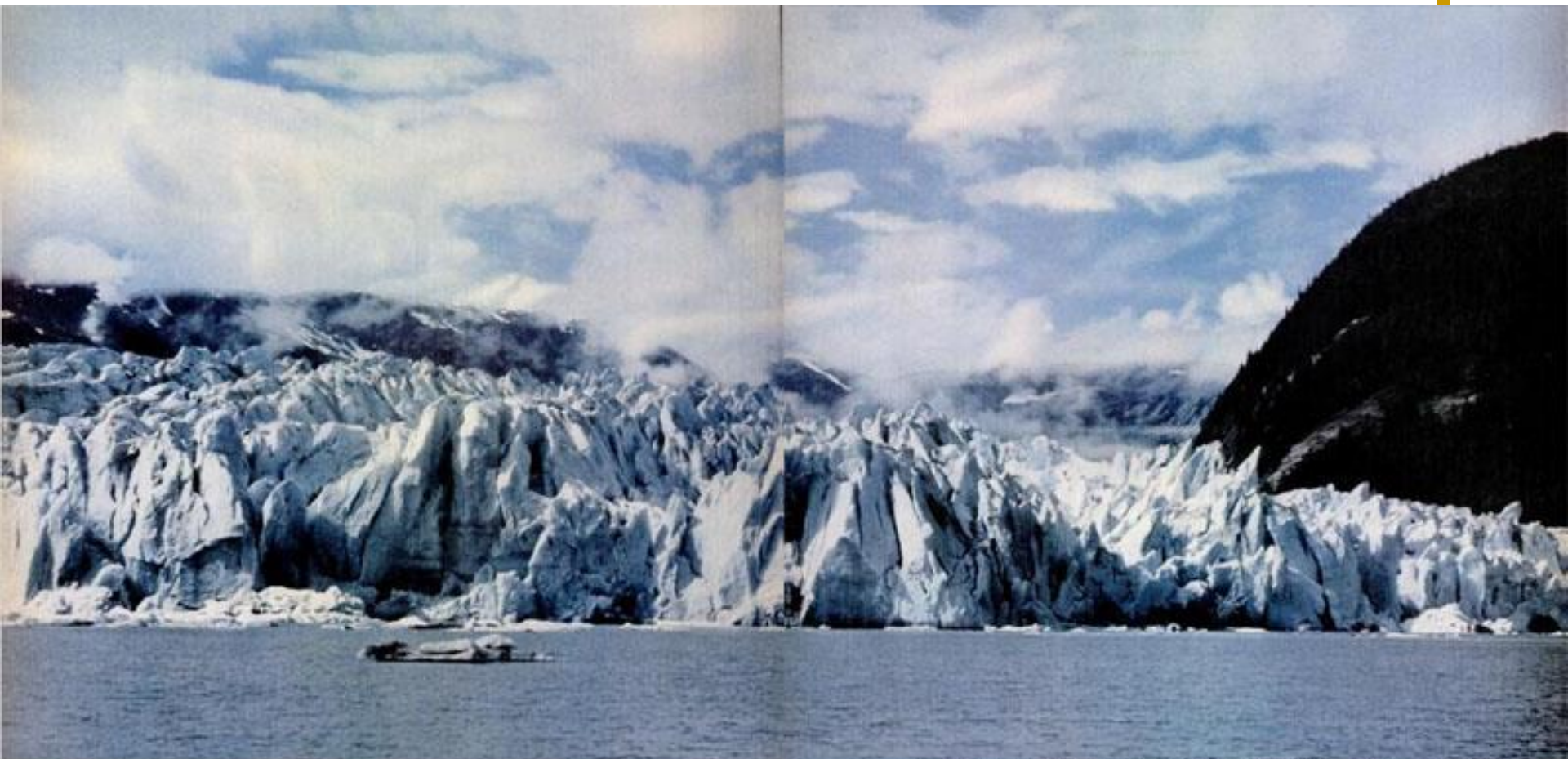
By ROGER REVELLE and HANS E. SUESS, Scripps Institution of Oceanography, University of California, La Jolla, California

(Manuscript received September 4, 1956)

Abstract

From a comparison of C¹⁴/C¹² and C¹³/C¹² ratios in wood and in marine material and from a slight decrease of the C¹³ concentration in terrestrial plants over the past 50 years it can be concluded that the average lifetime of a CO₂ molecule in the atmosphere before it is dissolved into the sea is of the order of 10 years. This means that most of the CO₂ released by artificial fuel combustion since the beginning of the industrial revolution must have been absorbed by the oceans. The increase of atmospheric CO₂ from this cause is at present small but may become significant during future decades if industrial fuel combustion continues to rise exponentially.

Present data on the total amount of CO₂ in the atmosphere, on the rates and mechanisms of exchange, and on possible fluctuations in terrestrial and marine organic carbon, are inadequate for accurate measurement of future changes in atmospheric CO₂. An opportunity exists during the International Geophysical Year to obtain much of the necessary information.



ENCO GLACIER, ALASKA, IS 8 MILES OF ICE STRETCHING 270 SQUARE MILES. YET THE PETROLEUM ENERGY HUMBLE SUPPLIES AMOUNTS TO ONLY 17% OF THE RATE OF 7 MILLION TONS A DAY!

EACH DAY HUMBLE SUPPLIES ENOUGH **ENERGY** TO MELT 7 MILLION TONS OF GLACIER!

This giant glacier has remained unmelted for centuries. Yet, the petroleum energy Humble supplies—if converted into heat—could melt it at the rate of 80 tons each second! To meet the nation's growing needs for energy, Humble has applied science to nature's resources to become America's Leading Energy Company. Working wonders with oil through research, Humble provides energy in many forms—to help heat our homes, power our transportation, and to furnish industry with a great variety of versatile chemicals. Stop at a Humble station for new Enco Extra gasoline, and see why the "Happy Motoring" Sign is the World's First Choice!

HUMBLE
OIL & REFINING COMPANY
America's Leading **Energy** company



Copyrighted material

Life Magazine 02/02/1962

<http://books.google.com/books?id=k00EAAAAMBAJ&lpg=PA86-IA3&dq=glacier%20humble&pg=PA86-IA2#v=onepage&q=glacier%20humble&f=false>

[¿Dónde está la oposición?]

- Let me tell you why you are here. You are here because you know ... that there's something wrong with the world. You don't know what it is, but it's there, like a splinter in your mind, driving you mad. It is this feeling that has brought you to me. [...] The Matrix is a system, Neo. That system is our enemy.
- The first question of political philosophy today is not if, or even why, there will be resistance and rebellion, but rather how to determine the enemy against which to rebel. Indeed, often the inability to identify the enemy is what leads the will to resistance around in such paradoxical circles.

Morpheus, in Wachowski and Wachowski
1999

Hardt and Negri 2000; 210-11

[The 'counterintelligentsia']

- Karl Marx
- Frederick Engels
- Vladimir Lenin
- Iosef Stalin
- Adam Smith
- Max Weber
- Lewis Powell
- Julian Simon



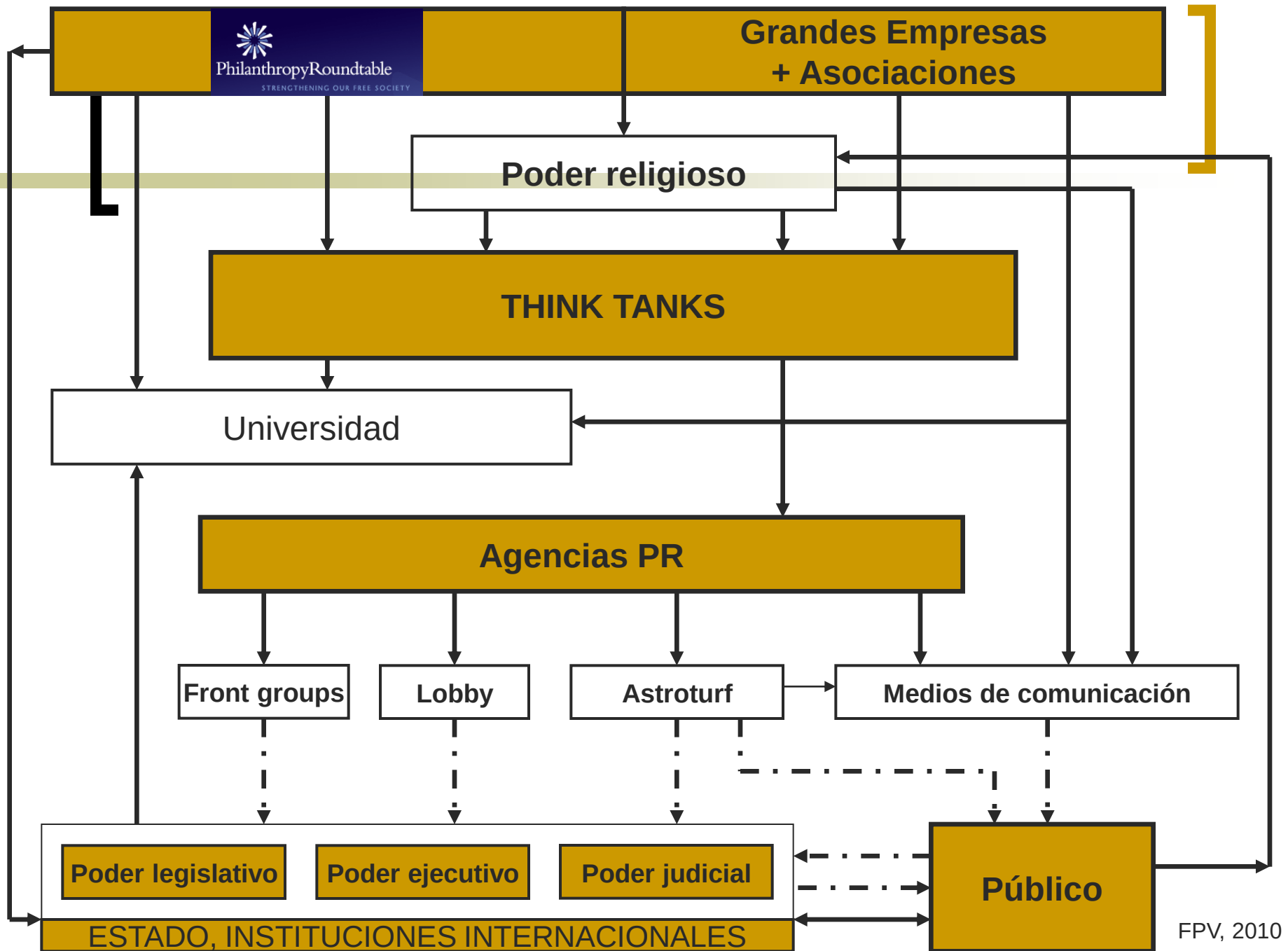
Antonio Gramsci



Antonio Gramsci

[¡Agnotología!





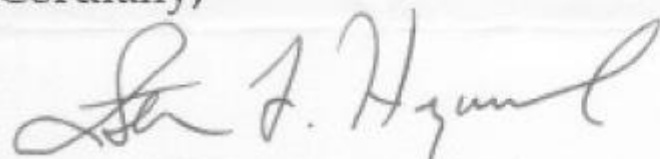
Comprar científicos

or have thoughts about who else might be interested, please give Ken Green a call at 202-862-4883 at your convenience.

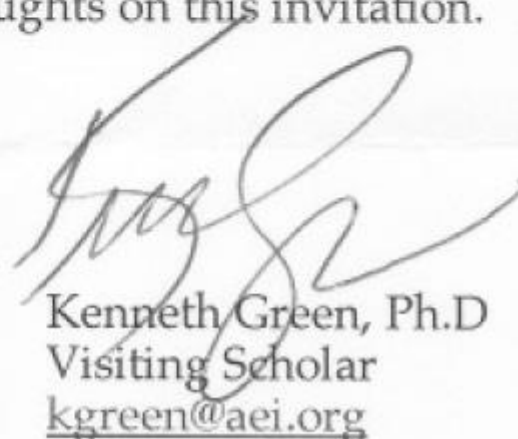
If you and Prof. North are agreeable to being authors, AEI will offer an honoraria of \$10,000. The essay should be in the range of 7,500 to 10,000 words, though it can be longer. The deadline for a complete draft will be December 15, 2007. We intend to hold a series of small conferences and seminars in Washington and elsewhere to coincide with the release of both the FAR and our assessment in the spring or summer of 2007, for which we can provide travel expenses and additional honoraria if you are able to participate.

Please feel free to contact us with questions and thoughts on this invitation.

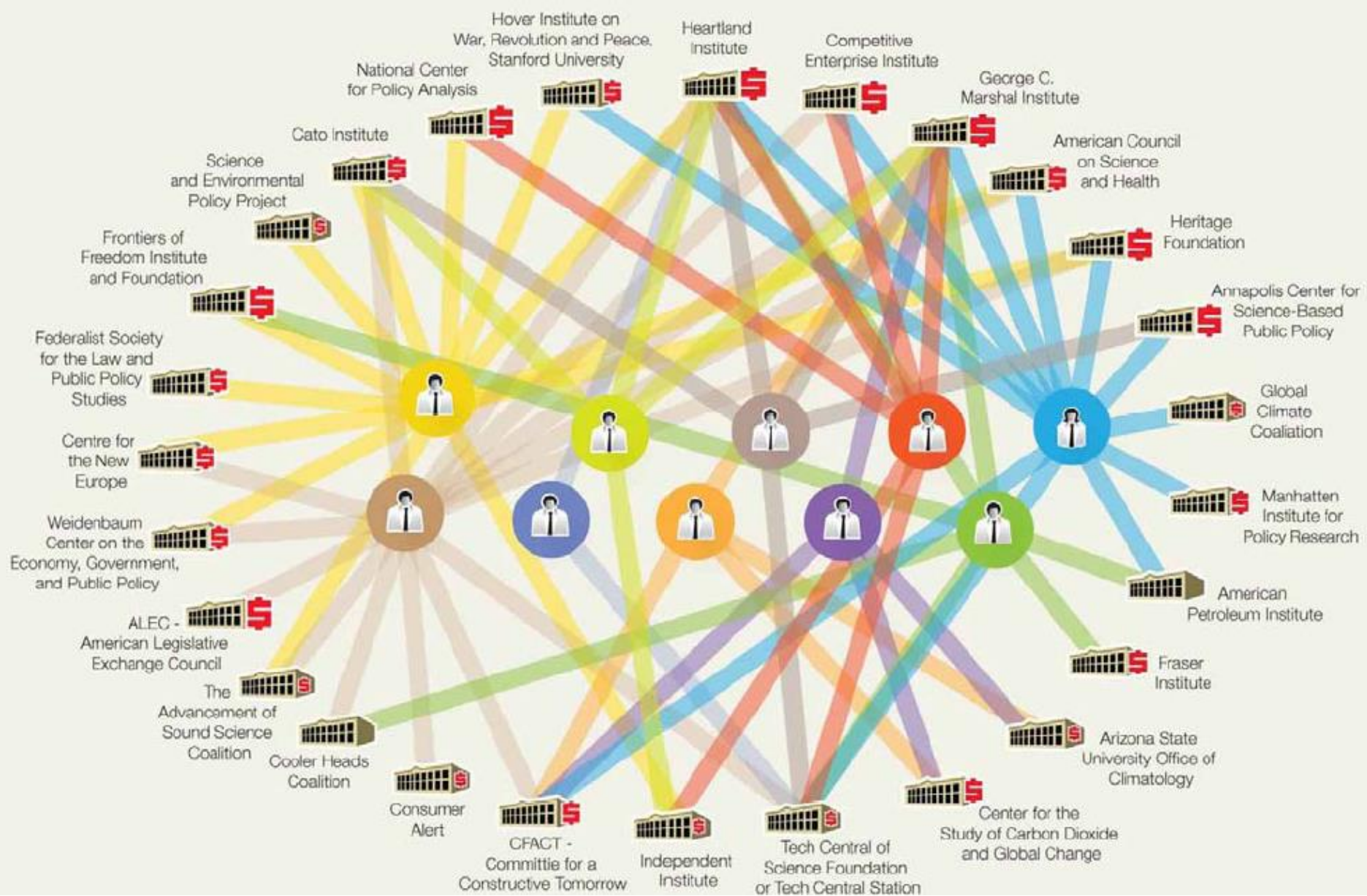
Cordially,



Steven F. Hayward, Ph.D
Resident Scholar
shayward@aei.org



Kenneth Green, Ph.D
Visiting Scholar
kgreen@aei.org



Eco-chamber

Dealing in Doubt: The Climate Denial Industry and Climate Science - A Brief History of Attacks on Climate Science, Climate Scientists and the IPCC (Greenpeace, 2010)

[Nombres TT]

Tradicionales

American Enterprise Institute (1943)
RAND Corporation (1948)
Reason Foundation (1968)
The Hoover Institution on War, Revolution and Peace (1958)

Ah hoc

Center for Science and Public Policy (2003)
Center for the Study of Carbon Dioxide & Global Change (1998)
Committee for a Constructive Tomorrow (1985)
Foundation for Research on Economics and the Environment (1985)
Friends of Science (Canada, 2002)
Frontiers of Freedom (1996)
Oregon Institute of Science and Medicine (1980)
Science and Environmental Policy Project (1990)
Science and Public Policy Institute (1994)
The Annapolis Center for Science-Based Public Policy
The Center for Free Market Environmentalism
The Cooler Heads Coalition (1997)

Australia

APEC Study Centre
The Lavoisier Group (Australia, 2000)
Institute of Public Affairs (Australia, 1940)

Nueva era

Alexis de Tocqueville Institution (1988)
American Enterprise Institute (1943)
American Legislative Exchange Council (1973)
American Policy Center (1988)
Center for the Defense of Free Enterprise (1976)
Citizens for a Sound Economy (1984-2004)
Competitive Enterprise Institute (1984)
Democracy Institute (2006)
Ethics and Public Policy Center (1976)
George C. Marshall (1984)
National Center for Policy Analysis (1983)
New American Century
Pacific Research Institute (1979)
Templeton Foundation (1987)
The Breakthrough Institute (2003)
The Cato Institute (1977)
The Foundation for Defense of Democracies
The Fraser Institute (Canada, 1974)
The Heartland Institute (1984)
The Heritage Foundation (1977)
The Independent Institute (1986)

Nombres TT (Europa)

Bruselas

Centre for European Policy Studies
Centre for the New Europe (1993-2008)
European Enterprise Institute
European Science and Environment Forum
European Sound Climate Policy Coalition
Institut Economique Molinari
International Council for Capital Formation
National Endowment for Democracy

Alemania

Europäische Akademie für Umweltfragen
Studienzentrum Weikersheim
Weikersheim Think Tank

Francia

Institut Economique Molinari
Institut Thomas More

España

Fundación para el Análisis y los Estudios Sociales (FAES)
Fundación para las Relaciones Internacionales y el Diálogo Exterior
Grupo de Estudios Estratégicos
Juan de Mariana
Real Instituto Elcano
Catalunya Oberta

Redes

Atlas Economic Research Foundation
The Stockholm Network

Reino Unido

Adam Smith Institute (1977)
Centre for Policy Studies (1974)
Green Alliance
Institute of Economic Affairs (1955)
International Policy Network (1971)
The European Foundation (1992)



Asociaciones de empresas

American Petroleum Institute
ACCCE
Information Council on the Environment
Sense about Science

Front groups
Americans for American Energy
Greening Earth Society
Mercatus Center

Astroturf

America's Power Army
Americans for Prosperity
Citizens Against Government Waste
Citizens for a Sound Economy (1984-2004)
CO2 Is Green
Consumer Energy Alliance
Creciendo Juntos
Defenders of Property Rights
ECO
Eco-terrorism
Energy Citizens
Foundation for Clean Air Progress
Frontiers of Freedom (1996)
General
Natural Resources Stewardship Project
Not Evil Just Wrong
Ozone Action
Plants Need CO2

[PR]

Adfero Group

APCO

Bonner & Associates

Bracewell & Guiliani

Bracy Williams & Co

Brown & Williamson

Burson Marsteller

DCI group

Ecos Corporation

Edelmans

Environmental Strategies
Group

Fenton

HDMK

Hill & Knowlton

Ketchum Public Relation

Lincoln Strategy Group

Medialink Worldwide

Mongoven, Biscoe and Duchin

Ogilvy Government Relations

Pac/West Communications

Patton

Potomac

R&R Partners

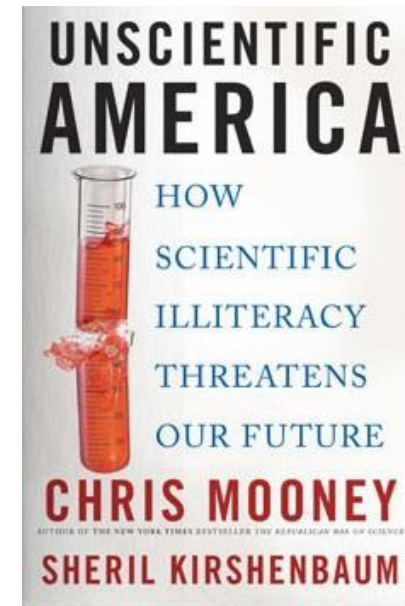
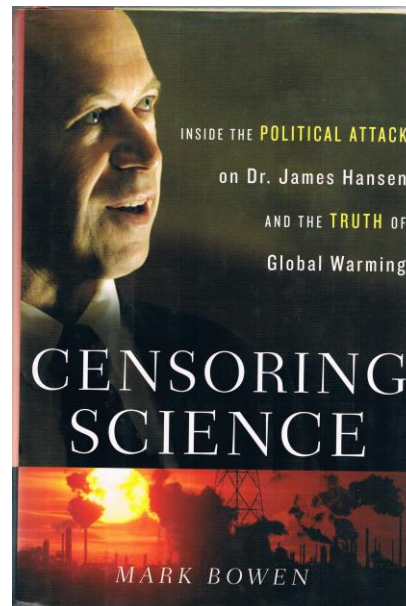
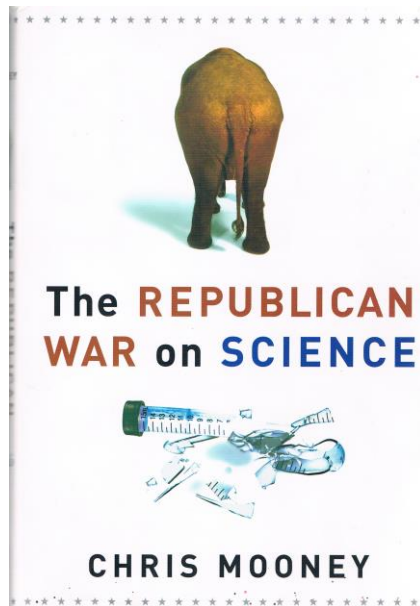
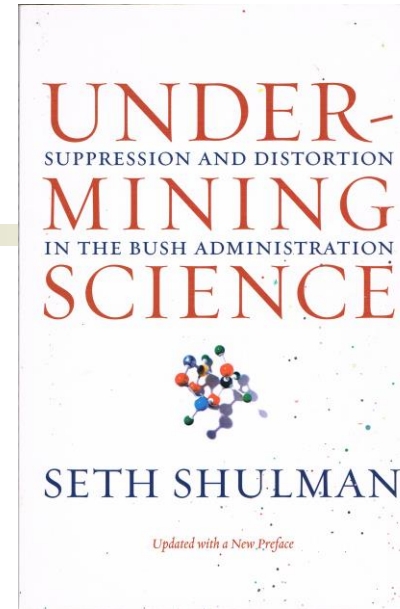
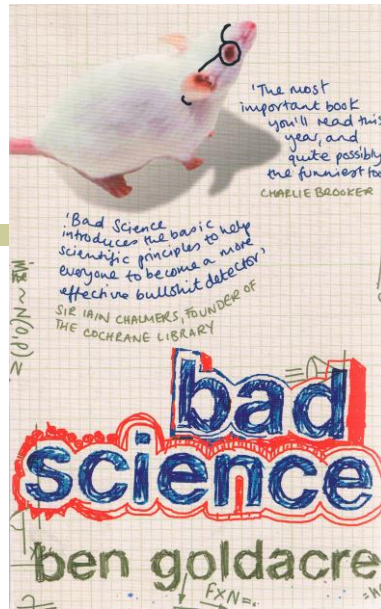
Rudder & Finn

[La ciencia que es basura]

Table 1
Environmental and Health Issues Characterized as Junk Science in OpEds and News Stories

Global Warming	Endangered species	Ergonomic standards
Electro-magnetic flux from power lines	Dursban pesticides	Tobacco addiction
Pesticide use in schools	Trans fats and coronary disease	Second-hand tobacco smoke
Silicon breast implants	Exposure thresholds and effects of radiation	Sodium and high blood pressure
Air bag safety	Genetically modified corn	Endocrine disruptors and human reproductive effects
Air pollution in National Parks	Mad cow disease	Fen-phen and heart damage
Gender and clinical trials for new drugs	Oxygenated fuel and air pollution control	Evaluation of affirmative action programs
Mortality and health risks from air pollution	Dioxin clean-up at Times Beach, Missouri	Nitrogen oxide emissions in the Eastern United States
Sea level rise due to climatic change	Pollution control for SUVs	Wildlife management in National Parks

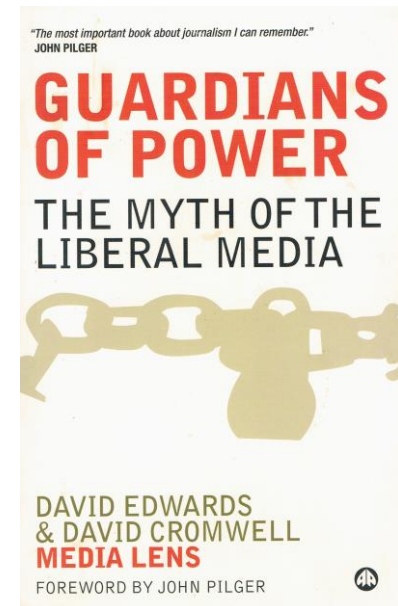
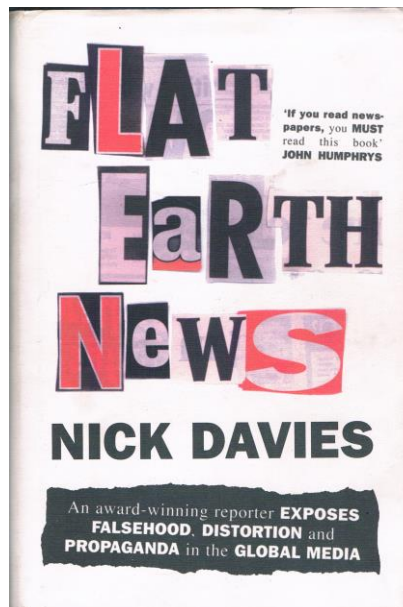
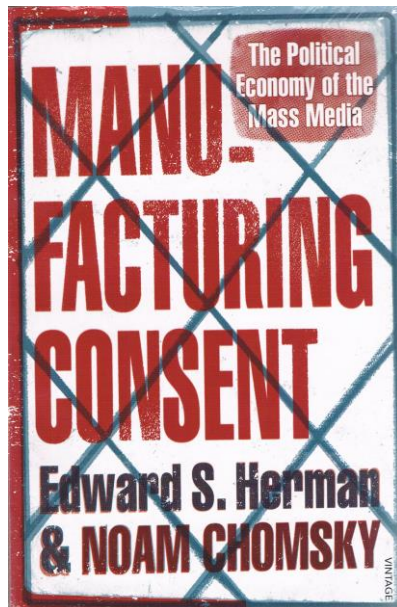
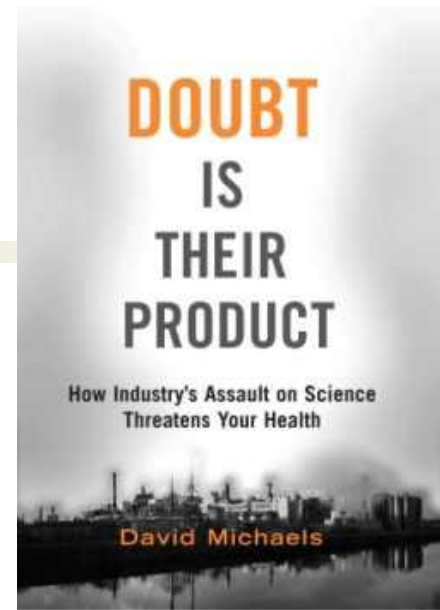
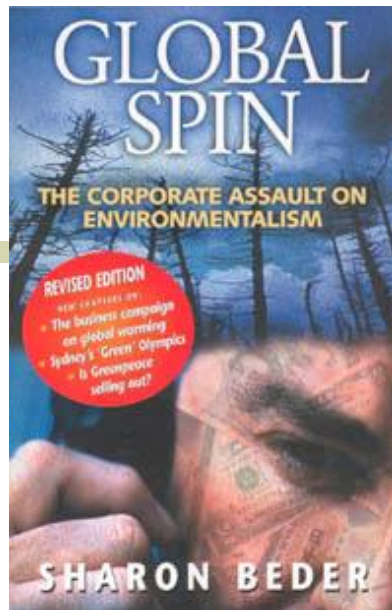
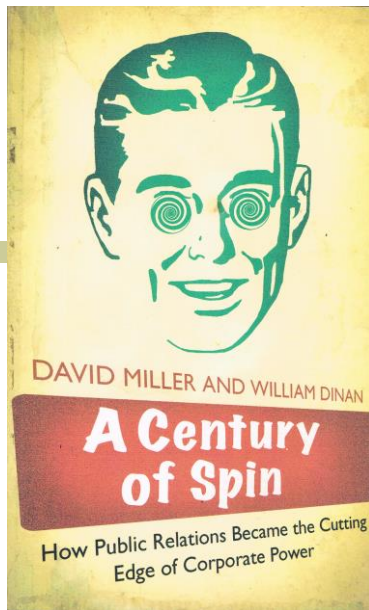
Charles N. Herrick and Dale Jamieson (2001) - Junk Science and Environmental Policy: Obscuring Public Debate with Misleading Discourse - Philosophy and Public Policy Quarterly 21:11-16 - Stratus Consulting Inc.; Henry R. Luce Professor in Human Dimensions of Global Change, Carleton College, Northfield



Suffering the Science

Climate change, people, and poverty

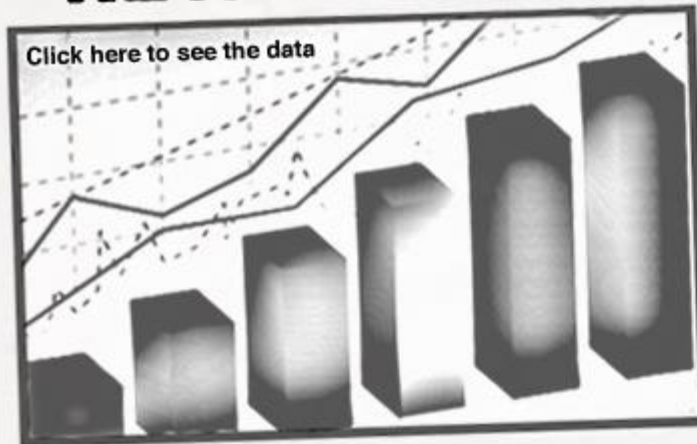




SPINNING THE MEDIA

A JOINT CRIKEY-ACIJ INVESTIGATION

OVER HALF YOUR NEWS IS SPIN



Spinning the Media is an investigation between Crikey and ACIJ at UTS into the role PR plays in the media in Australia.

After analysing a 5-day week in the media, our researchers found that nearly 55% of stories were driven by PR...

READ MORE

SPECIAL REPORT

**A/V PRESS RELEASES:
PRE-PACKAGED JOURNALISM**

MORE SPECIAL REPORTS

KEY FINDINGS

How much of your daily news is PR?
Which papers are the worst offenders?

INTERVIEWS

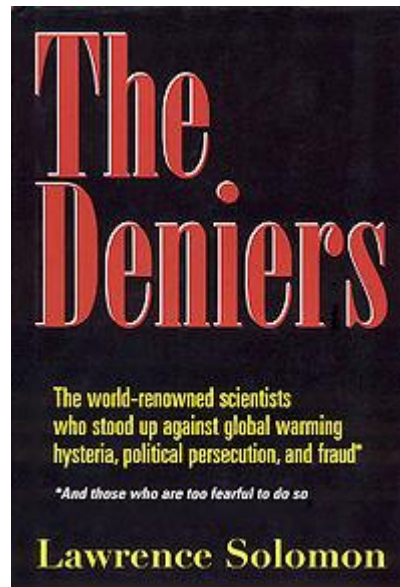
- The editors fire back
- Insiders respond

**HOW WE
DID IT | CREDITS**

LEARN MORE

[

]



Penetración cultural (1)

Amazon.com: Online Shopping for Electronics, Apparel, Computers, Books, DVDs & more - Mozilla Firefox

Fixter Edita Visualiza Historial Adreces d'interès Yahoo! ScrapBook Eines Ajuda

http://www.amazon.com/

GM GR Dic iG EP PB LV LV EM LD C NYT CSW RC CP DSB S SB:E RB SMC AE MET Wo W TR NS NS SK GR SL GNCC CCCYH WPCC

Finally, the truth ... Roads to domini... The Environment... The Nation-State... The Great Transf... What is spiritual ... Editor entrada < U... Amazon.com: O...

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Losing Moses on the Freeway: The 10... Why should all Americans -- not just Christians and Jews -- care about the Ten Commandments? [Read more](#) \$14.00 \$4.33

Pre-order Twilight: The Graphic Novel, Volume 1 [Stephenie Meyer's](#) bestselling paranormal love triangle of Bella, Edward, and Jacob has put a spell

FoxProxy: Disabled

9:35

Penetración cultural (2)

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In this New York Times authors Singer and Ave

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Hardcover by Philip Ball

~~\$29.95~~ **\$23.96**

When Corporations Rule the World

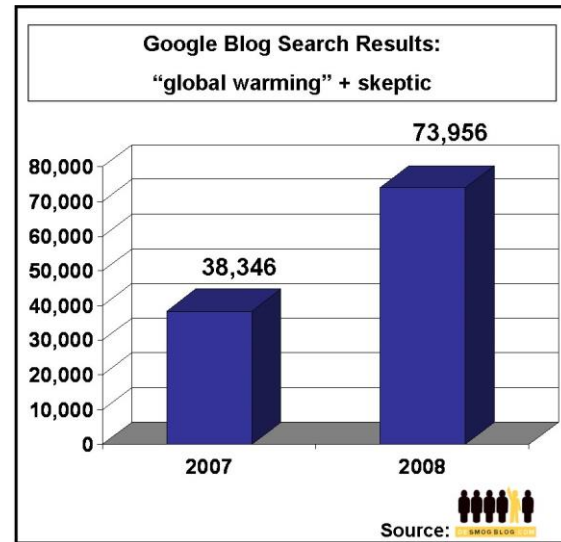
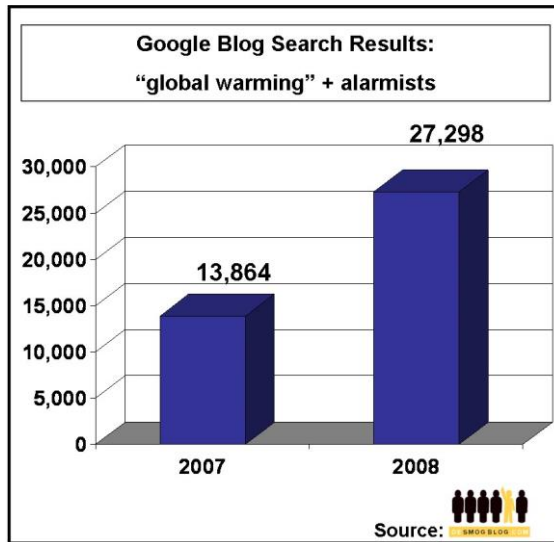
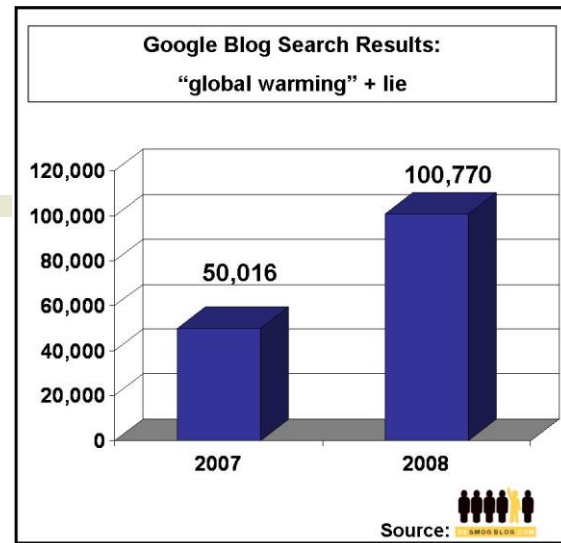
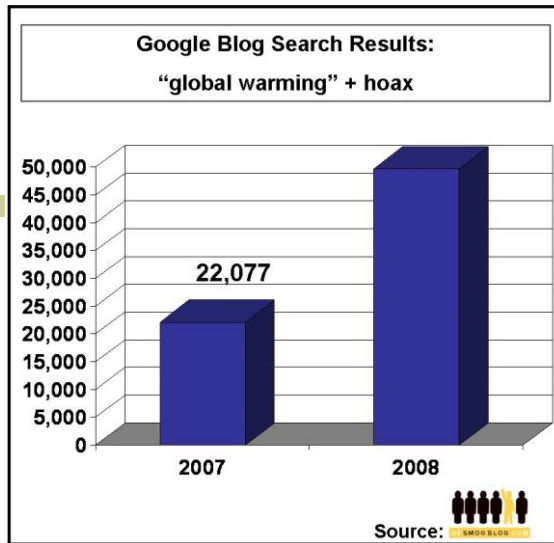
David C. Korten

AGENDA FOR A NEW ECONOMY

David C. Korten

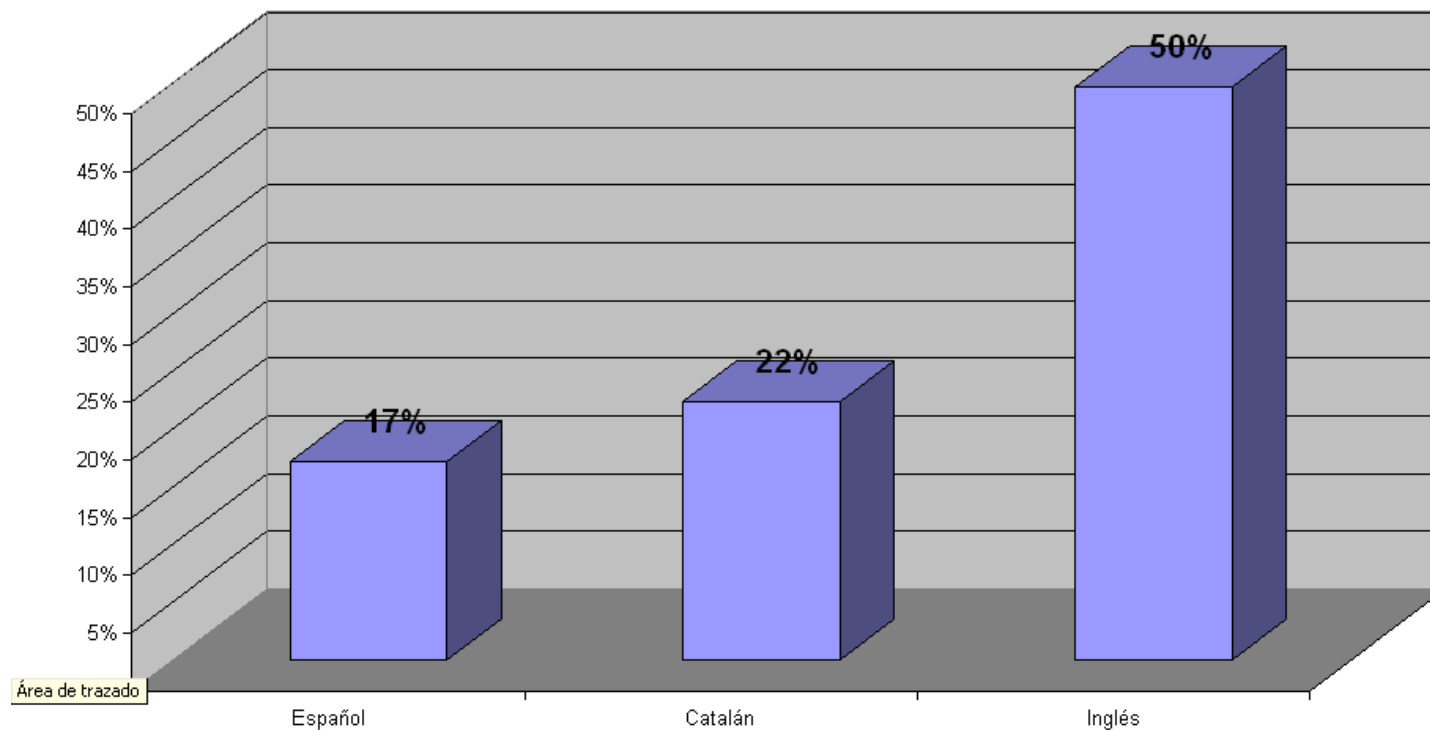
The Great Turning

David C. Korten

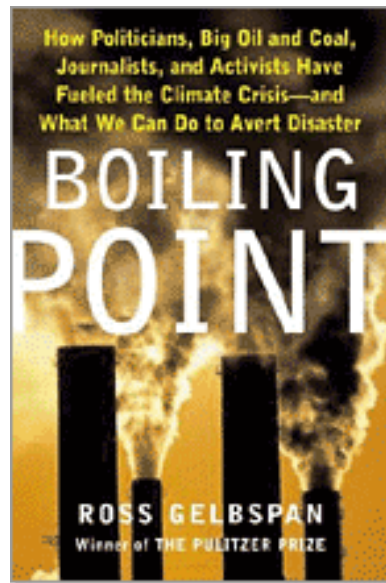


	A	B	C	D	E	F	G
1	02/04/2010	"Cambio Climático"	"Calentamiento global"	Total			
2	Total	7.890.000	1.240.000	9.130.000			
3	+mentira	186.000	127.000	313.000	3%		
4	+alarmista(s)	21.400	13.380	34.780	0%		
5	+escéptico(s)	60.500	38.200	98.700	1%		
6	+patraña	7.100	4.140	11.240	0%		
7	+socialista, +izquierda	809.000	303.000	1.112.000	12%		
8	Total negacionistas:				17%		
9	[Calentólogos	42.700]					
10							
11		"Canvi climàtic"	"Escalfament global"	Total			
12	Total	549.000	68.100	617.100			
13	+mentida(es)	23.710	6.750	30.460	5%		
14	+alarmista(es)	2.113	1.737	3.850	1%		
15	+escèptics	3.110	3.790	6.900	1%		
16	+falòrnia	229	29	258	0%		
17	+socialista, +esquerra(es)	86.100	10.560	96.660	16%		
18	Total negacionistas:				22%		
19							
20		"Climate change"	"Global warming"	Total			
21	Total	108.000.000	41.700.000	149.700.000			
22	+lie	5.090.000	5.270.000	10.360.000	7%		
23	+alarmist(s)	451.000	504.000	955.000	1%		
24	+sc(k)eptic(s)	4.077.000	1.514.000	5.591.000	4%		
25	+hoax	858.000	1.590.000	2.448.000	2%		
26	+socialist(s)	1.274.000	1.158.000	55.022.000	37%		
27	+left	26.500.000	15.900.000				
28	+liberal(s)	4.900.000	5.290.000				
29	Total negacionistas:				50%		

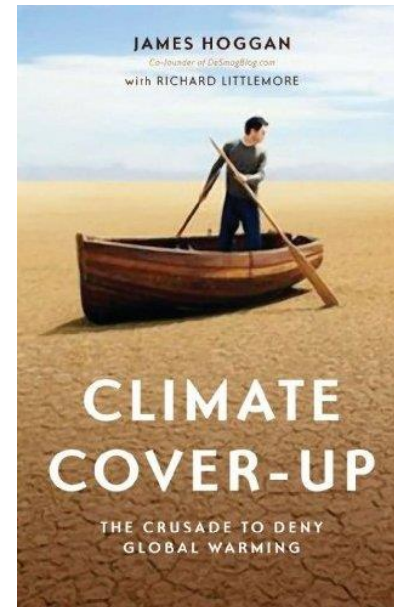
Índice de negacionismo



Búsquedas en Google según criterios indicados en dispositiva anterior - 04/04/2010



2004

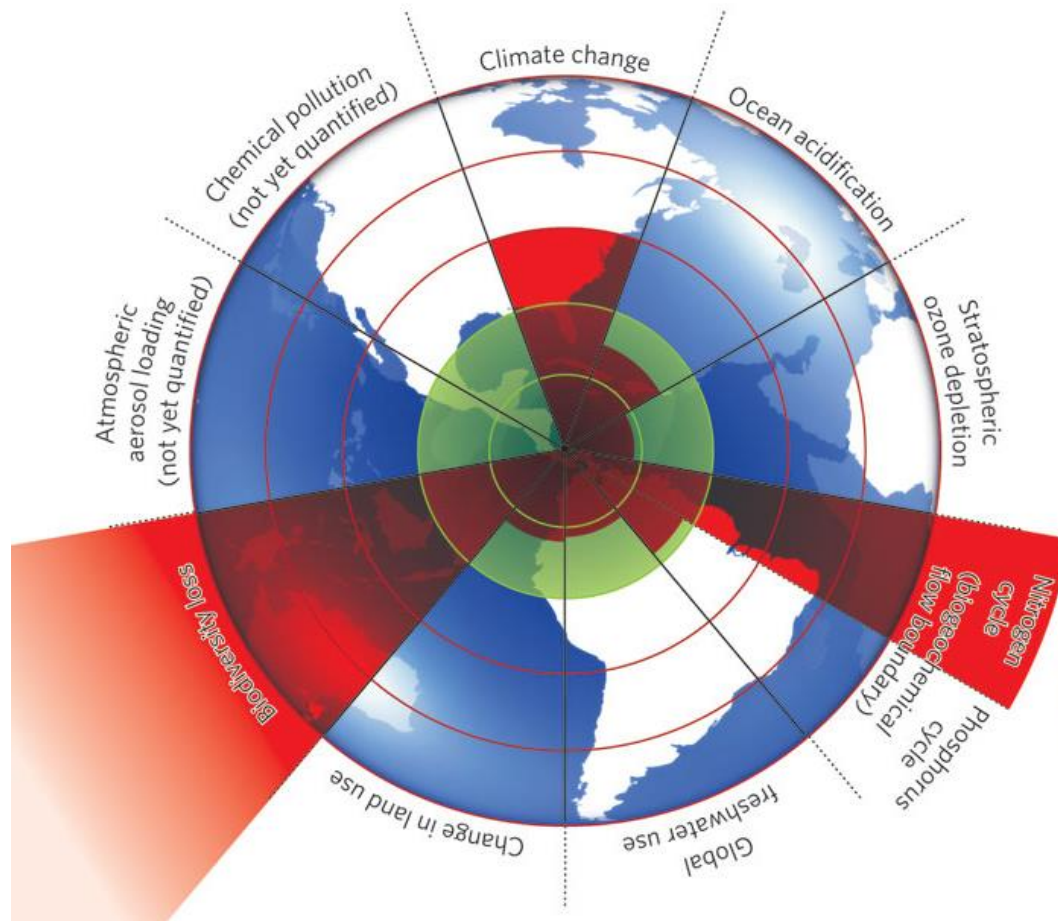


2009



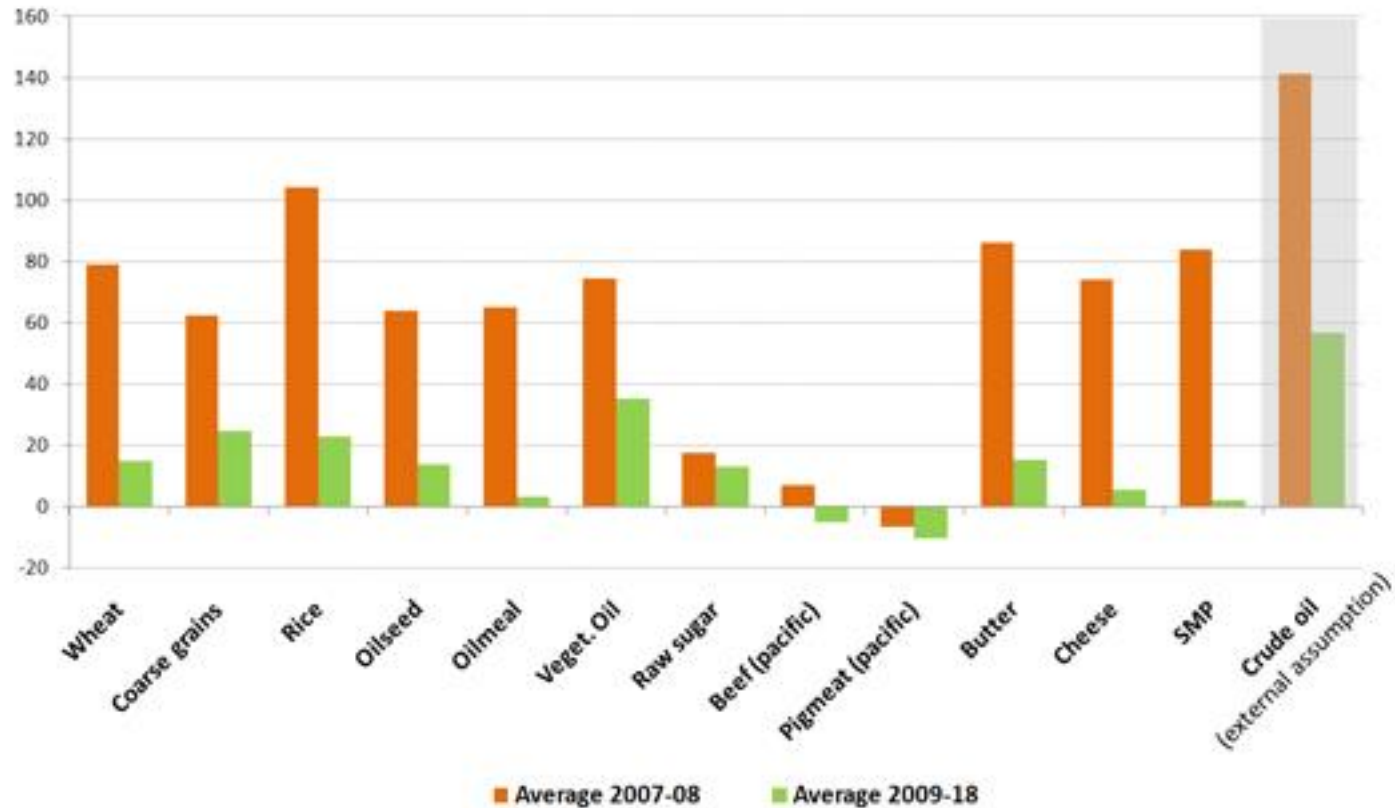
Otras dificultades

A safe operating space for humanity



Johan Rockström et al (2009) - A safe operating space for humanity
- Nature 461:472-475 doi:10.1038/461472a - 29 auteurs

Agricultural Outlook 2009-2018



OECD/FAO

[El periodismo de la catástrofe]

- On March 17, 2051, the world will pump its last easily accessible barrel of usable oil
- By that time, cancer directly attributable to human-created toxicity will kill 125 million people per year
- Major disruptions in the hydrological cycle will so dramatically reduce the amount of fresh water that 18.9 percent of the human population will die each year as a direct result.
- On June 14, 2047, exactly half of the area of the world's oceans will be dead zones, incapable of supporting significant marine life
- Three and a half years later, topsoil losses will have reached the point where even with petrochemical based fertilizers, pesticides, and herbicides, yields will drop by 50 percent on the most fertile soil and fall to zero on soil that has effectively gone sterile due to contamination and compaction.
- But there won't be any petrochemicals anyway, because there won't be any oil. And there won't be enough water. And so there won't be enough food.
- And getting reliable broadband internet service will be difficult

Cargas del planeta (resumen+)

■ Población

- Amos 7.000.000.000
- Esclavos 100.000.000.000

■ Forzamiento límites

- Acidificación océanos
- Disminución ozono estratosférico
- Ciclo del fósforo
- Agua potable
- Cambios en el uso de la tierra
- Cambio climático
- Pérdida de biodiversidad
- Ciclo del nitrógeno
- Aerosoles
- Contaminación química

■ Secuestro de la democracia deliberativa

- Posmodernismo
- Credibilidad ciencia en cuestión
- Individualismo
- Evitación del Systems Thinking
- Persuasión masiva (spin)

■ Economistas

- Teoría del equilibrio
- Valoración vidas
- Descuento
- Recursos no finitos
- Nagishi weighting
- Leyes incómodas (Termodinámica)
 - Ignorancia o inversionismo

A decorative graphic consisting of a thin gold circle on the left and a horizontal bar extending to the right. The bar has a gold-to-white gradient. A large black left square bracket is on the left, and a gold right square bracket is on the right.

Geopolítica

Copenhagen imposible

Económicas

- Importación / exportación
- Dirección del transporte
- Otros gases (arroz, pérdidas conducciones)
- Capacidad de absorción

Científicas

- Aerosoles
- Interacciones gases-aerosoles

Éticas

- Emisiones históricas / actuales
- Por países / por cápita
- Por cápita / por renta
- Ubicación concreta
- Desarrollados / En proceso
- Ventajas últimos entrados
- Responsabilidades vs. Impactos

¡Y verificación compromisos!



Geopolítica

Aritmética

Premisas

20% población de países ricos; han emitido 80% C atmosférico en exceso

4 GtC $\equiv$ 1 ppm - Quedan 720 GtC para 560 ppm

Llevamos emitidas 305 GtC desde 1750

Cálculos

20% (720+305) = 205 GtC autorizadas

80% x 305 = 245 GtC emitidas

205 – 245 = - 40 GtC

Precio tCO₂ 2006: 15 €; Precio tC = 15 x 3.664 = 55 €

Valor de las emisiones en exceso países ricos:

40 GtC x 55 € = 2.200 kM€ = 2.860 kM\$

Volumen deuda externa: 2.850 kM\$

[Tormenta ética perfecta]

Problemas

- Dilema del prisionero
 - Tragedia de los comunes (Garret Hardin)
- Acceso ilimitado → acceso restringido
 - Cómo se distribuye
- Daño diferido en el espacio y en el tiempo
- Responsabilidad acumulada
- Responsabilidad intergeneracional

- Multiplicidad de actores:
 - *Passive bystanders*
 - ¿Somos también perpetradores?
 - ¿Culpables, responsables? ¿Quiénes son?

Riesgos éticos

- Distracción
- Complacencia
- Dudas no razonables
- **Atención selectiva**
- Falsa ilusión
- Aprovecharse
- Falso testimonio
- Hipocresía



Scientific American, 2008



En positivo...

Realidades ineludibles

■ Sesgos cognitivos

- Protección cultural
- Status quo
- Acción única (!)
- Percepción lineal
- Value-action gap
- Más y más grande es mejor
- Capacidad finita de preocupación
- Descuento incoherente del futuro
 - Strong present bias

■ Enormidad problema

- Problema internacional, ¿solución internacional?
- Políticos y elites superadas
- Movimiento ecologista amortizado

■ Fundamentalismos

- Religioso
- Económico
- Tecnológico
- Científico (reduccionismo)

Ataque a la ilustración

A horizontal line with a light beige gradient, spanning the width of the slide. On the left end, there is a large black opening square bracket '['. On the right end, there is a large yellow closing square bracket ']'.

Medios de comunicación
convencionales
estructuralmente cooptados



No estamos preparados
culturalmente para reto tan
enorme



Objetivos

Ampliación de la base de bien
informados

Activación de inteligencia
colectiva

- De arriba hacia abajo:

- La ciencia informa a la política

- De abajo hacia arriba

- La población consciente debe liderar un debate ético y de soluciones
- 'When the people leads, leaders will follow'

[¿Qué queremos promover?]

- Acción responsable doméstica y/o empresarial
 - Utilidad real
 - Single action bias
- Presión a los gobiernos locales
 - Poco útil sin expresión internacional
- Acuerdo internacional
 - ¿Cuál? ¿Cuándo?
 - ¿Cómo?
- Generación de consciencia
- Presión desde abajo
- No olvidar
- Conocer elites, pero no contar con ellas
- Issue-attention cycle
- O esperar Pearl Harbour...

Las acciones pueden ser distintas en función del objetivo

Alternativas

↑
Ética, soluciones

No funciona o agotado

- Transmisión
- Alfabetización científica
- Polarización mensajeros, venta
- Cifras
- Medios convencionales
- Reduccionismo
- Las dos culturas
- Elites

Puede funcionar

- Diálogo
- Funcionamiento de la ciencia
- Adaptación mensajero-audiencia
- Gráficos
- Internet
- Holismo
- Interdisciplinariedad
- Inteligencia colectiva

[Framing]

- Medio ambiente → Ciencia
→ Matemáticas
- Internacional → local
- Energía → Situar bien el problema
- Incertidumbre → Riesgo
- Economía (valoración activos)
- Salud pública
- Político, social, ético
- Eslóganes
- Analogías y metáforas
- Cuñas
- Alusiones
 - Históricas
 - Culturales
 - Literarias
- Refranes

Low info rationality

[Lenguaje científicos]

- Esto sugiere que ...
- Es muy probable que ...
- Verbo condicional
- Cautela extrema
- IPCC + 1 escalón =
- No saben comunicar al público

No saben que no saben comunicar

Mensajes, mensajeros y medios

- 'Crisis climática' (Lakoff)
- Incorporar cambio abrupto, tipping point
- Menos animales y más personas: Ejemplos
 - Acidificación océanos → Alimentación
 - Wages Pacala - Sokolow
- Incluir elementos emocionales según sensibilidades: hijos, religión, mejora especie, etc.
- Adaptados a audiencia
- Cuidado con la imaginaria ecologista o izquierdista
- Medios
 - Internet
 - Comunidad amplia 2.0
- Proyecto MIT (!)



We face only one truly existential threat: that is climate change, the great moral imperative of our era. We have a duty, a responsibility, to play our part in changing minds, opinions, and policies. We have a clear message. We want nothing less than to build a grassroots movement for change, now.

Ban Ki-Moon, January 2009

Importante: gestionar discordias

¿En qué punto estamos?

Causas

- ¿Petróleo?
- ¿Combustibles fósiles?
- ¿Ultraliberalismo?
- ¿Liberalismo ilustrado?
- ¿Capitalismo?
- ¿Crecimiento económico?
- ¿Democracia?
- ¿Egoísmo, avaricia?
- ¿Naturaleza humana?



[Movilización (1)]

- Tenemos un solo problema, y es existencial
 - Movimiento ecologista: priorización; reconversión
 - Reconsiderar errores
- Políticos y empresarios incapaces (estructuralmente)
- Movimiento ecologista amortizado
- Medios secuestrados – dinámica acontecimiento
- Socializar el conocimiento
 - Movilizar a la comunidad científica
 - Integración de disciplinas
 - Información científica libremente accesible (!!)
 - Doblar o subtitular videos para Internet
 - Evidenciar motivos y conexiones negacionistas
 - Puerta a puerta en lugar de manifestaciones (salvo masivas tipo Irak)

Movilización (2)

- Ampliar base de conocedores
 - Ampliar audiencias con mensajes y mensajeros ad-hoc personalizados
 - Integrar conservadores convencidos
 - Empresas como punto de socialización
- Emplear periodistas subocupados
 - ¿Juramento hipocrático?
 - Datos contrastados
 - Rechazo explícito del razonamiento inverso
- Hablar desde el corazón
 - Si nosotros no estamos alarmados ¿quién lo estará?
 - Acompañar con esperanza (¿cuál?)
- Tratamiento científico de la comunicación científica
- Liderar gran diálogo en comunidad lingüística castellano-parlante
- Creación de alianzas

[Activar inteligencia colectiva]

- Particularly high social return
 - Drawing on the best human and computational resources available
 - Develop government policies about climate change
- If we could build it:
 - Our societal conversation about global warming could go beyond the realm of the all-too-often emotionally-driven yes/no votes about small numbers of simplified alternatives.
 - It could, instead, facilitate reasoned and evidence-based collective decision-making about highly complex issues."

[Inteligencia colectiva]

The web-based forum we have described is, simultaneously, a kind of Wikipedia for controversial topics, a Sims game for the future of the planet, and an electronic democracy on steroids.

- 1) A Scientific Expert
- 2) An Advocate
- 3) A High School Student
- 4) An Open-Source Software Developer
- 5) A congressional staffer

- 1) On-line Argumentation Systems
- 2) Computer Simulations
- 3) Collective decision-making tools

[Pragmatismo?]

- It's quite a challenge to be simultaneously pragmatic and visionary, not least because when pragmatism takes the stage, the 'visionary' wins polite denigration and quickly fades into the background.
- This time, however, the vision - of a rights-based climate protection regime must not be allowed to fade, and for one emphatically pragmatic reason above all others: In its absence, pragmatism will become politics as usual - accommodation to power - and the atmosphere will become merely the property of the rich. And this ... would mean the loss of all legitimate hope



¿Y nosotros?



Sometimes doing your best is
not good enough. Sometimes,
you must do what is required
— Winston Churchill