

# Pseudociència i negacionisme climàtic: desmuntant els arguments fal·laciosos i els seus portadors

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# Sumari

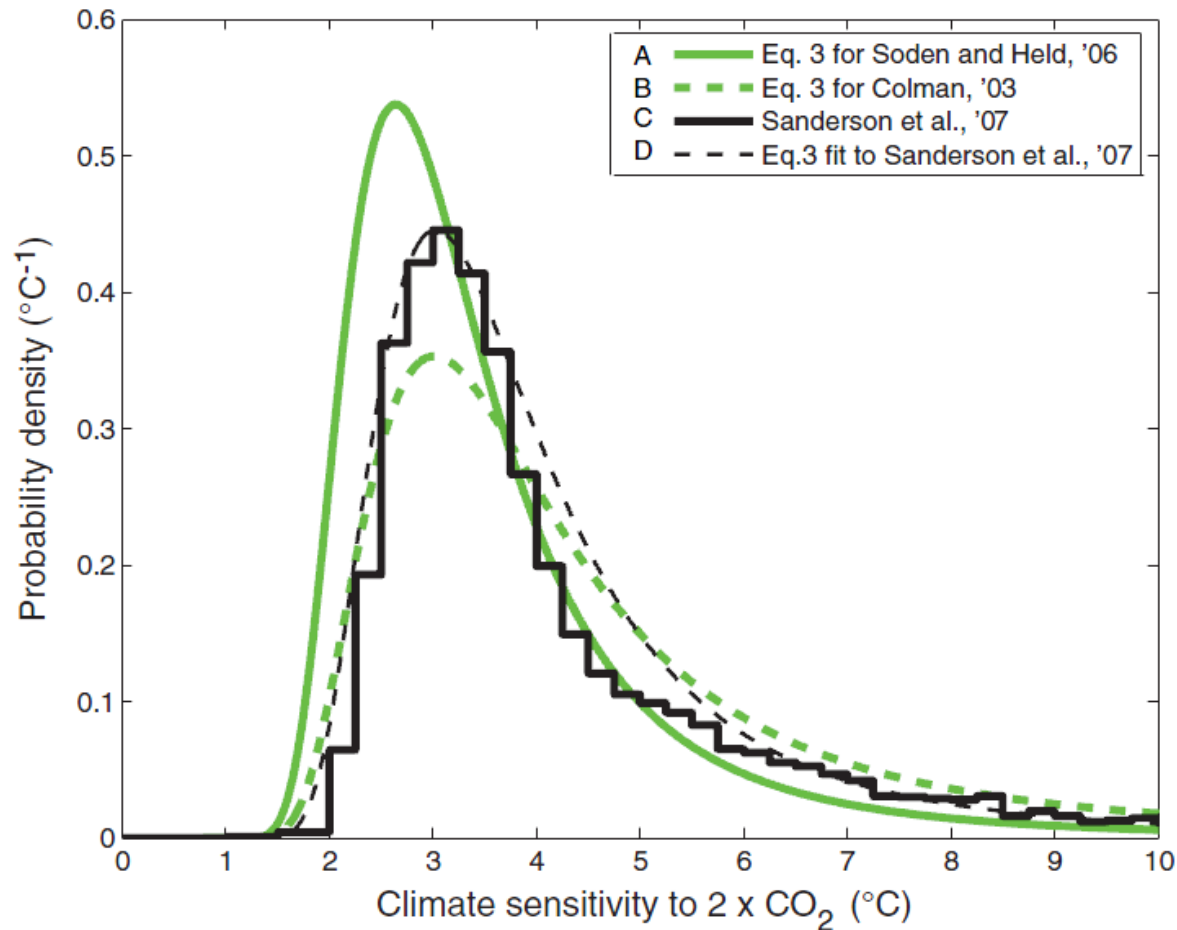
- Introducció
- Percepció vs. Realitat
- Argumentació
- Què és el negacionisme
- Estructura de la maquinaria de negació

# **INTRODUCCIÓ**

# Sabem que:

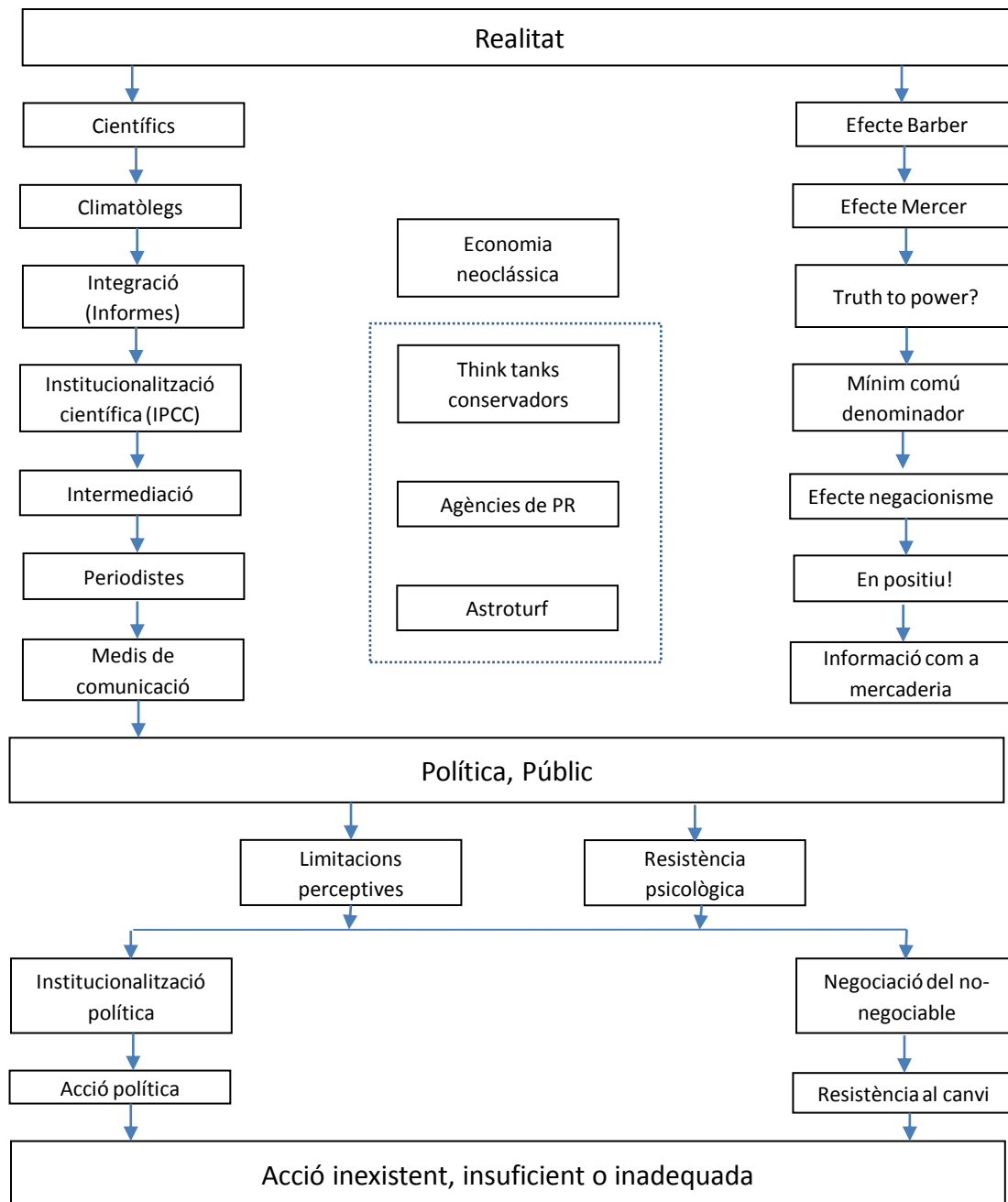
- Planeta s'escalfa
- 0,15-0,20 °C/dècada:  
Efecte aerosols
- Fenòmens extrems i derivats
- Nivell del mar
- Inèrcia tèrmica
- +2 °C és massa
- +4 °C a 2060?
- Lindars d'estabilitat
- Incertesa sensibilitat
- Resposta: -6% anual + 100 GT reforestació
- Energia → PIB
- Límits renovables
- Negociacions internacionals estancades

# Sensibilitat climàtica



Gerard H. Roe and Marcia B. Baker (2007) - Why Is Climate Sensitivity So Unpredictable? - Science 318:629-632 doi:10.1126/science.1144735 - Department of Earth and Space Sciences, University of Washington

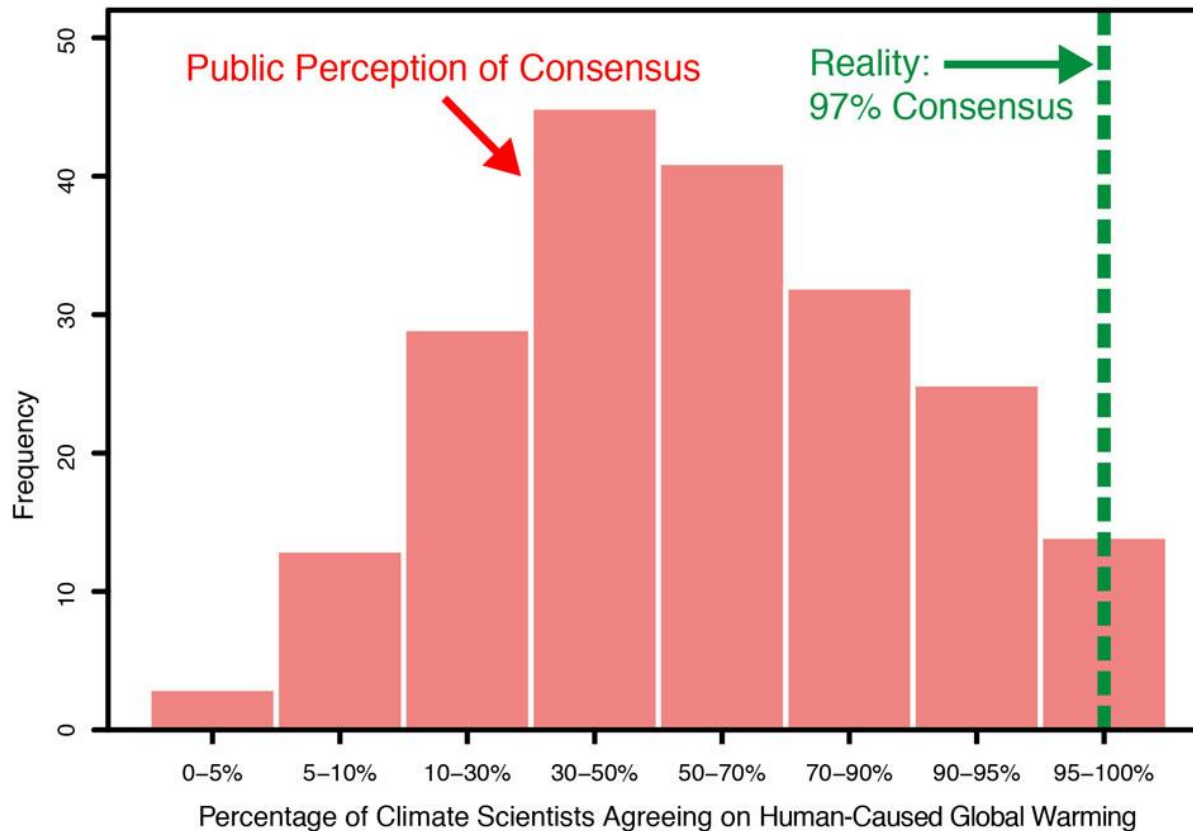
**REALITAT VS. PERCEPCIÓ**





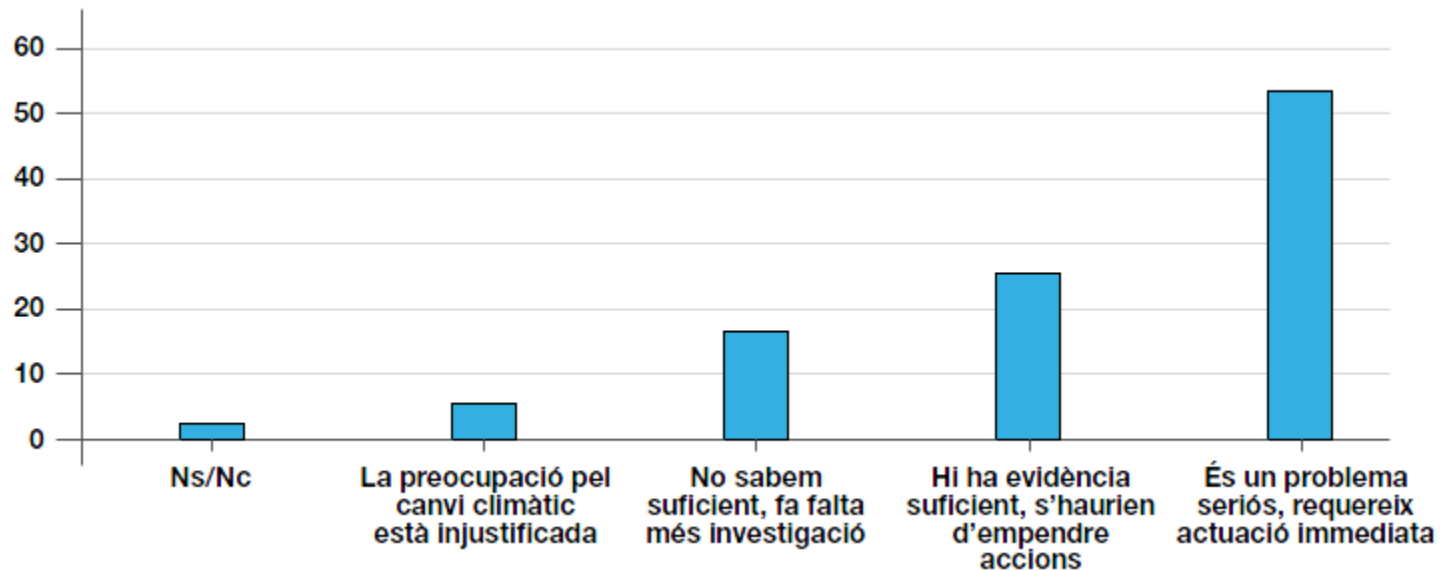
William R. L. Anderegg et al (2010) - Expert credibility in climate change - Proceedings of the National Academy of Sciences PNAS doi:10.1073/pnas.1003187107 - Department of Biology, Stanford University - <http://www.pnas.org/content/early/2010/06/04/1003187107.full.pdf+html> - 4 authors

# Percepció - realitat



Aaron M. McCright et al (2013) - Perceived scientific agreement and support for government action on climate change in the USA - Climatic Change doi:10.1007/s10584-013-0704-9 - Lyman Briggs College, Department of Sociology + Environmental Science and Policy Program, Michigan State University y John Cook et al (2013) - Quantifying the consensus on anthropogenic global warming in the scientific literature - Environmental Research Letters 8 024024 doi:10.1088/1748-9326/8/2/024024 - Global Change Institute, University of Queensland + Skeptical Science + School of Psychology, University of Western Australia

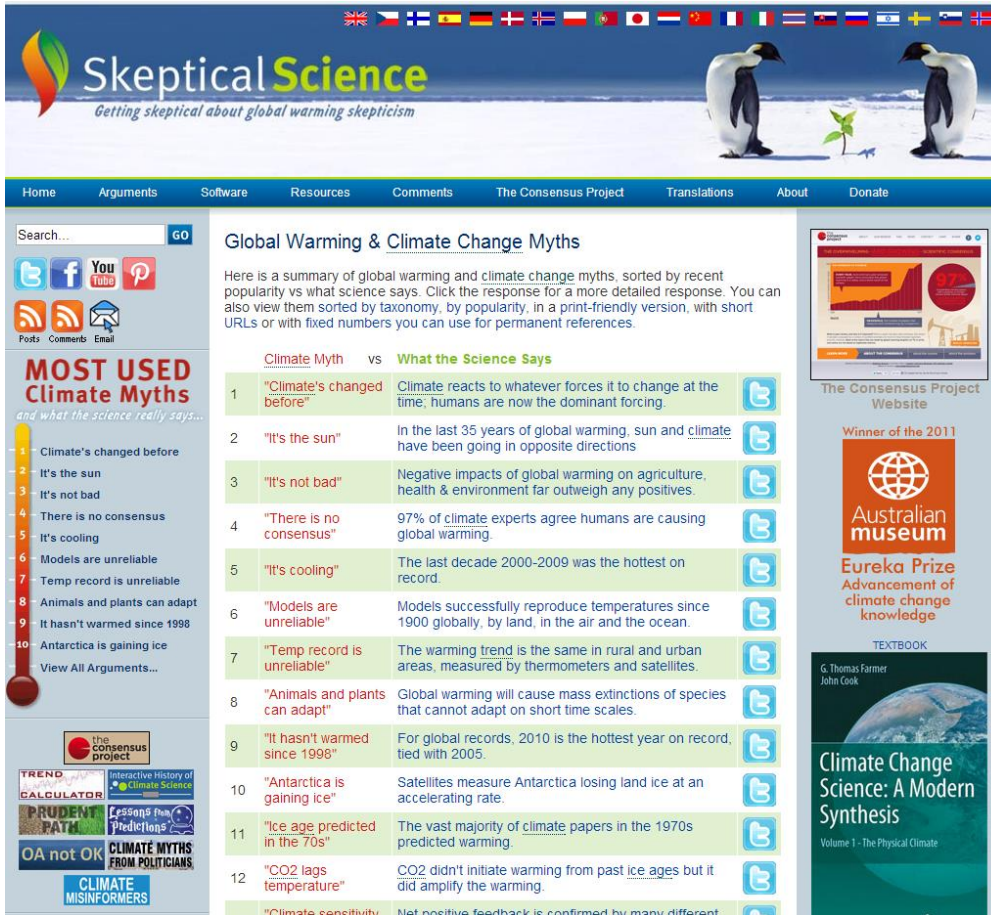
# Percepció a Catalunya



Joan David Tàbara et al (2008) - Percepció pública i política del canvi climàtic a Catalunya - Consell Assessor per al Desenvolupament Sostenible de Catalunya (CADS) - Institut de Ciència i Tecnologia Ambientals (UAB)

**ARGUMENTACIÓ**

# Arguments “científics”



**Skeptical Science**  
Getting skeptical about global warming skepticism

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**MOST USED Climate Myths**  
and what the science really says...

- Climate's changed before
- It's the sun
- It's not bad
- There is no consensus
- It's cooling
- Models are unreliable
- Temp record is unreliable
- Animals and plants can adapt
- It hasn't warmed since 1998
- Antarctica is gaining ice
- View All Arguments...

**Global Warming & Climate Change Myths**

Here is a summary of global warming and climate change myths, sorted by recent popularity vs what science says. Click the response for a more detailed response. You can also view them sorted by taxonomy, by popularity, in a print-friendly version, with short URLs or with fixed numbers you can use for permanent references.

| Climate Myth                      | vs | What the Science Says                                                                               |
|-----------------------------------|----|-----------------------------------------------------------------------------------------------------|
| 1 "Climate's changed before"      |    | Climate reacts to whatever forces it to change at the time; humans are now the dominant forcing.    |
| 2 "It's the sun"                  |    | In the last 35 years of global warming, sun and climate have been going in opposite directions      |
| 3 "It's not bad"                  |    | Negative impacts of global warming on agriculture, health & environment far outweigh any positives. |
| 4 "There is no consensus"         |    | 97% of climate experts agree humans are causing global warming.                                     |
| 5 "It's cooling"                  |    | The last decade 2000-2009 was the hottest on record.                                                |
| 6 "Models are unreliable"         |    | Models successfully reproduce temperatures since 1900 globally, by land, in the air and the ocean.  |
| 7 "Temp record is unreliable"     |    | The warming trend is the same in rural and urban areas, measured by thermometers and satellites.    |
| 8 "Animals and plants can adapt"  |    | Global warming will cause mass extinctions of species that cannot adapt on short time scales.       |
| 9 "It hasn't warmed since 1998"   |    | For global records, 2010 is the hottest year on record, tied with 2005.                             |
| 10 "Antarctica is gaining ice"    |    | Satellites measure Antarctica losing land ice at an accelerating rate.                              |
| 11 "Ice age predicted in the 70s" |    | The vast majority of climate papers in the 1970s predicted warming.                                 |
| 12 "CO2 lags temperature"         |    | CO2 didn't initiate warming from past ice ages but it did amplify the warming.                      |
| "Climate sensitivity"             |    | Net positive feedback is confirmed by many different                                                |

the consensus project  
TREND CALCULATOR  
PRUDENT PATH  
OA not OK  
CLIMATE MYTHS FROM POLITICIANS  
CLIMATE MISINFORMERS

The Consensus Project Website  
Winner of the 2011 Australian museum Eureka Prize Advancement of climate change knowledge  
TEXTBOOK  
G. Thomas Farmer John Cook  
Climate Change Science: A Modern Synthesis  
Volume 1 - The Physical Climate



**MOST USED Climate Myths**  
and what the science really says...

- Climate's changed before
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- It hasn't warmed since 1998
- Antarctica is gaining ice
- View All Arguments...

# Arguments no científics

- No hi ha acord
- Conspiració
  - Agenda oculta
  - Control demogràfic
- Diners recerca
- Millor clima
- Adaptació
- Econòmics
  - Es molt car
  - Cost-benefici
  - Créixer per a adaptar-s'hi
  - Altres prioritats
  - Tecnologia ho arranja
  - Geoenginyeria

**NEGACIONISME**

# Negacionisme: definició

“El negacionisme climàtic consisteix en un escepticisme fingit o irracional pel que fa als resultats de la recerca al terreny climàtic, expressats aquests darrers rigorosament mitjançant el mètode científic i el procés d’avançament de la ciència, i que responen a una realitat objectivament verificable. El seu objectiu és evitar, o si més no retardar, l’endegament d’accions correctives per la via de crear dubtes infundats sobre el conjunt de l’opinió pública.”

# Negacionisme (2)

- “Demostramos que distintas organizaciones del movimiento conservador se han movilizado durante los últimos años en forma de contra-movimiento de oposición a los esfuerzos del movimiento ecologista, y de sus aliados, para mostrar la gravedad de los problemas medioambientales globales.”

Aaron M. McCright and Riley E. Dunlap (2000) - Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counter-Claims - Social Problems 47:499-522 doi:10.1525/sp.2000.47.4.03x0305s - Department of Sociology, Washington State University -  
[http://www.climateaccess.org/sites/default/files/McCright\\_Challenging%20Global%20Warming.pdf](http://www.climateaccess.org/sites/default/files/McCright_Challenging%20Global%20Warming.pdf)

- “Las afirmaciones contrarias de los escépticos tienen una importancia secundaria ... la lucha sobre el estado del planeta es una lucha sobre los valores sociales dominantes que institucionalizan obligaciones y esquemas de poder. Esta reacción ha quedado eclipsada, cuando no completamente oculta, debido a que los académicos se han preocupado demasiado de las propias afirmaciones contrarias y han dejado el significado del propio escepticismo relativamente indeterminado y subanalizado.

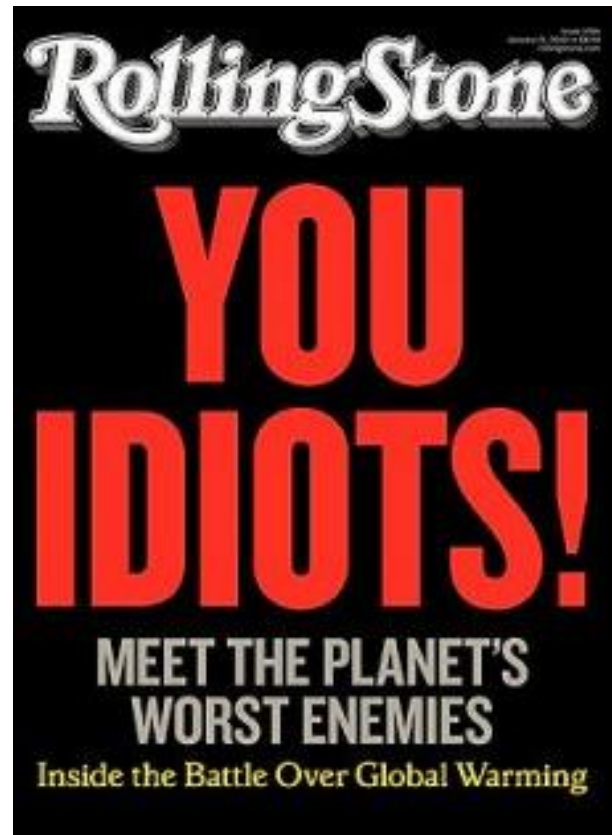
Peter J. Jacques (2006) - The Rearguard of Modernity: Environmental Skepticism as a Struggle of Citizenship - Environmental Politics 6:76-101 doi:doi:10.1162/glep.2006.6.1.7 - Department of Political Science, University of Central Florida; Department of Sociology, Oklahoma State University

Doubt is our product since it is the best means of competing with the "body of fact" that exists in the mind of the general public. It is also the means of establishing a controversy. Within the business we

recognize that a controversy exists. However, with the general public the consensus is that cigarettes are in some way harmful to the health. If we are successful in establishing a controversy at the public level, then there is an opportunity to put across the real facts about smoking and health. Doubt is also the limit of our "product". Unfortunately,

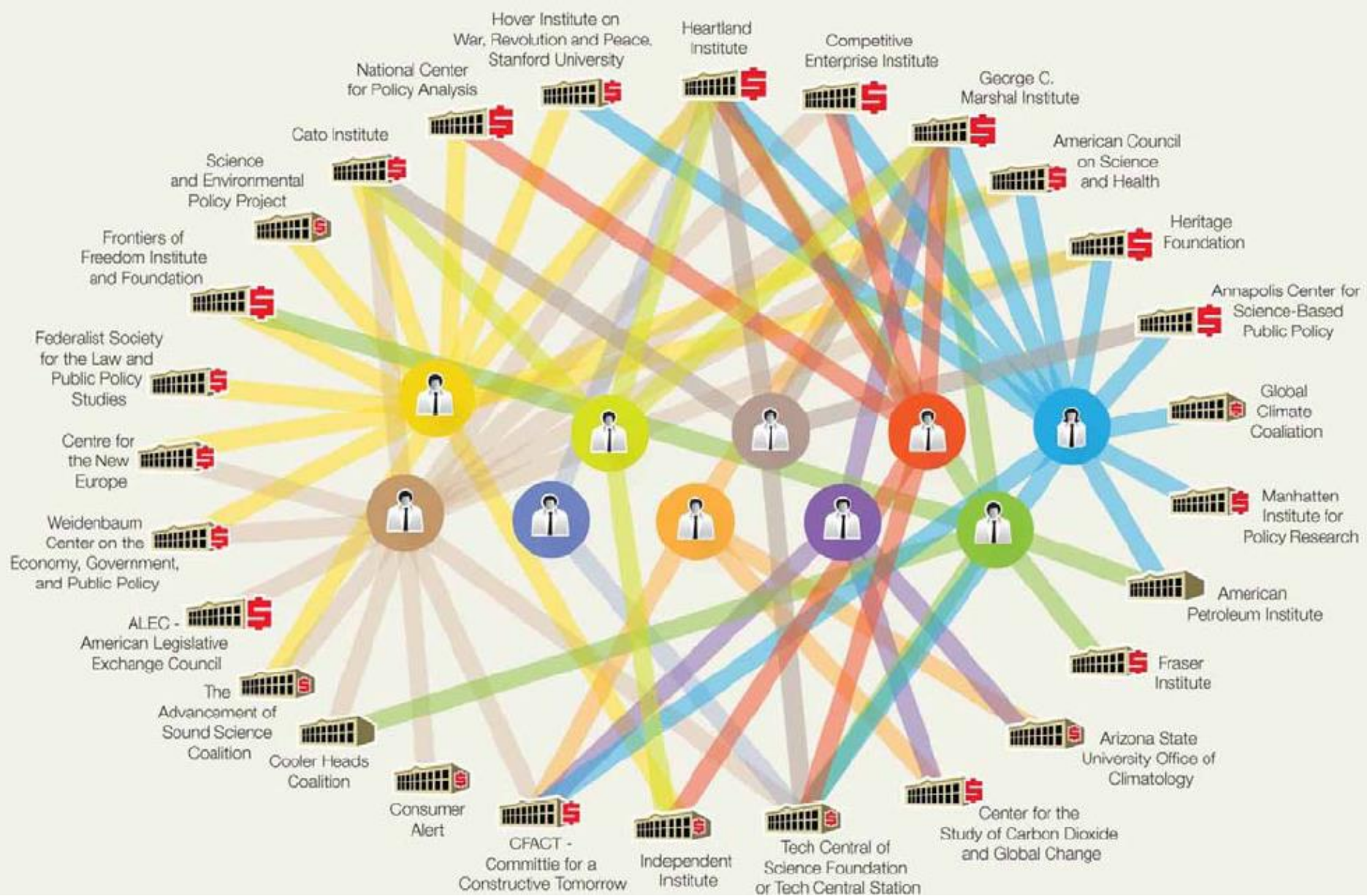
S30010954

¿Escèptics? ¿O negacionistes?



# Negacionisme (3)

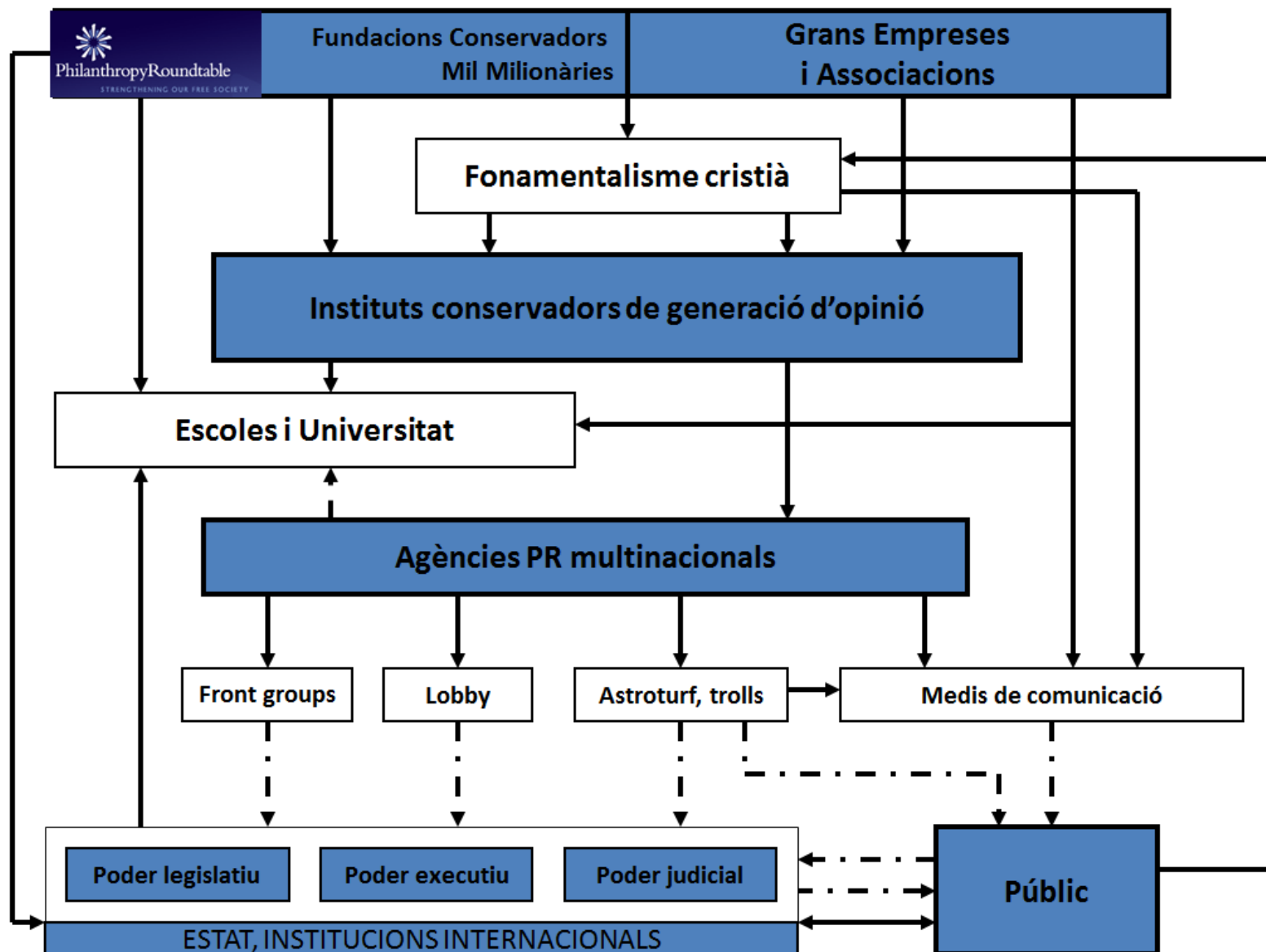
- Tot → element comú: combustibles fòssils
- Fonamentalismes
  - De mercat
  - Cristià
- Limitacions perceptives
  - Mecanisme de defensa
  - Setge de confirmació
  - Raonament motivat
  - Just world
  - Systems thinking
- Antecedents
  - Tabac, etc.
  - Cinturó de seguretat!
- Provocar debat en públic
- Mobilització del biaix (2<sup>a</sup> dimensió del poder, Luke, 1972)
- Aparentar que són molts
  - 3% científics (Anderegg et al, 2010)
  - Oreskes, 2004: 928 papers
  - James Powell, 2012 0,17% s/ >14.000
  - John Cook, 2013
- Conceptes populars d'incertesa, teoria, consens
  - SCAM
- Politització de la ciència
  - Efecte d'identificació ideològica
  - IPCC
- Filosofia de la ciència
  - Posmodernisme
- Cassos Phil Jones, Hansen

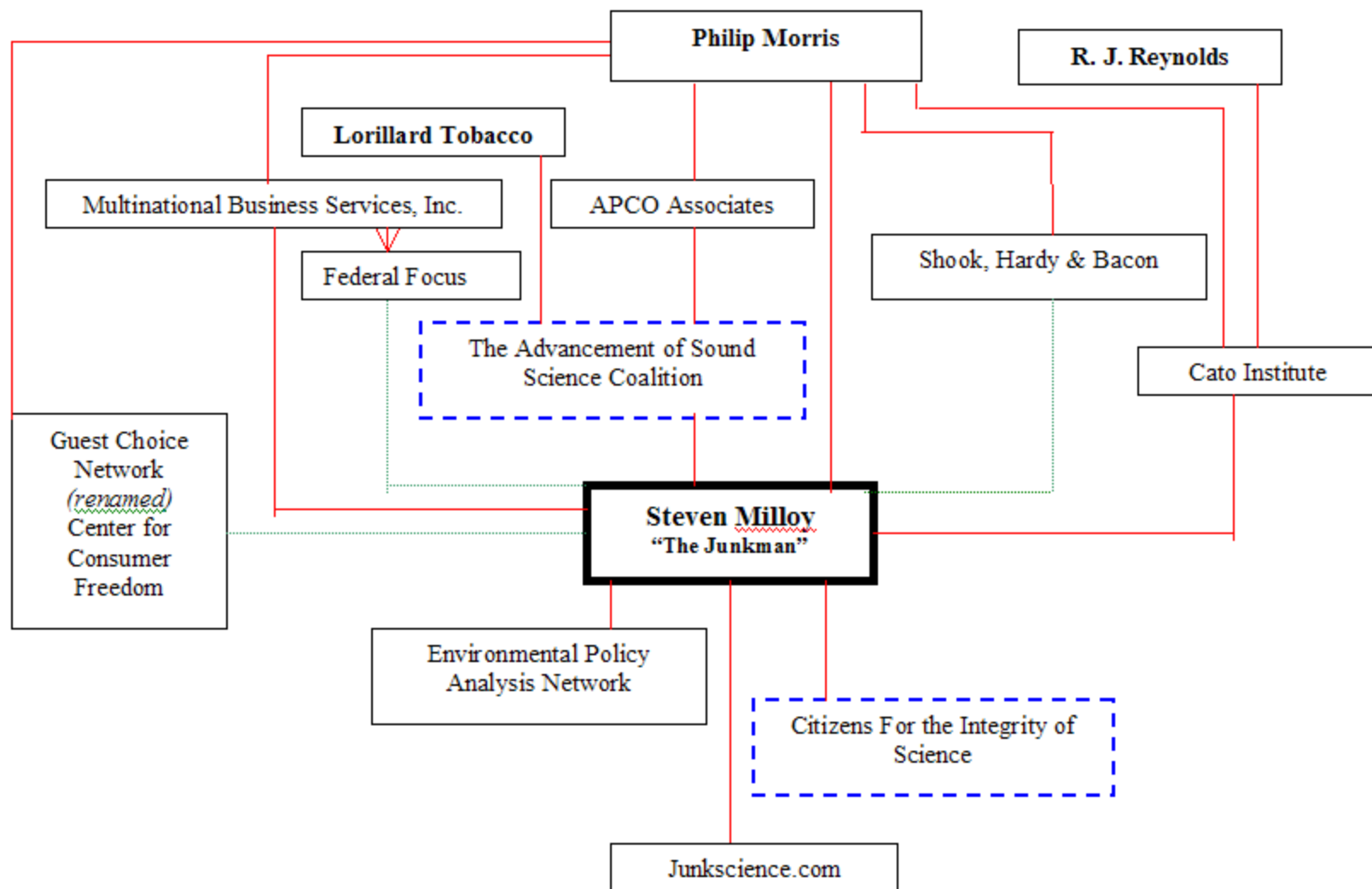


## Eco-chamber

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)

# **ESTRUCTURA MAQUINARIA NEGACIÓ**





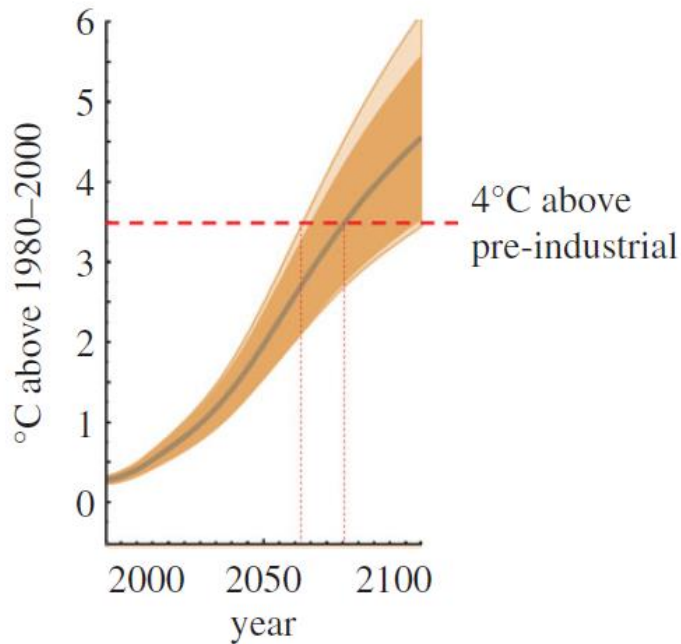
Money Ties

Affiliated

Same Address

**EPÍLEG**

# Anys 2060



“Si la retroalimentación con el ciclo del carbono fuera más fuerte, cosa que parece menos probable pero todavía creíble, **el calentamiento de 4 °C podría ser alcanzado en los primeros 2060**, en base a predicciones consistentes con el ‘margen probable’ del IPCC.” [énfasis añadido]

Richard A. Betts et al (2011) – When could global warming reach 4°C? – Philosophical Transactions of the Royal Society of London A 369:67-84 doi:10.1098/rsta.2010.0292 – Published online: 29/11/2010 – Met Office Hadley Centre – 6 authors

# Probabilitats $\Delta T$ a 2100



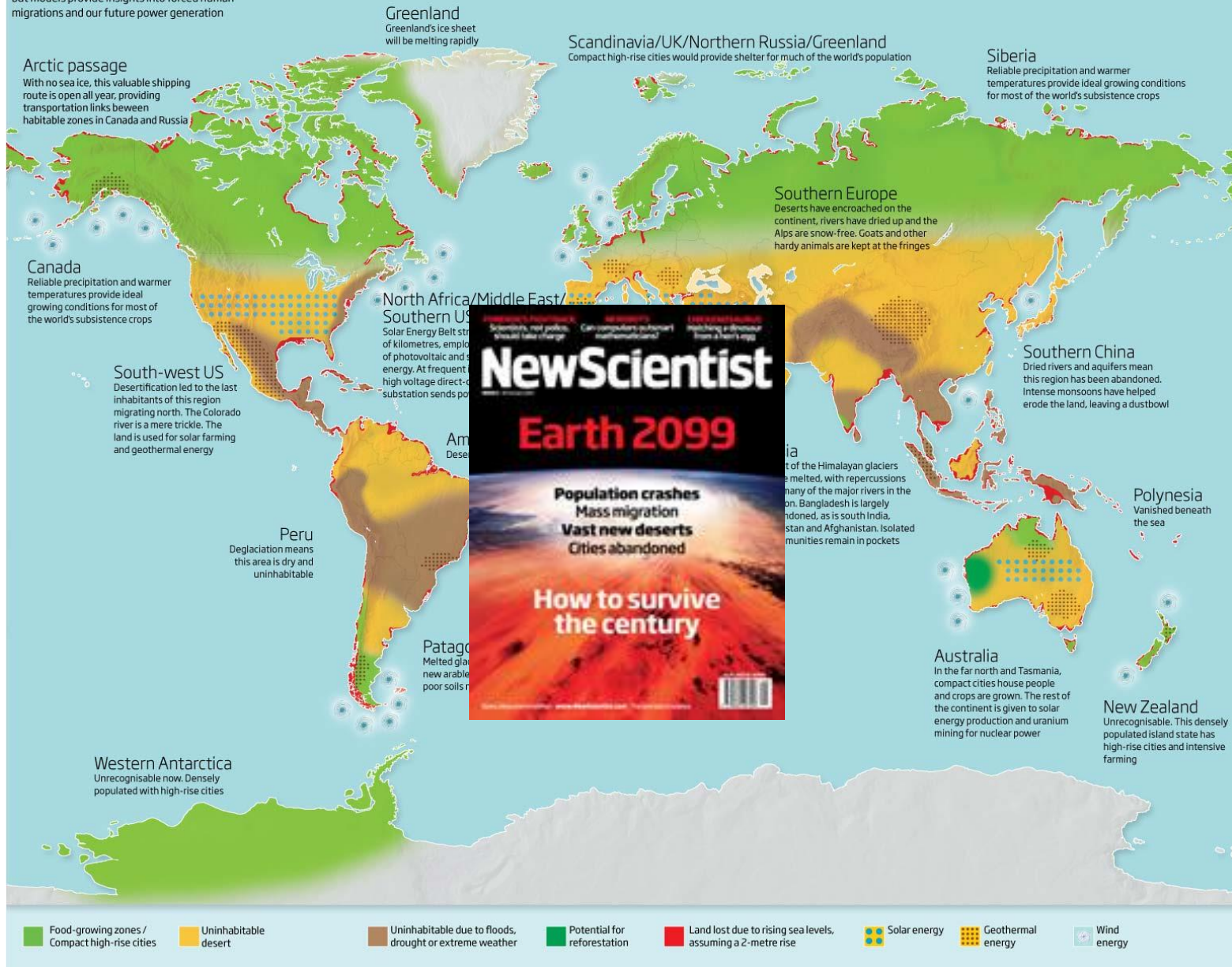
NO POLICY



POLICY

# 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



Gaia Vince (2009) - How to survive the coming century - New Scientist, Marzo 2009 -

<http://www.newscientist.com/article/mg20126971.700-how-to-survive-the-coming-century.html>

# NewScientist

WEEKLY 17 November 2012

## CLIMATE CHANGE

FIVE YEARS AGO WE FEARED THE WORST.  
BUT IT'S LOOKING EVEN WORSE THAN THAT

