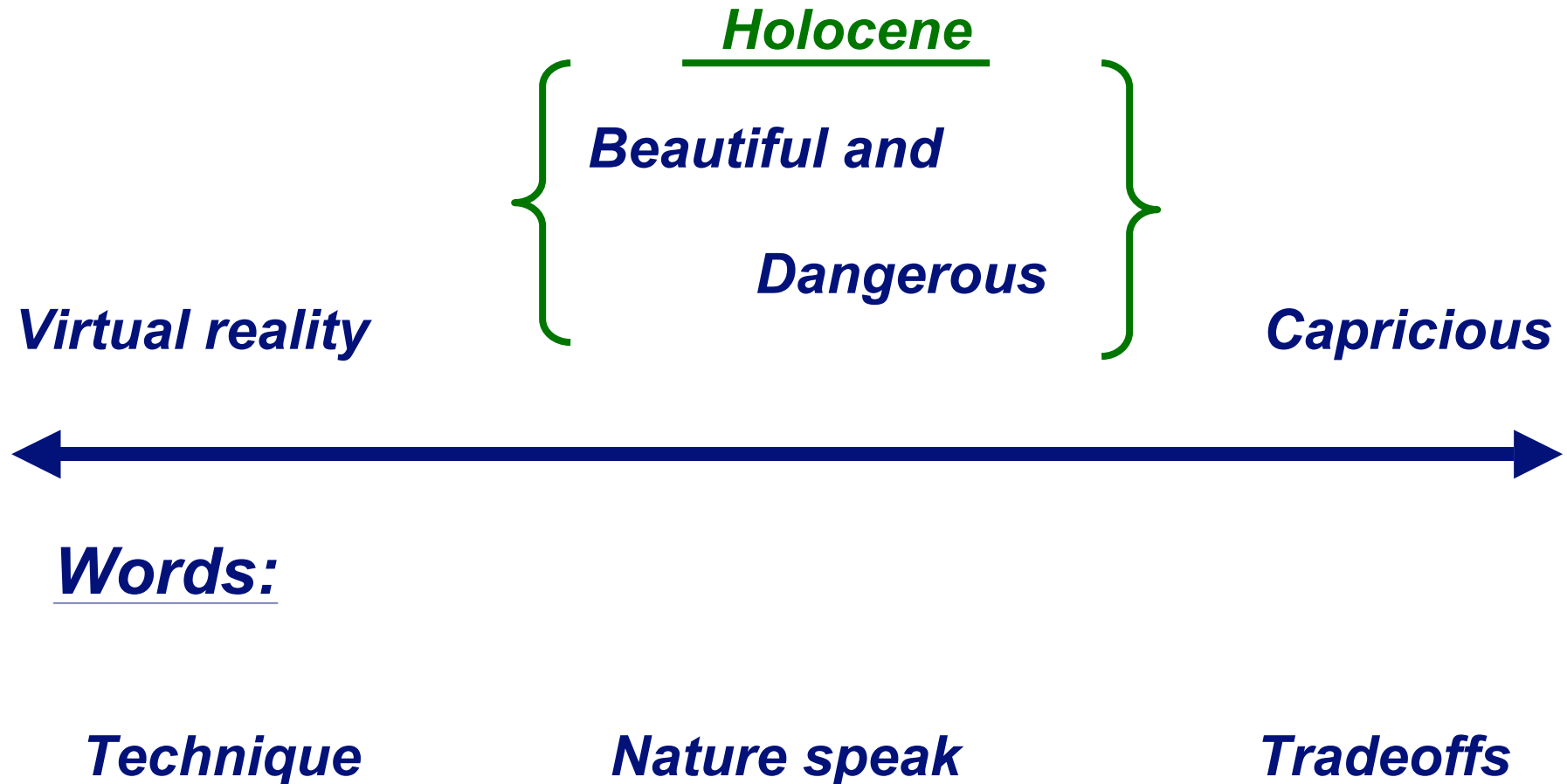
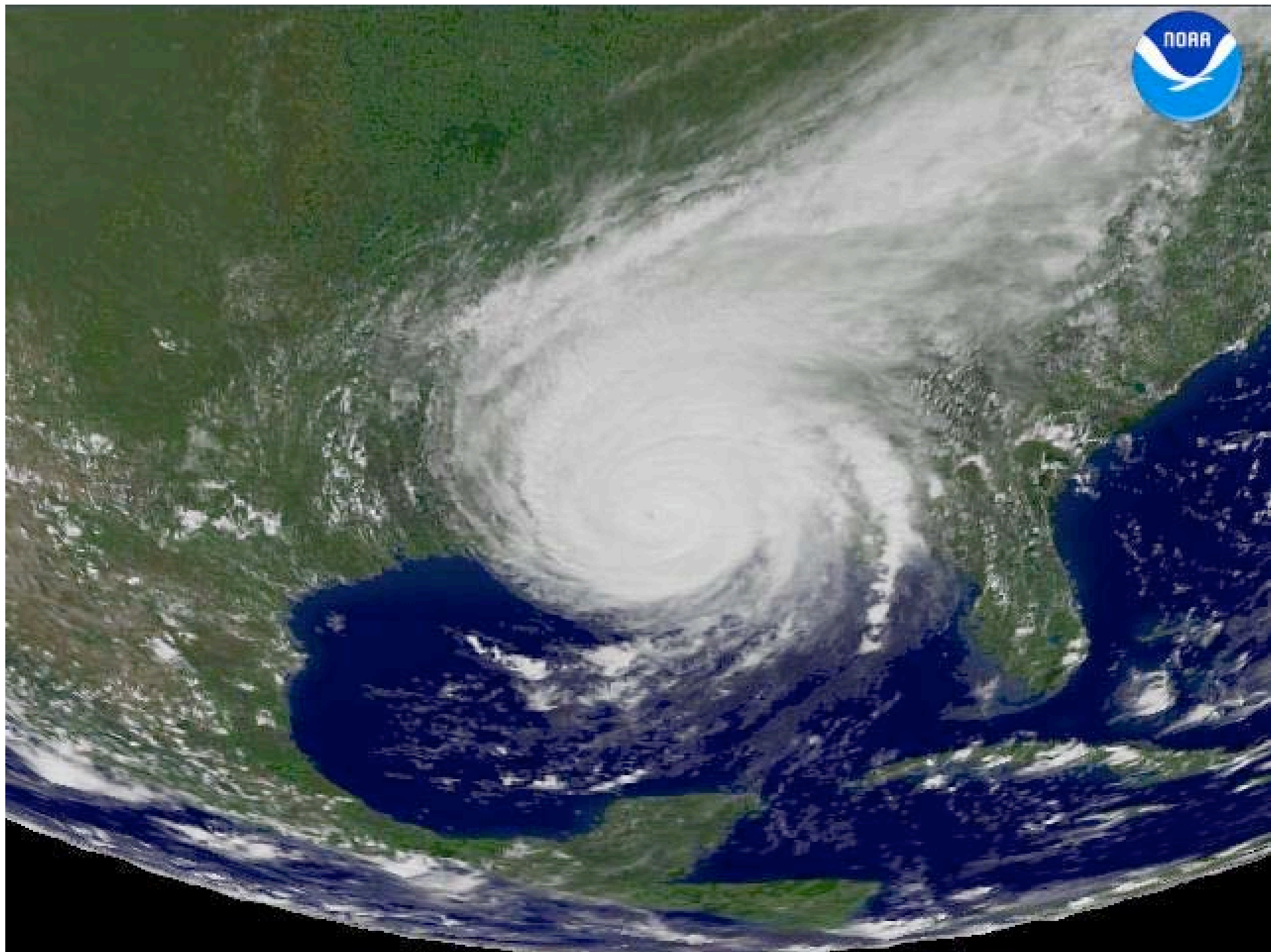


# *The experience of nature*





























# *Mountaintop Removal: 1.5 Million acres . . .*











©2005 J Henry Fair



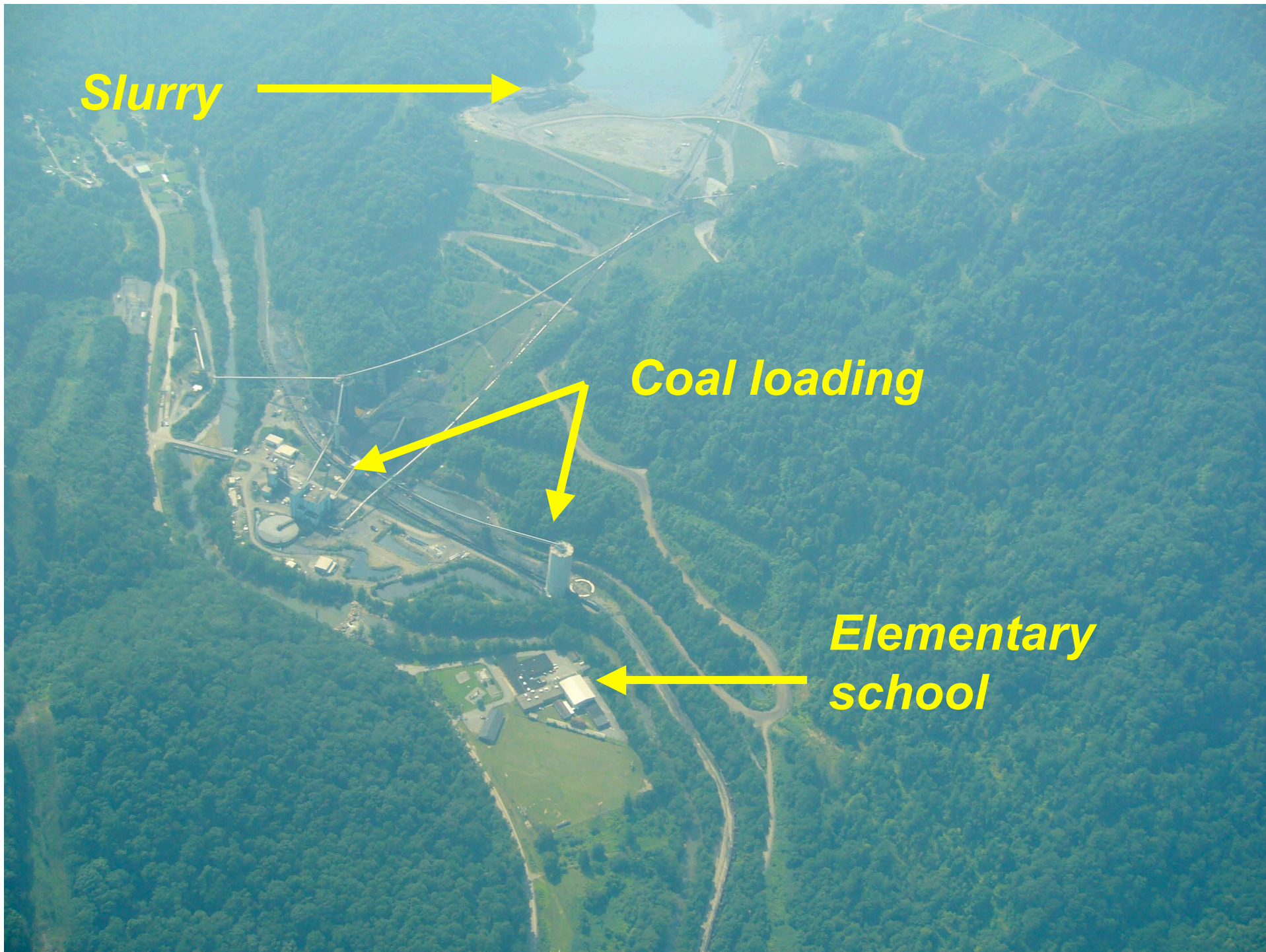












*Slurry*

*Coal loading*

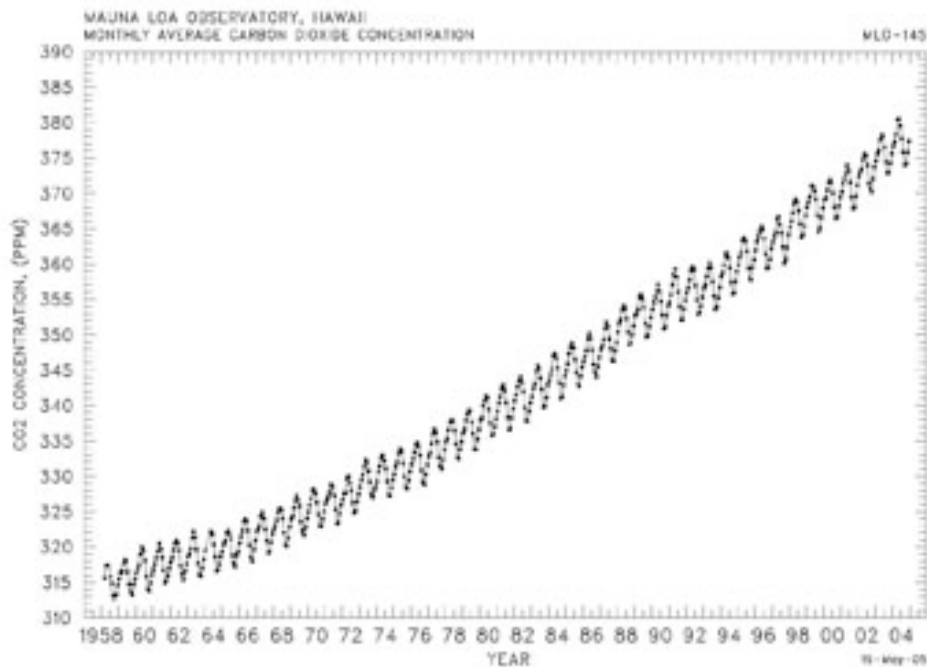
*Elementary  
school*



*Marsh Fork elementary  
school*







## CLIMATE SHOCK

reduce the resiliency of the global community. With every nation dealing with local emergencies, it would be more difficult to mobilize resources to aid victims in other areas, and there would be fewer resources to mobilize.

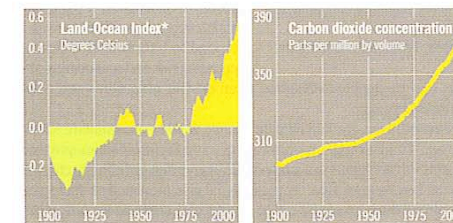
Municipalities around the world would struggle under the burden of greatly increased demands on funds to maintain and repair basic infrastructure. Forget about safety nets—FEMA and its ilk would be bankrupt. In the world's tightly coupled markets, financial tsunamis would surge through the system, leaving banks and corporations insolvent. Financial panics, largely absent for more than 70 years, would return with a vengeance.

Here at home, a flickering climate would impose an enormous tax on every individual and business. Property values in most places would plummet as buyers disappeared and costs of insurance and maintenance soared. The upper-middle-class American family, today so well protected against external shocks, would find its layers of insulation gradually stripped away as fuel, food, jobs, and social order became less certain. Katrina's aftermath exposed how quickly extreme weather can reduce an orderly society to dysfunction.

Some of the calamities that may happen—droughts that last more than a century, an advance of arctic zones southward, incessant and epic storms—simply overwhelm the imagination when we try to envision them in a world of six billion people depending on an ex-

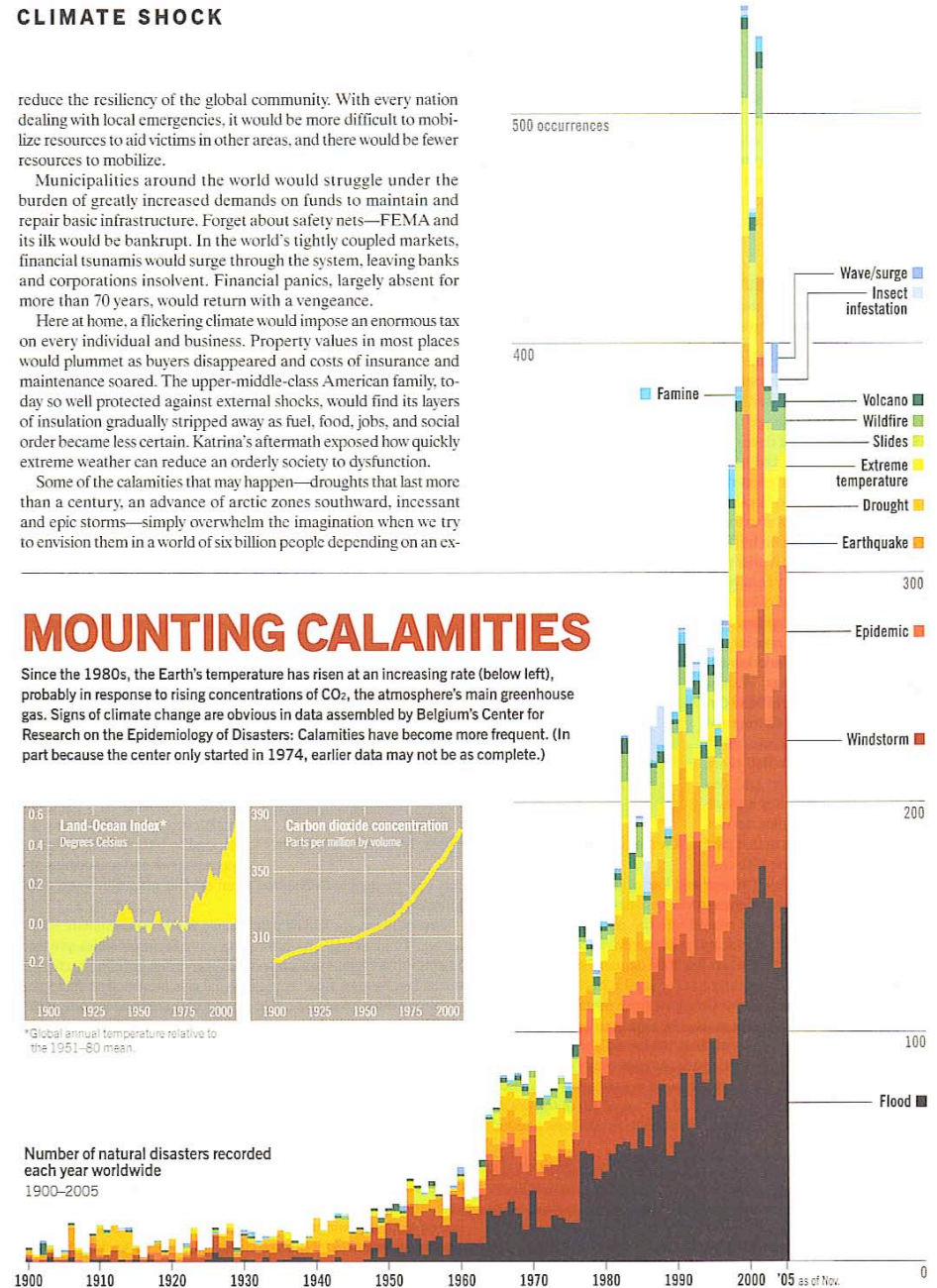
## MOUNTING CALAMITIES

Since the 1980s, the Earth's temperature has risen at an increasing rate (below left), probably in response to rising concentrations of CO<sub>2</sub>, the atmosphere's main greenhouse gas. Signs of climate change are obvious in data assembled by Belgium's Center for Research on the Epidemiology of Disasters: Calamities have become more frequent. (In part because the center only started in 1974, earlier data may not be as complete.)



\*Global annual temperature relative to the 1951-80 mean.

Number of natural disasters recorded  
each year worldwide  
1900-2005



## Keeling Curve + effects

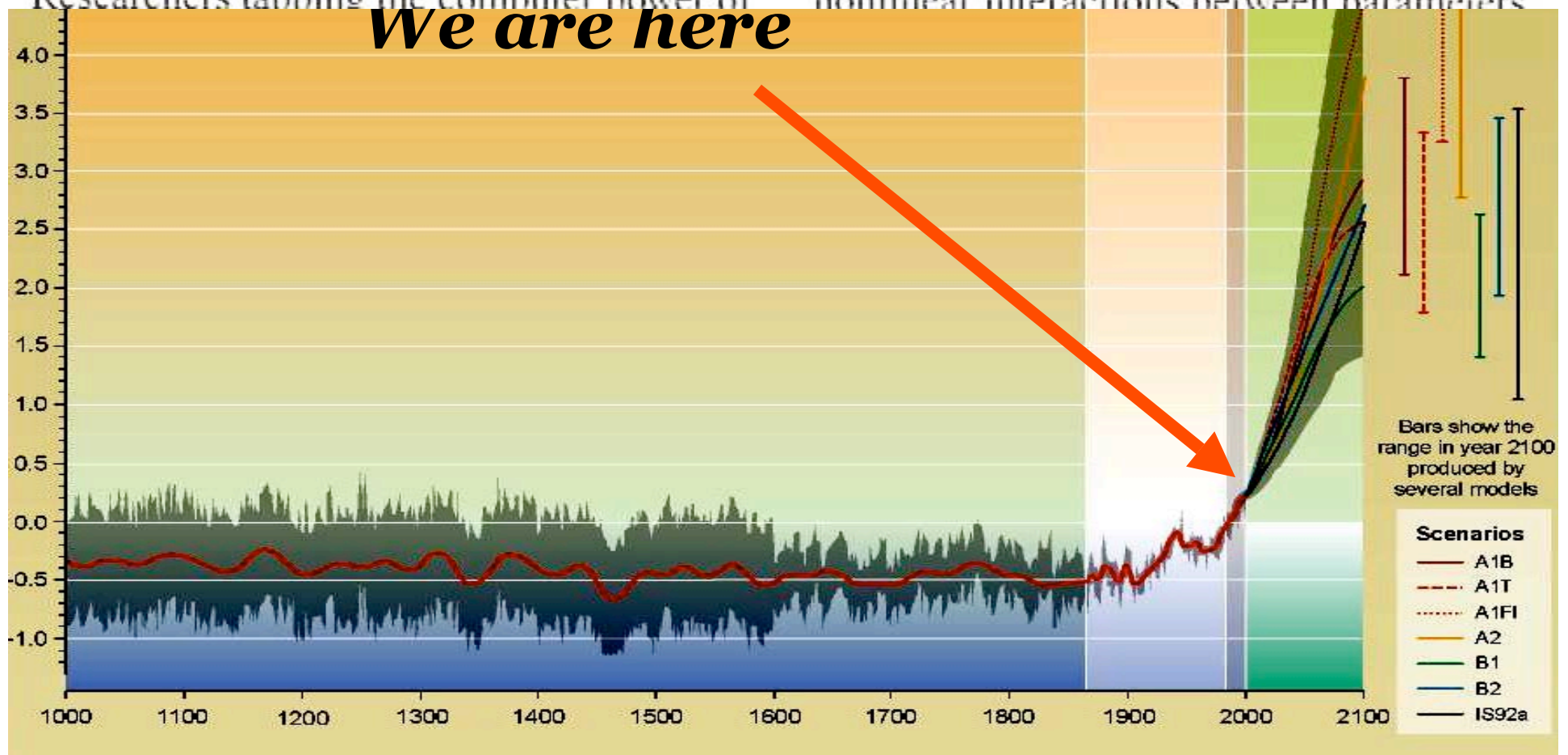


GREENHOUSE WARMING

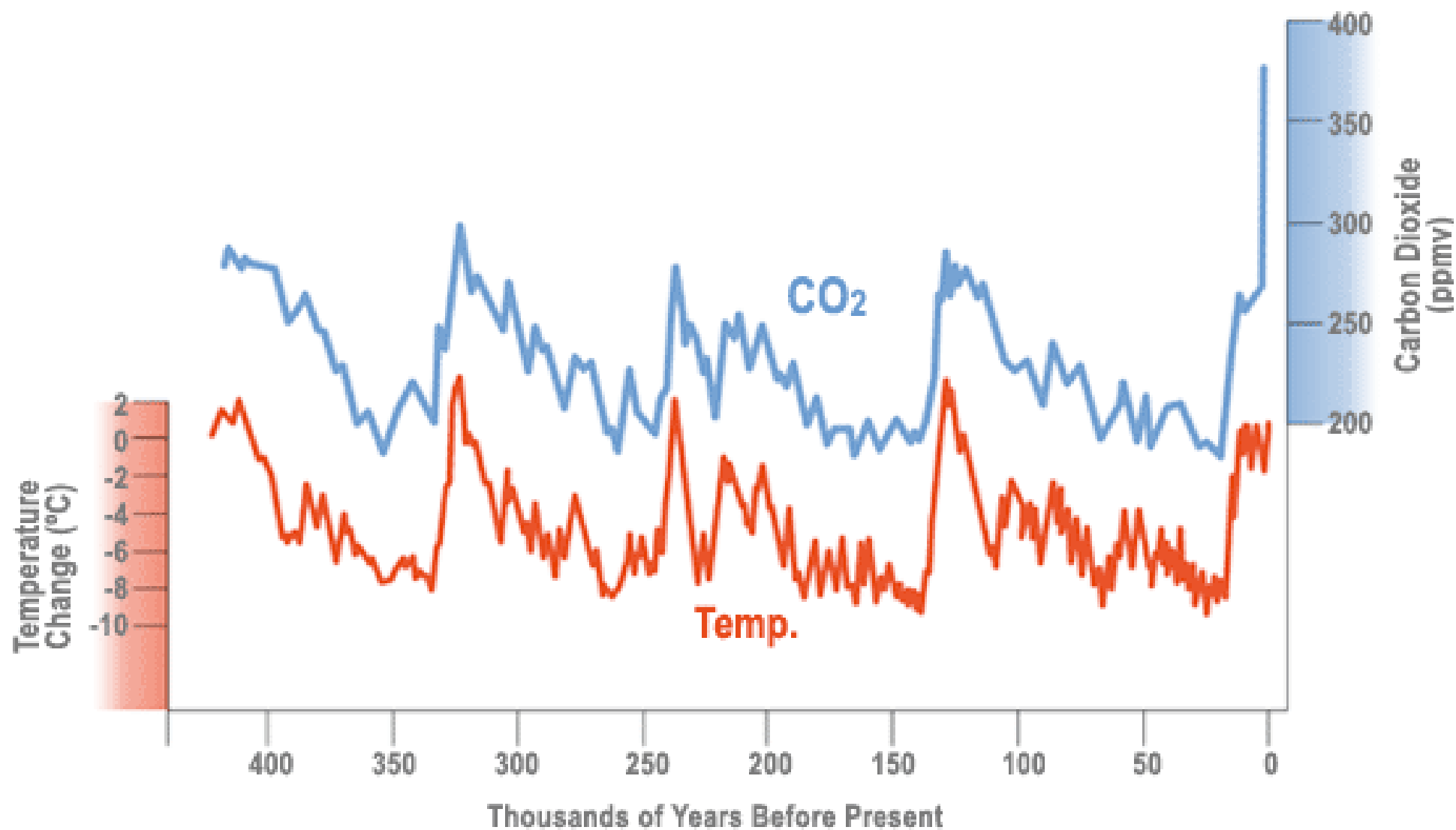
# Climate Modelers See Scorching Future as a Real Possibility

Researchers tapping the computer power of nonlinear interactions between parameters

*We are here*









# Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment

P. J. Webster,<sup>1</sup> G. J. Holland,<sup>2</sup> J. A. Curry,<sup>1</sup> H.-R. Chang<sup>1</sup>

nature

Vol 436|4 August 2005|doi:10.1038/nature03906

LETTERS

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## Increasing destructiveness of tropical cyclones over the past 30 years

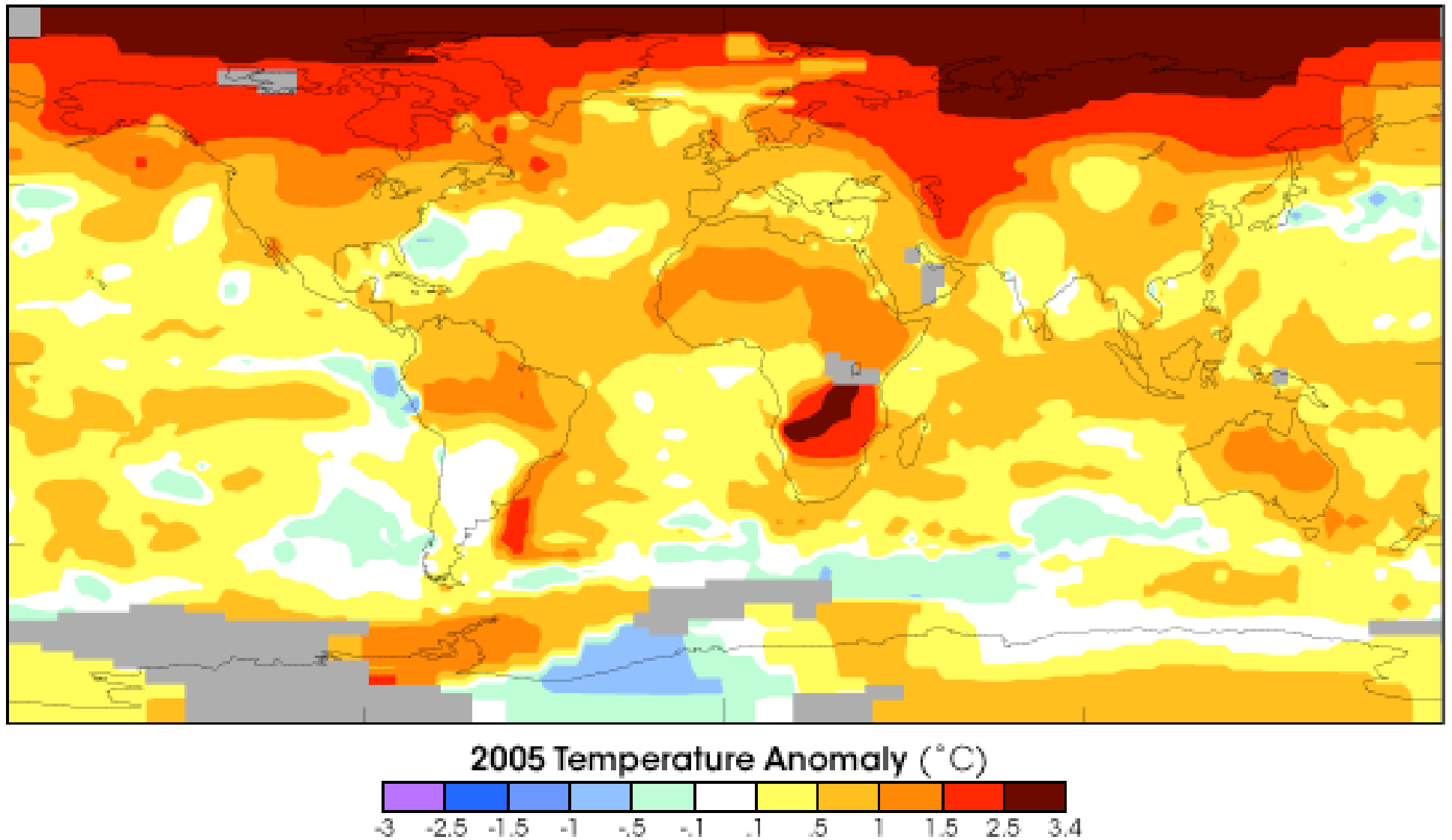
Kerry Emanuel<sup>1</sup>



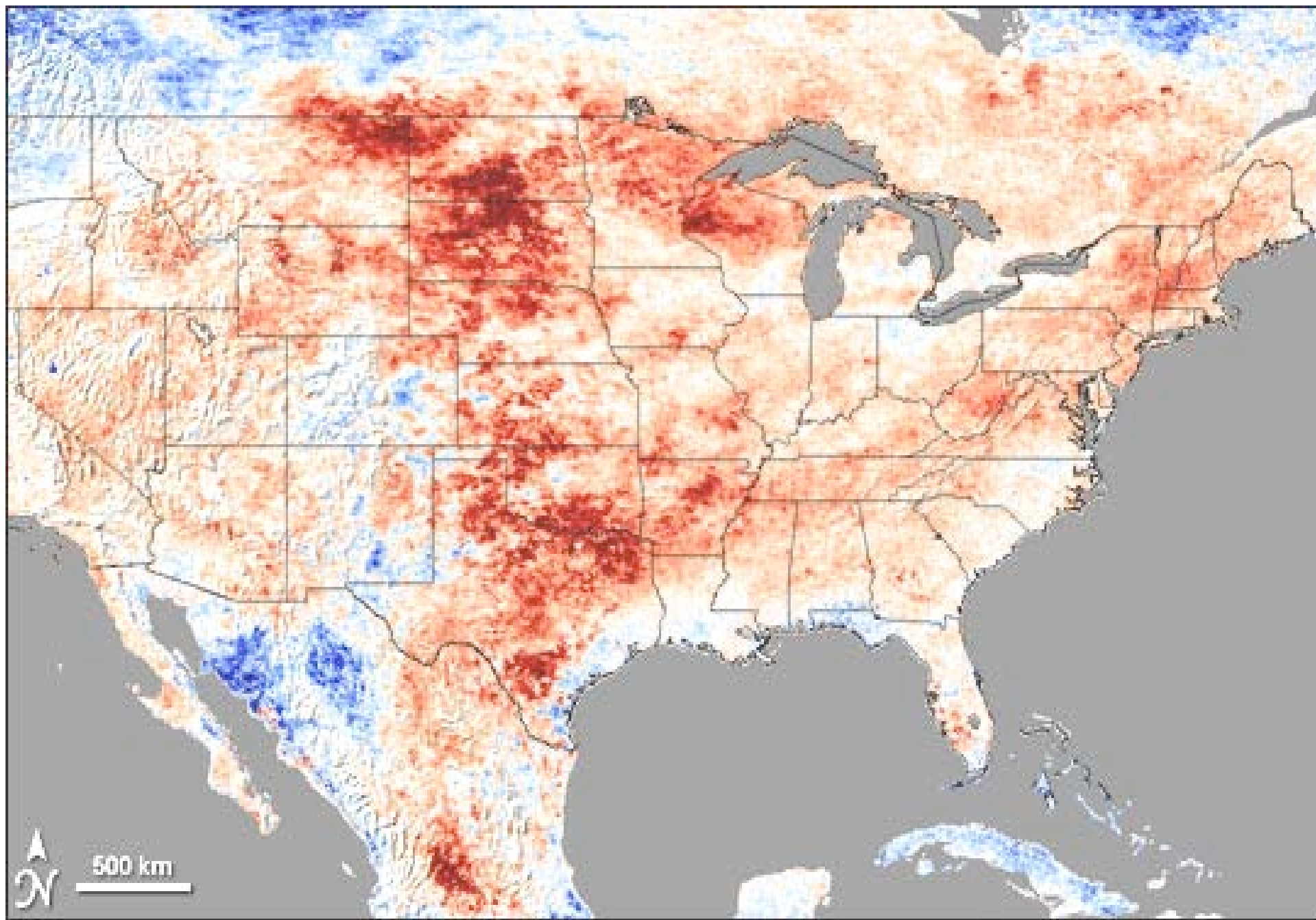




## *Climate anomalies: 2005*





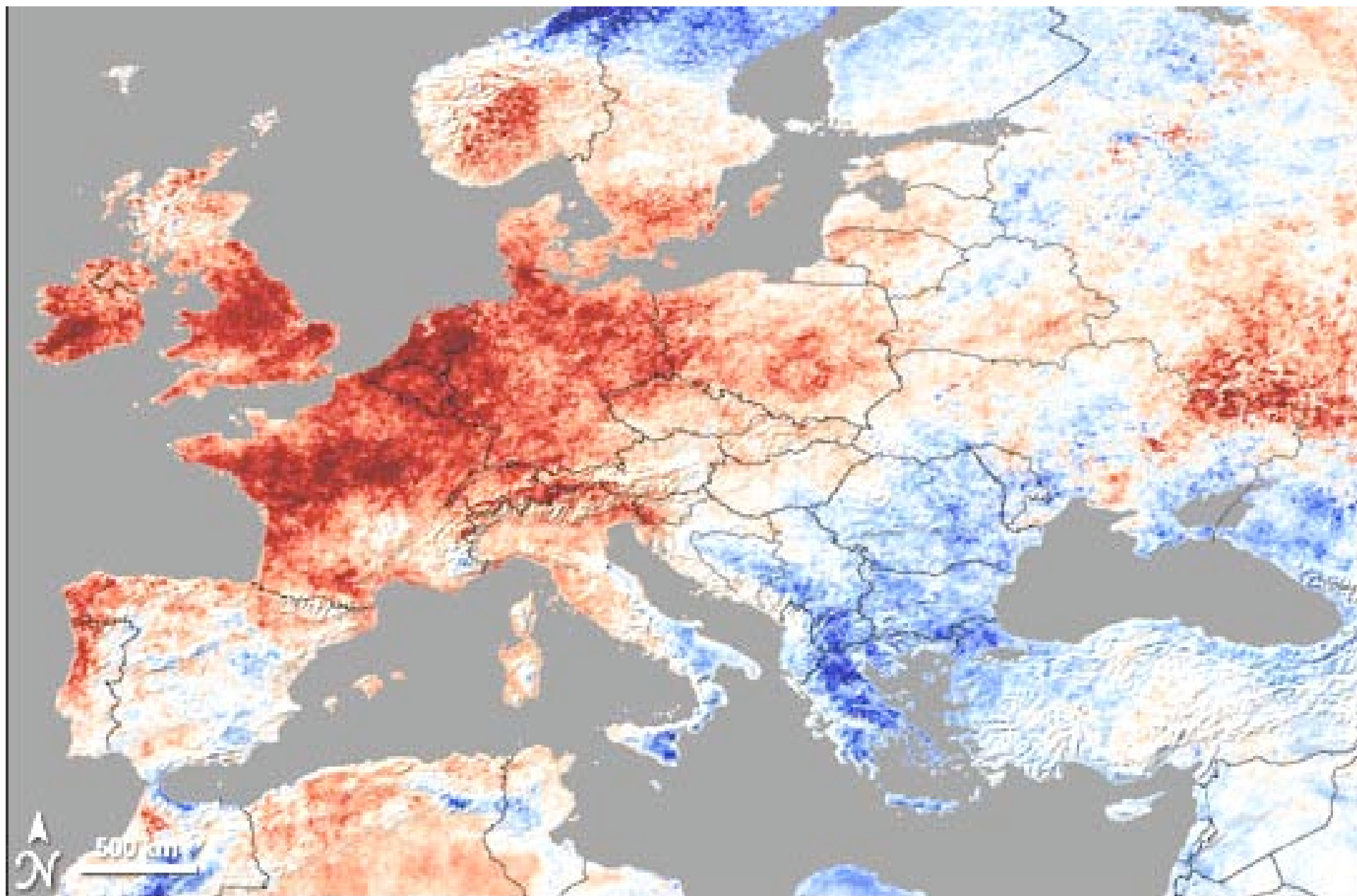


July 12 - 19, 2006

Land Surface Temperature Anomaly ( $^{\circ}\text{C}$ )

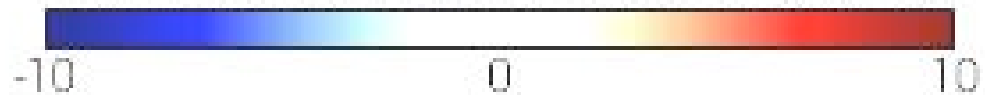
-10      0      10





July 12 - 19, 2006

Land Surface Temperature Anomaly ( $^{\circ}\text{C}$ )





## Increased likelihood of nonlinear changes

- There is *established but incomplete* evidence that changes being made in ecosystems are increasing the likelihood of nonlinear changes in ecosystems (including accelerating, abrupt, and potentially irreversible changes), with important consequences for human well-being

***Millennium Ecosystem Assessment Report  
2005***



# ***Global Destabilization . . .***

---

***Rising Sea levels***

***Storms and storm severity***

***Disease & famine***

***Drought and heat waves***

***Changing ecosystems***

***Coral Bleaching/marine ecosystems***

***Political/economic disorder***

***Death toll . . . Now at 150,000/yr (WHO)***



*Pieter Bruegel, The Triumph of Death, 1562*



# *The climate challenge*

2006

2050

C: 8.5 BT

~3.0



P: 6.4

8-10





***Opportunity***

***Fear***



***It is the leaders who decide the policy and it is always a simple matter to drag the people along . . . All you have to do is tell them they are being attacked, and denounce the peacemakers for their lack of patriotism . . . It works the same in any country."***



***Hermann Goering, Reichsmarchall  
at Nuremberg Trials, 1946***

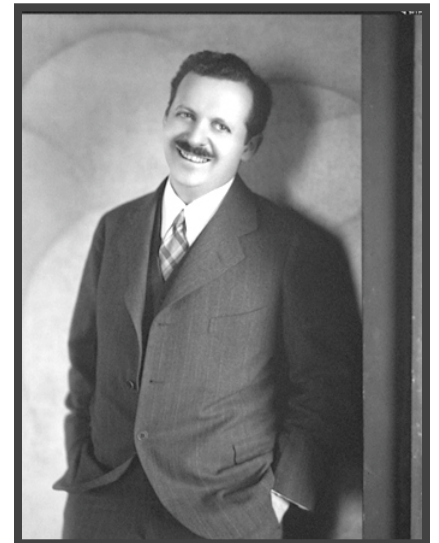


***Edward Bernays . . .***

***Advertising and public manipulation . . . Satisfying inner happiness → docile public → public stability.***

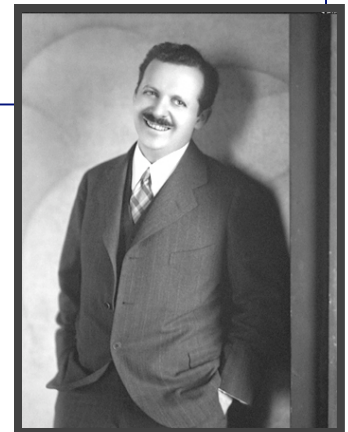
***Cars = sexual potency***

***Smoking = freedom***

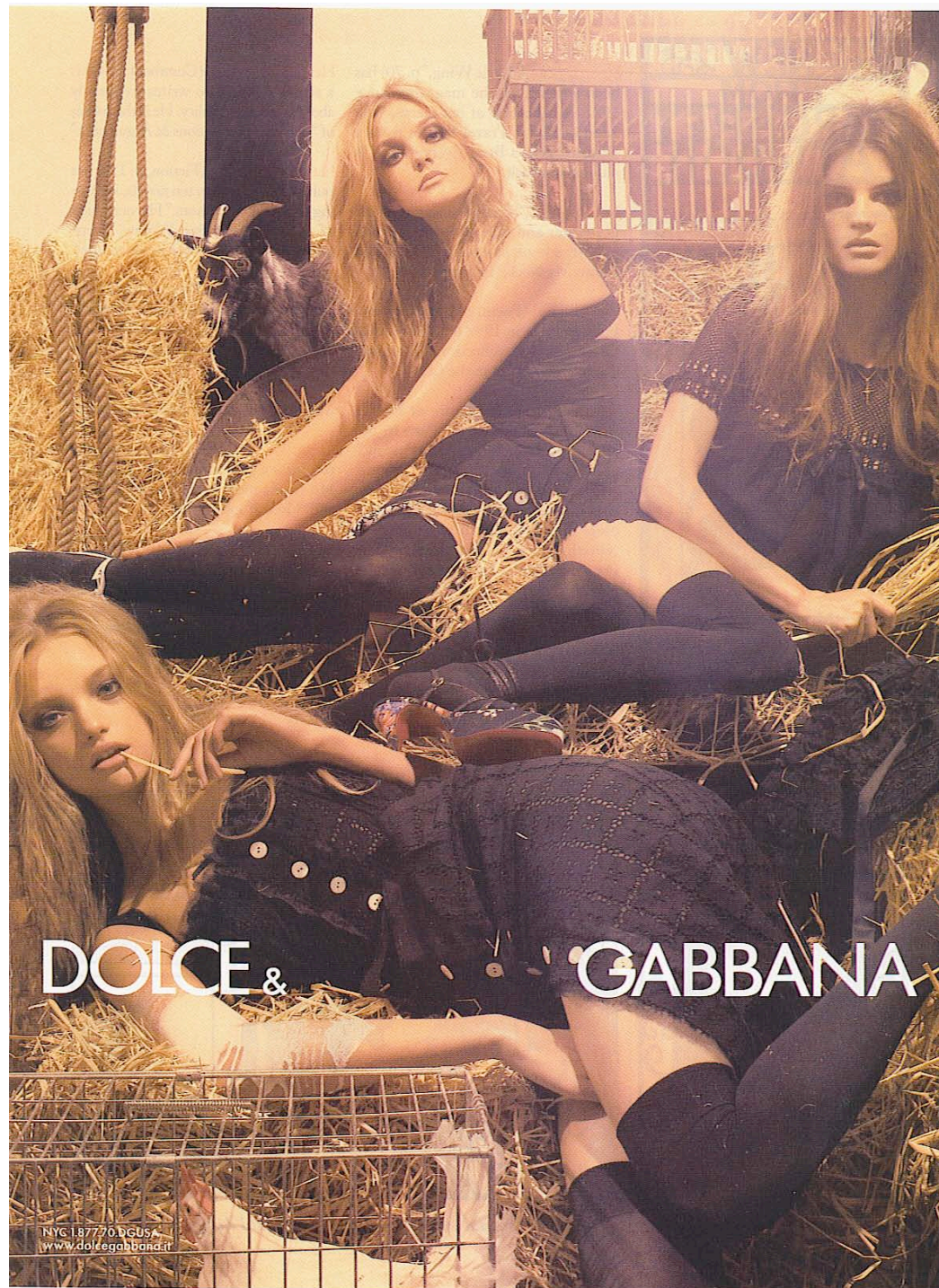


## **Edward Bernays . . .**

***The engineering of consent is the very  
essence of the democratic process . . . the  
freedoms of speech, press, petition and  
assembly . . . make the engineering of  
consent possible.***



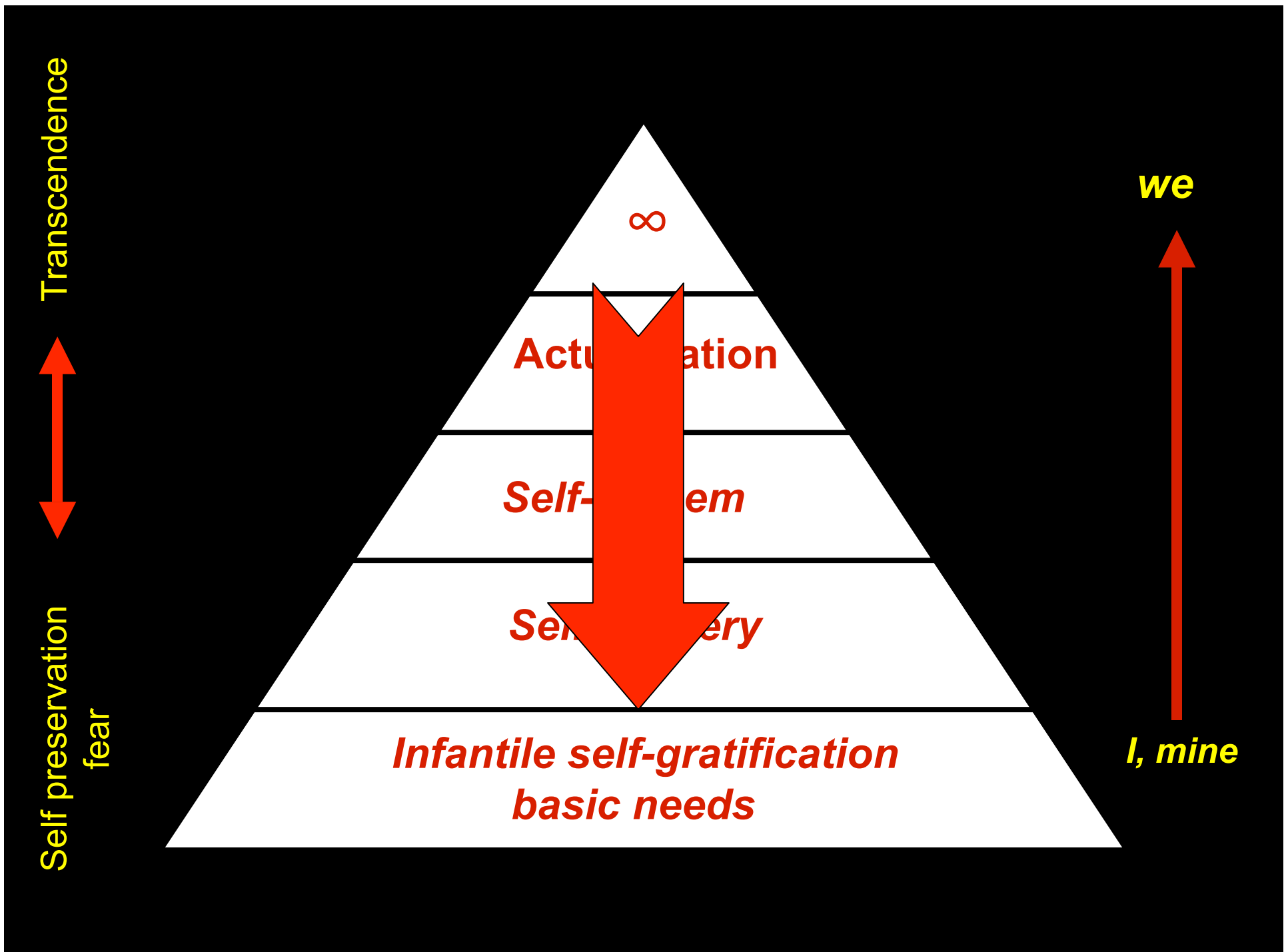












## *Fair and Balanced?*

*Fairness Doctrine (1949) overturned  
by the FCC in 1987*

*The Telecommunications Act 1996*

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*Clear Channel Communications:*

*US Press 27<sup>th</sup> Freest Press*  
*1200 Radio Stations*  
*In the World!*

*36 Television Stations*

*776,000 Advertising displays*



# **Fairness: Widening income gap 1970-2000**

**Bottom 90%:**

**$\$27,060 \rightarrow \$27,035 = -0.1\%$**

**99.9—99.99:**

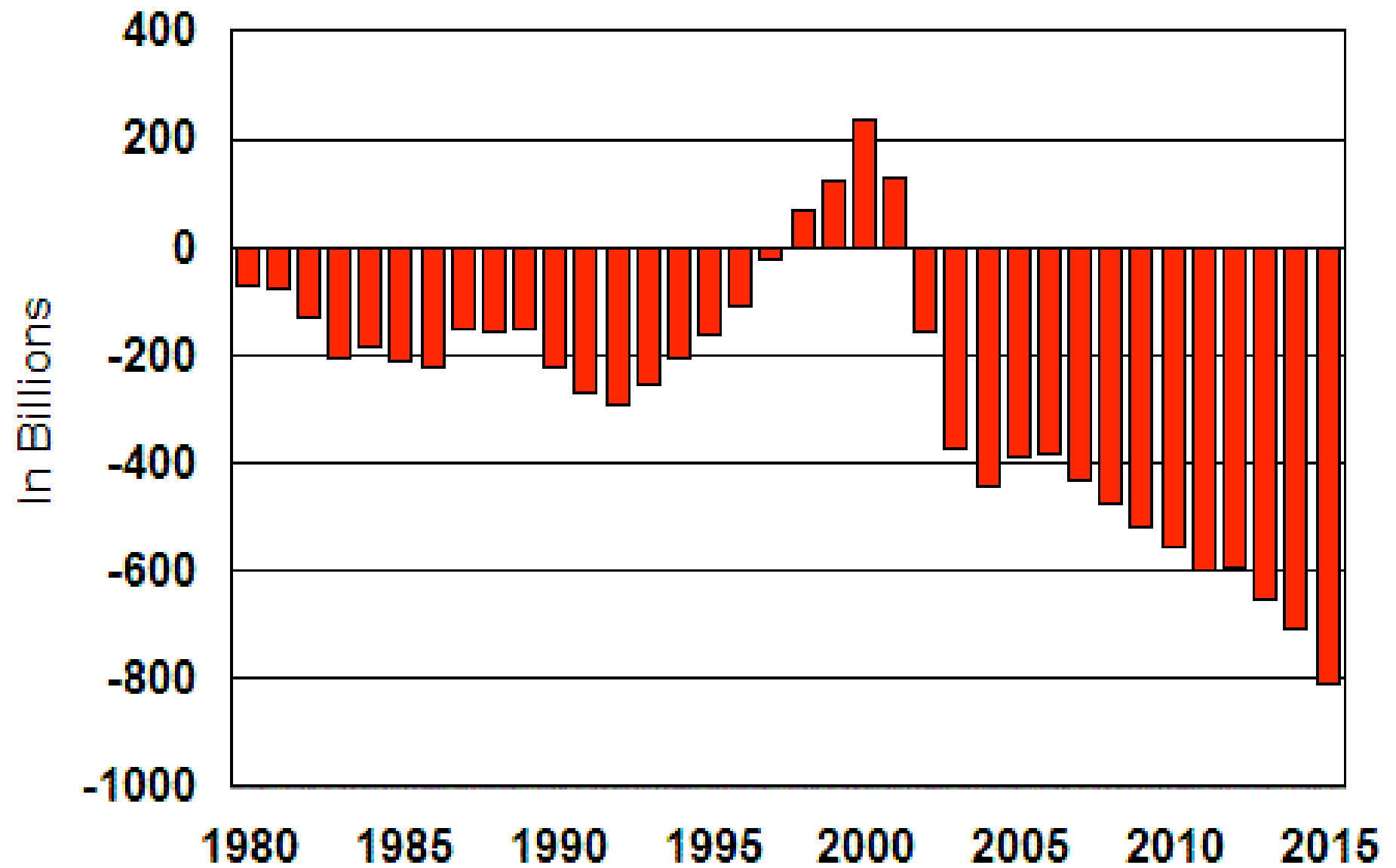
**$\$722,480 \rightarrow \$3,049,226 = 322\%$**

**Top 13,400:**

**$\$3,641,285 \rightarrow \$23,969,767 = 558\%$**



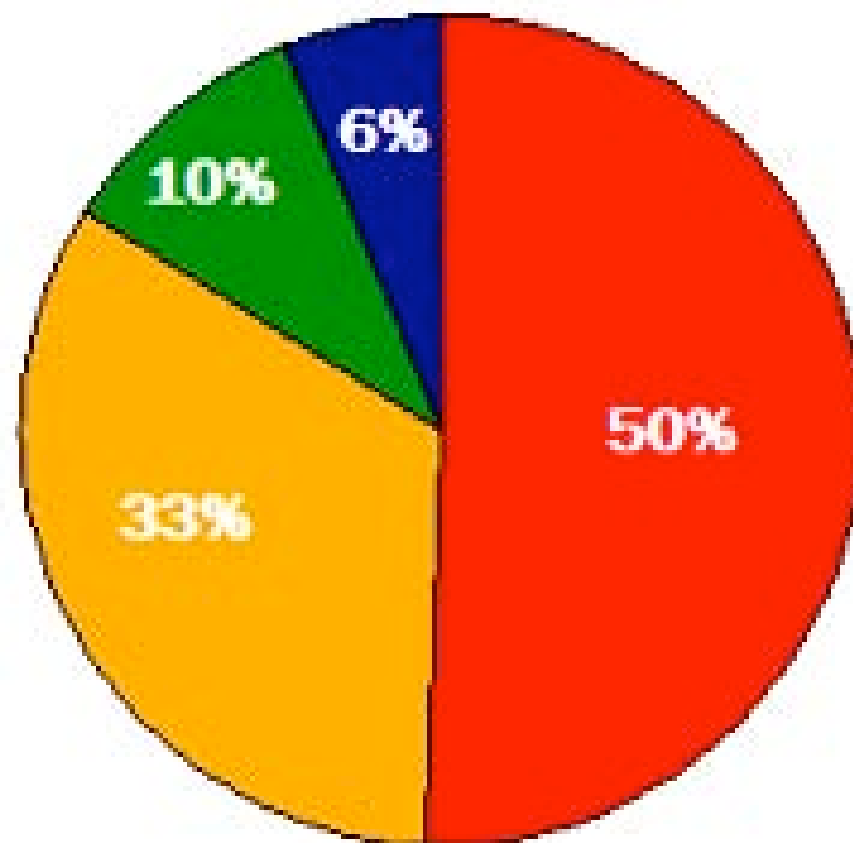
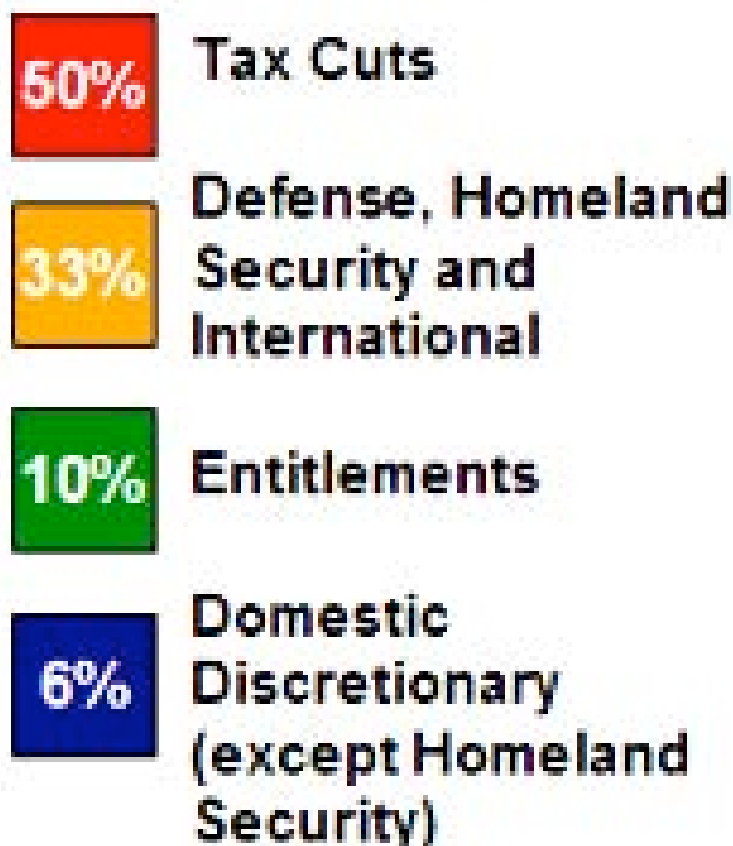
## Federal Surplus (+) Or Deficit (-)





## LEGISLATION ADDING TO DEFICITS: MOSTLY TAX CUTS AND DEFENSE

Cost, 2002-2011, of legislation enacted since January 2001



Source: CBPP calculations based on Congressional Budget Office data. Assumes extension of tax cuts and Alternative Minimum Tax relief.

***“Liberal”***

***Political dialogue*** 



***(Middle of the Road)***

***“Conservative”***



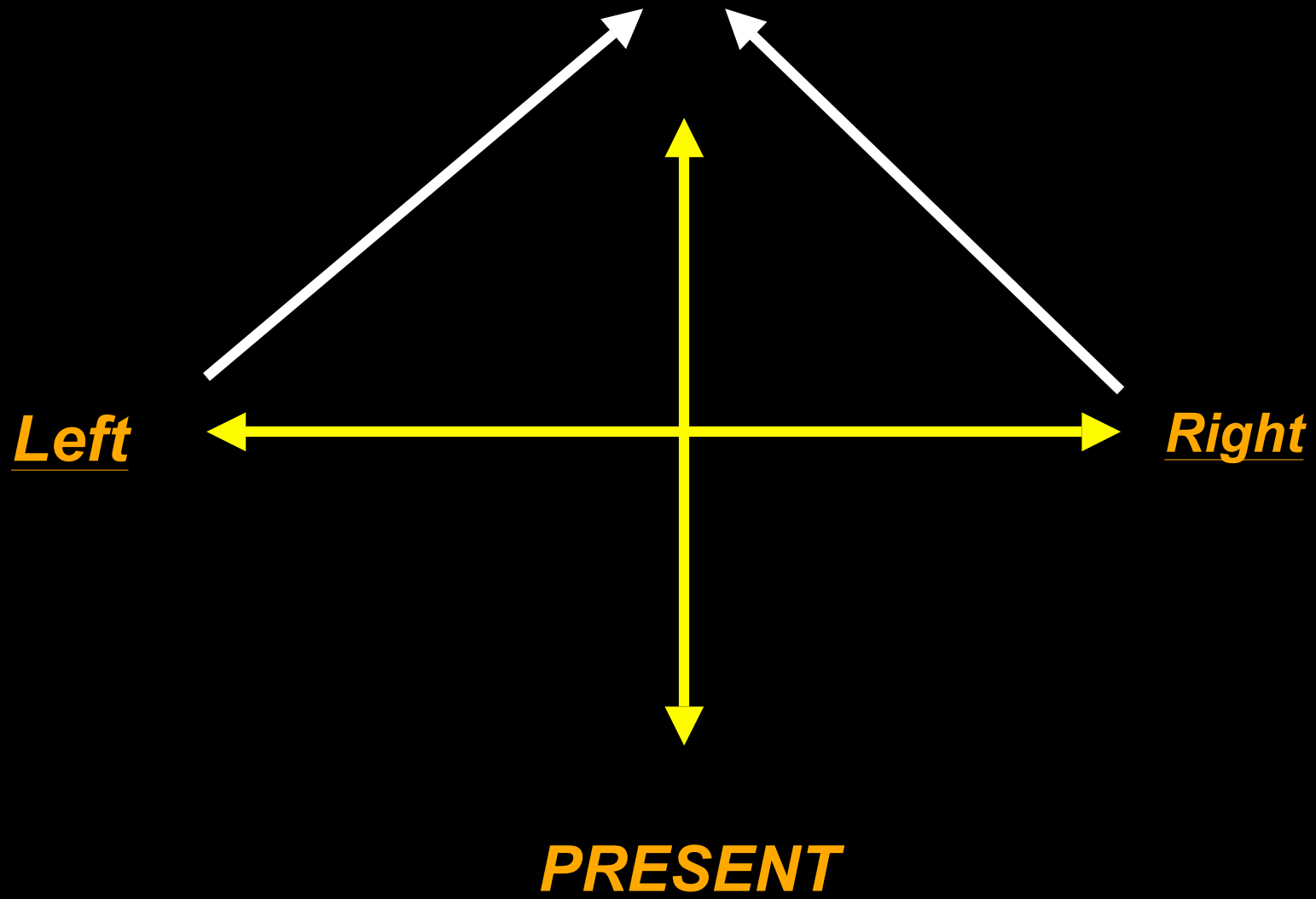
**Between fear and possibility**

***I have set before you life and death, blessing  
and cursing:***

***therefore choose life, that both thou and thy  
seed may live.***

***Deuteronomy 30:19***

# *Sustainable Futures*





***A Nation defined by:***

***The Declaration of Independence  
1776***

***The Constitution & Bill of Rights  
1787***

***The Gettysburg Address  
1863***

***The Second Bill of Rights  
1944***



***“A Land Ethic changes the role of Homo sapiens from conqueror of the land community to plain member and citizen of it.”***

*Aldo Leopold*



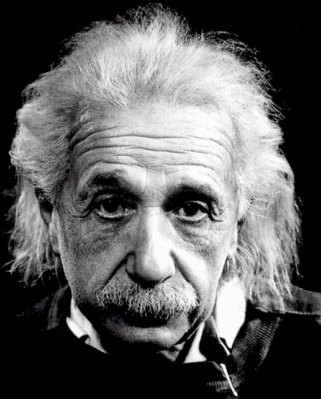
## ***The right to life:***

***No society has the right to alter Earth's natural cycles or impair the stability, integrity, and beauty of nature—the consequences of which would be a form of intergenerational tyranny.***

*A human being is part of a whole, called by us the universe, a part limited in time and space.*

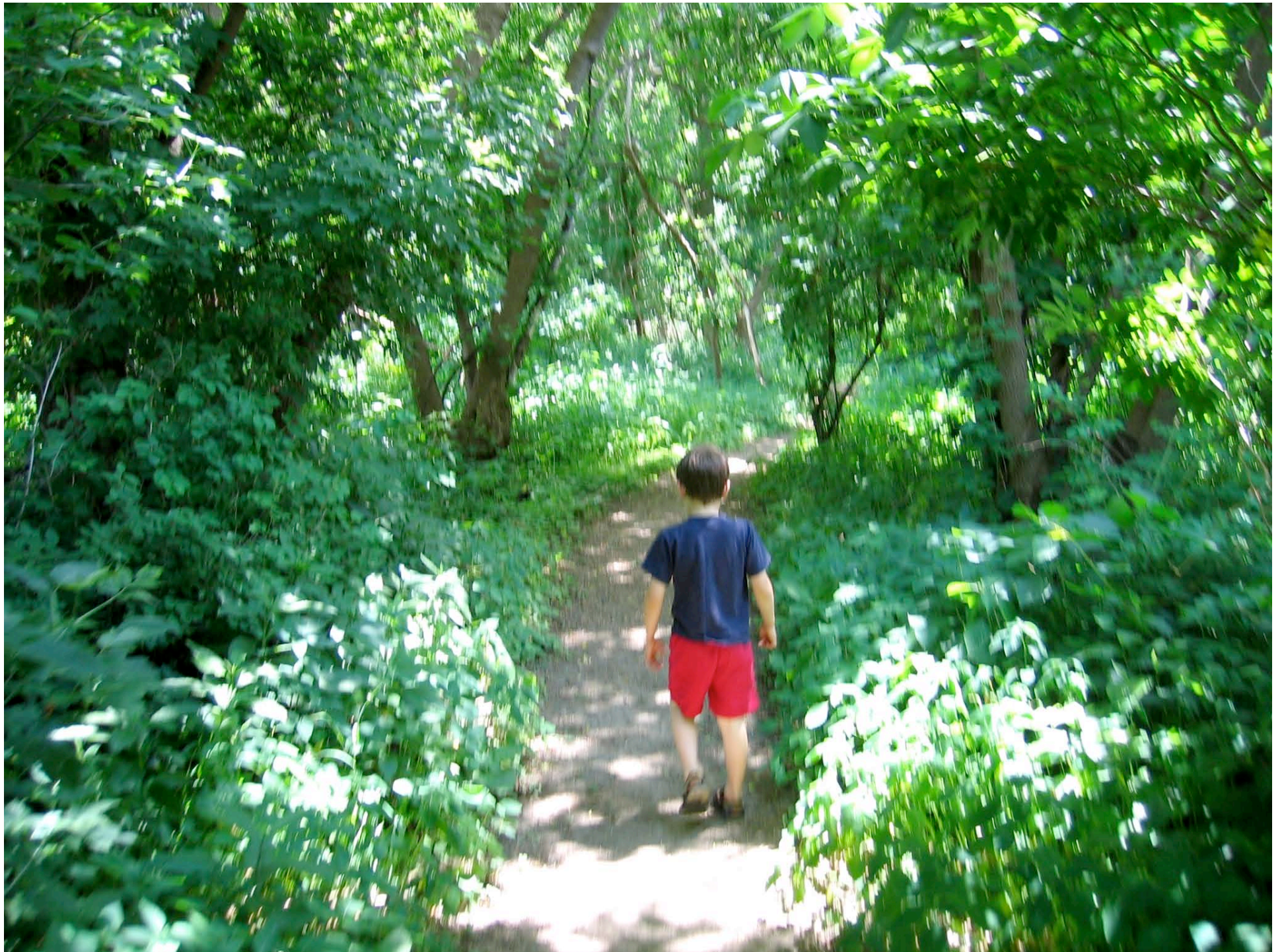
*He experiences himself, his thoughts and feelings, as something separated from the rest—a kind of optical delusion of his consciousness.*

*This delusion is a kind of prison for us, restricting us to our personal desires and to affection for a few persons nearest us. Our task must be to free ourselves from this prison by widening our circles of compassion to embrace all living creatures and the whole of nature in its beauty.*



*Albert Einstein*







## **Communication scales:**

