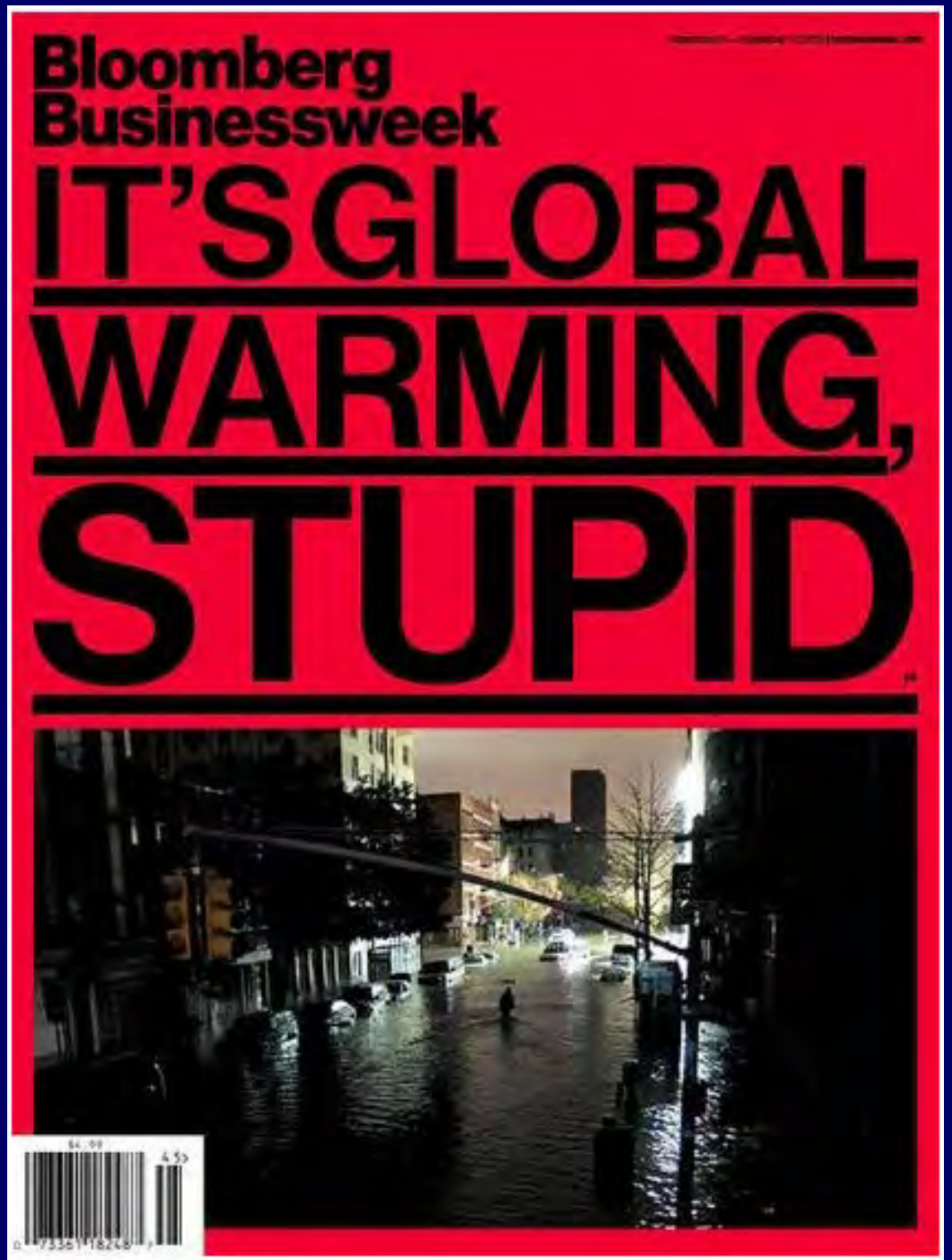
HOT TOPIC – COLD COMFORT
Climate Change and Attitude Change

Gudmund Hernes

Hurricane Sandy
Oct 29-30
BW Nov 1



Based on

Free download: http://www.nordforsk.org/en/publikasjoner/hot-topic-cold-comfort-climate-change-and-attitude-change/view

Astronomy - cosmology

- How is the cosmos constructed ?
- What is the logic that is hidden behind it?
- Looked at the Heavens through an image of God
- A socially constructed cosmos

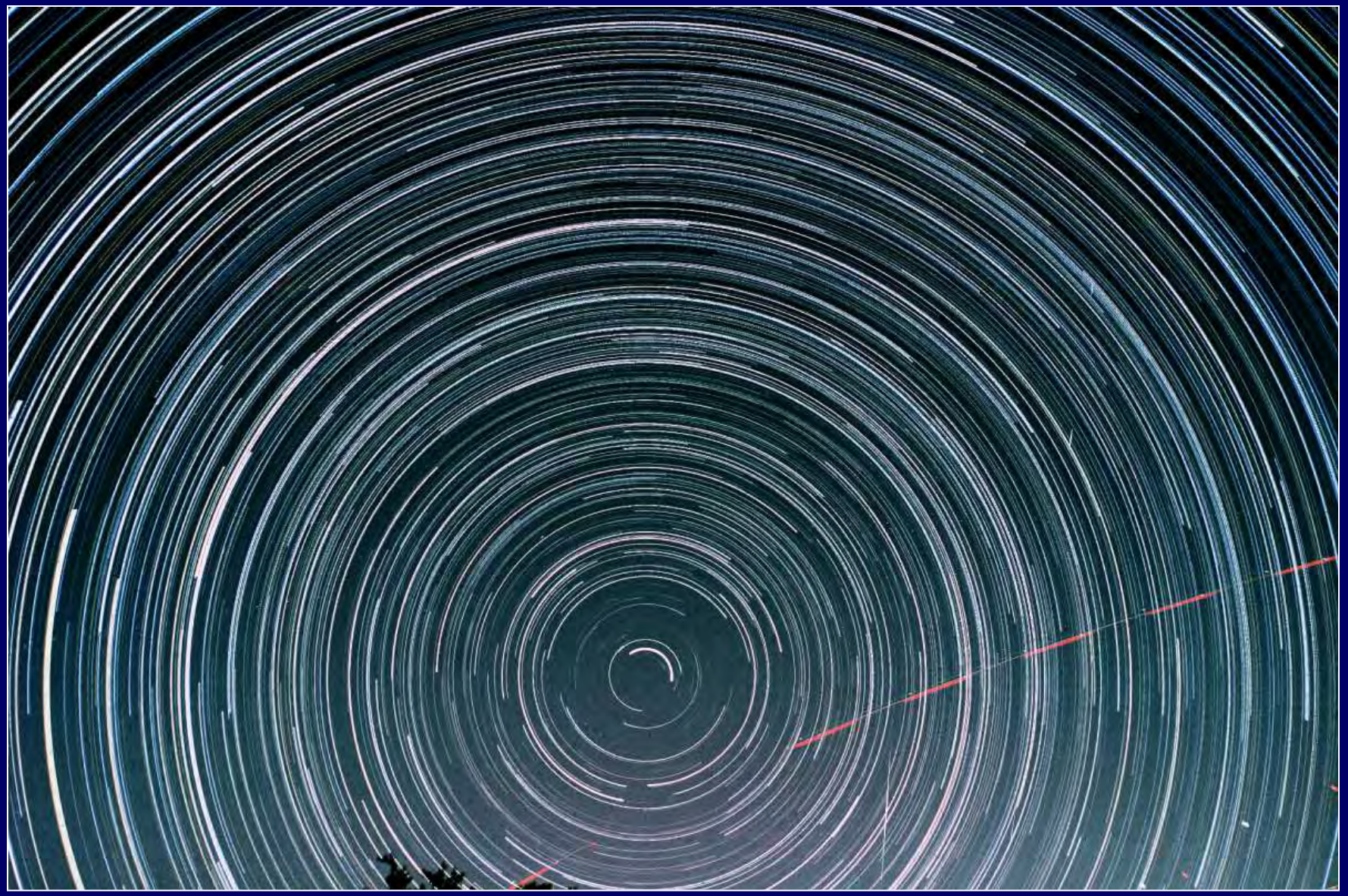
Egyptian Cosmos

Yggdrasil in old Norse mythology

Conceptual Tipping Points

- ”In the beginning God created the heaven and the earth”
- The act of creation a reflection of Him
- He is perfect
- *What is a perfect figure?*
  - *A circle!*
  - *God’s language is mathematics !*
- *God: “Let us make man in our image!”*
  - *The Earth in the center of the universe.*
  - *Man central figure on the Earth*

The proof: The stars in circular orbits!



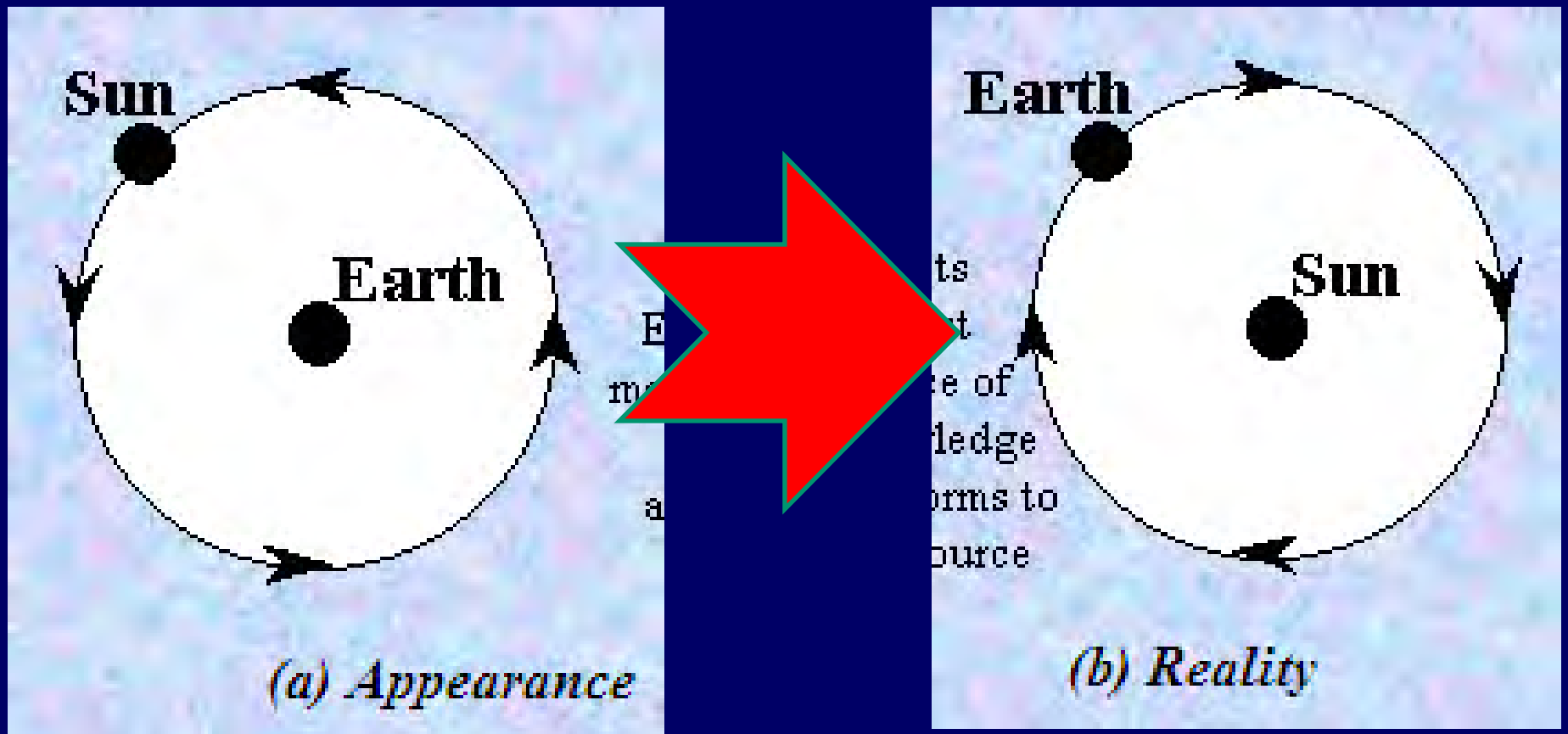
The proof: Man the measure of all things!

God used the perfect circle in the construction of the universe !

- And with the Earth at its center!

Schema huius præmissæ diuisionis Sphærarum.

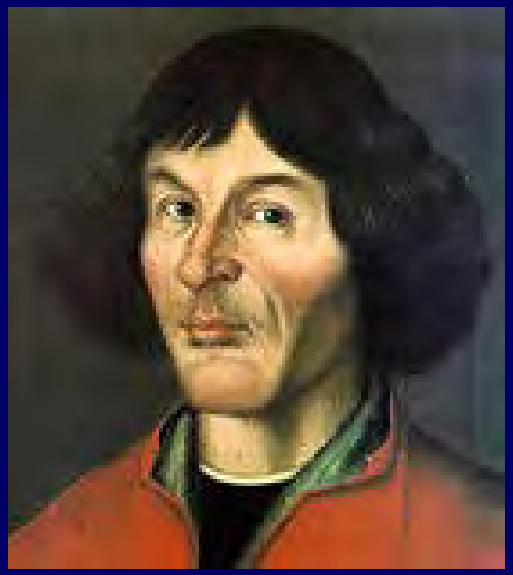
The Copernican Revolution: The Sun put at the centre !

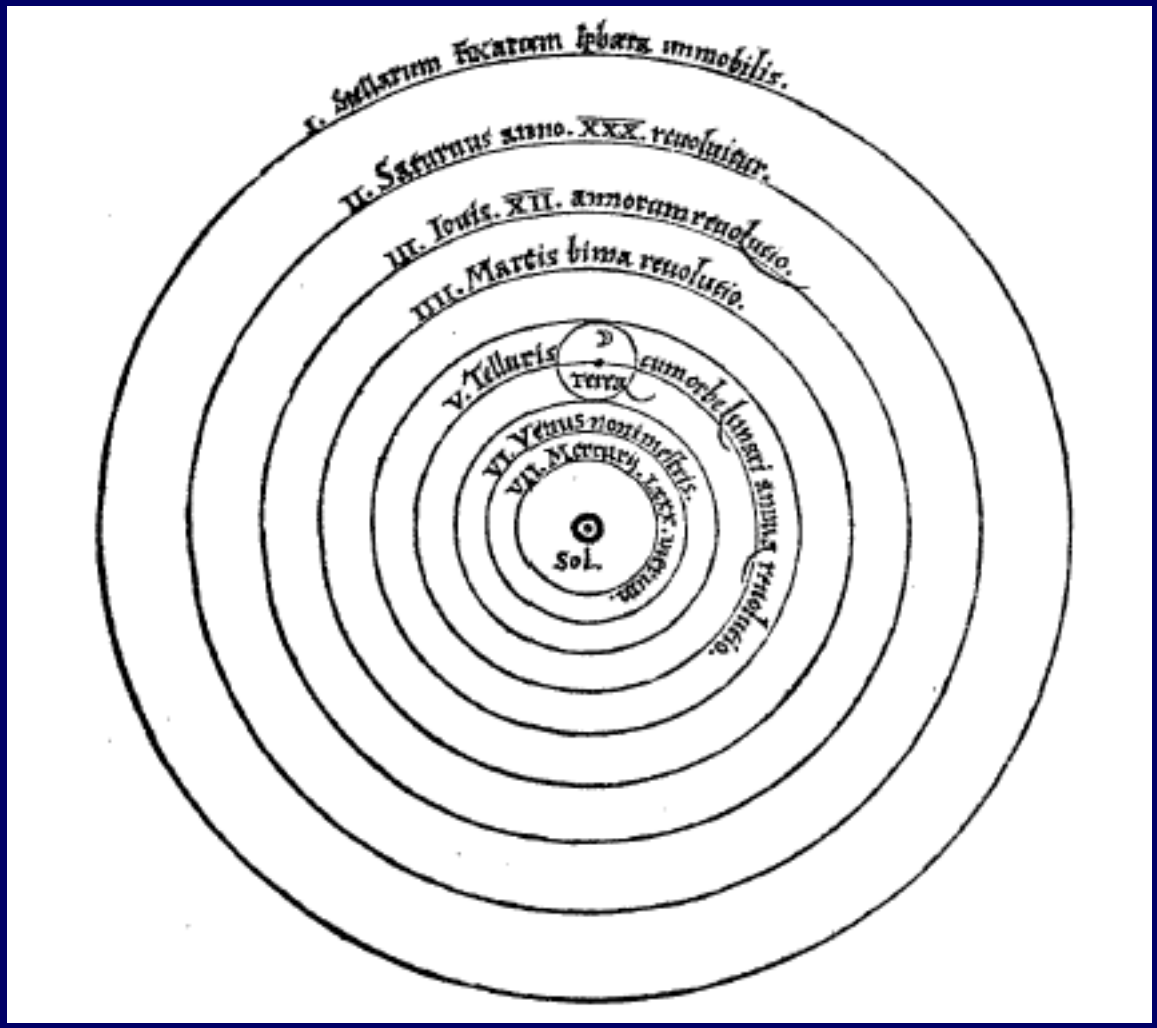


Ptolemaios

Copernicus

The Copernican Revolution





The value of false hypotheses – if one checks them !

The Copernican Revolution
A change of *mindset*

- Heliocentric model
- Cosmos infinite
- → Scientific Revolution

Why tell the story ?

Still not everybody is convinced !

- Even today one in five Americans believes the Earth revolves around the Sun!
- Change of worldview takes time – decades, sometimes centuries
- And sometimes in bits and parts only

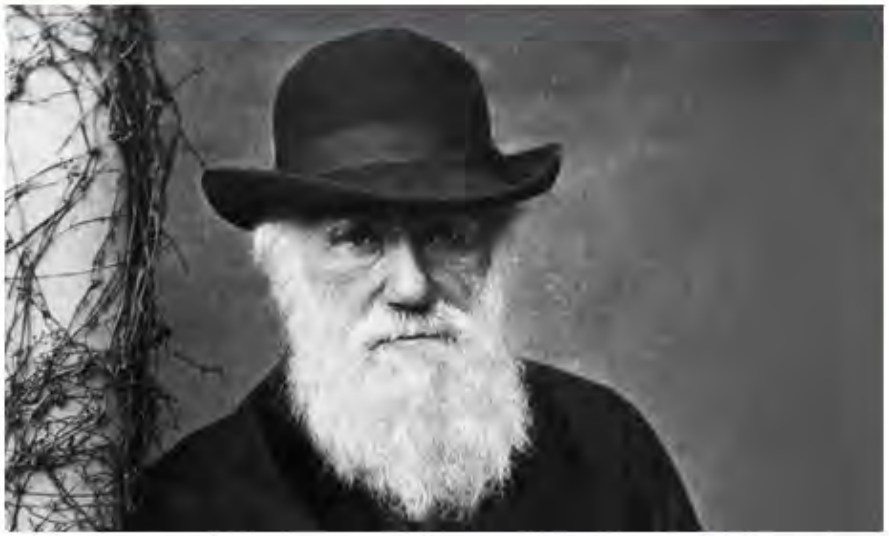
Scientific progress …

The percentage of people in the USA who accept the idea of Darwinian evolution *declined* from 45% in 1985, to 40% in 2005.

Half of Britons do not believe in evolution, survey finds

More than one-fifth prefer creationism or intelligent design, while many others are confused about Darwin's theory

Riazat Butt, religious affairs correspondent
guardian.co.uk, Sunday 1 February 2009 13.52 GMT
Article history



The Rescuing Darwin survey was timed to coincide with the 200th anniversary of Charles Darwin's birth

Half of British adults do not believe in evolution, with at least 22% preferring the theories of creationism or intelligent design to explain how the world came about, according to a survey.

The poll found that 25% of Britons believe Charles Darwin's theory of evolution is "definitely true", with another quarter saying it is "probably true". Half of the 2,060 people questioned were either strongly opposed to the theory or confused about it.

The story as the backdrop of another story:

After the Second World War

- Climate change on the agenda
- But also a change of the mental climate

Thesis 1: *The Ecological Revolution*
Change of mindset

- About how the world works
- About what the threats are
- About what needs to be done

A change of mindset – and of worldview

- ”Neo-geocentric”
- ***Ecocentric!***
  - *A serious concern for environmental issues,*
  - *Views nature and biosphere as the support for all life*
  - *Ecological management not just to instrumentally serve humans*
  - *Focus on Earths interactive systems – living (natural and social)– and non-living*

From: The Earth

1. Boundless
2. Robustly resilient
3. Natural and social processes loosely coupled
4. Mother Nature determinant
5. The world compartmentalized
6. Welfare determined at home
7. The universe immutable and world stable
8. No need to respond to aggregate effects
9. What happens to the world is cyclical
10. Unlimited time – business as usual

The Ecological Revolution: The Earth

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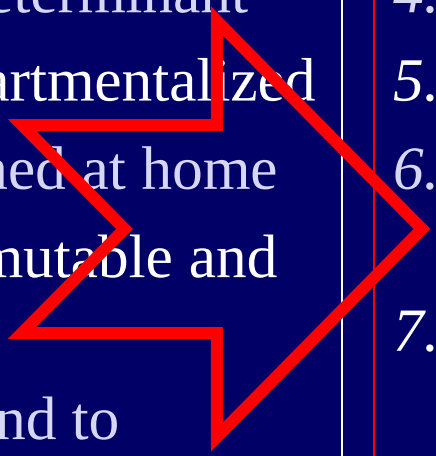

1. *Finite*
2. *Alarmingly fragile*
3. *Tightly linked, causally integrated*
4. *Antropogenic*
5. *The world a commons*
6. *Welfare determined abroad and often far away*
7. *Dynamic complexity produces unpredictable extreme events*
8. *Summons for massive countermeasures*
9. *Complexities make for tipping points and irreversible changes*
10. *Action urgent – time running out!*

New mindset : "The Ecological Revolution" - *but*

- Not everybody share all points of view
- Not all tenets logically integrated
- Is often partial and patchy
- Several tenets contested
- Also reversals of public opinion
- Yet dissemination – and convergence

How did the change – *The Ecological Revolution* – come about?

- By arguments?

Thesis 2:
Event-generated attitude change !

- Changes not only by arguments, but by experiences
- Dramatic occurrences after World War 2 that has caught attention, captured imagination and changed mindsets
- Selected: Seven defining moments or turning points with take home lessons
- Each contributed to the ecocentric model

The redefining events after World War II

1. *Hiroshima*
2. *Silent Spring*
3. *Chernobyl*
4. *Poverty*
5. *Limits to Growth*
6. *Climate Change - Global Warming*
7. *Earth Rise*

The change in mindset: The Earth is

1. Boundless
2. Robustly resilient
3. Natural and social processes loosely coupled
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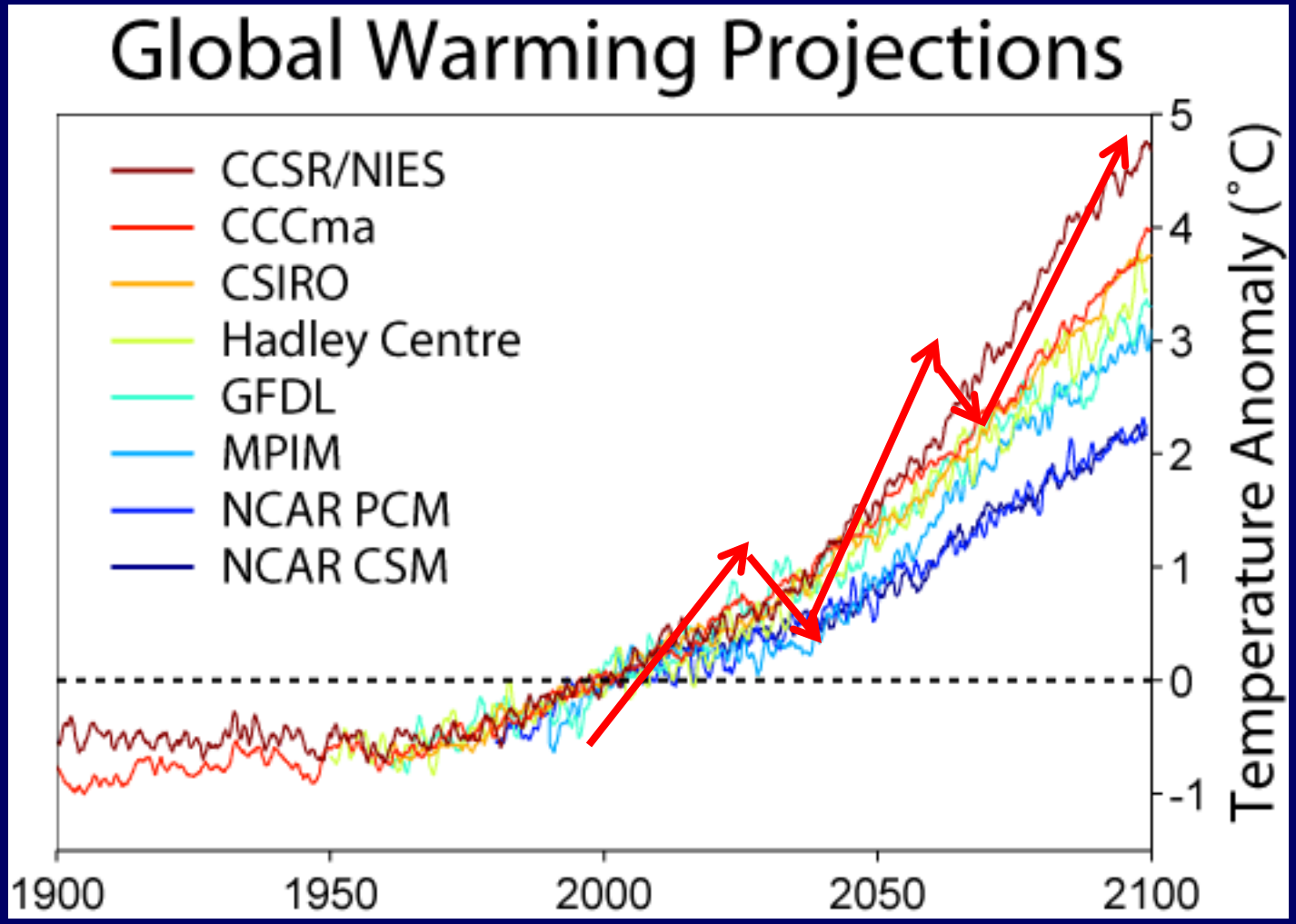
Topics for research:
Public opinion – trends or events?



Why attitudes hard to change?

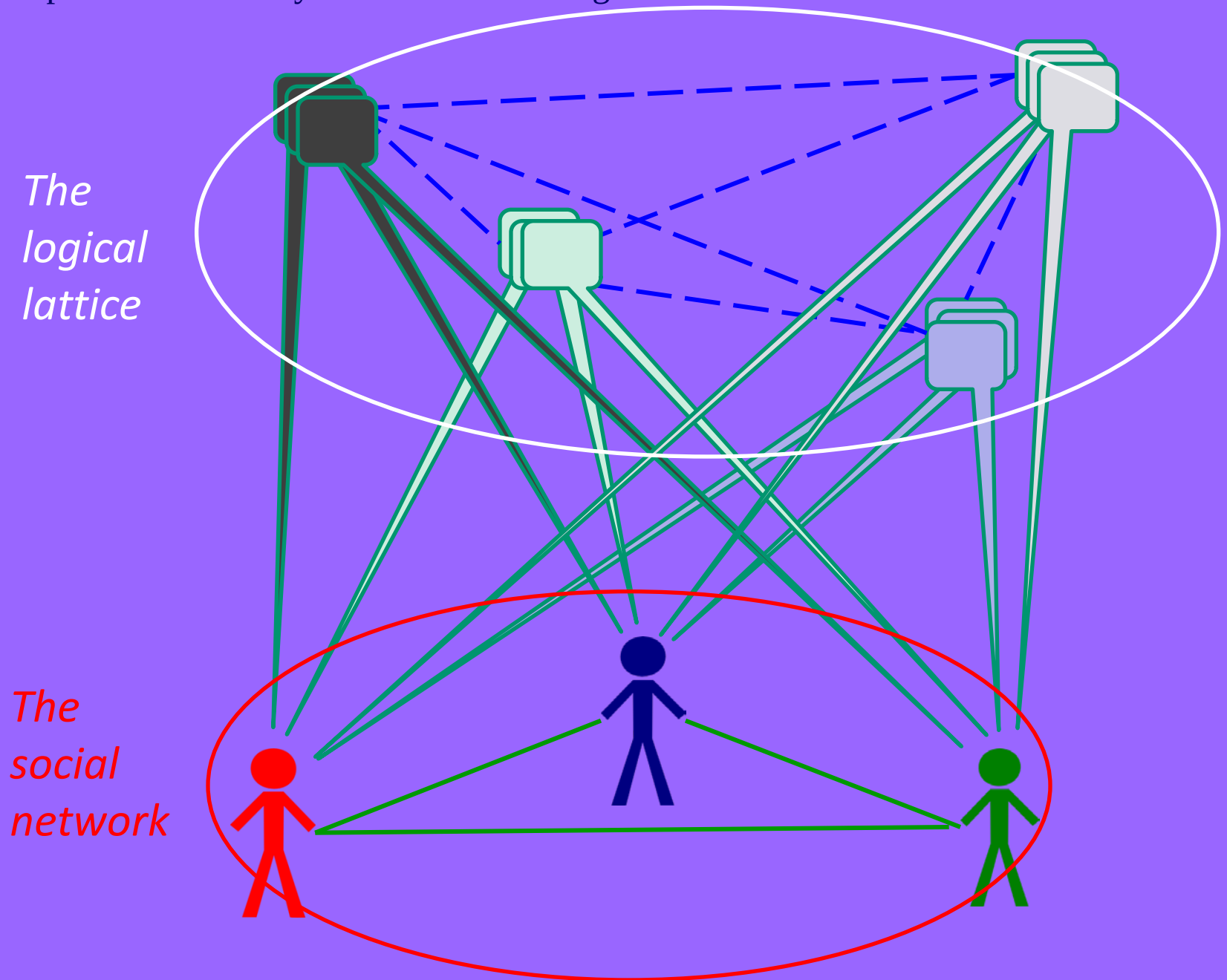
Thesis 3:
People loath to change their opinions

Thesis 4
Theories of Attitude Change: *Inadequate*

- Identity
- Empty Heads Fallacy
- Consistency
- Selective perception, selective memory, reinterpretation, rationalization
- Cognitive dissonance
- *People are cognitive escape artists!*

Figure 7

Opinions are doubly embedded – in a logical lattice as well as in a social network



Double embedding

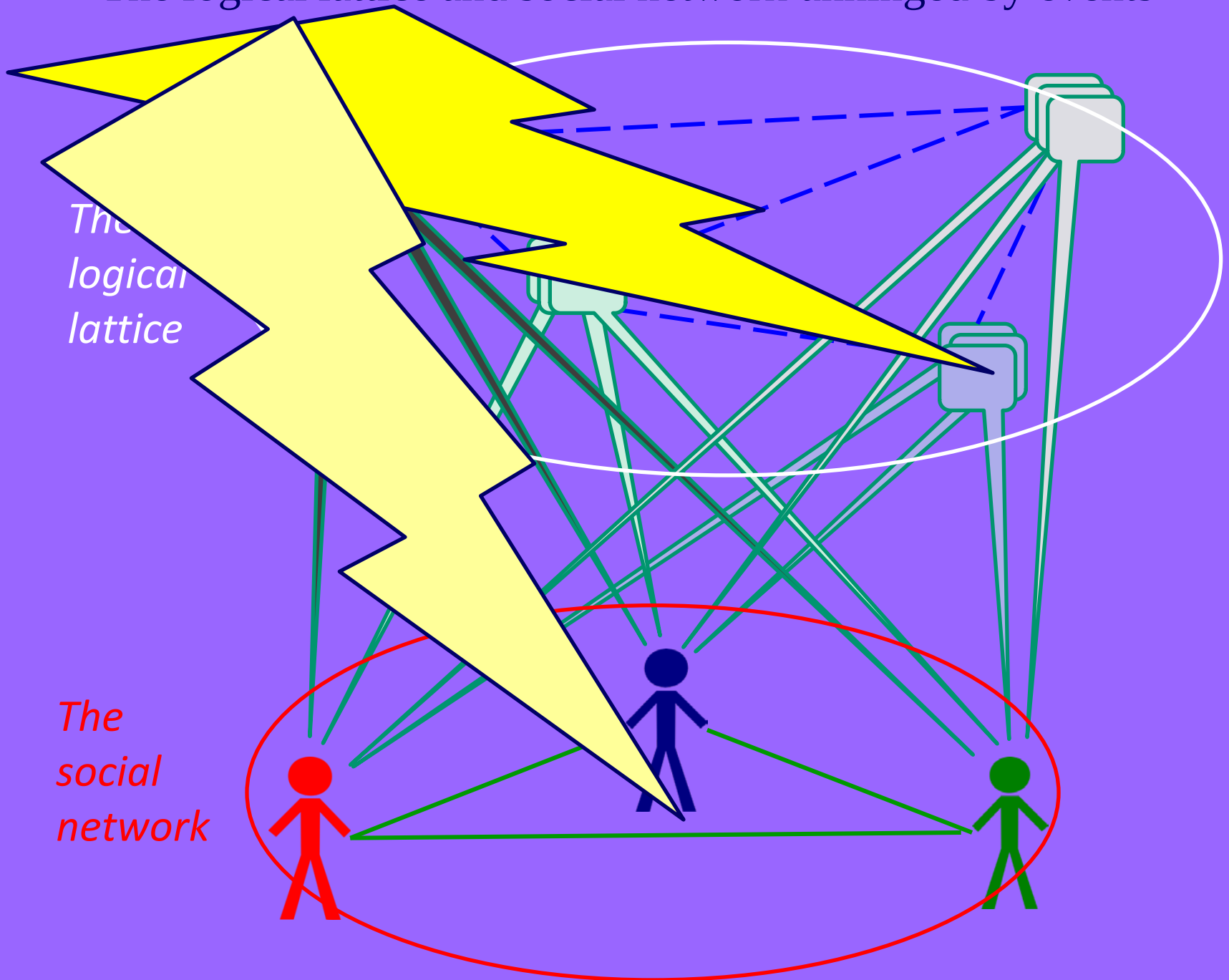
- Opinions come in ensembles – friends come in clusters – and both come together!
- Attitudes lodged in a logical lattice as well as in a social network
- People support each other's misconceptions
- "If you change your opinions, you have to change your friends!"

Thesis 5: Dramatic events attack both belief systems and social relations

- Rather than being changed by the force of argument
- They are changed by the force of circumstance
- Events can unhinge both – the logical lattice as well as the social network

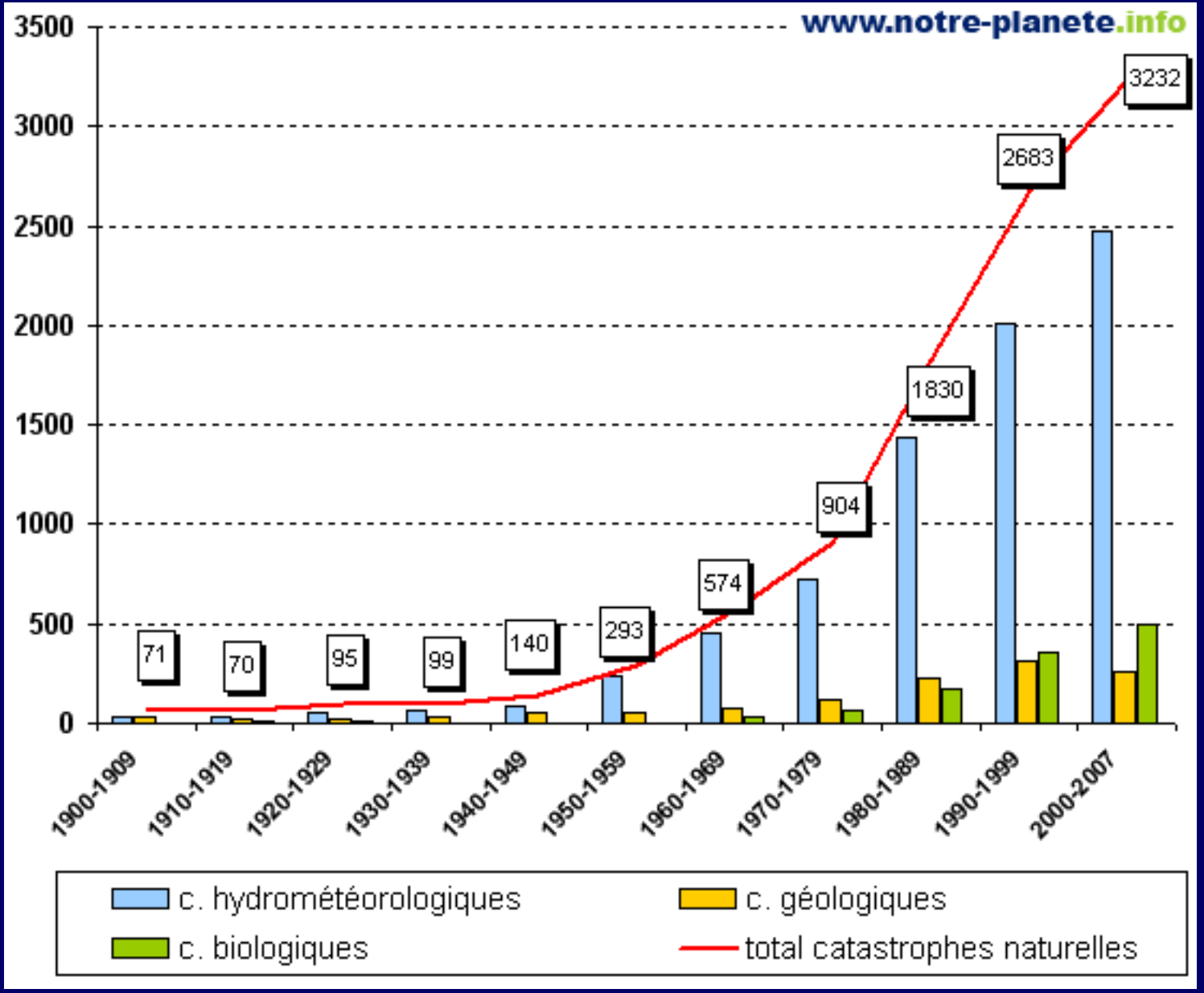
Event generated attitude change:

The logical lattice and social network unhinged by events



Catastrophes from climate change is increasing

Source: ICSU



When attitudes and relations are unhinged, they can be reconfigured !

- *Re-connecting* the dots !

Seven redefining events after World War II

1. *Hiroshima*
2. *Silent Spring*
3. *Chernobyl*
4. *Poverty*
5. *Limits to Growth*
6. *Climate Change - Global Warming*
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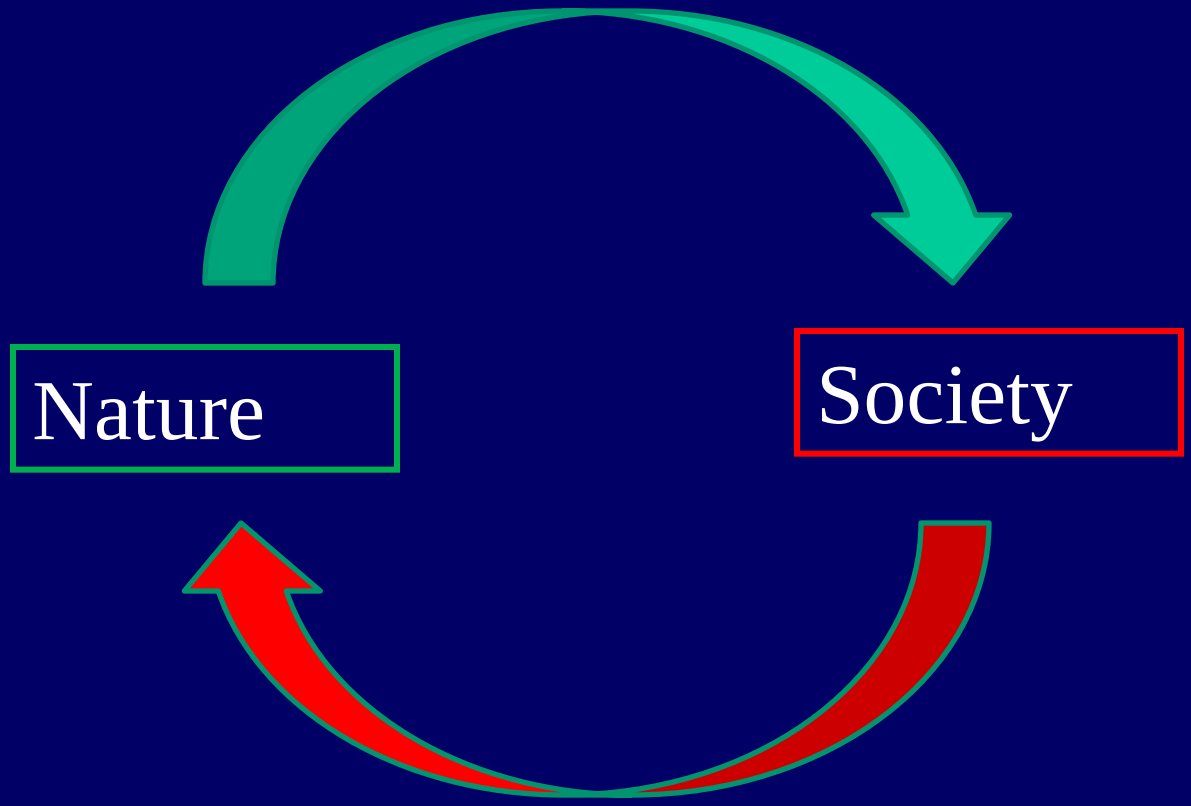
Tasks

- Agenda for integrated research
- Agenda for political communication
- Agenda for public information

New causal maps: Circular causation - need for *integrated research*



Take home lesson :

- We cannot change the laws of nature.
- But we can change how humans act.
- Hence we have to model not just the processes of nature,
- But also
  - map the human causes of and
  - translate them into feasible policies

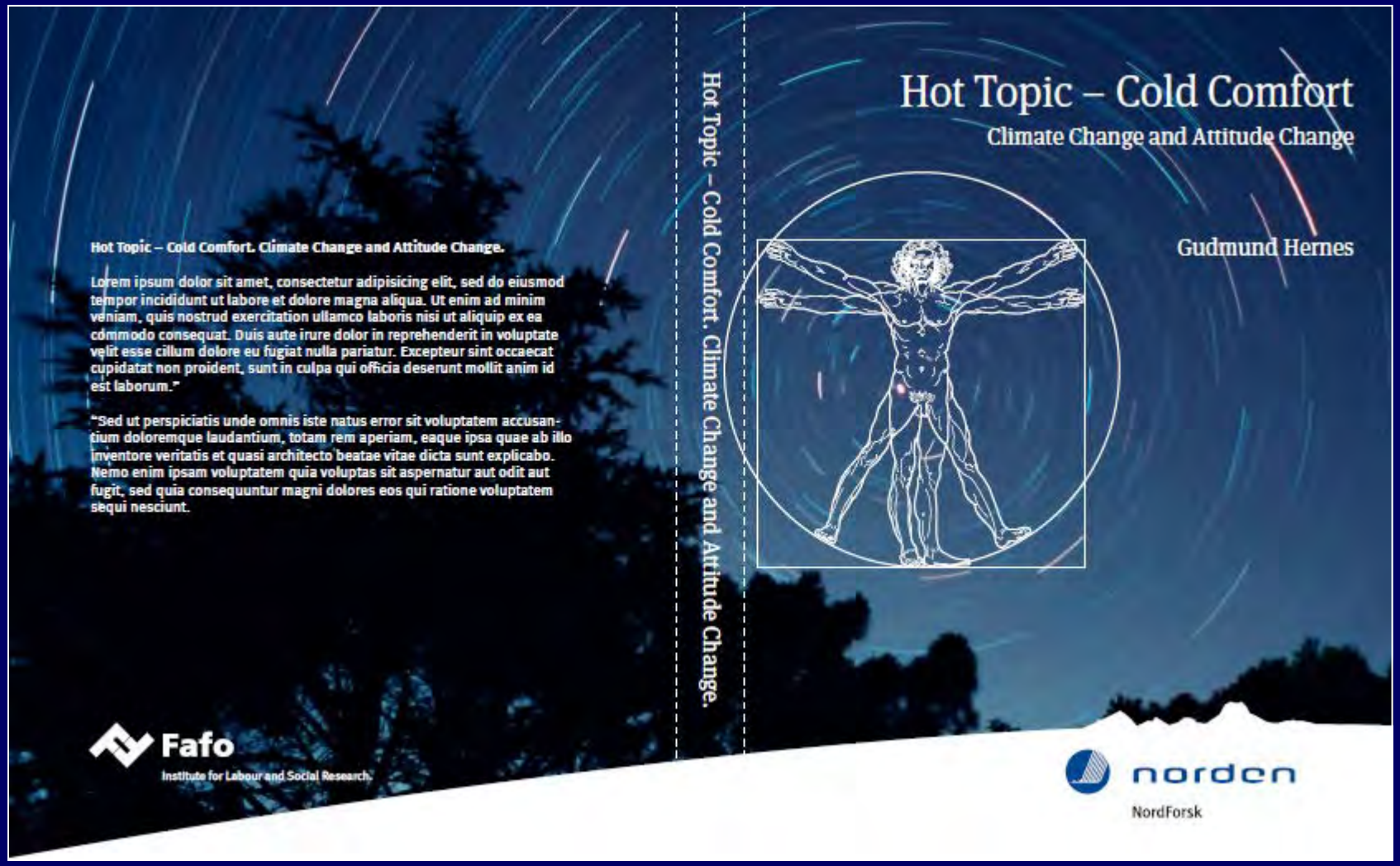
More than that:

- When the laws of nature are triggered and mediated by human activities and their consequences are social and global
- In order to change our human condition
- We need to integrate knowledge from many different fields
  - Spanning from physics and biology to economics, sociology, engineeering and medicine

2010 - 2050

- The greatest challenge for humanity ever !

Natural and social science - taking charge of the future?



Implications for educational planning

- Educational planning as resistance to change
  - Educational theories/ideologies/paradigms embedded in networks of scholars, administrators, politicians
    - What is the best way?
    - Orthodoxies
- Events resetting the agenda for education ?

Events resetting the educational agenda

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demokratie leben

Dr. H. Kaminski (w. spectacles) in the "Sputnik" room of the observatory; telescope left
Source: dpa

Full Size View

categories

Culture
Economy
Education
- Sputnik shock
Society
Sports

Education

Sputnik shock

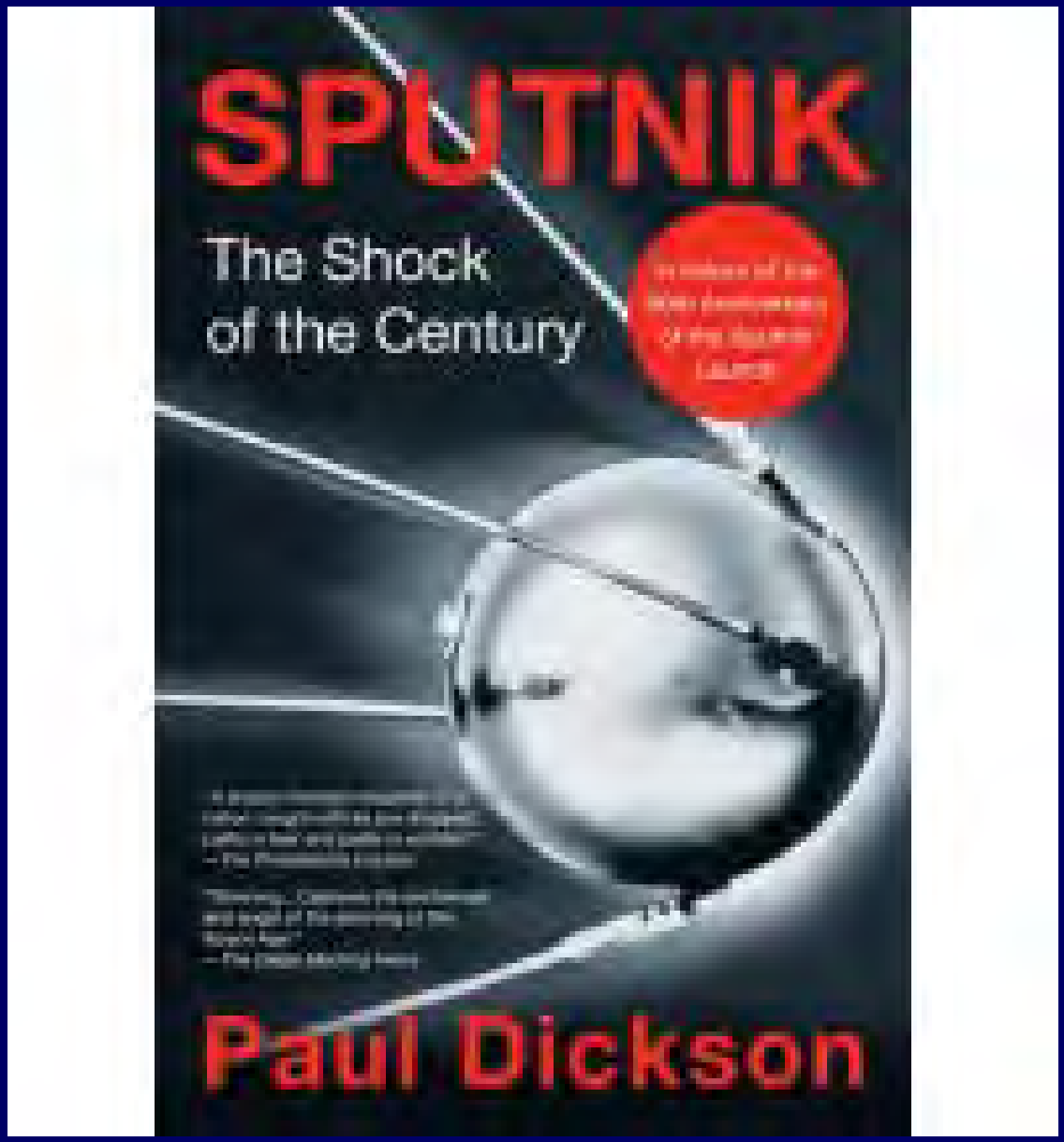
The public observatory in Bochum receives signals from Sputnik, the Soviet satellite that panics the Americans. Star wars have begun!

When on 4 October 1957 the USSR becomes the first country to put a satellite in space, the Sputnik shock rudely awakens the Americans. This means, they say, the Russians can now the US with their intercontinental missiles!

Three days after the launch, an engineer by the name of Heinz Kaminiski receives the signals at the observatory in Bochum, the only European facility to make contact with the satellite.

Kaminiski founded the public observatory, the Volkssternwarte, as part of the town's adult education centre (VHS), as early as 1946. He wants to alter people's "inner orientation" by giving them a fresh perspective on the earth - celestial political education funded by the state government. Heinz Kaminiski wants to look up at the stars - and down at the planet Earth.

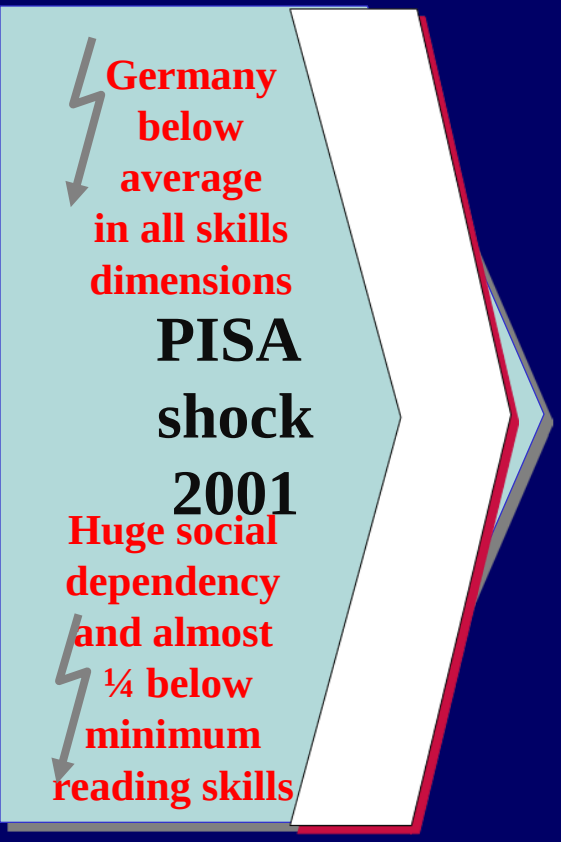
He goes on to be become the director of the Institut für Weltraumforschung (Institute for Space Research), one of several offshoots of the observatory.


SPUTNIK
The Shock of the Century
Paul Dickson

Can events for educational planning be planned?

The „PISA shock“ of 2001 made education an issue of national interest and triggered major policy changes

Dr. Jörg Dräger - July 26th, 2012



CESifo Press Service

Research Findings

After the PISA Shock: Pointers for an Educational Reform

The PISA shock still reverberates throughout Germany. Newspaper articles discuss reforms for our schools and universities, while committees at federal and state level are engaged in a frenetic search for improvements to the current educational system. They all come up with suggestions that schools should be allocated more funds.

But is money the solution to all things? According to Thomas Fuchs and Ludger Woessmann, researchers at the Ifo Institute, it is far more important to reform the educational institutions themselves. Based on the findings of the PISA study and of other surveys, they show that around one fourth of the international difference in student performance revealed by the PISA study can be accounted for by the institutional differences in the countries considered, while the financial endowment of those institutions barely made a difference in performance.

What kind of reforms should be introduced to the school system's institutional structure? From an economic standpoint, some areas can clearly be improved. First, the application of external exams — i.e. exams free of influence by the teaching personnel in the schools themselves— helps to ensure a better overall quality level. Second, schools should enjoy more autonomy in the selection of teachers and textbooks, and in how they shape budget allocations within the school itself. Each school knows best, after all, where its shoe pinches.

The effectiveness of the above measures is corroborated by a further finding of the research team, which shows that pupils of private schools, such as those run by churches, achieve better performance levels than do those attending public ones.

There is still the fact that student performance depends to a great extent on the student's family background, as measured by parental education, parental occupation or the number of books at home, a fact that ought to be born in mind when formulating suggestions for reform of the (public) educational institutions.

T. Fuchs & L. Woessmann: *What Accounts for International Differences in Student Performance? A Re-examination using PISA Data*, CESifo Working Paper No.1235

Learning from disasters

Learning from disasters

- Planning for disasters
  - UNESCO: Education for Disaster Risk Reduction (DRR)
- The danger: Preparing for the last war
  - «Maginot line» of education ?

Haiti - Source: Unesco

Educational content

- Curriculum –-» ‘Curriculismism’
- Bookish bias
- Can an education be more organized around a sequence of events?
- From «What every child needs to know»
- To «What every child needs to experience»
- Which experiences are transformational?
- From curriculum to «eventium» ?

The Educational Experiences That Change a Life

The intellectual glamour couple of Oak Forest High, Frank Lloyd Wright's Baghdad, a draconian English boarding school ... Comments (6)

Spencer Tucker

Saturday Morning at the Museum

By MICHAEL BLOOMBERG, *Mayor, New York City*

When I was growing up, Saturday mornings meant one thing only to me: a trip to the Boston Museum of Science. I loved science — still do — and there was nowhere else I'd rather be. The museum's instructors would give these fascinating two-hour lectures and demonstrate the laws of physics using hands-on experiments. They would also quiz us on the museum's exhibits, and all the kids would try to show off by having every answer. Thos visits to the museum stretched my mind in ways that my schoolwork didn't. They taught m to listen, question, test and analyze. Figuring out how things work — and how they can wo better — is what led me to become an engineer, a technology entrepreneur, a philanthropis and a mayor. I guess I can count my lucky stars that there were no Saturday morning cartoons when I was kid.

Philip Sinden

A Liberal Nun in Baghdad

By ZAHA HADID, *architect*

The teachers who taught sciences in the school I went to when I was growing up in Baghda were all from the university, and so the levels of the science courses were really incredible. The headmistress, who was a nun, was very interested in the education of women, so in a way she was a kind of pioneer in that part of the world. We were all these girls from different religions — Muslim, Christian, Jewish — we had no ideas what our religions were As in so many places in the developing world at the time, the '60s, there was an unbroken belief in progress and a great sense of optimism. People respected history but also believed in liberating themselves from the pressure of history. They were creating a new Arab state democratic, liberal, open to education, and that carried with it also an interest in building. One reason I became interested in architecture is that I remember being taken to an exhibition — I was only 6 or 7 years old, but I remember seeing models and things — of Frank Lloyd Wright's plan for Baghdad.

Rahm Emanual:

- You never want a serious crisis go to waste!
- It is an opportunity to do what you think you could not do !
- Opportunity in the confluence of crises
- But need for integrated science and social science !

http://www.nordforsk.org/en/publikasjoner/hot-topic-cold-comfort-climate-change-and-attitude-change/view