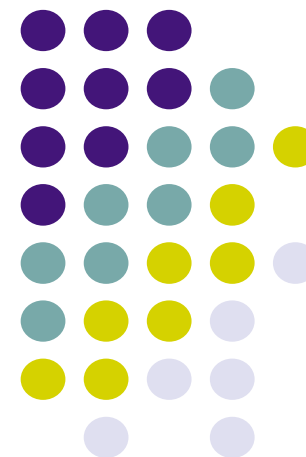


Re-calibrating the Climate Challenge

- learning from history, lessons for the future

Climate Change & Scenarios
VCCCAR Climate Adaptation Workshop
Melbourne
17th November 2010

Ian T. Dunlop
Director Australia 21
Member, Club of Rome
Chairman, Safe Climate Australia
Deputy Convenor, Australian Association for the Study of Peak Oil

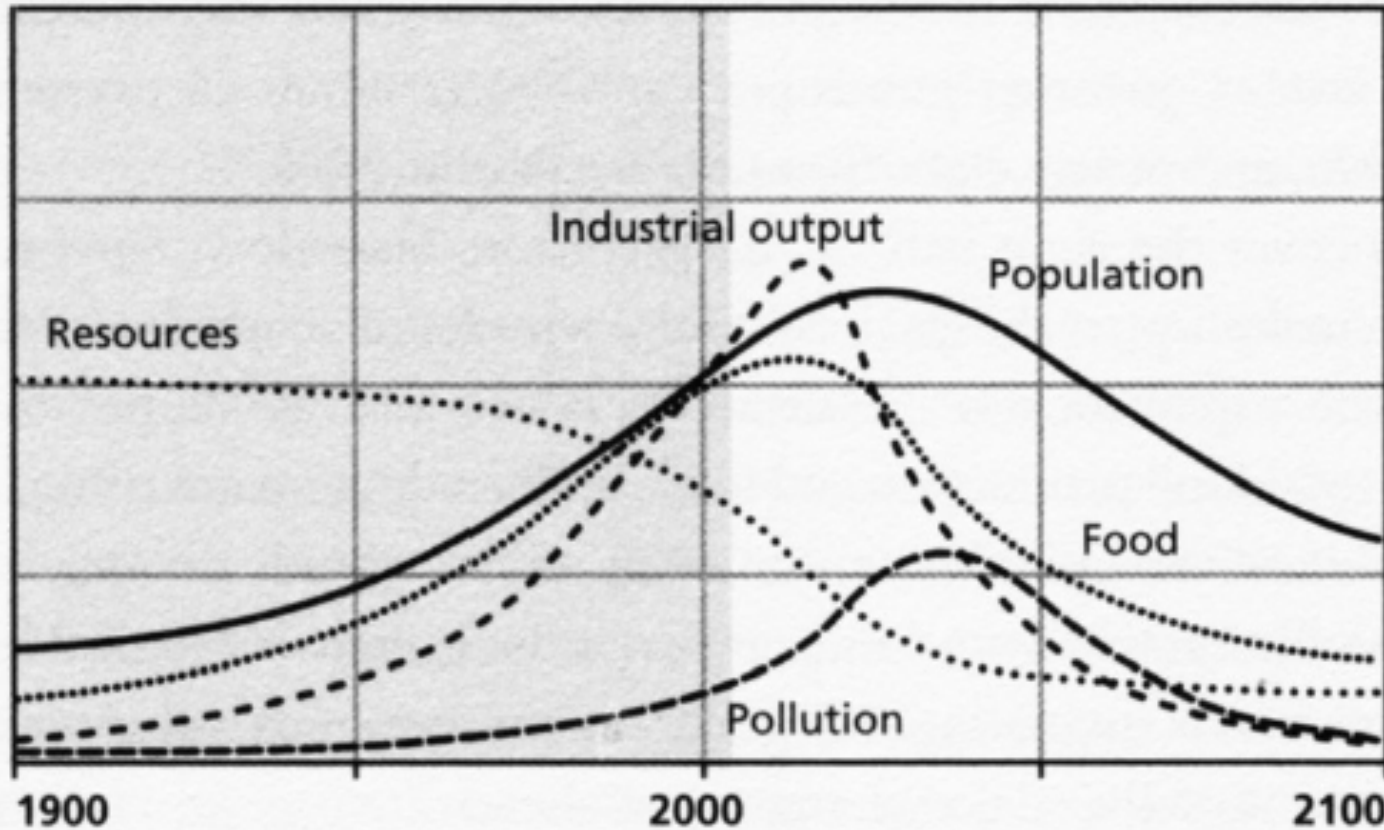


Limits to Growth 1972

- base scenario “business-as-usual”



State of the World



30 years of history is almost exactly in line with the 1972 estimates.

The inflexion point is near, evidence of its impending arrival increases daily, yet no action has been taken to address the consequences.

How long do we continue to sit as rabbits in the headlights?

Limits to Growth

-the key messages in 1972



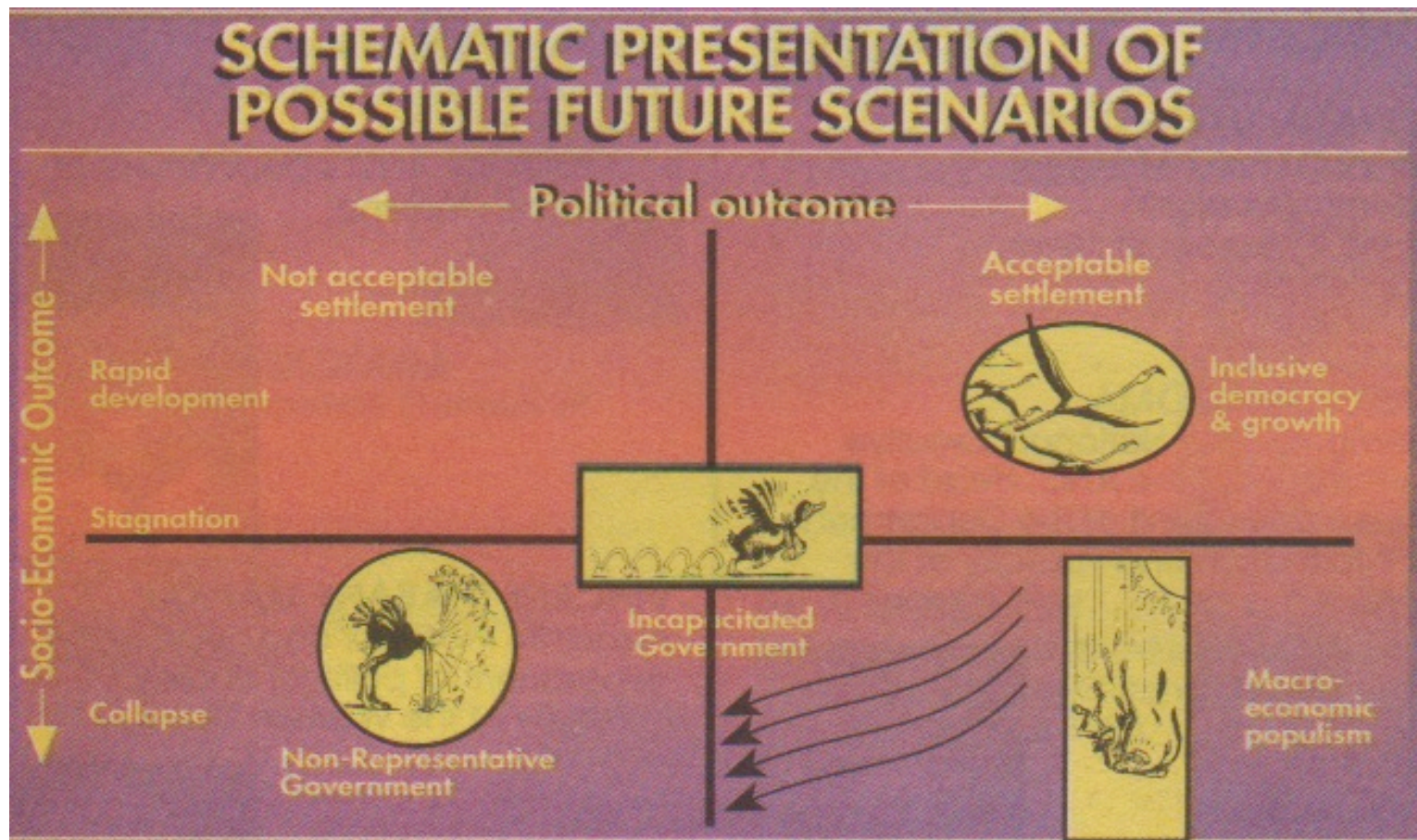
- The human ecological footprint grew rapidly from 1900-1972
- It cannot continue to grow at historical rates
- It is possible, even likely, that the human ecological footprint will overshoot the carrying capacity of Planet Earth (*it happened in 1986*)
- Once sustainable limits have been exceeded, contraction is unavoidable
- Overshoot can be avoided through forward-looking global policy
- It is important to act as soon as possible, that is in 1975 (*nothing happened*)

The Fundamental Scientific Message:

“Global Society is likely to overshoot – and then be forced to decline or collapse – because of significant reaction delays in the global economy. These are the unavoidable lags in the perceptions and localisations of global limits, the significant institutional delays involved in (democratic) decision-making, and the biophysical lags between implementation of remedial action and the improvement of the ecosystem”

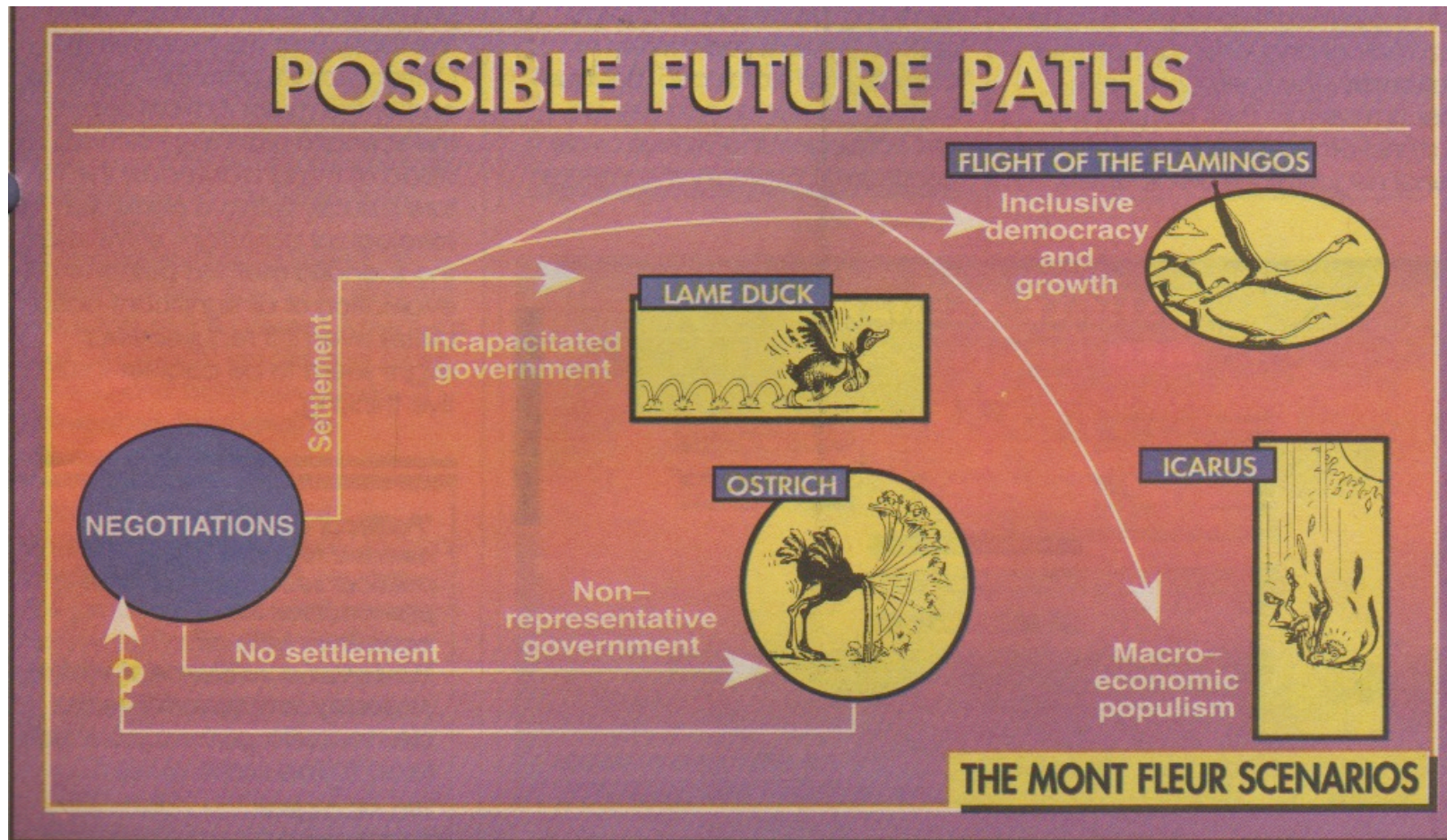
South Africa

The Mont Fleur Scenarios - 1991



South Africa

The Mont Fleur Scenarios - 1991



Climate Uncertainty - no excuse for inaction



“If you wait for 100% certainty on the battlefield, something bad is going to happen.”

General Gordon R. Sullivan, former Chief of Staff, US Army.
“National Security & the Threat of Climate Change”, CNA Corporation 2008

Bad Things are happening:

- European Heatwave 2003
- Hurricane Katrina, New Orleans 2005
- Greek Bushfires 2007
- Californian Bushfires 2007
- Cyclone Sidr, Bangladesh 2007
- Cyclone Nargis, Myanmar 2008
- Darfur, ongoing extreme drought
- North Queensland floods, 2009
- Victorian Bushfires, 2009
- East Siberian Arctic Shelf methane emissions identified 2008-10
- High temperatures and/or flooding 2010
 - USA
 - Northern Europe
 - Russia
 - Pakistan
 - China
 - Japan etc
- Russia wheat harvest destruction 2010
- Record global temperatures 2010

Are these events due to global warming ?

Would these events have happened at pre-industrial levels of CO₂?

“None can be put down to global warming exclusively, but they are in line with its forecast evolution”

“Almost certainly not”

Time to face reality

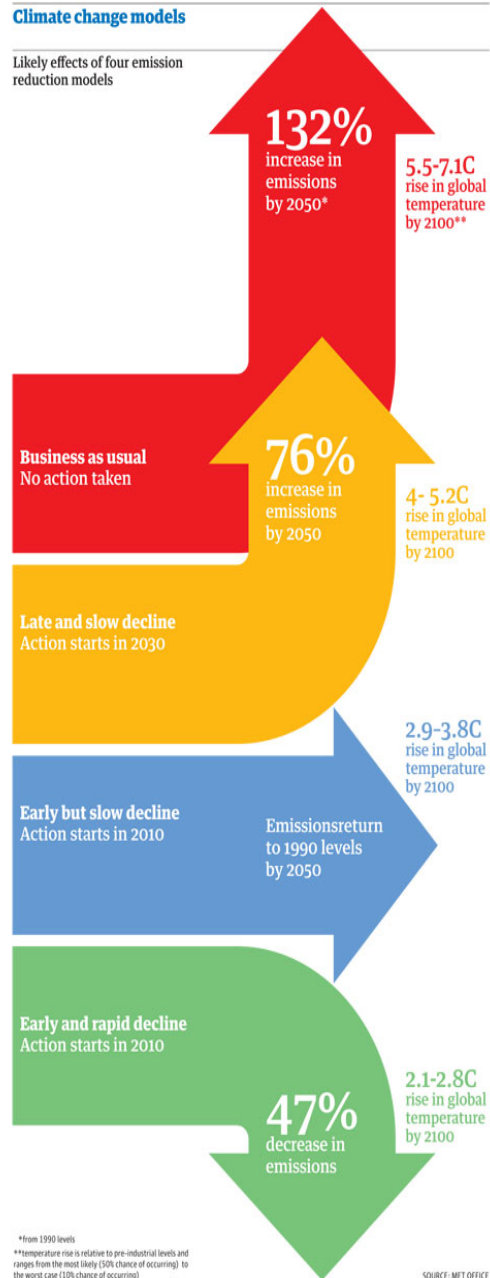
- risks are escalating fast



- Human carbon emissions accelerating
- Rapid summer melt of Arctic sea ice
- Decline in natural carbon sinks
- Tipping point for ice sheet loss & glaciers at lower temperatures than expected
- Large increase in projected sea level rise
- Increased ocean acidification
- Initial indications of Arctic permafrost & seabed methane hydrate (clathrate) emissions

Climate change models

Likely effects of four emission reduction models



The implications of procrastination



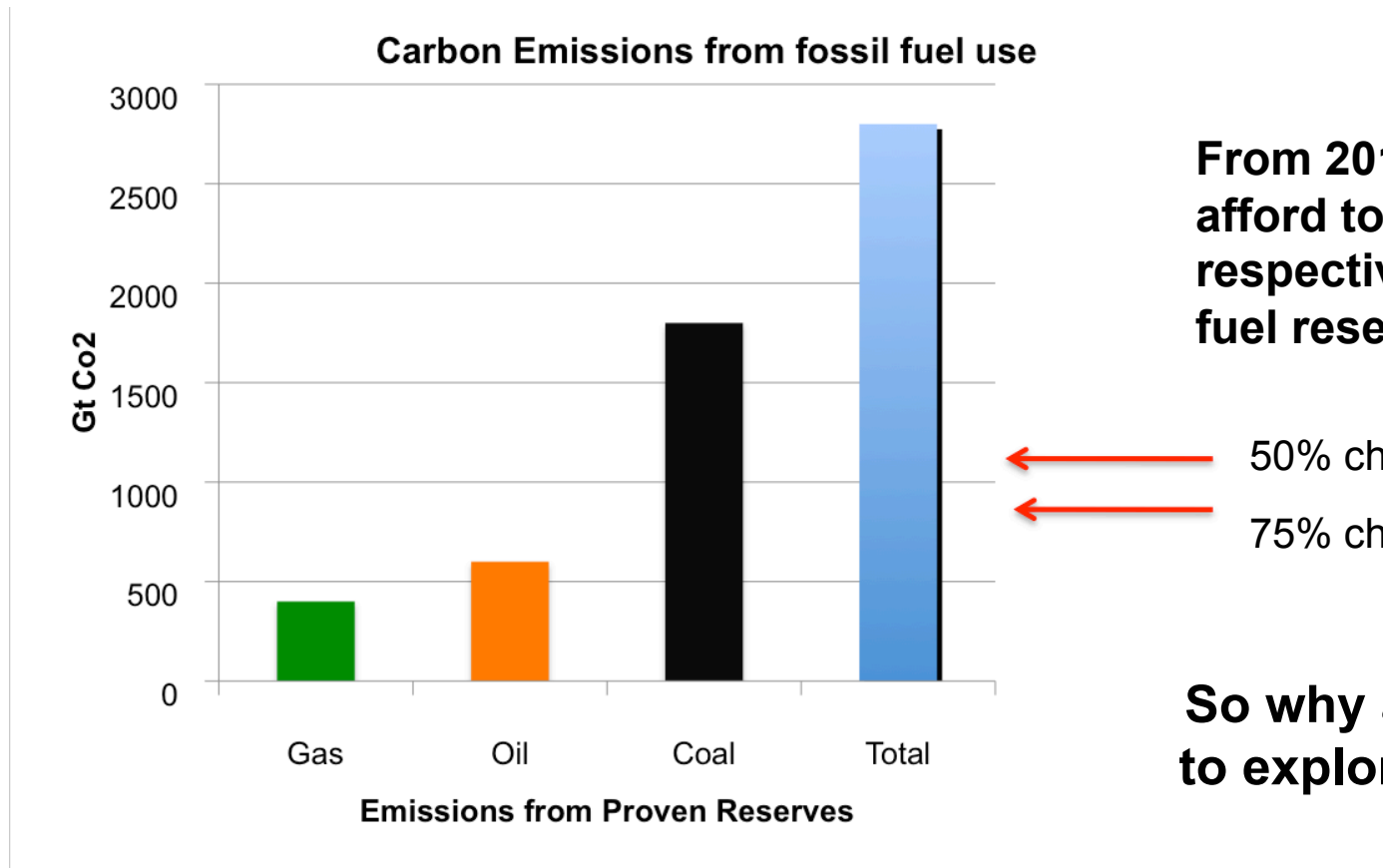
“All of this serves to underscore the conclusion that the sooner an emissions trading scheme can be implemented the better. Too much time has already been wasted – for which the Australian community will necessarily pay a high price”

**Federal Treasury Red Book
– released 1st October 2010**

Source: Meteorological Office, UK

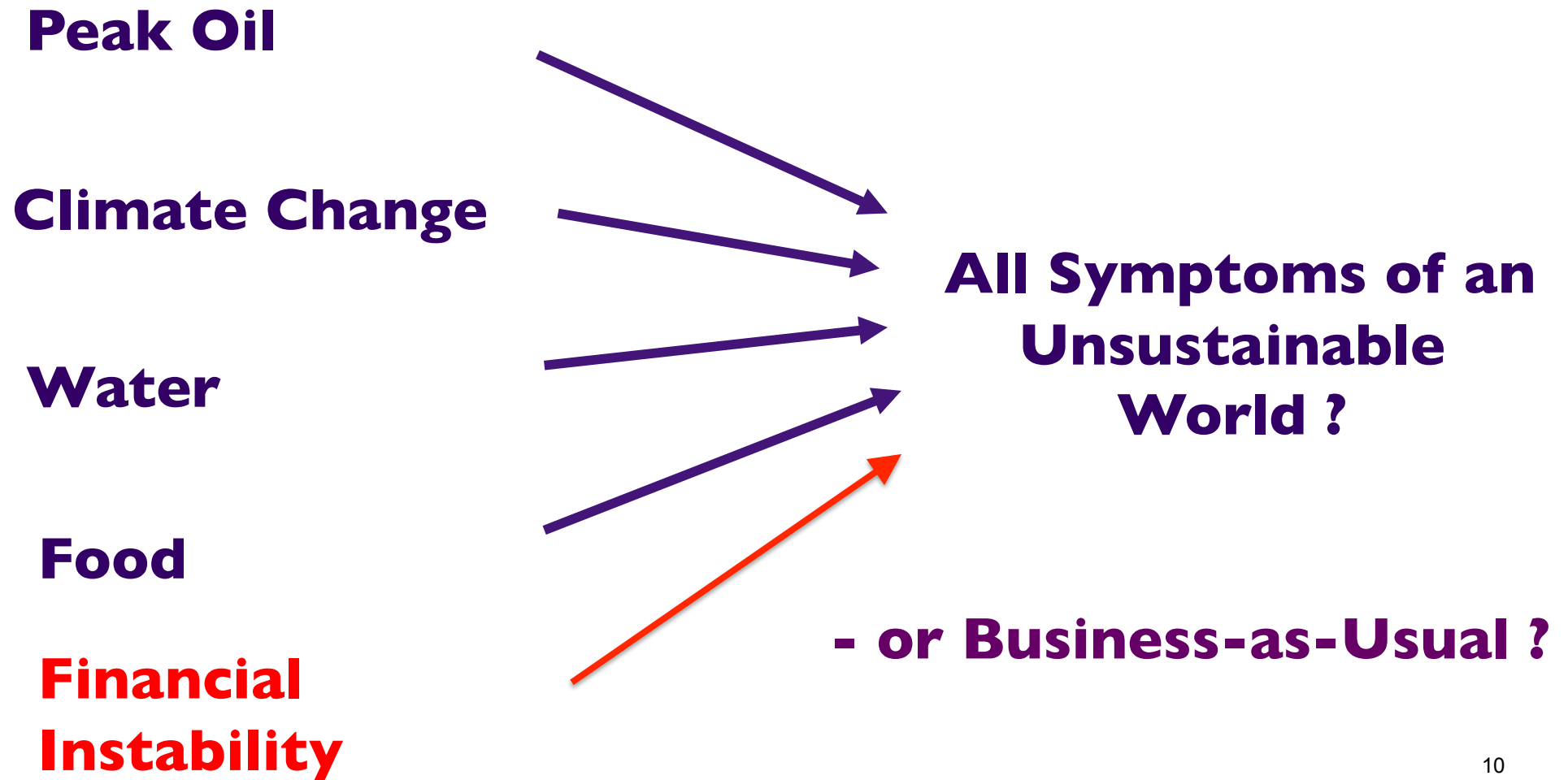
Linking Climate & Energy

- global carbon budget to avoid dangerous climate change



Source: Meinhausen et al, Greenhouse-gas emission targets, Nature, April 2009

The Great Convergence

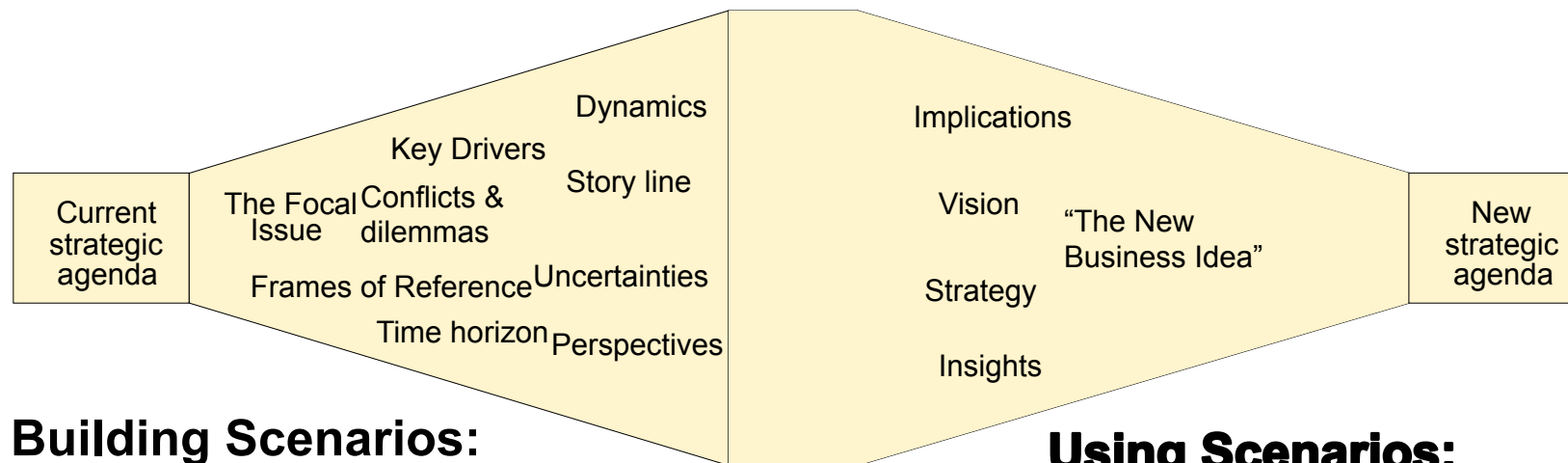
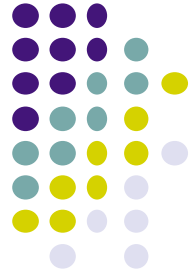


Scenarios - a means of handling complexity realistically



- Plausible, pertinent, alternative stories about the future
- Tools for Learning
- NOT projections, predictions or preferences
- Challenge assumptions
- Initially focus on questions NOT answers
- To be meaningful, must result in policies, strategies and contingency plans

Building & Using Scenarios



Building Scenarios:

– thinking about the future
(widening perspectives)

Using Scenarios:

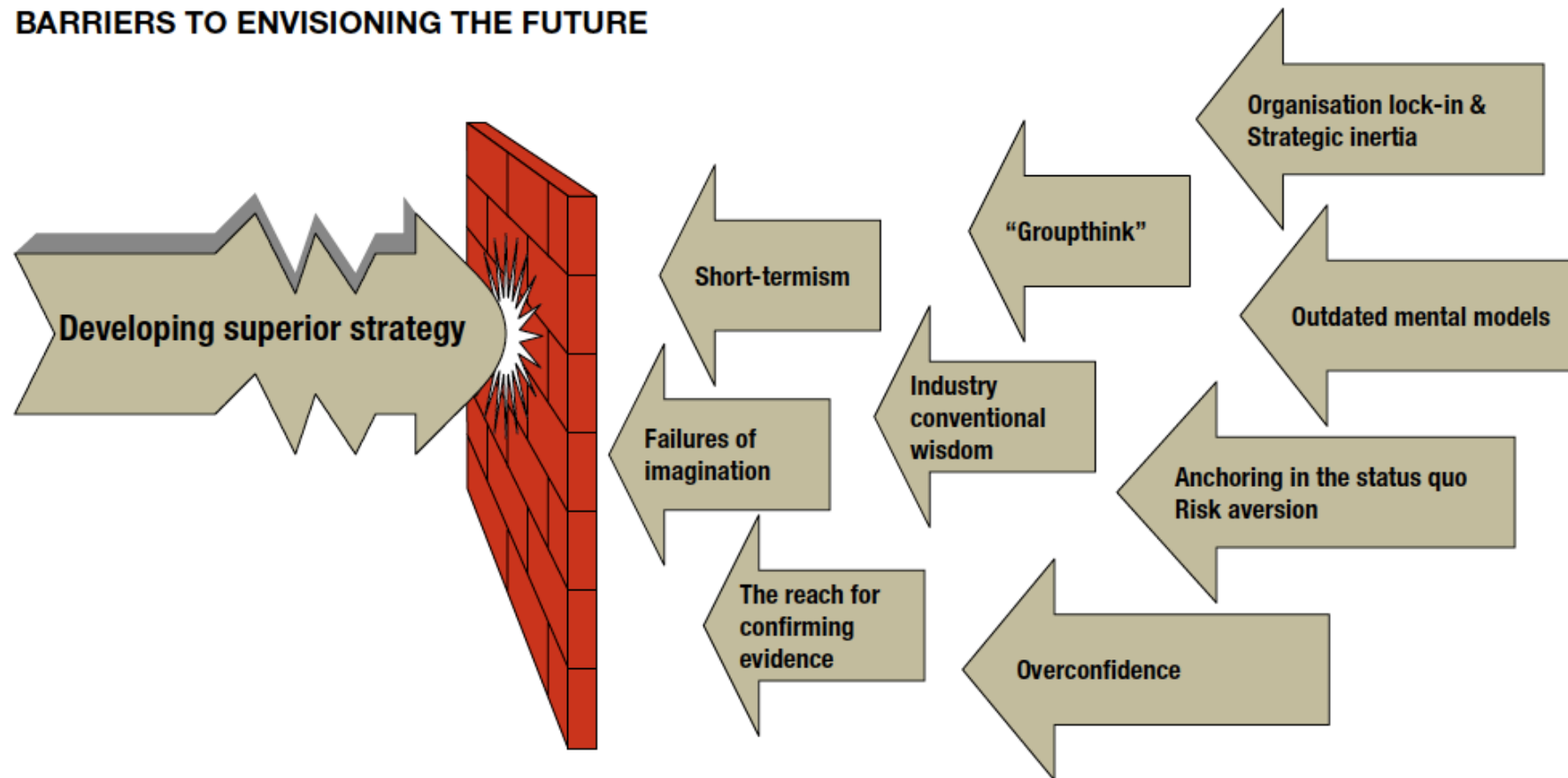
-acting on the future
(widening options)

Source: Shell

Scenarios expose barriers to acceptance & action



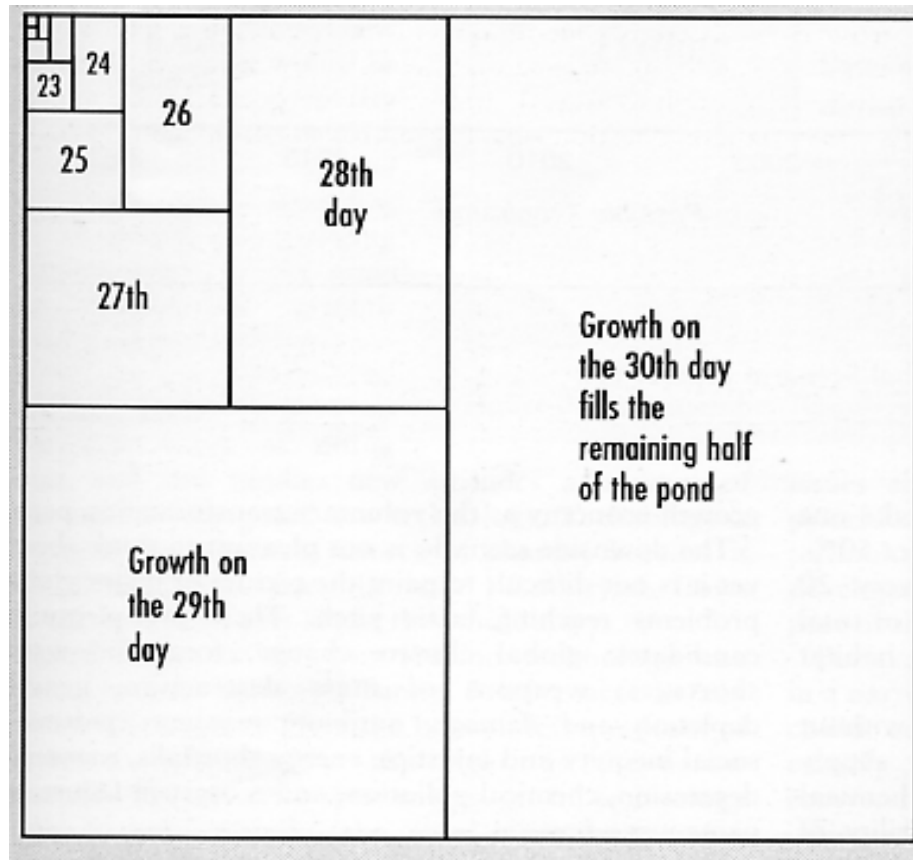
BARRIERS TO ENVISIONING THE FUTURE



Exponential growth - the ultimate disruption



A water lily doubles size every day for 30 days



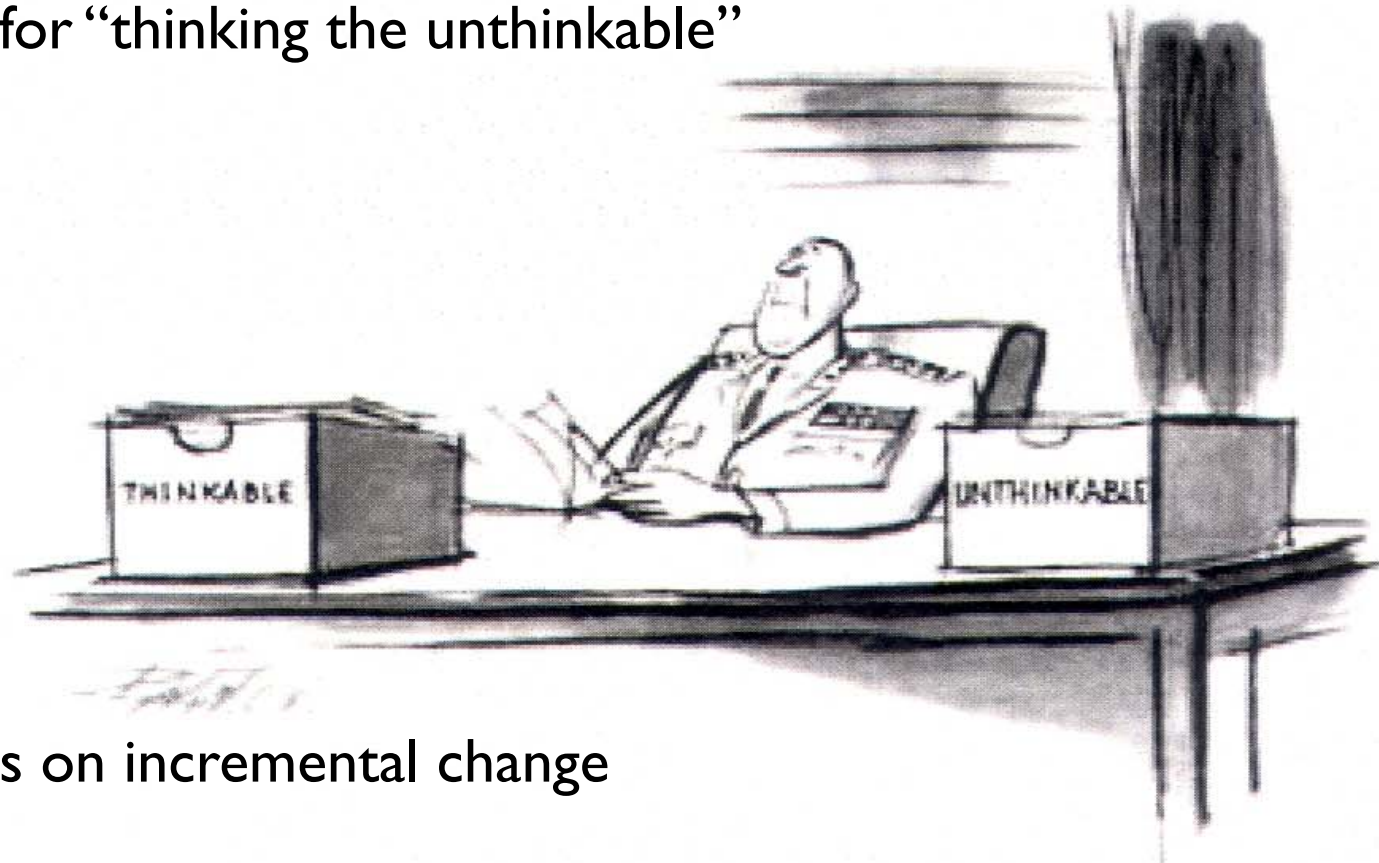
**How close are we to the
29th day, or the 30th day,
for :**

- water**
- energy**
- food**
- the planet ?**

Scenarios are not being used effectively in the climate debate



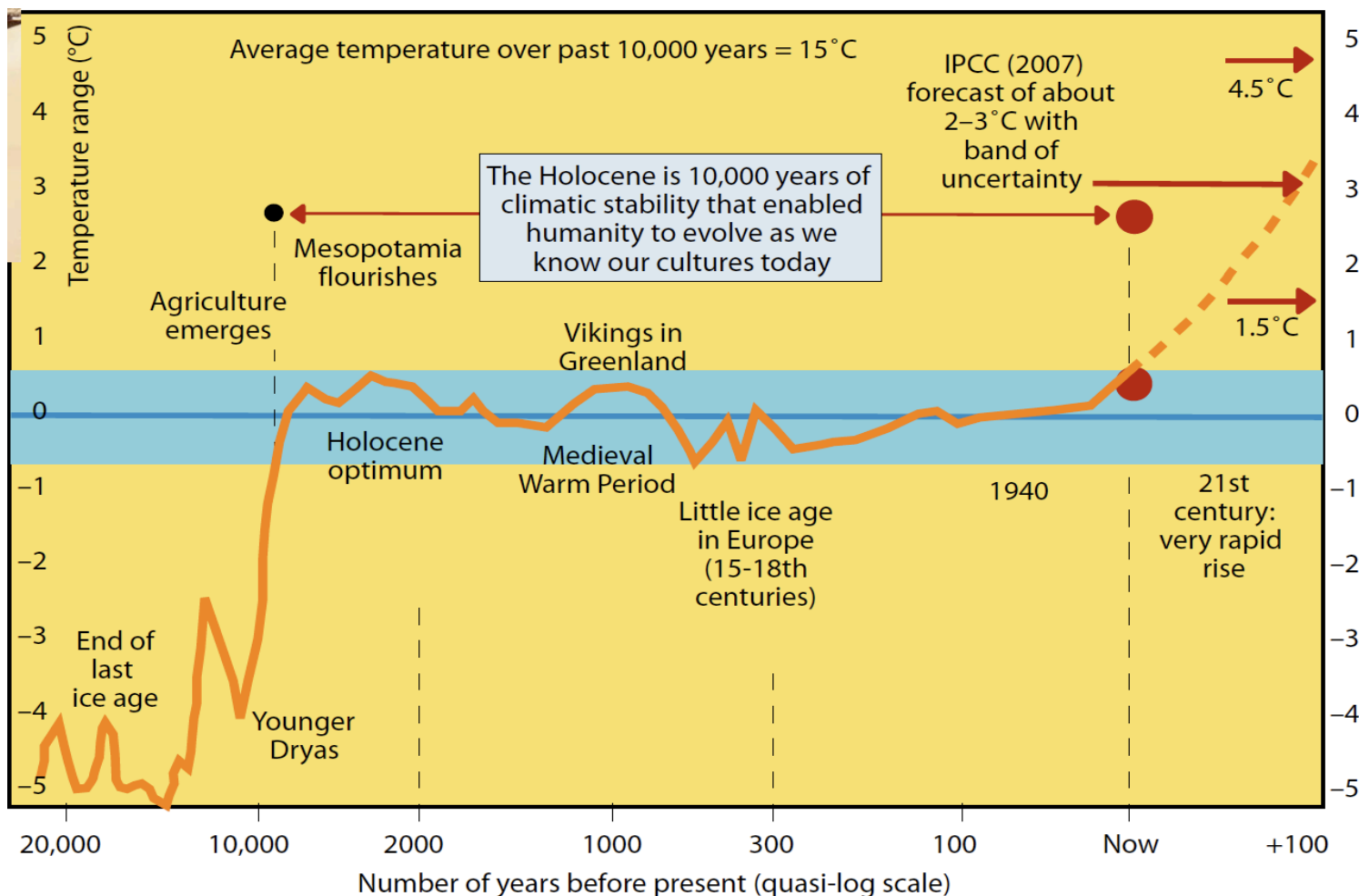
- should allow for “thinking the unthinkable”



- not just focus on incremental change

Source: The New Yorker, 1965

We have to re-enter the Safe Climate Zone



Source: Robert Corell, Heinz Center

Ian Dunlop 2010

The Real Task



- Latest science suggests 2°C temperature rise is far too high:
 - non-linear effects are already occurring at 0.8°C rise
 - tipping points may be already committed
 - we are probably well into the danger zone already
- The new objective, for a safe climate - restore Arctic summer sea ice
 - stabilisation target - around 300ppm CO₂ or 350ppm CO₂e
 - not the 450-550ppm CO₂e currently being negotiated
- This requires developed world emission reductions of:
 - 45-50% by 2020, not 5-25%
 - 95-100% by 2050, not 50-80%
 - and re-absorption of some carbon from atmosphere
- A far greater task than is being acknowledged politically or corporately

- we have the solutions, given the will -

Re-calibration required !



- Existing political process will not deliver
 - trying to solve the wrong problem with the wrong policies
- Working “within the system” has failed
- A circuit-breaker is required to move:
 - from incrementalism to transformation
 - political & corporate mindsets beyond their comfort zone
- A new approach must encompass:
 - strong emphasis on community awareness
 - refocusing progressive organisations on far more ambitious objectives and preparedness to work around “the system”
 - exerting peer pressure on, and giving support to, national & global leaders for transformative change
- **Emphasise Opportunities, not Problems**

In short - Emergency Action



**“Management is doing things right
Leadership is doing the right things”**

Peter Drucker

- time we moved to leadership -

**“Those who cannot remember the past are condemned to
repeat it”**

George Santayana

Thank You

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