

  
**The Actuarial Profession**  
making financial sense of the future

**EARNIX**  
 **Oliver James**  
a s s o c i a t e s

## **GIRO Conference and Exhibition 2012**

Juggling uncertainty the actuary's part to play

© 2010 The Actuarial Profession • [www.actuaries.org.uk](http://www.actuaries.org.uk)

  
**The Actuarial Profession**  
making financial sense of the future

## **GIRO Conference and Exhibition 2012**

# **Practical management of emerging risk with a climate change case study**

Trevor Maynard, Lloyd's

© 2011 The Actuarial Profession • [www.actuaries.org.uk](http://www.actuaries.org.uk)

---

## Practical management of emerging risks – with climate change case study

---

### Agenda

- Lloyd's approach to managing emerging risks (not an advertisement!)
- Climate change as a case study

---

## Why have an emerging risks team?

---

- “To ensure that the Lloyd's market is aware of potentially significant emerging risks.”
- To avoid repeats of systemic issues, such as asbestos
- The risk environment is constantly changing

## Emerging risk principles

- Adopt a clear definition of an emerging risk, including medium and long-term issues
- Recognise at board level that emerging risks need explicit management
- Consider emerging risks from a multidisciplinary viewpoint
- Keep a track of all material risks
- Consider a broad range of scenarios
- Make allowance for behavioural factors
- Share risks with the market and learn from a variety of experts.

© 2011 The Actuarial Profession • www.actuaries.org.uk

4

## Adopt a clear definition...

“An issue that is perceived to be potentially significant but which may not be fully understood or allowed for in insurance terms and conditions, pricing, reserving or capital setting.”

© 2011 The Actuarial Profession • www.actuaries.org.uk

5

## Share risks with the market...



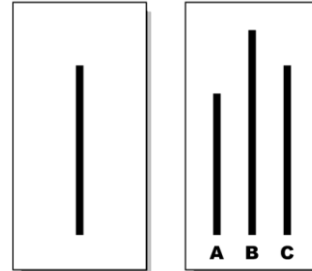
## Make Allowance for Behavioural Factors...

- Those involved in emerging risks management should be aware of behavioural issues e.g.
  - Cognitive dissonance
  - Herding
  - Anchoring of assumptions
- Scepticism around new, emerging risks
- 50 years of high quality research



## Make allowance for behavioural factors...

- Avoidance of ill defined problems
- Exploration bias: Expectations based on personal (recent) experience
- Media are selective - framing issues
- Numbing
- Collective blindness: rigid organisational beliefs
- Solomon Asch - Group pressure - Short is long
- Overconfidence of powerful people
- Temporal bubbles - pressures of now
- How to cope with lack of expertise



© 2011 The Actuarial Profession • www.actuaries.org.uk

8

## Consider a broad range of scenarios & Keep a track of all material risks

- Desk-based internet searches
  - Email newsletters / RSS feeds
  - Scientific journals and aggregators/ blogs
  - Yahoo Pipes
- Trialled different types of software – common problem of too much information and too many sources to analyse
- Develop relationships with other risk experts / organisations e.g.
  - Insurance Services Office - emerging issues panel
  - Risk centres at universities.
- Database of emerging risks (issued to Lloyd's managing agents)

© 2011 The Actuarial Profession • www.actuaries.org.uk

9

## Consider emerging risks from a multidisciplinary viewpoint...

- Managing agent representatives with responsibility for emerging risks
- Sharing information and learning
- Helping shape Lloyd's research agenda
- Cutting edge topics / expert speakers.



© 2011 The Actuarial Profession • www.actuaries.org.uk

10

## Learn from a variety of experts....

- Lighthill Risk Network
  - Aon Benfield, Catlin, Guy Carpenter and Lloyd's
  - Linking academia and insurance industry
- CRO Forum Emerging Risks Initiative
  - Allianz, Axa, Lloyd's, Munich Re, Swiss Re, Zurich
  - Collaboration e.g. solar storms
- Oasis – an open architecture loss modelling framework for the global community.

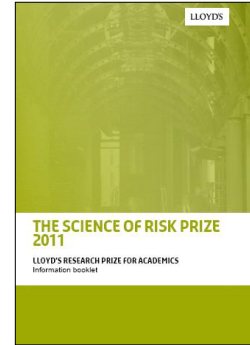


© 2011 The Actuarial Profession • www.actuaries.org.uk

11

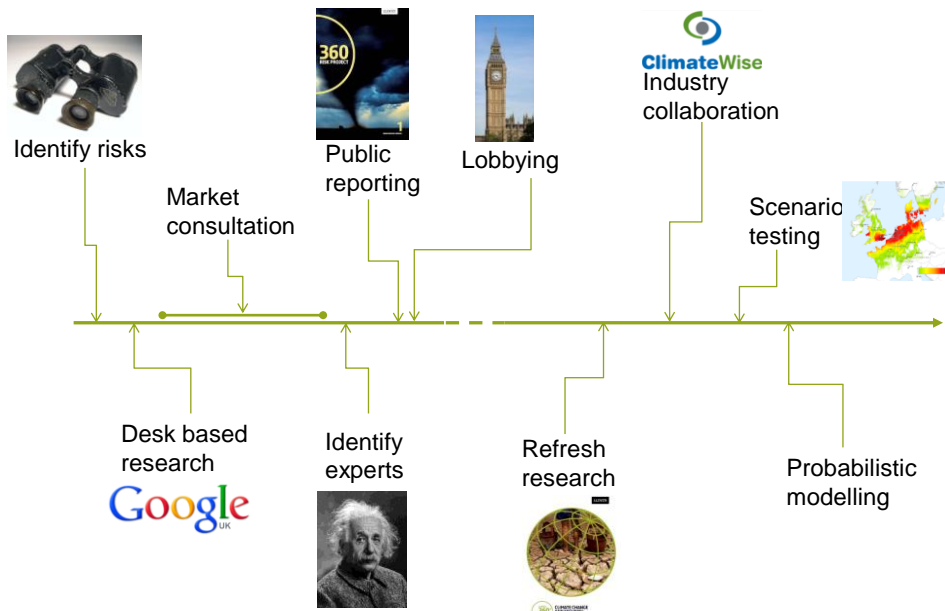
## Learn from a variety of experts....

- Now in its third year – objectives:
  - Broaden our understanding of risk and encourage new research into emerging risks
  - Develop stronger links between insurance and academia
- Awards in five risk categories in 2011 – behaviour, climate change, natural hazards, technology/biology & insurance ops
- Over 100 insurance executives, academics and other risk experts attended conference at Lloyd's
- 2012 Prize focusing on natural hazards and climate change.

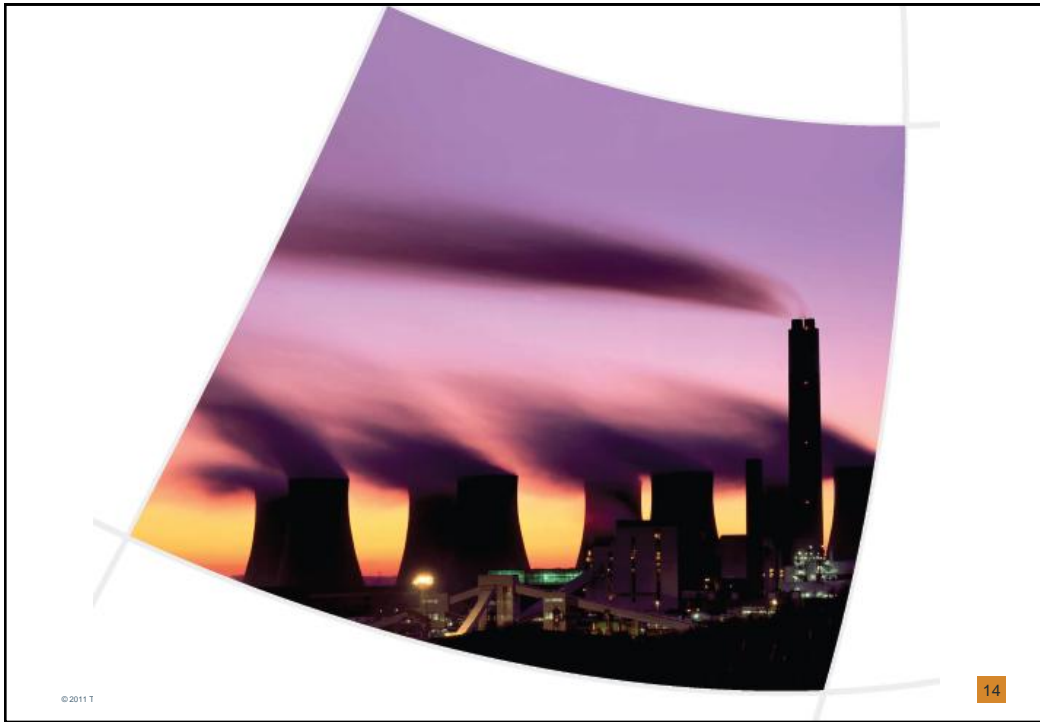


© 2011 The Actuarial Profession • www.actuaries.org.uk

12



13



## Behavioural factor: Temporal bubbles and pressure of “now”

- Climate change negotiators just before Financial Crisis 2008 and Copenhagen 2009?
- Urgent problems have taken focus away from important ones

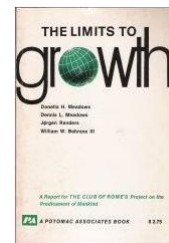
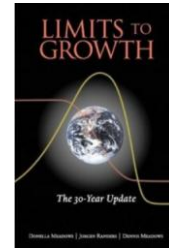


[http://en.wikipedia.org/wiki/File:Leviathan\\_Reactions.jpg](http://en.wikipedia.org/wiki/File:Leviathan_Reactions.jpg) No implied endorsement



## Behavioural factor: Chain processes hard to predict

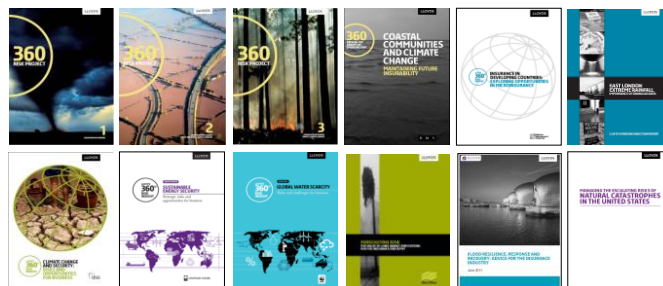
- REG project
- Actuarial profession funded
- Anglia Ruskin Uni experts
- Systems modelling of economy with mega trend forcings
- Scenarios and financial implications



© 2011 The Actuarial Profession • www.actuaries.org.uk

16

## Behavioural factors: Managing lack of expertise...



17

Adapting to Climate Change: Role of Insurance  
19 October 2011

## Behavioural factors: Media are selective

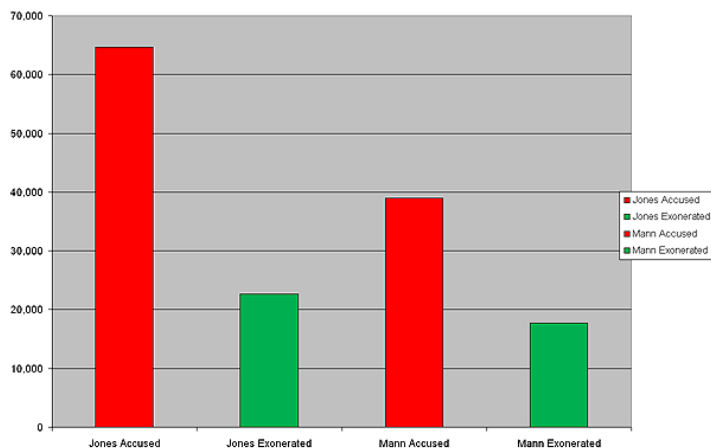
### “Climategate”

- November 2009 emails stolen from University of East Anglia’s Climatic Research Unit
- Controversy went viral and dubbed “Climategate”
- Main targets were Dr Phil Jones (CRU) and Dr Michael Mann (Pennsylvania State University)
- Accused by climate “sceptics” of hiding and fudging data
- Sceptics used emails to claim there was a massive international conspiracy to promote global warming
- Investigations shown allegations baseless and both scientists exonerated.

© 2011 The Actuarial Profession • www.actuaries.org.uk

18

## Behavioural factors: Media are selective

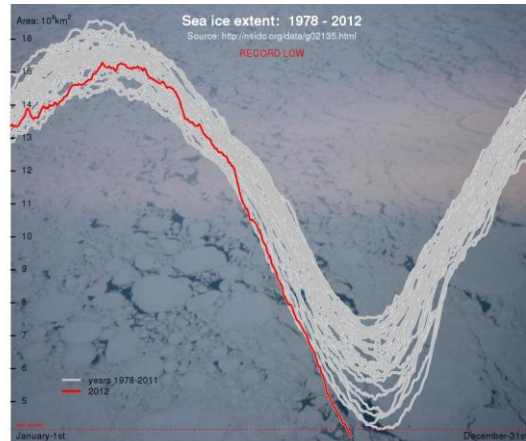


© 2011 The Actuarial Profession • www.actuaries.org.uk

19

## Behavioural factors: Numbing

- ¼ Volume 20 years ago
- Ice free in summer within 10 years?
- Just 5 Years ago IPCC thought 70!
- Albedo feedback



© 2011 The Actuarial Profession • www.actuaries.org.uk

20

## Behavioural issue: Representation bias

- Lloyd's report published 2012
- Arctic creating both opportunities and risks for businesses
- Arctic investment could reach \$100bn over next decade (mainly oil and gas, shipping)
- Huge uncertainties and knowledge gaps exist
- This is not the Gulf of Mexico



© 2011 The Actuarial Profession • www.actuaries.org.uk

21

## Behavioural issues: Avoidance of ill defined problems



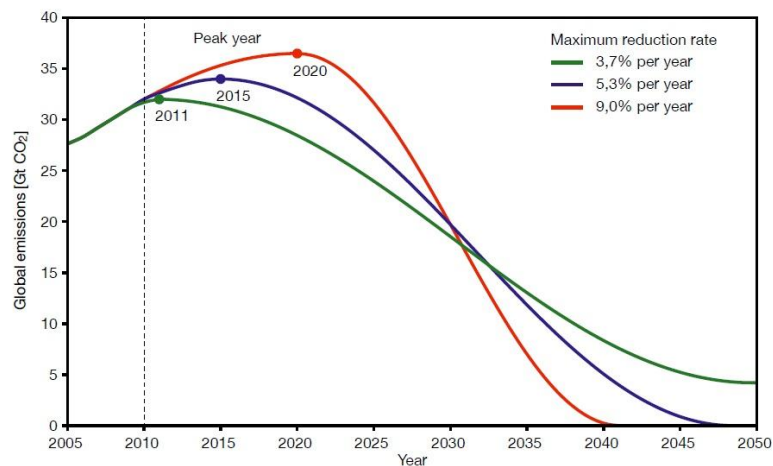
*"This CCRA has mainly examined the risks of a changing climate in the UK – not to the UK from abroad...."*

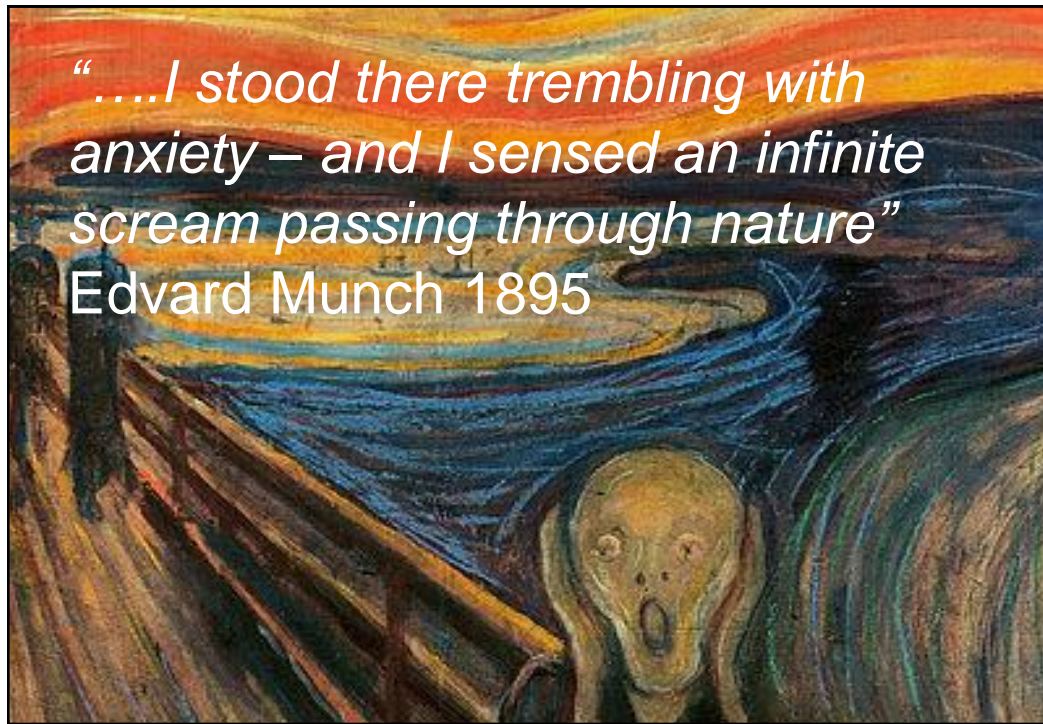
*"To minimise analytical complexity ... the CCRA does not build in societal change in assessing future risks..."*

*"Projected climate change poses a serious threat to America's national Security"*

*"Climate change acts as a threat multiplier for instability in some of the most volatile regions of the world"*

## Behavioural issue: Overconfidence of powerful people





**If you have been affected by any of the issues in this presentation....**

The Actuarial Profession  
making financial sense of the future

Welcome L\_maynard. View my account

Home » Your preferences

**Your preferences**

This is the profile you have provided. If you need to amend it, please do so here.

**Newsletter preferences**

**Practice area community preferences**

**Member interest group preferences**

**Your groups**    **Other groups**

Non Executive Directors	subscribe
Norwich Actuarial Society	subscribe
Pensions Buy-out	subscribe
Resource and Environment	subscribe
Shanghai Group	subscribe
Sole Practitioners and Small Firms	subscribe
Solvency II for PMI	subscribe

Click here!

## Get to know your climatewise rep... ...or join

### Collaborations:

- Carbon capture and storage
- Sustainable claims
- Health impacts
- Risks and opportunities for investment
- Building resilience in underinsured markets

