



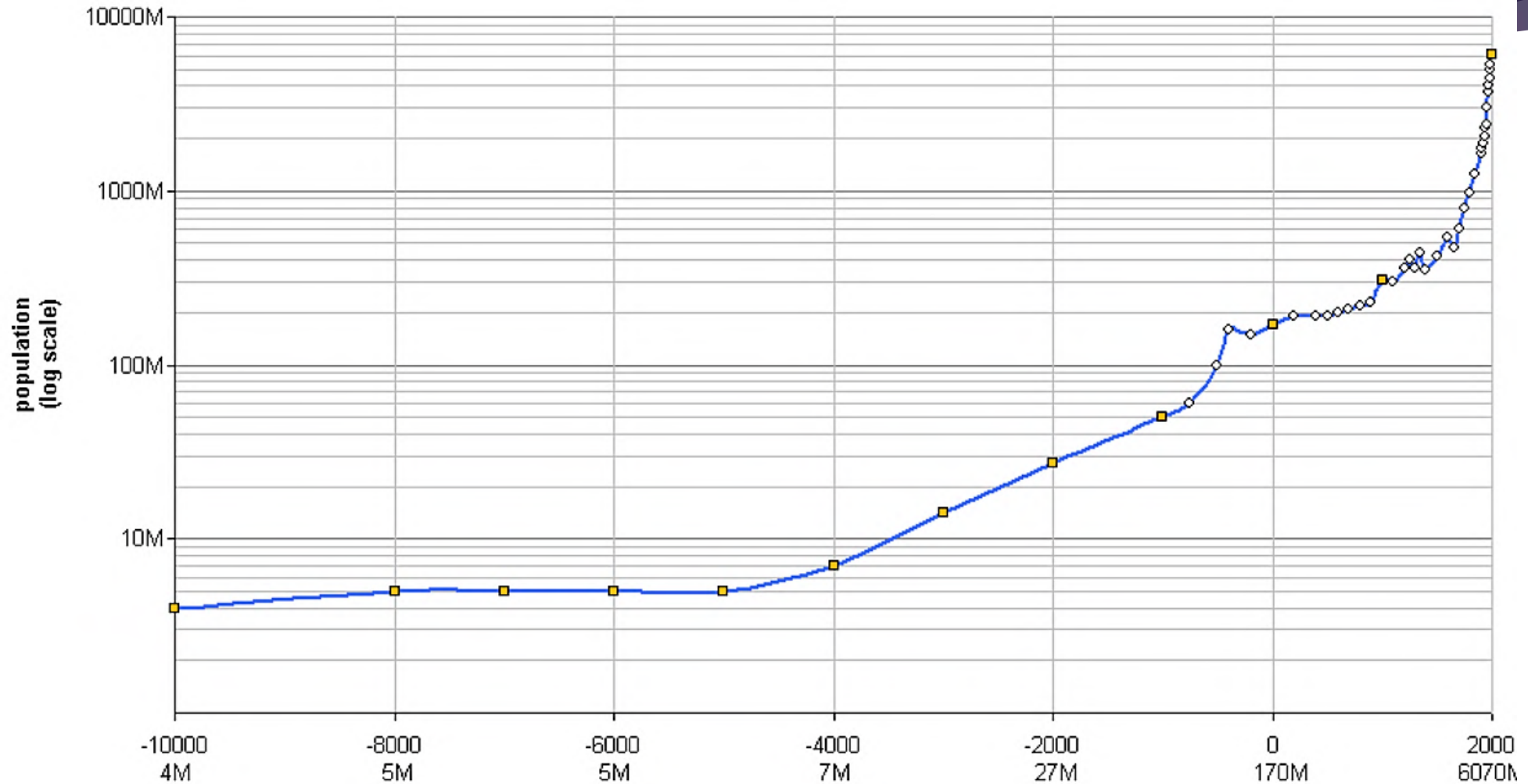
# The Philosophy of RISK

JOHN CLARK, TINTERN PHILOSOPHY CIRCLE

# Origins of settled farming – 11,000 years ago



# Global population since Neolithic times



# SCOPE OF PRESENTATION

- ▶ Meaning of the term, RISK, and how we address it
- ▶ What have philosophers thought about risk over the ages
- ▶ Why RISK is so important in our societies TODAY
- ▶ What is current thinking on risks, how to respond to them and the inadequacies of that model

# Meaning of RISK (from Gr Rhizikon = cliff, cut of land – or nautical danger)

- ▶ An unwanted event
- ▶ **Cause** of an unwanted event
- ▶ **Probability** of an unwanted event
- ▶ **Chance of avoiding** an unwanted event
- Major risks → major changes in our societies
- Deciding on those changes should ideally be informed by strong knowledge of their costs & opportunities
- Those changes can bring unforeseen consequences/new risks
- Risk contains opportunities as well as threats

When the winds of change blow,  
some people build walls, others  
build windmills.

Chinese Proverb



# How people and societies address Risks

- ▶ For each possible action we consider the Risk entailed (R) in terms of the Consequences (C) of bad things happening and the Probability (P) of that outcome

- ▶  $R = P \times C$

- ▶ **But:** we may have little info about **P**; also **C** may be uncertain & subjective; and people's perception of risk and risk-aversion differ
- ▶ **Also:** **C** may be shared unequally and may not impact the decision-maker (society leader, boss, family-head, etc)

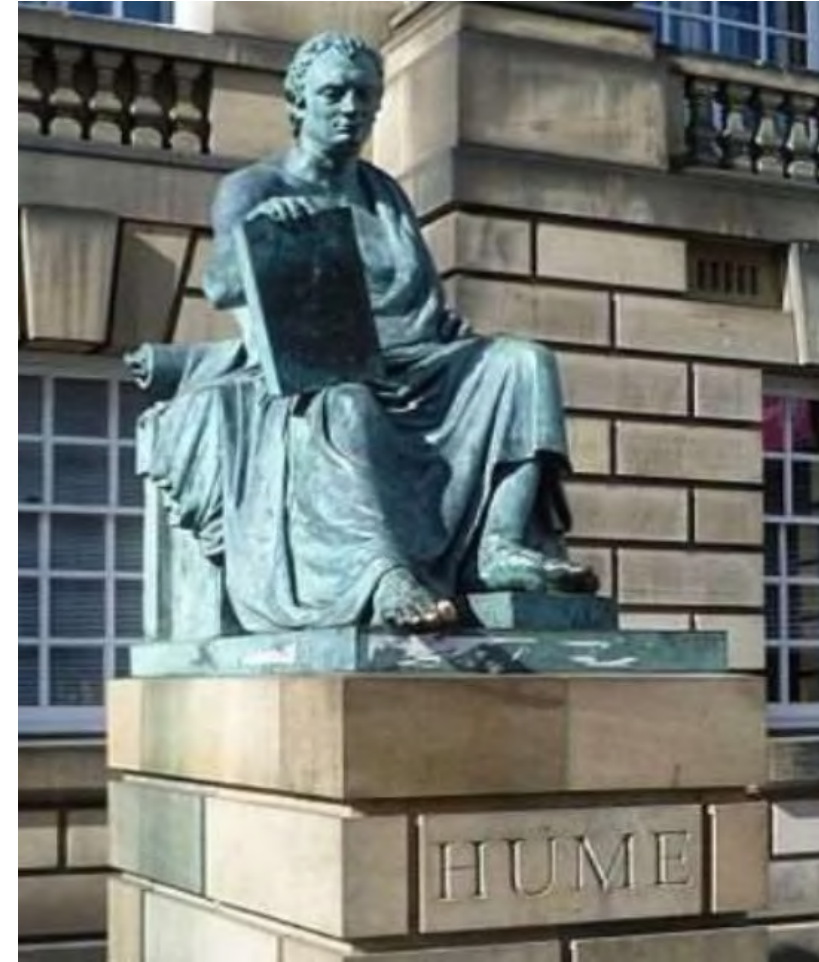
# What do philosophers say about risk?

- ▶ The “Ancients” seemed to give it little thought
- ▶ Plato wrote about “*The Great Deluge*” in **Timeus** (360 BCE) – catastrophes (from Greek **kata** = down; **strephein** = turn); but as unpredictable, God-given trials that devastated societies, from which human civilisation had to start all over again
- ▶ Aristotle took up the theme in “**Meteorologia**” (~340BCE); again as the cycle of creation-growth-destruction-rebirth
- ▶ Asserted that these destructions occurred at fixed intervals, albeit at totally different places; governed by astronomy
- ▶ Parallels with Hinduism (Shiva) and other religious thinking.
- ▶ “It’s all in the hands of God; not much we can do about it”



Fast Forward ... David Hume, mid-18<sup>th</sup> C (Scottish empiricist)

- Distinguished between natural & moral philosophy
- Wrote about probability and chance
- Cautioned not to take even common observation or testimony as FACT
- ... to balance risks & benefits + their probabilities
- Very influential on other philosophers

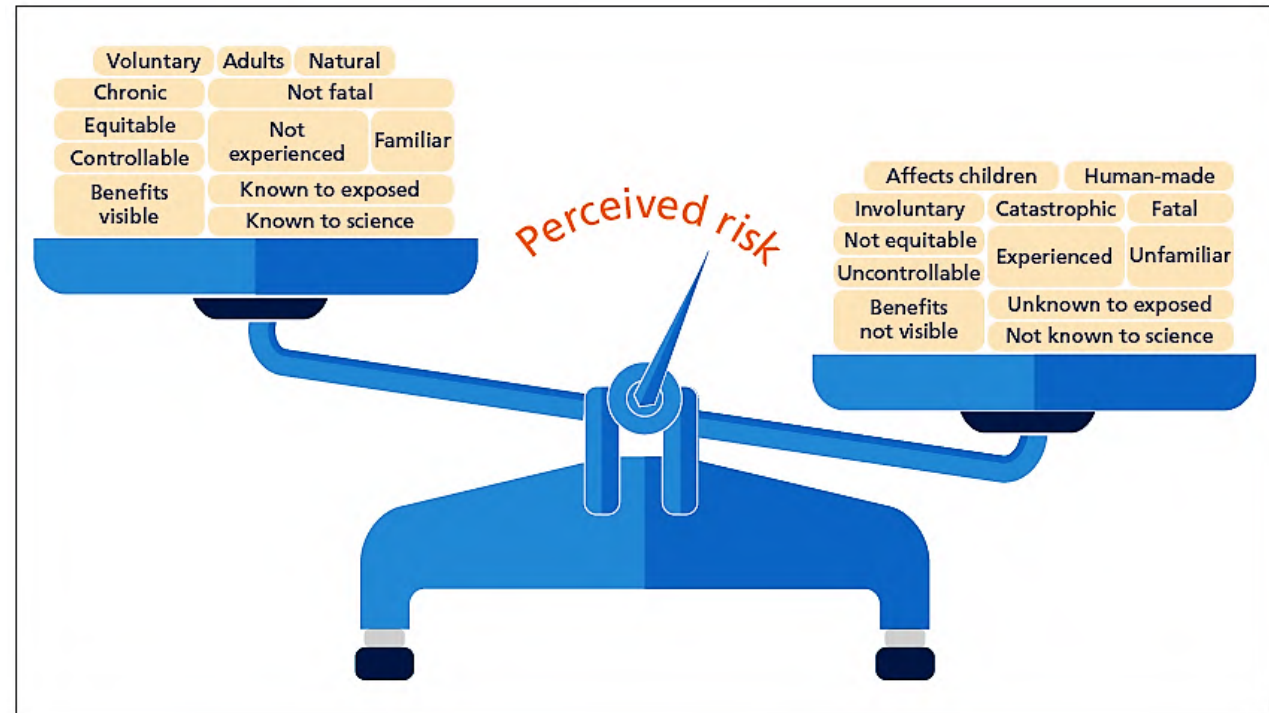


# Founder of modern thinking about risk

- ▶ ***“In general, there is a degree of doubt, caution and modesty, which, in all kinds of scrutiny and decisions, ought forever to accompany a just reasoner”***

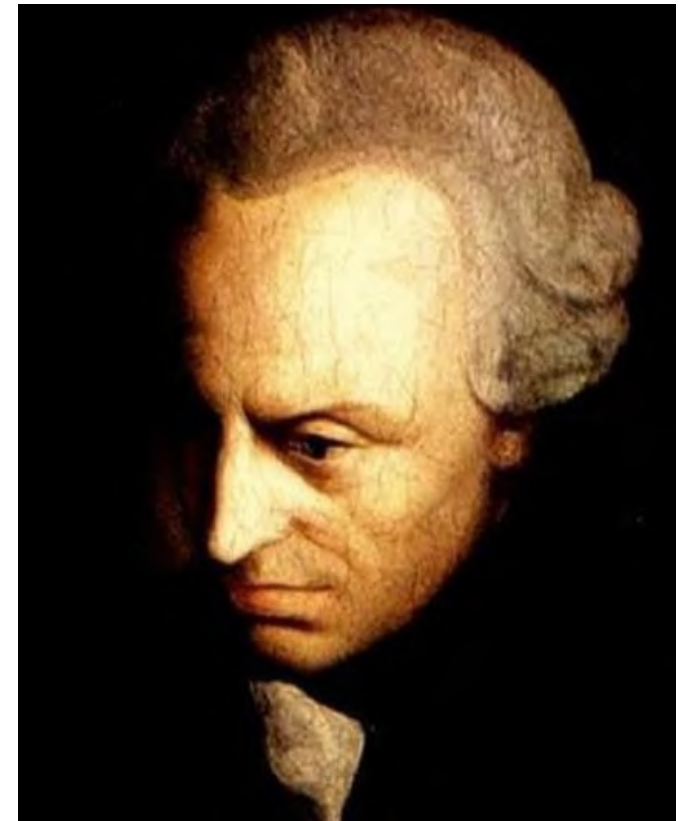
**David Hume, 1748**

*“An enquiry concerning Human Understanding”*



# Immanuel Kant (1724-1804) and Ethical Theory

- ▶ Hume's thinking woke him from "my dogmatic slumber"
- ▶ But disagreed with **balanced** reasoning; decisions should be inherently moral because the actions (not outcomes) are
- ▶ **Deontology**: requires a universal set of rules to determine the morality of **Actions** (by the rules) and **Duties** (following the rules)
- ▶ To him, for example, lying is always wrong – even if it leads to consequences that are better to all concerned
- ▶ Close to "Demand Command" ideas found in most religions except that Kant would argue the moral codex derives from reasoning
- ▶ **Frances Kamm thought experiment**: it would be morally right to divert a runaway railway carriage to a track where 1 person would be killed to save 5 on the original track; BUT what about killing 1 person to harvest his organs that could save the lives of 5 others?



# Bertrand Russell – philosophy of probability

- ▶ Forceful on the importance of understanding probability
  - “*Probability is the most important concept in modern science, especially as nobody has the slightest notion what it means*” 1929 lecture in New York
- ▶ But in 1930 wrote well-argued essay: “*Probability and Fact*” which analyses how we should view risks, randomness and probabilities in all walks of life.

# Economist philosophers (both Nobel Prize-winners)

- ▶ **James Tobin** (1950s): In "**Liquidity Preference as Behavior Towards Risk**" Tobin *inter alia* showed the benefit of balancing of high-risk, high-returns investments with safer ones. (This is the "barbell" strategy of aggressive speculators today)
- ▶ **Joe Stiglitz** (1970s and 80s): **Information Asymmetry** – where one part in a negotiation has better information than the other  $\equiv$  a power imbalance; causes a market failure. Not just in economics; has even caused wars where leaders risk battle because they miscalculate their chances of victory

# “Black Swan” events, +ve & -ve – Nassim Taleb

- ▶ (From Aristotle/s “deductive reasoning) we don’t expect black swans
- ▶ Very rare events with v severe consequences
- ▶ Extreme outliers have disproportionate role in history & impact on society
- ▶ By their nature they aren’t computable
- ▶ People will not think about them ... until they happen (then they are “predictable”)



# Taleb argues Black Swans shape the world

- ▶ They explain almost every major social change, scientific advance, religious movement, market collapse, new super-business, etc



# The “Risk Society” – variations in preparedness to take risk

- ▶ Anthony Giddens and Ulrich Beck, 1980s “Risk Society” – how societies organise in response to risk; observed how societies differ
- ▶ Risk taking is culturally determined; comprises a spectrum

**Americans.. (men) .. Singaporeans ... Chinese/Brits ... Europeans ..(women).. THE POOR**

- ▶ The young, the better educated and business leaders all more prepared to take risks
- ▶ Former Enron and Lehman Bros. top execs and families are still among the super-wealthy
- ▶ This month, JP Morgan \$920M fine for “spoofing” – illegal manipulation of commodity markets for gain; hurt legit commodity traders; no criminal action likely
- ▶ Massive gains at stake and few penalties when caught – other than bad press & social stigma
- ▶ Survey of business leaders showed 35-50% companies lost business to others who used bribes to win contracts; a different (Cambridge U) study found that every \$ of bribe translated into \$6-9 increase in profits. **So why don't firms ALWAYS use bribes?**



# Concept of the “Micro-mort” – Lloyds Register Foundation

- ▶ **1  $\mu\text{m}$**  = chance of an event killing a person / 1M
- ▶ A sky-dive, taking gen. anaesthetic, being murdered in UK / yr. all = **10  $\mu\text{m}$**
- ▶ Miles travelled per  $\mu\text{m}$ : motorbike **6**, walking **17**, car **230**, plane **1000**, train **6000**
- ▶ Non-natural causes: **200 $\mu\text{m}$** /person/y (including 100 from accidents at home)
- ▶ Also concept of micro-life (43 mins): **1  $\mu\text{L}$   $\equiv$  3 cigarettes**
- ▶ BUT what we fear most is v different from what is most likely to do us harm
- ▶ We fear most events that are sudden, catastrophic, over which we have no control, where risks are imposed on us
- ▶ **We use intuition more than calculation in assessing risks to ourselves**
- ▶ Also, in thinking of risks to others, we are more concerned when the danger is graphic, on the media, out of their control, affecting named people, esp. children

Major risks of the 21<sup>st</sup> century (to date)

Why RISK has become so important to us all

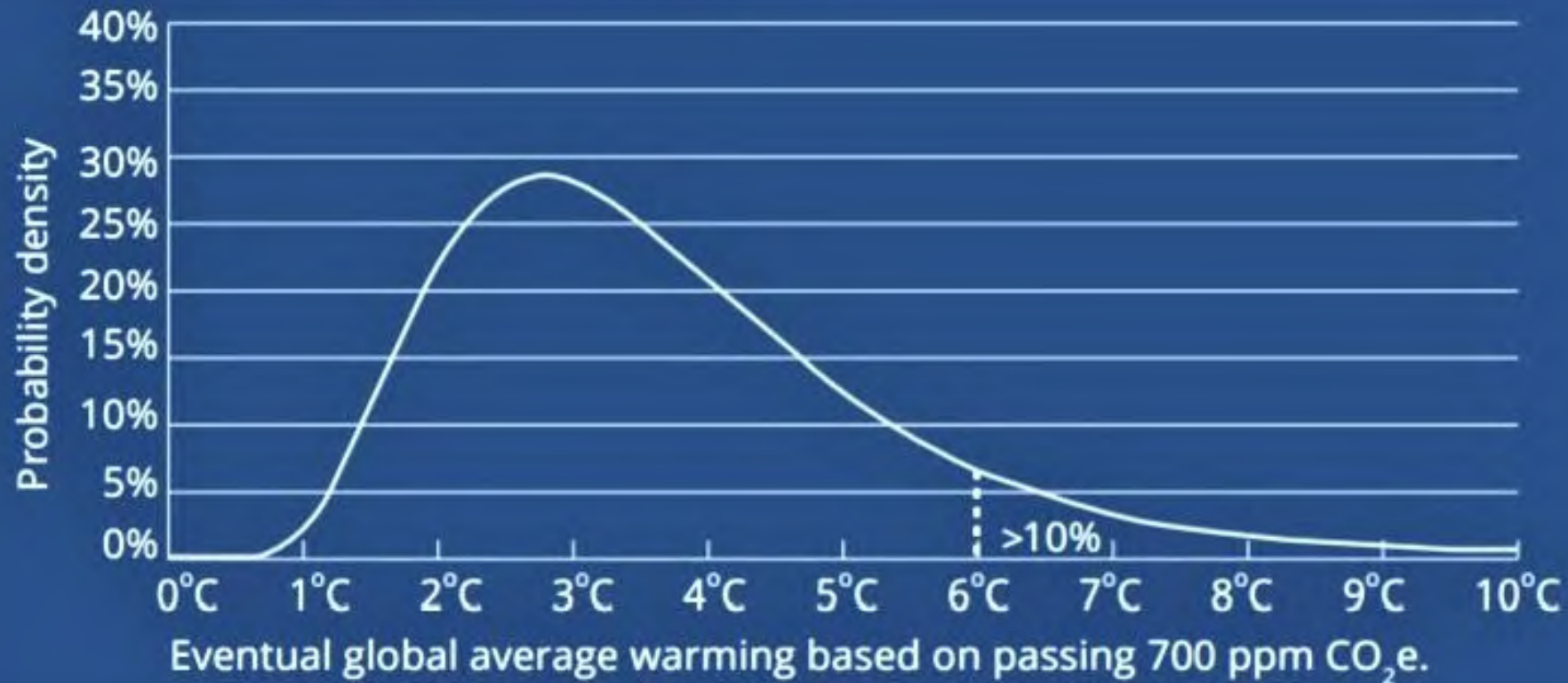
- ▶ Terrorism
- ▶ Climate Change
- ▶ COVID-19 (pandemics)
- ▶ Global Financial Crisis
- ▶ **Unforeseen events**

# Terrorism

- ▶ The awful event of 9/11
  - Since 2000 (including 9/11) 3200 US citizens have been killed
  - And 92 UK citizens
- ▶ Small numbers c.f. murders (16,200/yr. in US, 809/yr. in UK)
  - So: for every US terrorism death since 2000, 100 have been murdered
  - And for every UK terrorism death, 170 have been murdered
- ▶ Wars triggered by 9/11 have killed 6900 US and 606 British soldiers
  - They have cost the US \$6,400 Billion and the UK £72 Billion (\$2000/person)

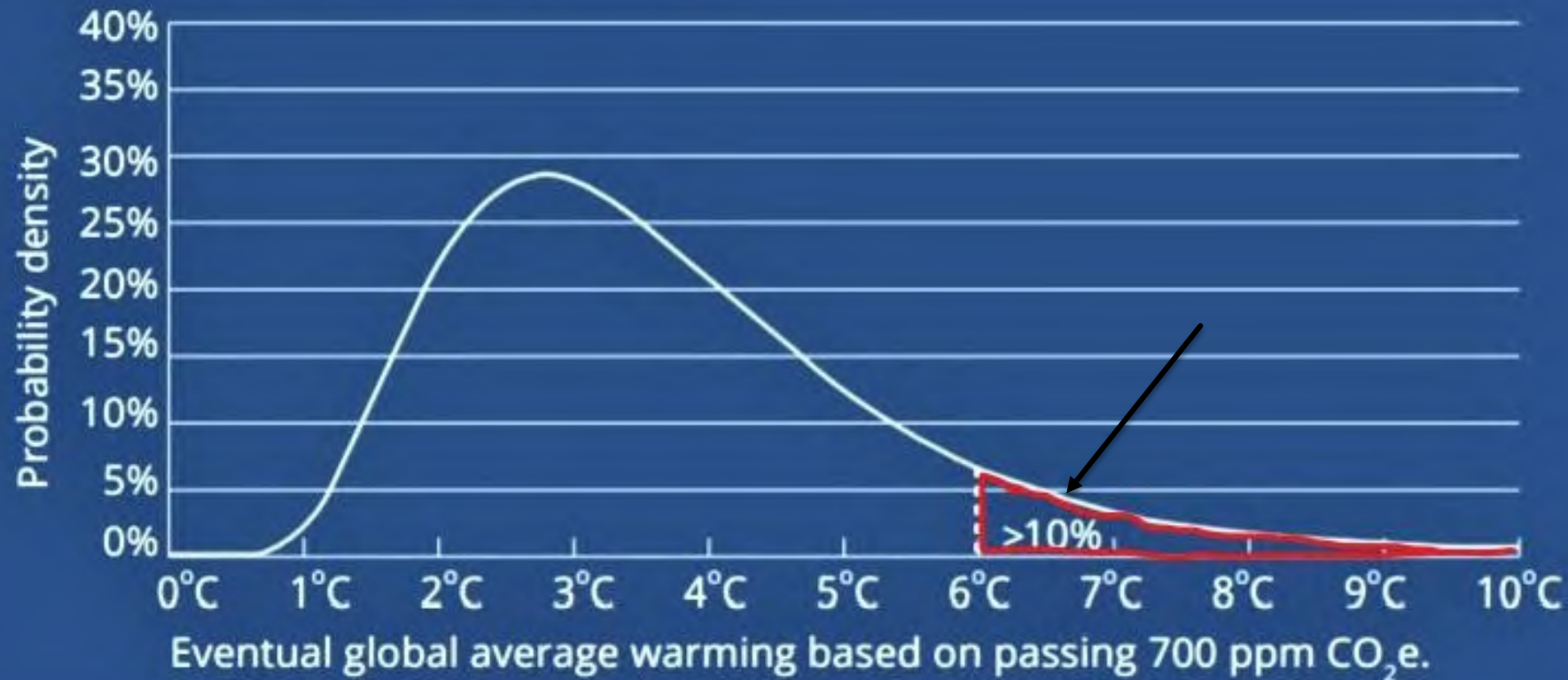
# Climate Change

## CLIMATE CHANGE LONG TAIL



# Climate Change - v. real chance of population wipe-out

## CLIMATE CHANGE LONG TAIL



# Climate Change

- ▶ 10 % chance of global temperature rise exceeding 6 degrees
- ▶ This could kill out  $> \frac{1}{2}$  of world's population;
  - ▶ or even make the world uninhabitable for humans
  - ▶ (actuarially  $\equiv$  500-900 million lives)
- ▶ US spending on Climate Change \$13bn
- ▶ UK spending in recent years has averaged £2.4bn
- ▶ Even if world keeps spending \$30bn/yr. combatting CC for the rest of the century this amounts to  $\sim$  \$3000/life
- ▶ Rule of thumb for governments' road programmes is that costs of \$2-4 **million** per life saved is justified

# COVID-19

- ▶ Official toll: 40.4 M infections and 1.2 M deaths worldwide
- ▶ In UK well over 60,000 deaths (including “excess deaths”, Mar-May)
- ▶ ≡ US + UK toll from terrorism this century **every 3 days!**
- ▶ Initial resistance to disrupt business or normal life
- ▶ Quarantining for air passengers not in place until end-May
- ▶ Great reluctance to require use of face-masks...
- ▶ ... and then public resistance to *wear* masks
- ▶ Indignation of public & local leaders about fairness & equity

# Pandemics over the ages

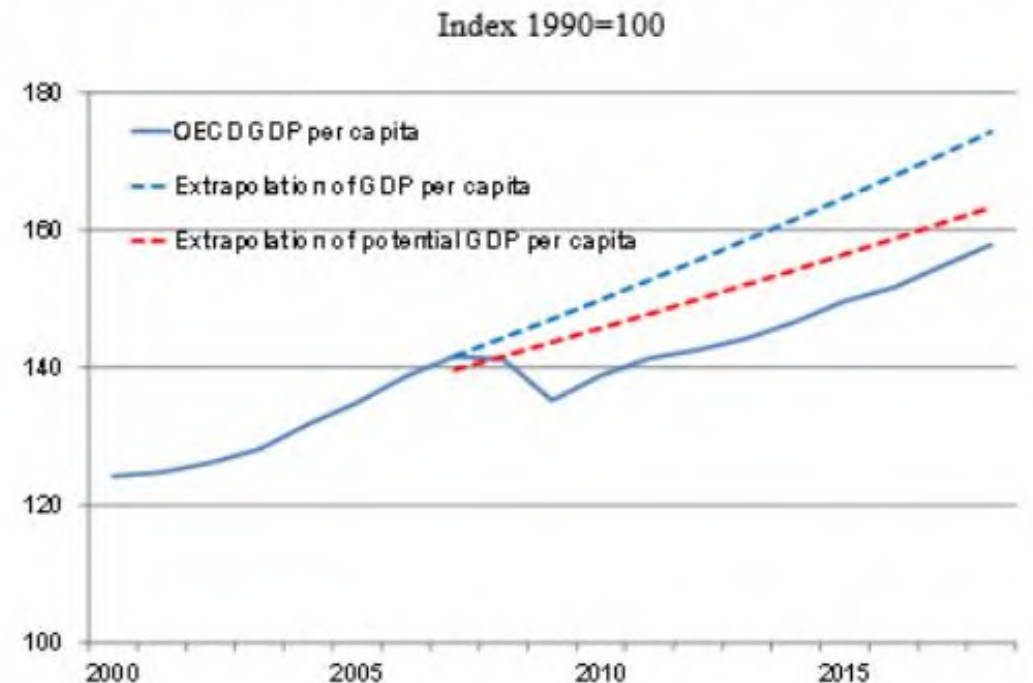
PANDEMIC	DATE(S)	LETHAL IMPACT
Plague of Justinian	AD 541-542	25-33m (13-17% of the world population)
Black Death	14th Century	50-75m (11-17% of world population)
Smallpox	1520-1527	200,000 deaths within the Aztec population (75% of population in some areas)
Spanish influenza	1918 - 1919	50 - 100m (2.5-5% of population)
Smallpox	20th century	300m over the course of the 20th Century
HIV/AIDS	1981 - present	34m
COVID-19	2020	1.2m (0.02% population)



# Global Financial Crisis – 2007-9 (and beyond)

- ▶ Triggered by collapse of Lehman Brothers (\$639 bn assets; debts of \$619 bn)
- ▶ Cost to US estimated \$23 trillion
- ▶ Loss of home, investments, salaries etc is \$70,000 per American
- ▶ Haldane estimates costs to UK including lifetime output loss is £7.4tr  $\equiv$  £110,000pp

**Figure 1. OECD GDP per capita compared with alternative pre-crisis trends**



# Of course those who steered the world into the crisis didn't suffer themselves

- ▶ Richard Fuld's pay + bonuses almost half a \$bn in 14 years as Enron CEO
- ▶ He received \$22M pay/bonuses in 2007; now worth \$250M;
- ▶ After Lehman collapsed, and legal actions were being considered, Fuld sold his \$15M Florida mansion to his wife for \$100

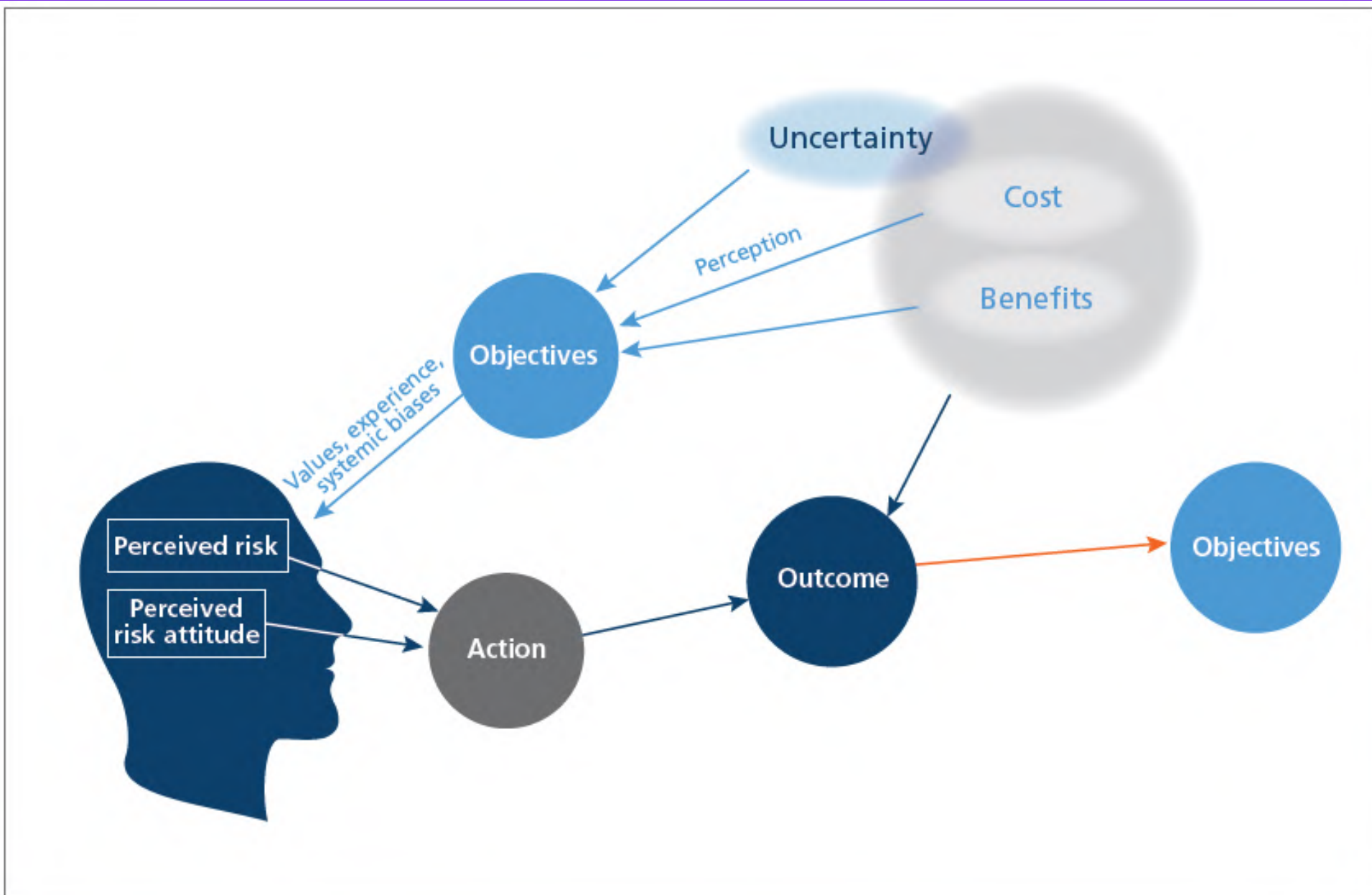
# Unforeseen risks – extinction events

- ▶ Many academic centres and defence institutions are now studying possible devastating events; v low risk but catastrophic impact
- ▶ Many are UK-based (Centre for Study of Existential Risks, Cambridge; Future of Humanities Institute, Oxford; Global Challenges Foundation)
- ▶ Ecosystem collapse, Meteor impact, Super-volcano, Rogue AI, Nuclear war/terrorism, Bio-weapons, Engineered pandemic, Justice failure, etc
- ▶ Asteroid > 1km diam. Strike earth every 500,000 yrs > 5km every 20 M yr
- ▶ Chance of super-volcano this century = 1:300
- ▶ Academics estimate 19% chance of human extinction this century
- ▶ i.e. we are 5x more likely to be killed by an “extinction event” than a car crash
- ▶ We fret about familiar risk (air crashes) and ignore alien ones – until they manifest

# Modern thinking about Risk (people and organisations)

- ▶ V important in today's increasingly technological & socially complex world
- ▶ More care needed in estimating risks & opportunities; costs and benefits;
- ▶ Balance these to take “**decisions-under risk**” → objectives ( **$R = P \times C$** )
- ▶ BUT increasing use of inaccurate sources & scepticism about experts
- ▶ How much weight to give to the “**precautionary principle**”
- ▶ Affects all our life-choices: where to buy homes, what to do with our pension pots, what diet and health care choices we make, what car we drive, the contributions we make to societal efforts of conservation etc
- ▶ Much greater fear of unlikely catastrophes than likely tragedies

# “TAKING DECISIONS-UNDER-RISK”



# For governments (local & national)

- ▶ The balancing presents very familiar dilemmas today!
- ▶ Balance protecting people from the COVID virus with protecting the economy
- ▶ Be aware of how citizens regard risks (their preferences); but seek to inform as well
- ▶ How far to take the precautionary principle
- ▶ Invest in research to better assess risks; and then “follow the science”
- ▶ Openness & sharing to combat info asymmetry
- ▶ BUT – need to give due weight to Black Swans

# Risk in the business world

- ▶ Risk has become and increasingly important business driver, for CEOs & all Stakeholders
- ▶ International Organisation for Standardisation advises a framework for “understanding and acting on the risks facing the organisation in pursuit of its objectives”
- ▶ Cavalier (even illegal) risks are common; penalties are rarely meted to the perpetrator.
- ▶ The business world is taking ever more and greater risks (limited liability)
- ▶ 46 major corporate collapses since 1963; most this century (few before)
- ▶ 19 were in US, 7 UK companies
- ▶ GAINS go to business leaders; DOWNSIDES go to workers & society

# FINALLY – wild-cards in modern thinking

- ▶ Societies aren't super-rational balancers of risks & costs
- ▶ We trust our intuition and gut-feeling more than “experts” and solid evidence
- ▶ People are v influenced by social and media pressure; and ideas of FAIRNESS
- ▶ How risks are presented & discussed publicly is key to support for decisions taken
- ▶ We give more weight to events that are BIG and SUDDEN
- ▶ We give more weight to victims who are NAMED, especially if on TV
  - ❑ cost \$xM to rescue 13 Thai kids stuck in cave; hundreds of volunteers from 22 countries
  - ❑ cost \$20M to rescue the 13 Chilean miners stuck underground in Copiago
- ▶ Insufficient attention to impacts on society, vs the business sector and the economy
- ▶ Insufficient attention to the Black Swans and the “outliers)



