

Sir Karl Popper Memorial Lecture

The Cunning of Uncertainty

Professor Helga Nowotny

President, European Research Council

Professor emeritus of Social Studies of Science, ETH Zurich

Professor John Worrall

Chair, LSE

Suggested hashtag for Twitter users: [#LSEuncertainty](#)



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The Cunning of Uncertainty

Craving for certainty

- Fascination with prophecies and predictions
- Long-waves and other regularities; boom and bust; crises of capitalism(s) from beginning
- Continuities and change: but at which point of the curve are we?
- Change not only of kind of society, but of knowledge of society about itself and nature

The Task of the Social Sciences (Sir Karl R. Popper)

- Their practical usefulness does not depend on their power to prophesy historical or political developments
- Their main task is to trace the unintended social repercussions of intentional human actions

(P. Gardiner, ed. *Theories of History*, 1959, 276-285)

The escape from destiny

- Fate vs. shaping one's destiny
- Approx. 1750: the horizon of an open future
- The project of modernity and the Faustian bargain: individual autonomy, the bourgeois self
- Science and technology: an open-ended future for human betterment

Historical profiles of fear

- J. Delumaux, Les peurs au moyen age
- B. Tuchman, A Distant Mirror: The Calamitous 14th Century (1978)
- K. Thomas, Religion and the Decline of Magic: Studies in popular beliefs in 16th and 17th Century England (1971)
- N.Rich, Odds Against Tomorrow (2012)

Changing concepts of the future

- Around 1750: tension between experience i.e. achievements and expectations: opening the horizon of the future
- Stabilized by belief in the idea of progress, deliveries still to follow
- The Enlightened Economy (J. Mokyr): ideology, knowledge&technology and institutions in economic change

Fragile future(s): the loss of confidence

- Limits to Growth (1972) vs. future(s) today:
fragile, volatile, shrinking
- Extended present: overwhelms and absorbs,
crisis as perpetuated turning point
- MMPI, since 1940s: increase in emotional
distress, restlessness, dissatisfaction
- Decrease of sense of control; shift in locus of
control

The quest for certainty and how to embrace uncertainty

- Uncertainty: outcome governed by an unknown probability distribution
- Risk: unknown outcome but with known probability distribution (F. Knight, 1921)
- *rischio* (13th, capitalism w/o adjective): act, dare, decide
- Willingness to bet on uncertain outcome
- Accompanied by proto-insurance

Risk is not danger

- Danger: (involuntary) exposure in potentially harmful temporal-spatial circumstances, uncalculable
- Risk: adverse or advantageous outcomes that can be calculated
- Taking risks: emancipation from fate and discovery of shaping one's destiny
- Supported by technologies of regulation, e.g. insurance

The Risk Society and its aftermath

- U. Beck: invisibility of radioactivity and other environmentally harmful exposures
- Reversal of technological risks into dangers
- The risk discourse since: nuclear, GMOs, bio-, nanotechnology, fracking...often equating risks with danger
- Since 2008: the Financial Risk Society
- Limits of prediction based on modeling

Coping with uncertainty

- The consequences of industrialization and the invention of the Welfare State
- The history of insurance and other regulation technologies
- Today: Social resilience as an outcome in which groups sustain their well-being in the face of challenges to it (P. Hall and M. Lamont)

Neoliberalism and New Public Management

- Economic order governed by market relations within and between states
- Ideological dimension of transformation vs. different social effects in political regimes
- Political significance (J. Jenson and R. Levi):
 - shifts in scale; individualization of risk, responsibility, rewards; NPM (i.e. market competition built into deliveries of public services)

Collective imaginairies transformed

- Information asymetries and market failure
- Rising inequalities: redistribution of risks and uncertainties
- Technologies of performance for self
- Technologies of performance for individuals and institutions: monitoring, benchmarking, ranking, impact factors...

Unintended consequences

- The Audit Society (M. Powers)
- Intensified pressure to perform, rise of new anxieties
- The creativity paradox: la pensée unique
- Growing reliance on governance by numbers – piling up of false certainties?

Decision-making under conditions of uncertainty

- The probabilistic revolution of 18th followed by a heuristic revolution? (G. Gigerenzer)
- Less is more: the heuristic empowerment of consumers and patients
- The elephant in the room: how to prevent errors and error propagation?

The cunning of uncertainty

- The embarrassment of complexity: non-linear dynamics in complex adaptive systems
- Open and evolving systems
- Future constrained by past, but not determined by it; path-dependency
- Multiple feed-backs, multiple equilibria

The lure of the unknown: science playing with uncertainty

- From forbidden knowledge to *libido scientiae*
- The Baconian project and the rise of the experimental method
- Le jeu des possibles (F. Jacob, 1979)
- ERC: funding of frontier research
- Uncertainty inherent also in innovation

Science thriving at the cusp of uncertainty

- Certainty is always only temporary
- The role of the scientific imagination and the insistence on empirical evidence
- The role of critical thinking: peers
- The crucial importance of serendipity

The dreams of the Enlightenment

- Social order built on rational thought
(Condorcet et al)
- NPM and the reign of governance by numbers
- Monitor, measure, rank, benchmark: the power of performativity
- Impact assessment: ex ante elimination of uncertainty

The cunning of uncertainty

- The ubiquity and evolution of error
- Error propagation, error detection, error management
- Human-machine interface, in real time
- Normal accidents. Living with High-Risk Technologies (Ch.Perrow, 1984): error reporting systems in aviation vs. ships
- Tightly-coupled and loosely coupled systems

Mistakes were made – but not by me (C. Tarvis and R. Aronson)

- A Theory of Cognitive Dissonance (L. Festinger, 1957)
- Tension between two inconsistent cognitions (ideas, attitudes, beliefs, opinions)
- Reduce dissonance by justifying either choice
- Many reasons to justify once decision made
- Self-justification is rampant

The cunning of uncertainty: science, innovation and democracy

- Learning to embrace uncertainty
- Towards a culture of learning from mistakes
- Innovation is inherently uncertain
- E/value/ation is a fundamental cultural activity

Uncertainty, science, technology and democracy - 1

“Contrary to what managers, engineers, politicians and risk experts want to make us believe, it is the massive mobilization of the population, of dissident experts and of victims which have led ministerial departments, industrialists, safety committees and courts of justice to modify their attitudes”.

(D. Pestre, 2013, *A Contre-Science. Politiques et savoirs des sociétés contemporaines*, p.151)

Uncertainty, science, technology and democracy - 2

- Science and markets meet ethics: the example of human embryonic stem cell research
- Stem cell research: a prominent case of co-production and co-evolution
- Political attention and public controversy have NOT lead to slow down of research, regulatory burden, and curtailing of free scientific inquiry
- But: to an outcome good for science and democracy (Good Science, Ch. Thompson, 2013)

Thriving at the cusp of uncertainty – together?

- If science can thrive at the cusp of uncertainty – why can't society?
- Fundamental research and innovation are inherently uncertain, but open and evolving systems
- Living with uncertainty, embracing contradictions
- A culture of learning from mistakes
- The limits of prediction: probabilities, complemented by heuristics
- Knowledge continues to evolve – and we do not know yet what we will know in the future (Sir Karl Popper)

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