# Is there anything to fear from the politics of complexity?

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# Who am I and how did I get into complexity?

- Background in international political economy and European Union social and economic policy
- Tipping point: Can one go beyond the theory of "multi-level governance" to explain the functioning of the EU and its policy outputs?
- Led to work on the Third Way, EU social policy, EU-UK social policy and, now, public policy (particularly health policy and chronic disease - diabetes).
- Set up Centre for Complexity Research. Currently trying to make it a joint Lancaster – Liverpool initiative

# Where does complexity come from?

One can start with what could be called the "paradigm of order"

- Rene Descartes (1596-1650) and Sir Isaac Newton (1642-1727)

- Pierre Simon de Laplace (1749-1827):

  If at one time, we know the positions and motion of all the particles in the universe, then we could calculate their behaviour at any other time, in the past or future (Celestial Mechanics).

# The paradigm of order

- American Nobel Laureate, Albert Michelson (1852-1931) complained that:

  "The future truths of Physical Science are to be looked for in the sixth place of decimals".

- Nobel Laureate Ernst Rutherford (1871-1931) added:

  "All science is either physics or stamp collecting".

# Phenomena in the Paradigm of Order

DISORDER ——————————→ ORDER

TIME ——————————→

EXAMPLES:

| | |
|---|---|
| Unknown or not fully understood phenomena | Gravity or motion in a vacuum. |

# Four Rules of the Paradigm of Order:

- *Causality:* given causes lead to known effects at all times and places.
- *Reductionism*: the behaviour of a system could be understood, clockwork fashion, by observing the behaviour of its parts. There are no hidden surprises; the whole is the sum of the parts, no more and no less.

# Four Rules of the Paradigm of Order:

- *Predictability*: once global behaviour is defined, the future course of events could be predicted by application of the appropriate inputs to the model.

- *Determinism*: processes flow along orderly and predictable paths that have clear beginnings and rational ends.

# Spreading ripples of doubt

- Henri Poincare (1854-1912) early chaos theory.
- Albert Einstein (1879-1955) relativity theory.
- Werner Heisenberg (1901-1976) uncertainty principle.

# Phenomena in the Paradigm of Order

DISORDER ——— ORDER

TIME ⟷

EXAMPLES:

| | |
|---|---|
| Some aspects of quantum mechanics. Zone of unknown/ discovery. | Gravity or motion in a vacuum. |

# Complex Systems in an abiotic world

- Fluid dynamics
- Weather
- Complex, but not necessarily  complicated

# The range of abiotic phenomena in a Complexity Paradigm

DISORDER —— COMPLEXITY —— ORDER

Range of abiotic complex systems

EXAMPLES:

| | | |
|---|---|---|
| Zone of Unknown/ Discovery. | Fluid dynamics. Weather patterns | Gravity. Motion in a vacuum. |

# Golden rules for abiotic systems in a complexity paradigm

- Partial Causality: phenomena can exhibit both orderly and chaotic behaviours, cause may not lead to effect.
- Reductionism and Holism: some phenomena are reducible others are not.
- Predictability and Uncertainty: phenomena can be partially modelled, predicted and controlled.
- Probabilistic: there are general boundaries to most phenomena, but within these boundaries exact outcomes are uncertain.

# Complex systems in a biotic world

- Peter Coveney and Roger Highfield (*Frontiers of Complexity*,1995)

  "Life is also an emergent property, one that arises when physiochemical systems are organized and interact in certain ways"

- James Lovelock and the concept of *Gaia*.

# Range of biotic and abiotic phenomena

DISORDER COMPLEXITY ORDER

Biotic Complexity | Abiotic Complexity

EXAMPLES:

| | | | |
|---|---|---|---|
| Zone of Unknown/ Discovery | Plant and animal interaction/ evolution. *Gaia* | Fluid dynamics. Weather patterns. | Gravity. Motion in a vacuum. |

# Golden rules of biotic systems in a complexity paradigm

- Partial Causality: phenomena can exhibit both orderly and chaotic behaviours, cause may not lead to effect.
- Reductionism and Holism: some phenomena are reducible others are not.
- Predictability and Uncertainty: phenomena can be partially modelled, predicted and controlled.
- Probabilistic: there are general boundaries to most phenomena, but within these boundaries exact outcomes are uncertain.
- Emergence: they exhibit elements of adaptation and emergence.

# Social sciences and the paradigm of order

- Thomas Hobbes (1588-1678) *Leviathan*.
- Francois Quesnay (1694-1774) the economic system as a mechanical clock.
- Condorcet (1743-1794):

  "The sole foundation for belief in the natural sciences is the idea that the general laws directing the phenomena of the universe, known or unknown, are necessary and constant. Why should this principle be any less true for the development of the intellectual and moral faculties of man than for other operations of nature?"

# Social sciences and the paradigm of order

- David Ricardo (1772-1823)

  Economic laws were “as certain as the principles of gravitation”

- Karl Marx (1818-1883)

  The immutable laws of capitalist development

# The social sciences and the paradigm of order: 20th century

- Modernisation in development theory
- Rational choice in politics
- Behaviouralism in sociology
- Positivism in economics

Drift to order and rule of the expert/ technocrat. Supports authoritarian social and political orders

# Challengers to the paradigm of order

- Immanuel Kant (1724-1804)

An organism, “cannot only be a machine, because a machine has only moving force: but an organism has an organising force… which cannot be explained by mechanical motion alone”

# Challengers to the paradigm of order

- F. A. Hayek (economist/philosopher)

  "in the field of complex phenomena the term'law' as well as the concepts of cause and effect are not applicable" 1958.

- The hermeneutical tradition of Sigmund Freud and Max Weber.

- The postmodern tradition of Jean-Francois Lyotard.

# The range of abiotic, biotic and conscious phenomena

DISORDER ——————————————— ORDER

| | Conscious Complexity | Biotic Complexity | Abiotic Complexity | |
|---|---|---|---|---|
| | **Range of non-linear dynamic systems** | | | |
| EXAMPLES: | Zone of the Unknown/ Discovery | Norms. Values. Language Narrative | Plant/ animal interaction and evolution. | Fluid dynamics and Weather patterns | Gravity. Motion in a vacuum. |

# Golden rules of conscious systems in a complexity paradigm

- Partial Causality: phenomena can exhibit both orderly and chaotic behaviours, cause may not lead to effect.
- Reductionism and Holism: some phenomena are reducible others are not.
- Predictability and Uncertainty: phenomena can be partially modelled, predicted and controlled.

# Golden rules of conscious systems in a complexity paradigm

- Probabilistic: there are general boundaries to most phenomena, but within these boundaries exact outcomes are uncertain.
- Emergence: they exhibit elements of adaptation and emergence.
- Interpretation: the actors in the system can be aware of themselves, the system and their history and may strive to interpret and direct themselves and the system.

# From the “age of extremes” to the “age of order”

- Soviet Communism
  - Collectivisation
  - Central planning
  - War
- Nazism
  - Final solution
  - War

# Another type of "order"

- But what about in the "normal" Western states?
- External actions/policies of dominant states towards weaker states/societies
  - World Bank/IMF Structural Adjustment policy
  - War on Terrorism
  - Iraq war II

# Another type of "order" 2

- Internal actions/policies of powerful state actors on weaker state/non-state actors
  - Health policy
  - Education policy
  - Third Way?

  - In other words, the pursuit of order in the 20th century was all encompassing, not just outsiders.

## Complexity allows us to see the problems of order, but unclear what we should do next.

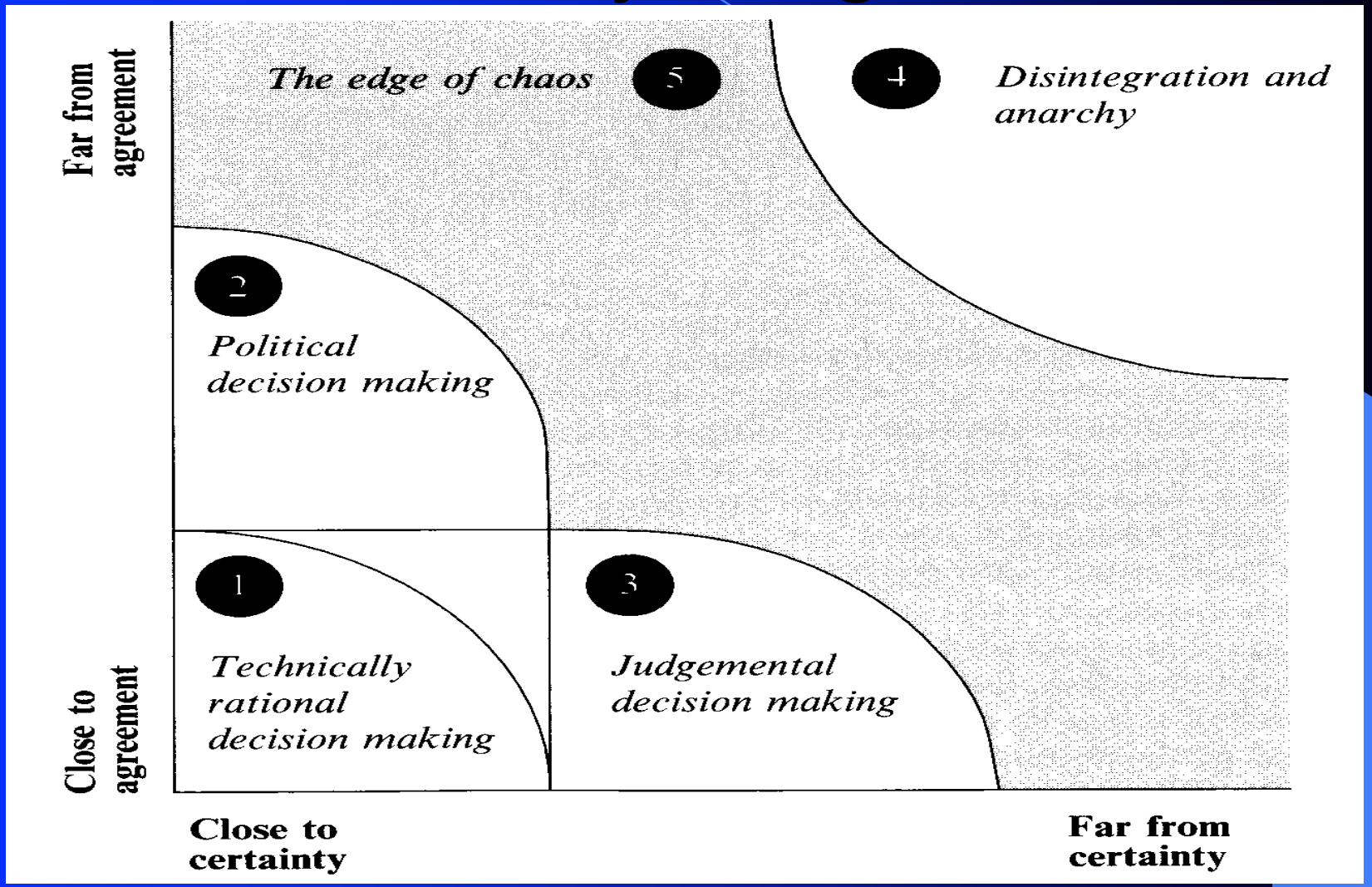
- Complexity mapping
- Stacey diagram
- Complexity cascade

# Mapping Political Dynamics

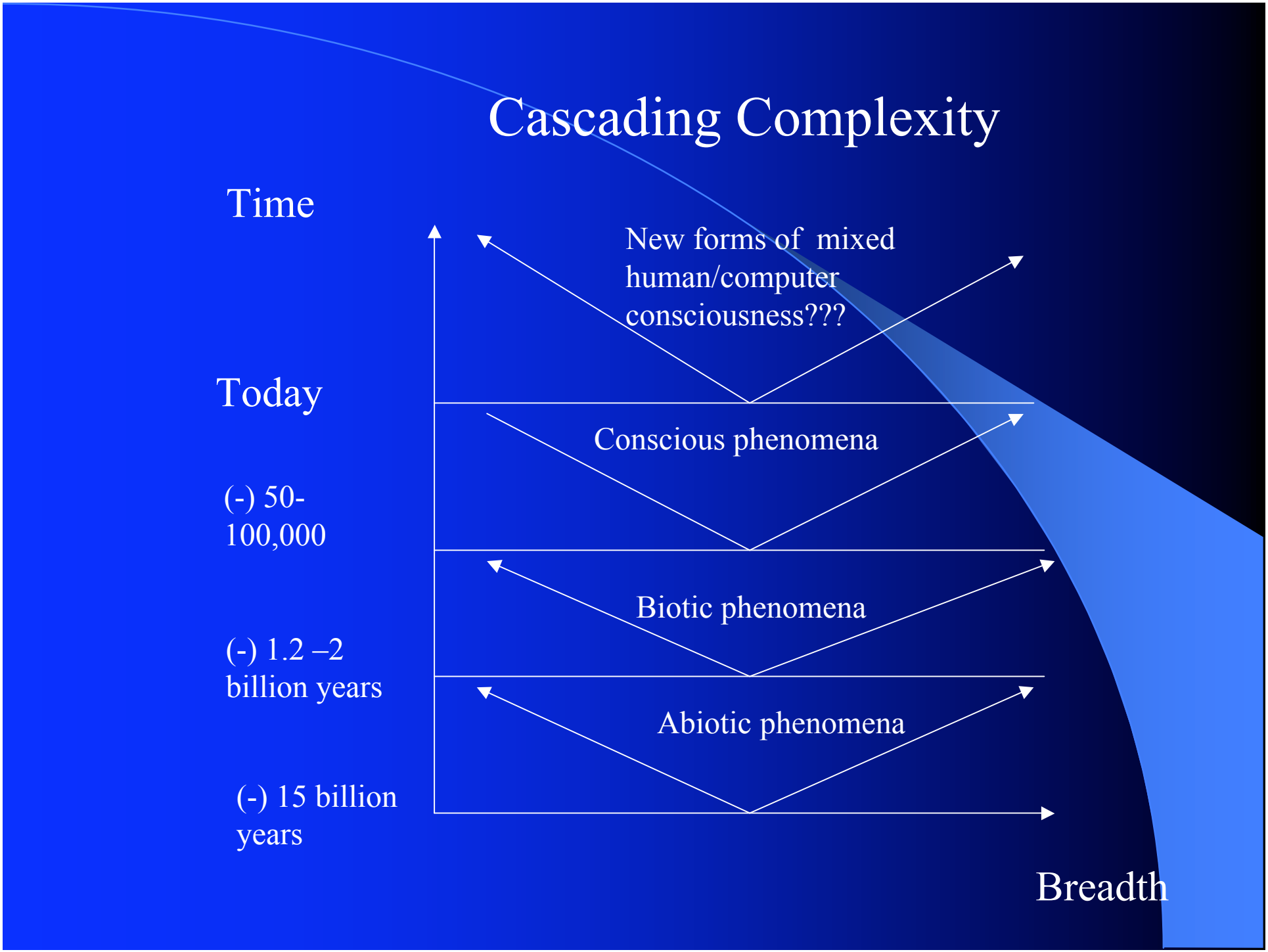
Disorder ——— Complexity ——— Order

| Conscious | Biotic | Abiotic |
| --- | --- | --- |
| Long term develop-ment of political dynamics | Contested political and social narratives | Party and institutional interaction | Voting and decision outcomes of policy institutions | Basic power resources and political structures |

# The Stacey Diagram



# Cascading Complexity



# Democracy

- Order
  - One main type
  - Endpoint in history
  - Western creation
  - Key challenge: getting others to become democracies
- Complexity
  - Basic aspects, but multiple variations
  - Emerging process
  - Democratic tendencies throughout history
  - Key challenge: Entrenching basics, but also creating space for democratic exploration and development

# Freedom

- Order
  - One main type, linked to free markets
  - Endpoint to history
  - Western creation
  - Key challenge: getting others to accept our "freedom"
- Complexity
  - Basic aspects, but multiple types
  - Emerging process
  - Concepts of freedom throughout history
  - Key challenge: continual exploration of freedom

# Human Rights

- Order
  - Core rights, linked to free markets
  - Endpoint in history
  - Western creation
  - Key challenge: getting others to accept our "rights"
- Complexity
  - Basic rights, but multiple types
  - Emerging process
  - Concepts of rights throughout history
  - Key challenge: defense of basic rights with continual exploration of new rights

# The problem of balance

## How to stay somewhere in the middle?

**Order---Stifling Order---Creative Complexity---Destructive Disorder---Disorder**

# Nothing to stop the powerful?

- Nothing inherent in complexity to stop powerful. In fact, tendency of complexity to grow mirrors growth in inequality.
- However, complexity does:
  - Remove the veneer of scientific legitimation of particular “orders”. No such thing as final order.
  - Encourages diversity, interaction and expansion of complex learning and development
  - Does not assume that individuals at the bottom are required to or must stay at the bottom

# No happy ending

- Struggle, tension, difficulties are part of process
- Learning, uncertainty, mistakes never end
- Continual pursuit of balance
- No glorious rallying cry, “Be balanced?!?”
- No final happy place

# Questions for Thought

- From an orderly and complexity perspective, what would happen if :
  - we replace the Board of Governors of the Bank of England with a barrel of monkeys?
  - we try to copy a successful policy strategy from a different country?
  - we develop a new super drug that suppresses all of the symptoms of the common cold?