

The Tortoise and the Hare

Governance challenges under conditions of scientific uncertainty

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Common criticisms

- ‘Law is too slow to deal with rapid technological change’
- ‘Law contains gaps and cannot respond to every new technological scenario’
- ‘Law is about the past; technology is about the future’
- ‘Lawyers and regulators do not properly understand science and technology’
- ‘Law works against technological progress’

‘Law is the most historically oriented, or if you like the most backward-looking, the most “past-dependent,” of the professions. It venerates tradition, precedent, pedigree, ritual, custom, ancient practices, ancient texts, archaic terminology, maturity, wisdom, seniority, gerontocracy, and interpretation conceived of as a method of recovering history. It is suspicious of innovation, discontinuities, “paradigm shifts,” and the energy and brashness of youth.’

(Posner)

The 'law lag'

- 'The hare of science and technology lurches ahead. The tortoise of the law ambles slowly behind.' (Kirby)
- 'Law, marching with medicine but in the rear and limping a little' (Justice Windeyer, *Mount Isa Mines v Pusey* 1970)
- 'The dilemma of control' (Collingridge)

Reasons for regulation

- To promote the general welfare of the community
- To reallocate public goods
- To address problems arising from information asymmetries
- To correct market failures (eg anti-competitive practices)
- To promote certain values (eg social justice, paternalism)
- To foster learning through participatory dialogue
- To serve particular political / economic private interests ('regulatory capture')

Examples

- General Product Safety Directive 2001/95/EC
 - Only 'safe' consumer products may be placed on the EU market

- REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) Regulation (EC) 1907/2006
 - Manufacturer / importer of a substance in quantities of one tonne or more per year shall submit a registration to ECHA

Challenges

- Social complexity, normative multiplicity, epistemic uncertainty
 - Product Liability Directive 85/374/EEC
 - ‘A product is defective when it does not provide the safety which a person **is entitled to** expect, taking all circumstances into account’
 - Necessary to prove causation
 - Defences: 10 year limitation period, and state of the art

Challenges

- How to regulate potential risks, given the data and model uncertainty?
- How, when and with what purpose to engage multiple stakeholders and publics?
- How is expertise constituted?
- Divisions of labour:
 - moral (Ravetz)
 - power and control (Rip, Misa and Schot)

Gaps in legal coverage

- Thresholds
 - ‘one tonne or more per year’ (REACH Regulation)
 - ‘sub-optimal regulation’ of nanomaterials; requirements for registration of nanomaterials ‘unclear’ (Matrix Insight Ltd)
 - ‘We remain concerned that REACH will not adequately address the regulation of nanoparticles’ (Royal Society and Royal Academy of Engineering)

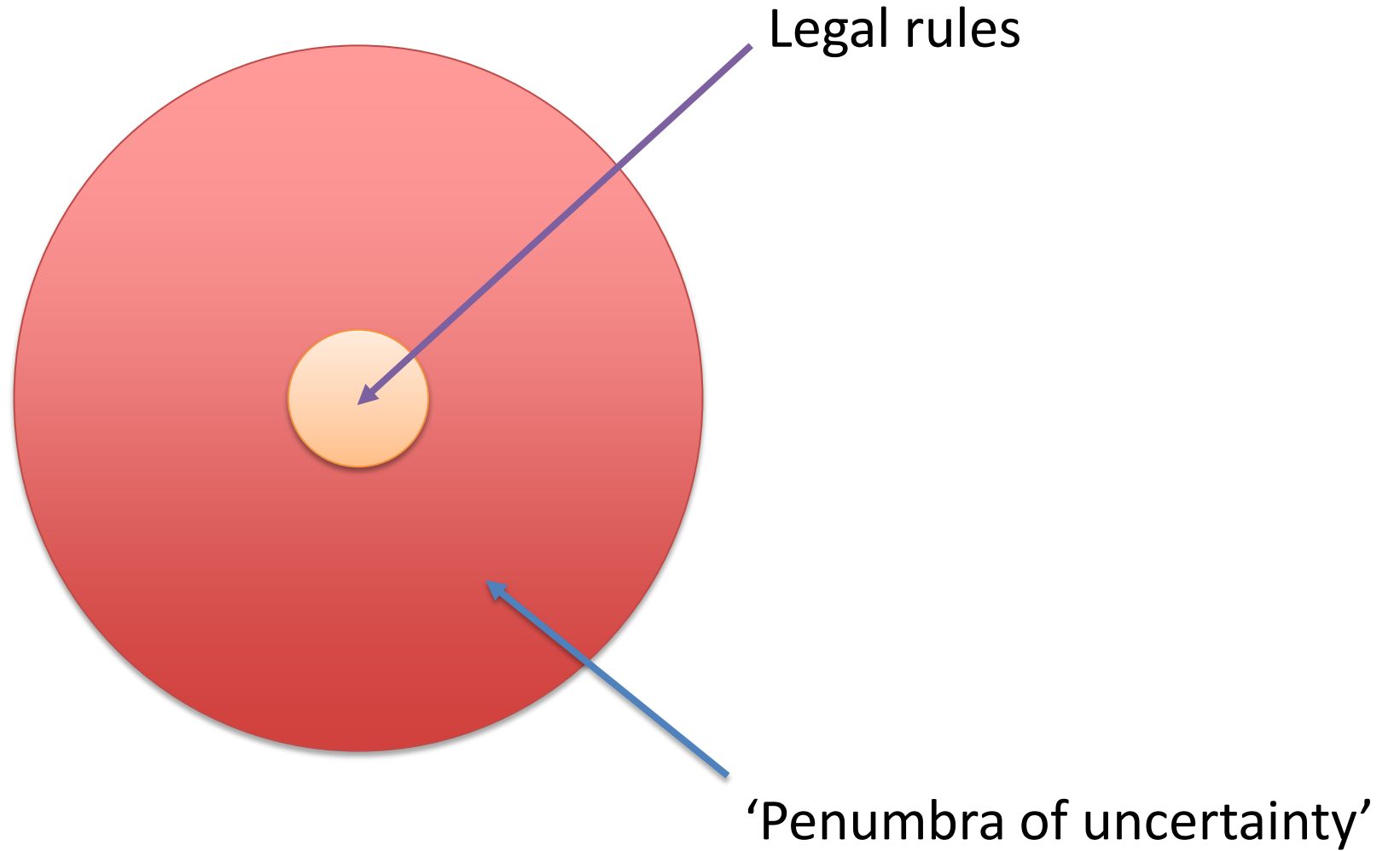
Regulation as facilitation

- Generic (not nano-specific) regulatory categories and standards
- ‘Soft’ law measures to improve regulatory implementation
 - European Commission, *Recommendation on the Definition of Nanomaterial* (2011)
 - International standards (eg ISO, CEN) and guidelines (eg WHO, OECD)
- Legislative amendments to ‘normalise’ applications of new technology
 - eg cosmetics, foods, biocides: nanomaterial labelling requirements

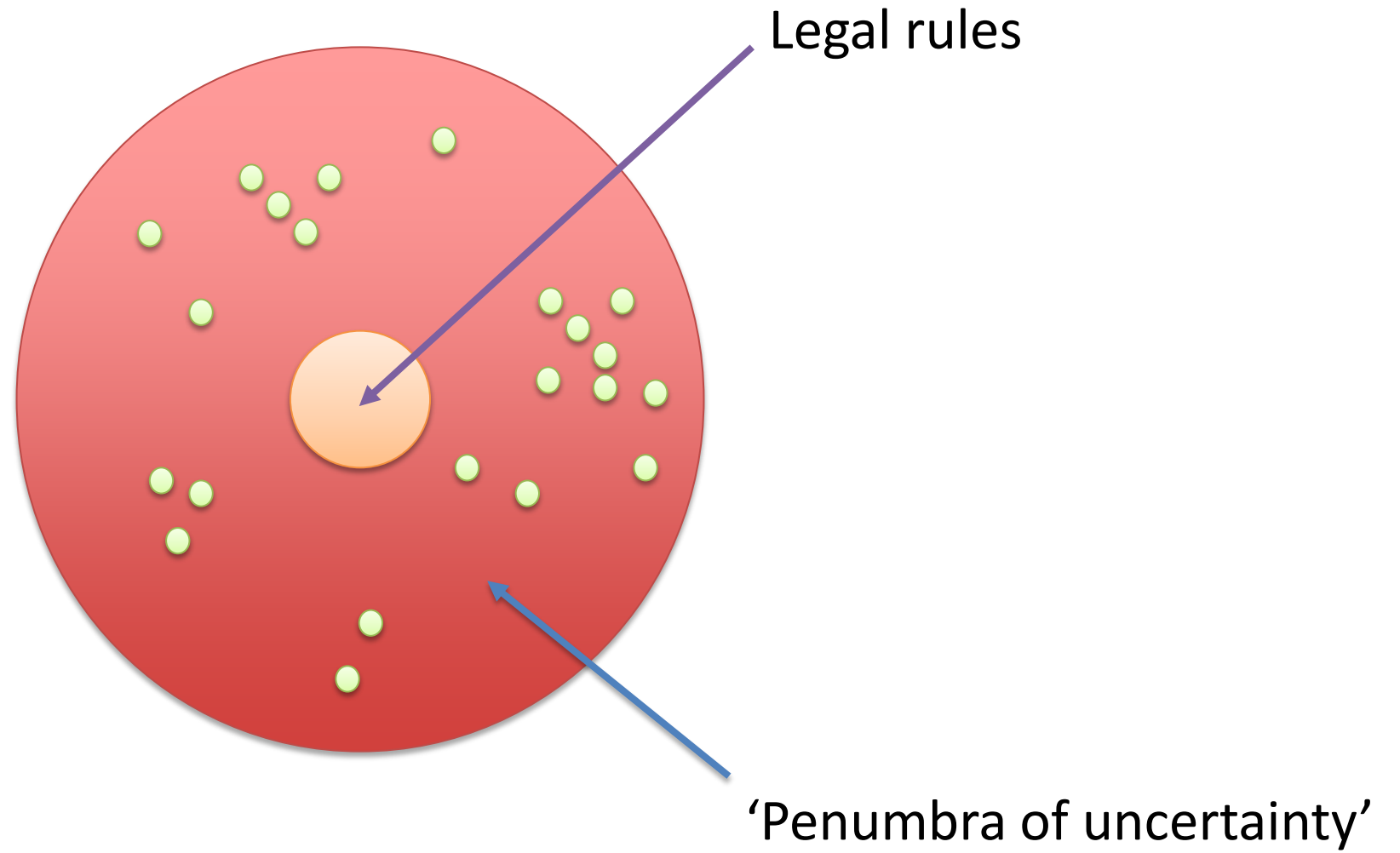
Responsible research and innovation

- Dialogue between those involved in the process of innovation and wider society as regards the acceptability, sustainability and societal desirability of innovation and its marketable products (Von Schomberg)
- Commission, *Code of Conduct for Responsible Nanosciences and Nanotechnologies Research* (2008)
 - ‘remain accountable’ → liability?
- UK Research Councils
 - EPSRC ‘Societal Issues Panel’ and ‘stage-gate’ process

HLA Hart, *The Concept of Law* (1961)



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Interdisciplinarity

- 'Behavior on a Beer Mat: Law, Interdisciplinarity and Expertise' (Priaux and Weinel)
- Problems facing lone legal interdisciplinarians
- Genuine collaboration and interactional research needed

Adaptive governance

- Themes: complexity and uncertainty; the need for intensified form of ‘social learning’; the role of institutions and governance systems in facilitating such learning processes (Cooney and Lang)
- Government is not the only important actor
- Legal rules are not the only available governance tools
- Governance is not about one-off implementation, but is an ongoing process
- It involves reflexivity and creativity

Concluding remarks

- Soft law and co-operative approaches
- Enlisting regulatory stakeholders in problem-solving partnerships
- ‘Hybrid’ or ‘blended’ regulation
- New-style regulation and governance are not trouble-free
- ‘Living law’ (Ehrlich)