Regulation by Design: Thoughts on Engineering out Non-Compliance

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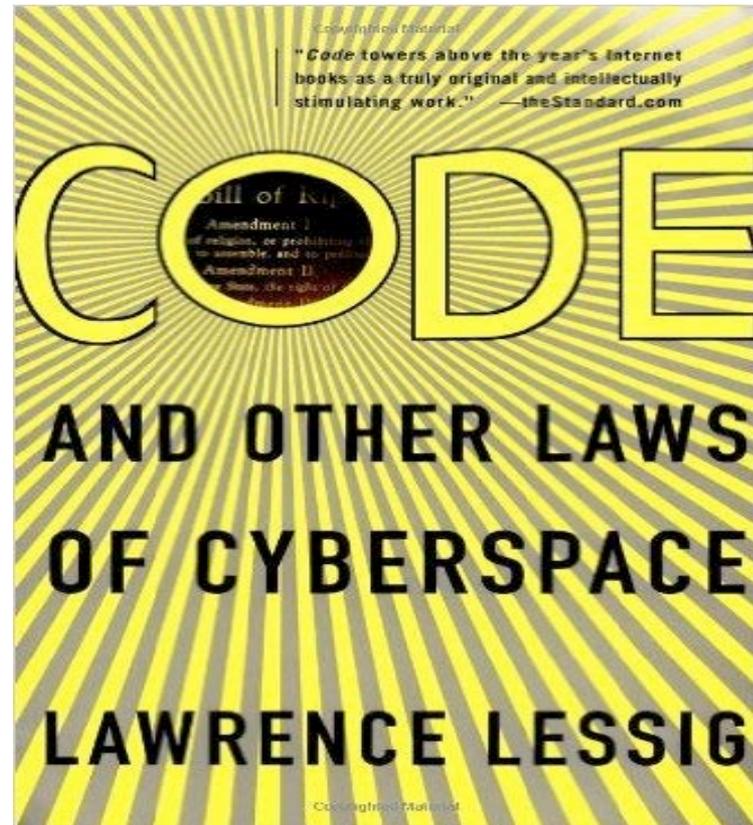Friday 8th April, 2016, Melbourne

Melbourne Law School

KING'S College LONDON

University of London

Regulatory techniques ('modalities')

- Law
- Markets
- Social norms
- Code

Eg. Sustainable energy consumption

- Law: prohibit the use of 'dirty' energy

- Markets: carbon tax

- Social norms: education campaigns and 'naming and shaming' worst offenders

- Code: investment in clean energy technologies

'Design-based' regulation

- Design and architecture have been used to discourage undesirable behaviour since ancient times (door lock, believed to have been designed by the Egyptian approx 4000 years ago)

- Yet relatively neglected as an object of scholarship

- Some exceptions: cyberlawyers, criminologists and (more recently) behavioural economists interested in the design of 'choice architecture'

Design-based regulation

- Design-based regulation: uses technological design to generate social outcomes deemed desirable
- Various forms
- encourage behavioural change
- reduce harmful impact of harm-generating activity
- prevent undesired activity (partially or fully)

Design objects: products, places, things

- Artefacts
- the built environment
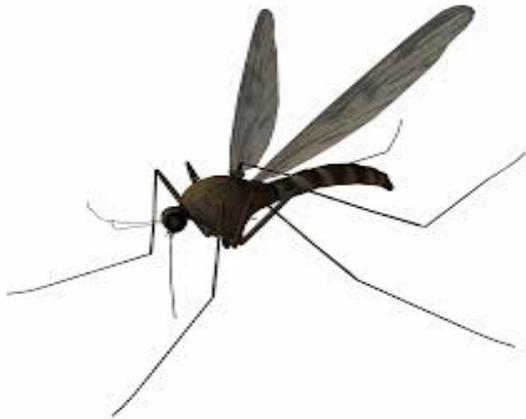- the virtual environment
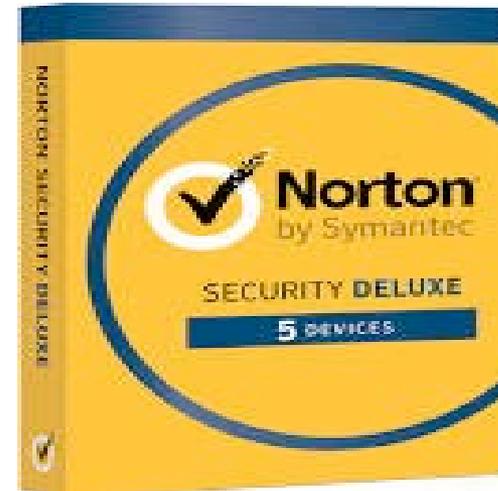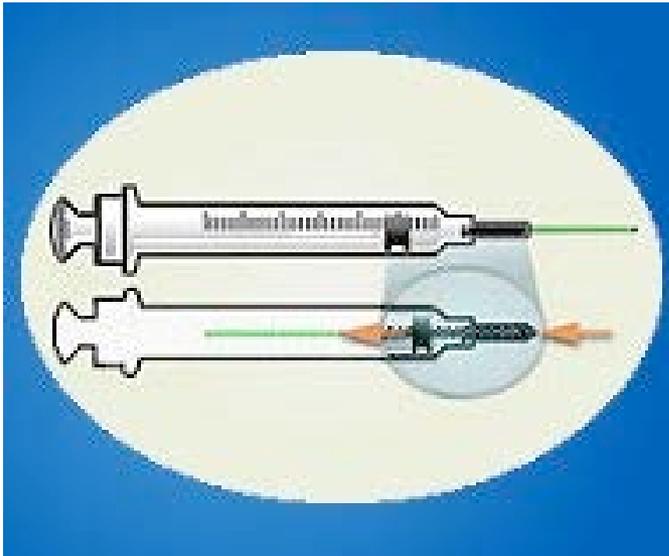
Designing biological organisms

Plants (genetically modified for insect tolerance – eg caterpillar resistant soy plant)

© Society for In Vitro Biology. Photo by Parrott Lab, UGA

Designing biological organisms

Animals, insects, birds

Nature 'Gene drive' mosquitoes engineered to fight malaria' (23 November 2015)

Researchers used a controversial method called 'gene drive' to ensure that an engineered mosquito would pass on its new resistance genes to nearly all of its offspring. The result: a gene that could spread through a wild population very rapidly.

Designing biological organisms

Psychopharmacology
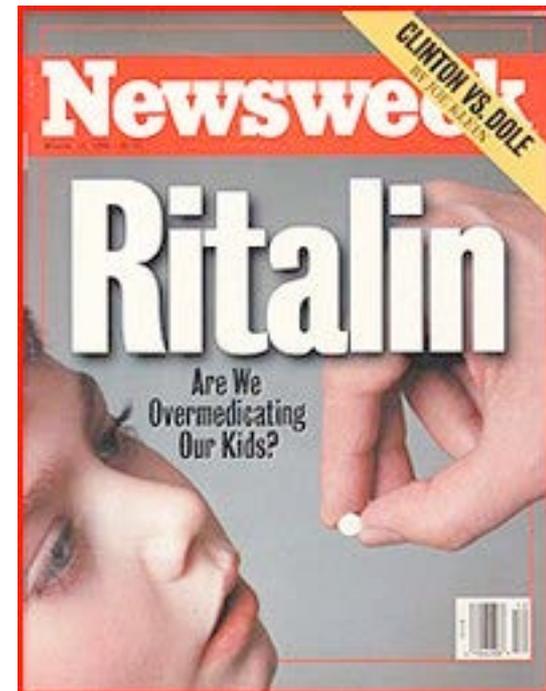
Hybrid design: augmented reality

Overview

Law vs Design

- Law: rule prohibiting undesired behaviour backed by sanction. Enforcement officials to (1) monitor compliance (2) take action to sanctions non-compliance to deter undesired behaviour

- Design: desired behavioural standard embedded into design, automatically enforced (no need for human enforcement action)

Automated enforcement

- Design attractive to protect IP rights from unauthorised intervention through the use of 'digital rights management' technology which overcome the pervasive practical difficulties associated with enforcing copyright. Eg Amazon kindle

- Also particularly attractive to *states* seeking to implement *public* policy goals due to self-enforcing capacities

But performance not guaranteed

- Ineffective or overbroad
- Circumvention
- Displacement
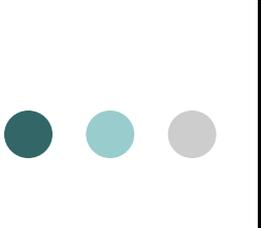
Democratic objections

Law	Design
Public consultation and deliberation	Lack of participation by affected stakeholders
Laws are publicly promulgated, transparent	Design may be opaque, intentionally concealled
Implementation and sanctioning by enforcement officials subject to appeal/review	No mechanisms for review or appeal (can't argue with a concrete bollard)
Promulgated by democratically elected legislature	May override legislatively authorised balance of values – lack of democratic legitimacy
Individuals subject to enforcement entitled to due process	No due process constraints
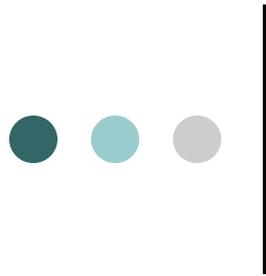
Other objections

- Ethical objections
- Nudge
- Collective implications

Ethical objections

- May lock-in discriminatory effects, even if unintended

In memory of Leonard Ball, who hated fat people

monkeon.co.uk

Ethical objections

- May treat people as things rather than individual moral agents entitled to dignity and respect

Ethical objections

May inappropriately allocate responsibility for bad outcomes

Deception and manipulation

Nudge as design

- What is a nudge? (Thaler and Sunstein)
- a technique for seeking to control behaviour (a regulatory instrument)
- 'an aspect of **choice architecture** that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives'

Richard H. Thaler
Cass R. Sunstein

Nudge

Improving Decisions
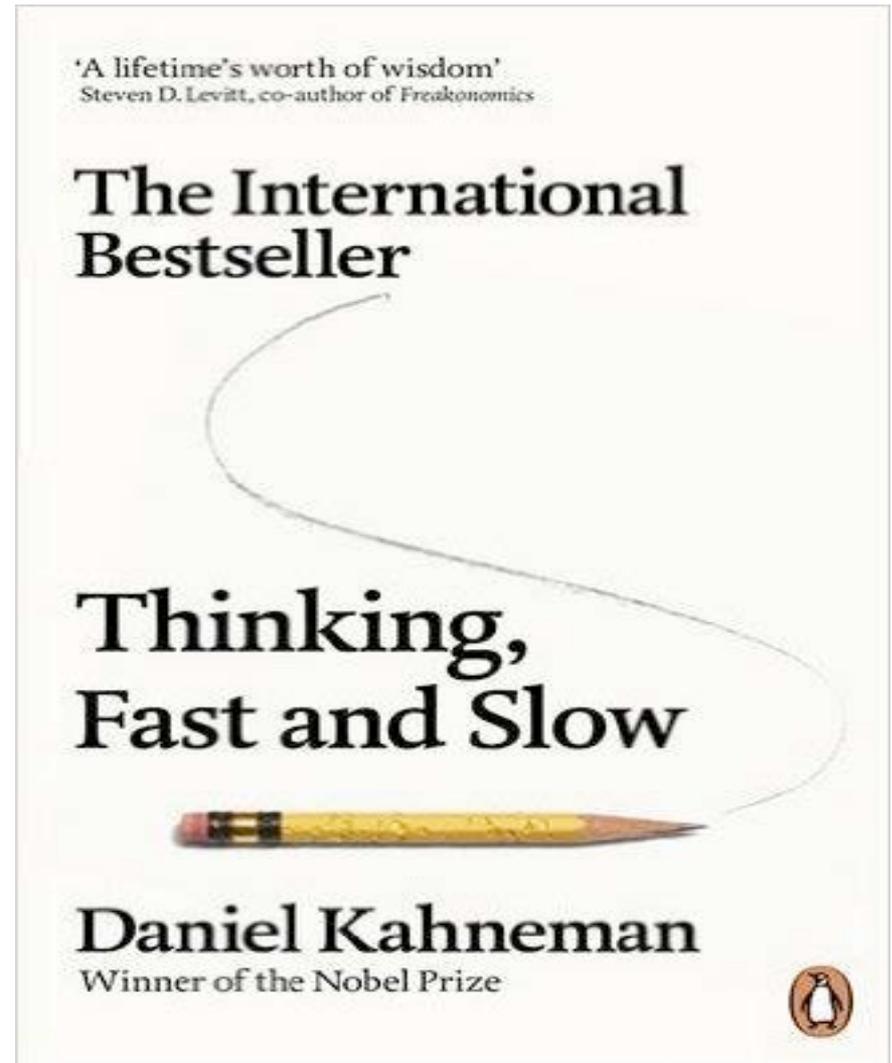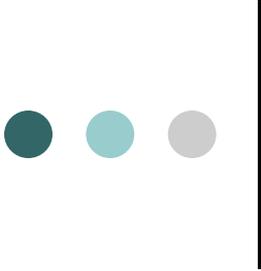About Health, Wealth,
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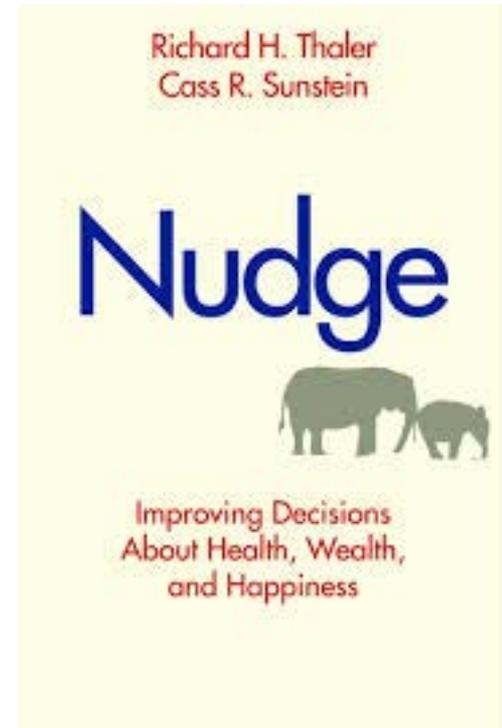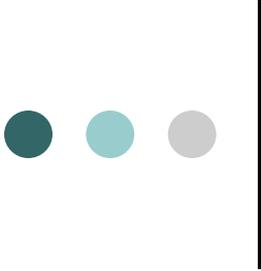
Nudge's intellectual heritage:

- Origins: cognitive psychology - lab experiments to understanding human decision-making
- systematic divergence between the rational actor model assumed in microeconomic analysis and how individuals actually make decisions.
- We systematically make 'sub-optimal' decisions due to our pervasive reliance on cognitive heuristics.
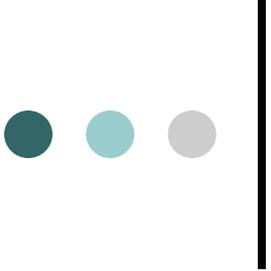
Understanding human decision-making

- System I thinking (fast, unreflective, easy)
- System II thinking (slow, deliberative, cognitively demanding)

'A lifetime's worth of wisdom'
Steven D. Levitt, co-author of Freakonomics

The International Bestseller

Thinking, Fast and Slow

Daniel Kahneman
Winner of the Nobel Prize

Some common cognitive heuristics

- **Availability heuristic**: tendency to predict the frequency of an event, or proportion within a population, based on how quickly past instances can be brought to mind. Eg in aftermath of a natural disaster, insurance sales for that kind of event rise sharply then rapidly decline as vivid memories recede

- **Anchoring heuristic:** 'anchor' on one trait or piece of information when making decisions, influencing our intuitive assessment of probabilities. People start with an implicitly suggested reference point 'the anchor' and make adjustments to it based on additional information to reach their estimate

- **Status quo bias:** tendency not to change an established behaviour unless the incentive to change is compelling.

- **Framing effect** : presenting the same option in different formats can alter people's decisions. Eg Asked to choose between treatment options, Option A is presented as having a 70% chance of success, and Option B as having a 25% failure rate, a significant number of individuals will choose Option A, even though Option B has the higher probability of success

Rise of behavioural economics

- Emergence of 'behavioural economics' cf microeconomics - does not assume rational actor model of human decision-making

- Ambition: to develop an approach to legal and social policy that integrate findings from cognitive psychology into an economic framework to generate an approach with greater descriptive accuracy and predictive reliability

- Offers prospect of accurately modelling how people will react to varying rules and policy interventions – esp attractive to politicians as a set of policy prescriptions for curing social ills

- Tim Harford (FT, 2014) 'behavioural economics is one of the hottest ideas in public policy'
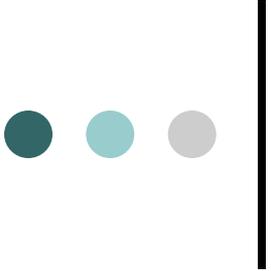
Nudge

- Nudge: draws on these findings of cognitive psychology Core idea – use 'choice architecture' to shape the *context* in which people make decisions, rather than altering or extending the range of choices

- Choice architects are like building architects: make design choices that they expect will yield beneficial effects (eg open stairwells)

- Urges deliberate **design of the informational choice architecture** to 'nudge' behaviour in desired direction by shaping the *context* in which people make decisions, rather than altering or extending the available range of choices

- Nudge as a form of 'design-based' regulation
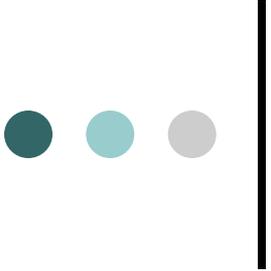
'Nudge' in public policy

○ Reflected in 'behavioural insights team' established at the highest levels of government in recent years

- UK: Conservative- Lib Dem Administration,

- USA: Obama's Democratic Administration White House)

- Australia: NSW Department of Premier and Cabinet announced that it had recruited a senior member of the UK's nudge unit, Rory Gallagher, to help find ways to nudge the citizens of NSW (2012)

Nudging for health

Intended to encourage healthier eating owing to the 'availability' heuristic
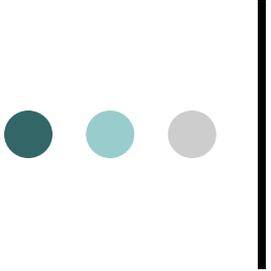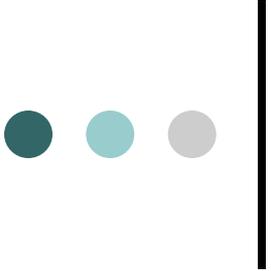
Types of nudge

Nudges can be roughly classified into three groups, based on the underlying architectural mechanism through which they are intended to work.
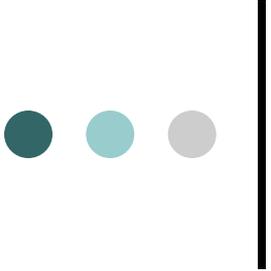
(a) physical design

(b) deliberation tools

(c) 'stealth nudges' (defaults and anchors)

Why nudge?

- Portrayed as 'libertarian' – no alteration of the formal options (eg can still choose the chocolate cake) so avoids 'nanny state'

- Yet can generate effective outcomes: eg default opt in to increase pension savings

Critiques of nudging

○ performance and effects

○ 'libertarian paternalism'

○ Manipulative, opaque and lack accountability

# Collective implications of the turn to design-based regulation

- infantilisation: people won't learn from their mistakes

- political quietism: treats symptoms rather than causes (treat 'disruptive' children with Ritalin)

- rise of the 'psychological state' and what it portends

- Towards Brave New World?
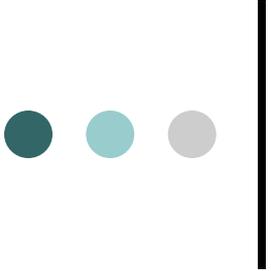
Big Data as 'Hypernudge'

○ 'Big Data' revolution: transformation in myriad social domains due to rise of big data technologies which allow for real-time, continuous digital tracking and algorithmic analysis of huge data sets

○ Core technology for 'persuasive technologies' that utilise algorithmic techniques for 'selection optimisation
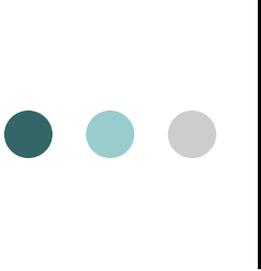
○ What implications?
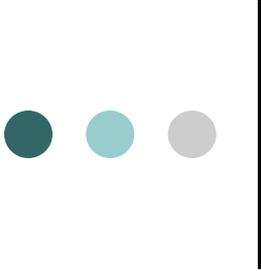
Big Data as Regulation by Design

- Today at 1:00 PM

"Hypernudge: Big Data as a Mode of Regulation by Design"

- Melbourne Law School, Level 9, Room 920

- Please register via Melbourne Law School web link to Eventbrite

Further references

○K Yeung, "Design for Regulation." 2015. In *Handbook of Ethics, Values and Technological Design,* edited by M J van den Hoven, P E Vermaas and I van de Poel. Dordecht: Springer;

○K Yeung, "Are human biomedical interventions legitimate regulatory instruments?" 2016 forthcoming. In *The Oxford Handbook on the Law and Regulation of Technology*, edited by R Brownsword, E Scotford and K Yeung. Oxford: Oxford Univ. Press.

○K Yeung, "The Forms and Limits of Choice Architecture as a Tool of Government" (2016) *Law & Policy*, forthcoming.

○K Yeung, "Nudge as Fudge" (2012) 75(1) *Modern Law Review*, 122-148

○K Yeung, "Towards an Understanding of Regulation by Design." 2008. In *Regulating Technologies: Legal Futures, Regulatory Frames and Technological Fixes*, edited by R Brownsword and K Yeung. Oxford: Hart Publishing, Oxford.