

# Nudging and other behaviourally-based policies as enablers for environmental sustainability

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# Abstract

Recent years have shown the fallibility of traditional regulatory techniques to cope with behaviour change, e.g., regarding environmental sustainability.

Governments have been including behaviourally informed considerations in policy and the law.

This gave rise to « green nudges », the practical and ethical implications of which remain largely neglected in legal scholarship.

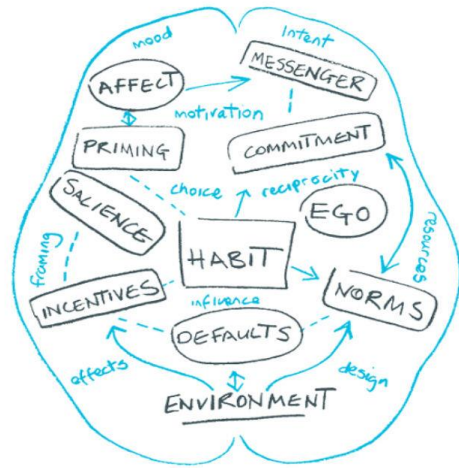
This paper analyses the concept and impact of nudges and boosts in the law, particularly as far as autonomy is concerned.

# Roadmap

1. The importance of behavioural insights in the law in general and for environmental protection in particular.
2. Types of behavioural interventions: *nudges* and *boosts*.
3. Taxonomy of « green nudges ».
4. Ethical and practical problems of nudging and boosting, in particular on autonomy.
5. Interim conclusions.

# 1

The importance of behavioural insights in the law in general and in environmental protection in particular



# Importance of behavioural insights in the law (I)

Surge in formal recognition of the potential of behavioural insights for policy (35 OECD members, World Bank's GINI).

## Importance of behavioural insights in the law (II)

- Classic Economics: people's motivation is money.
- Subsidies, taxes, penalties and fines can discourage the right action and lead to a reinforcement of unwanted behaviours.
- Behavioural Economics: market failures can be caused by biases of individual decision-making.
- Appeal to non-monetary incentives.

# Importance of behavioural insights in the law (III)

**Table 3 Policy tools to influence individual behaviour based on (House of Lords 2011)**

<b>Regulation of the individual</b>	<b>Fiscal measures directed at the individual</b>		<b>Non-regulatory and non-fiscal measures with relation to the individual</b>				
<i>Eliminate and restrict choice</i>	<i>Guide and enable choice</i>						
	Incentives and information			Nudging			
Laws and regulations	Fiscal incentives	Non-fiscal incentives	Provision of information	Simplification and framing of information	Changes to physical environment	Changes to the default policy	Use of social norms

Source: Mont, Lehner & Heiskaner, 2014

# Importance of behavioural insights in the law (IV)

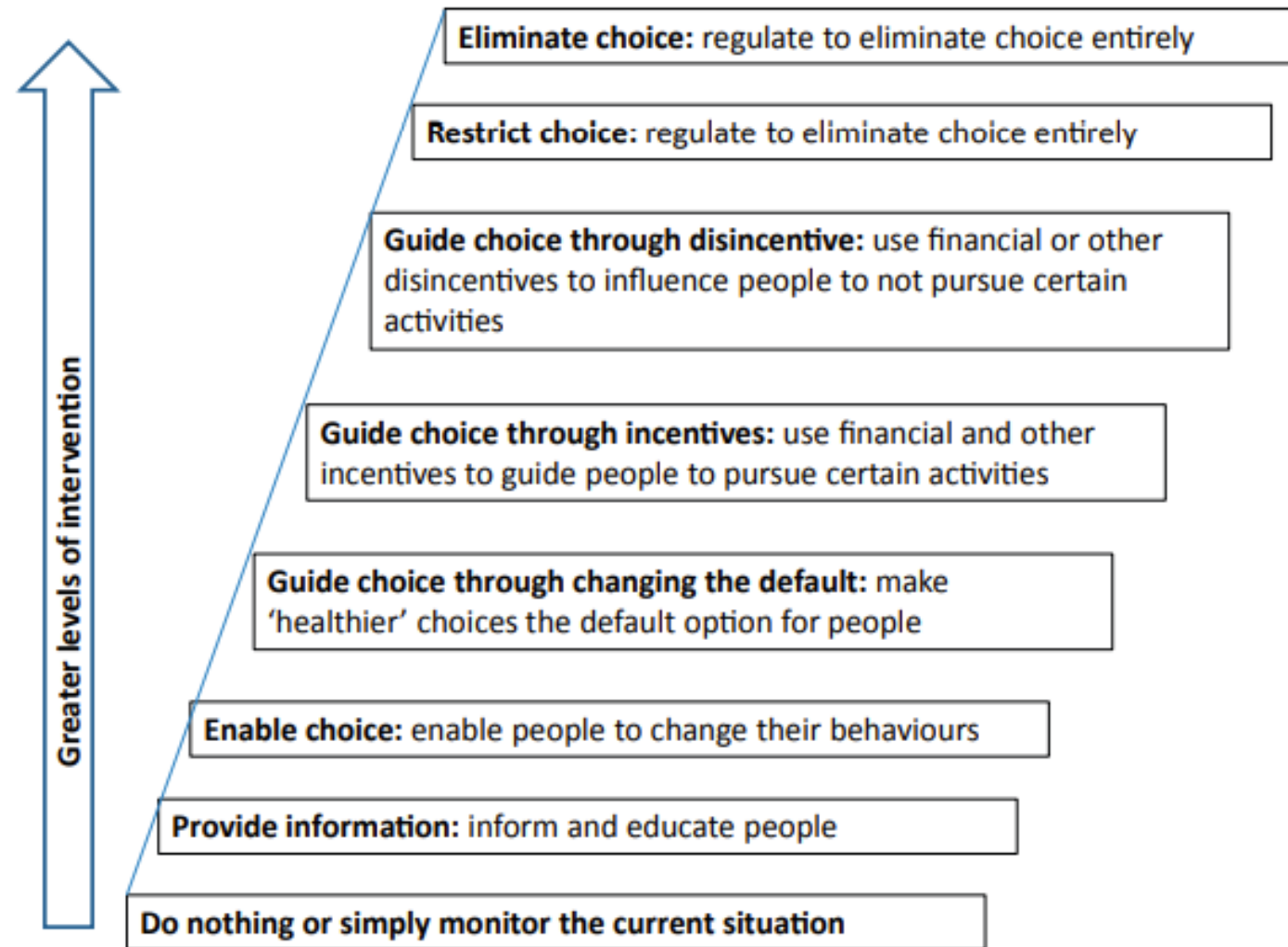


Figure 5 Ladder of interventions (Nuffield Council on Bioethics 2007)

Source: Mont, Lehner & Heiskaner, 2014



## The use of behaviourally informed tools for environmental protection (I)

Private consumption is responsible for more than a quarter of all greenhouse gas emissions.

EU Green Agenda (carbon pricing and consumers' empowerment).

2030 Agenda for Sustainable Development (Goals): need of maximizing outcomes.



## The use of behaviourally informed tools for environmental protection (II)

- Environmental regulation (« anti-nudges ») such as command-and-control instruments, market-based mechanisms, participatory-based regulation and self-regulatory schemes proved partially ineffective.
- « Nudge » instruments such as incentives, that work based on smart information disclosure, warnings, uses of social norms and default rules proved effective, particularly in (energy) resource efficiency and waste management .

## The use of behaviourally informed tools for environmental protection (II)

**Green nudges:** subsets of behavioural environmental policies that aim at promoting environmentally benign behaviour.

We know and sometimes want to behave in a way that helps fighting climate change, but due to the « intention-action gap » that does not always happen.



Source: "Consuming Differently, Consuming Sustainably" Page 10

# 2

Types of behavioural interventions: *nudges* and *boosts*

## Types of behavioural interventions: *nudges* and *boosts* (I)

- ***Nudges*** and ***boosts*** (Grüne-Yannoff & Hertwig) are policies or interventions that, based on psychological insights, structure choices in a way that people are more prone to make a choice that is either in their interest (paternalistic) or in the interest of third parties (non-paternalistic).
- Commonalities: based on empirical evidence of substantial and diffused cognitive and behavioural limitations; regulatory cognitive-based; neither imply a financial incentive; both reportedly leave freedom of choice untouched; cheaper than traditional regulation.

## Types of behavioural interventions: *nudges* (I)

Nudge is “any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives”.

Return of deposit for plastic bottles or “nutri-boost” are not nudges.



## Types of behavioural interventions: *nudges* (II)

- Categories: Default rules (inertia), smart information nudging (framing, salience and social influence) and exploitation/neutralisation of emotional responses.
- Libertarian paternalism: nudge stimulates choices that are perceived as welfare enhancing for the individual (paternalistic) but does not restrain the freedom of option of the agent (libertarian).
- BUT...
- Oxymoron? Is autonomy-freedom affected?
- There are paternalistic and non-paternalistic nudges.
- A narrower concept would reduce complexity and improve conceptual arrangement.

# Types of behavioural interventions: *boosts* (I)

Boosts are behaviourally-based interventions that target competences, instead of immediate behaviour.

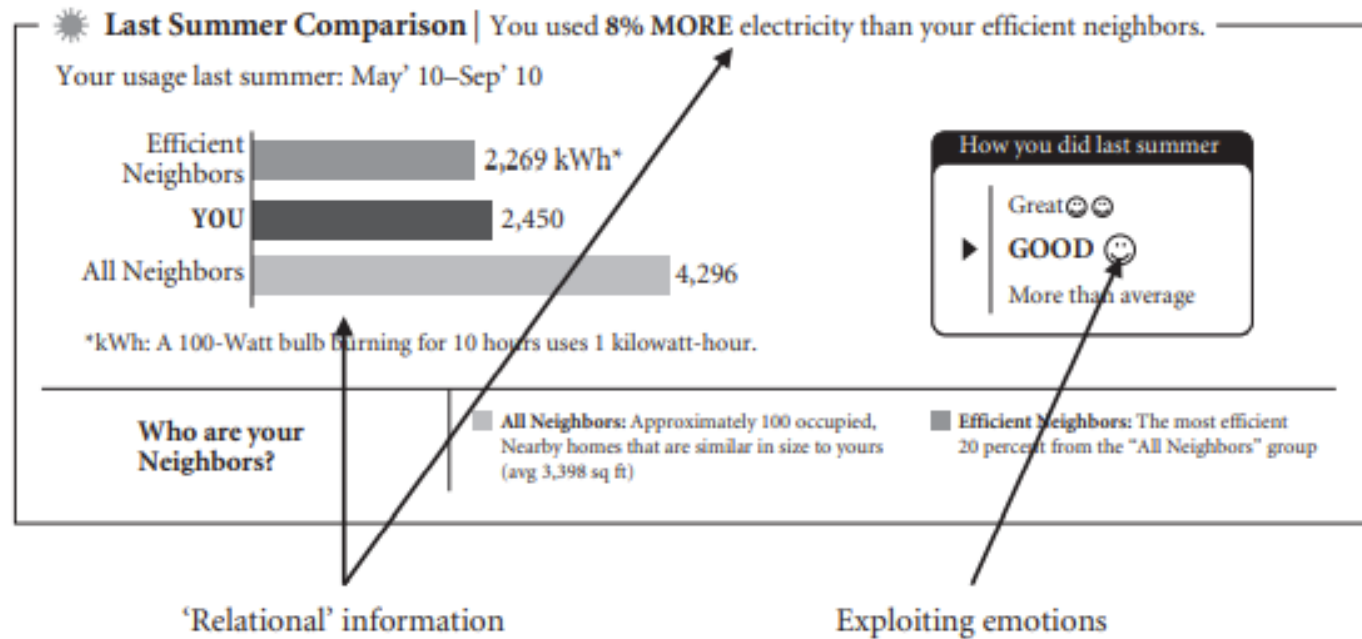
Hertwig & Grüne-Yanoff: risk literacy boosts, uncertainty management boosts and motivational boosts.

Di Porto & Rangone (empowerment): simplification of information, framing of information and priming, targeted education, simplification of choices and overcoming emotional responses.





# Types of behavioural interventions: *boosts* (II)



**Figure 2: An example of smart information nudging**  
Source: Opower, City of Pasadena 2014.

Source: Di Porto & Rangone, 2015

## Types of behavioural interventions: *boosts* (III)

**Self-boosts** (« self-nudges » - Reijula & Hertwig / sophisticated choice – Bovens, notes-to-self): self-paternalistic and empowering interventions that enable people to become choice architects.



# Types of behavioural interventions: nudges and boosts (I)

**Table 1** Eight assumptions of the nudge and boost approaches

	Nudge	Boost
<i>Cognitive error awareness</i>		
Must the decision maker be able to detect the influence of error?	No	Yes
<i>Cognitive error controllability</i>		
Must the decision maker be able to stop or override the influence of the error?	No	Yes
<i>Information about goals</i>		
Must the designer know the specific goals of the target audience?	Yes	No
<i>Information about the goals' distribution</i>		
Must the designer know the distribution of goals in the target audience?	Yes	No
<i>Policy designer and cognitive error</i>		
Must experts be less error-prone than decision makers?	Yes	No
<i>Policy designer and benevolence</i>		
Must the designer be benevolent?	Yes	No
<i>Decision maker and minimal competence</i>		
Must the decision maker be able to acquire trained skills?	No	Yes
<i>Decision maker and sufficient motivation</i>		
Must the decision maker be motivated to use trained skills?	No	Yes

Source: Grüne-Yanoff, Hertwig, Nudges Versus Boosts, p. 164

**Table 1.** Seven Dimensions on Which the Nudging (Non-educative) and Boosting (Long-Term) Approaches to Public Policy Can Be Distinguished

Dimension	Nudging	Boosting
Intervention target	Behavior	Competences
Roots in research programs and evidence	Show decision maker as systematically imperfect and subject to cognitive and motivational deficiencies	Acknowledge bounds but identify human competences and ways to foster them
Causal pathways	Harness cognitive and motivational deficiencies in tandem with changes in the external choice architecture	Foster competences through changes in skills, knowledge, decision tools, or external environment
Assumptions about cognitive architecture	Dual-system architecture	Cognitive architectures are malleable
Empirical distinction criterion (reversibility)	Once intervention is removed, behavior reverts to preintervention state	Implied effects should persist once (successful) intervention is removed
Programmatic ambition	Correct momentous mistakes in specific contexts—"local repair"	Equip individuals with domain-specific or generalizable competences
Normative implications	Might violate autonomy and transparency	Necessarily transparent and require cooperation—an offer that may or may not be accepted

Source: Vugt et al, 2018

## Types of behavioural interventions: *nudges* and boosts (II)

## Types of behavioural interventions: *nudges* and boosts (III)

Differences with nudges: target of intervention (system 1 vs system 2 - *Kahnemann*) and causal pathways taken to prompt behavioural change (bias preserving vs de-biasing).

*Table 4.1 Two cognitive modes of thinking*

Automatic thinking	Reflective thinking
Uncontrolled	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious	Self-aware
Skilled	Rule following

# 3

## A taxonomy of « green nudges »



**Table 2**

Nudge mechanisms used to influence residential energy consumption.

Nudge mechanisms used	Applications to residential energy efficiency	Evidence of effectiveness
Simplification and framing of information	Feedback on energy consumption: Informative energy bills, metering and displays Energy labelling of appliances and buildings	Extensive research on all scales: tailored and small-scale interventions render 1–20% savings, large field trials about 2% Experience on a large scale, but limited evaluation of effects
Changes to the physical environment	Design for sustainable behaviour, Design with intent (of homes and appliances) Prompts as reminders of appropriate behaviour	Small scale trials, little evidence of the size of the effects Standard in some environments such as hotels (key card removal turns of lights)
Changes to the default option	Opt-out green electricity offers Opt-out from smart grid trial (technology installed to control consumption)	Small scale trials, evidence of effectiveness as part of a package of interventions 95–99% of customers stay with the “green electricity default” Large effects (20%) in one survey study
Use of descriptive social norms	Social comparison billing feedback	Large effects in small scale trials (average 11%), smaller effects in large field trials (e.g. 2% savings)

Source: Lehner, Mont & Heiskanner, 2013

# A taxonomy of « green nudges » (II)

1. Appeal to people's self-image or self-identity





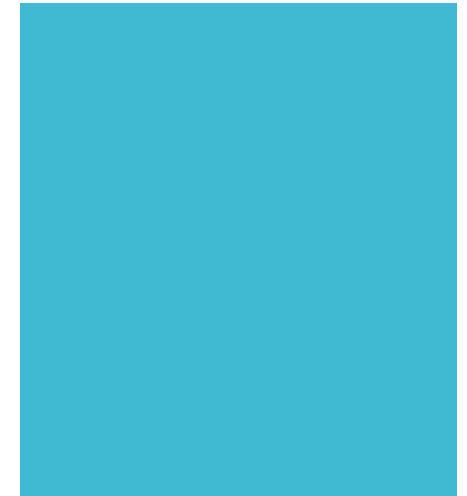
# A taxonomy of « green nudges » (III)

## 2. Appeal to social conformism



# A taxonomy of « green nudges » (IV)

## 3. Modification of defaults



# 4

Ethical and practical problems of nudging and boosting, in particular on autonomy

# Ethical and practical problems of nudging and boosting, in particular on autonomy (I)

- Nudge scepticism: Ethical reasons (autonomy, reversibility, impact on self-regulation and fairness) and practical problems (sustainability, preference identification)
- Autonomy:
  1. Lack of transparency: « work better in the dark », despite recent empirical studies
  2. Manipulation critique: lack of transparency generates bypass of reflective or deliberative processes, but doctrinal spectrum:
- J. Stuart Mill (« On Liberty »): individuals have authority to demand that they are allowed to make choices for themselves.
- Hausman & Welch, Bovens: no self-knowledge and self-transparency in « nudges ».
- Buss: an individual acts autonomously if acts according to one's character or minimal human flourishing.
- Baldwin: three degree nudges

First Degree Nudge	Supply of simple information or a reminder with the aim of improving the target's capacity to make an informed, rational and conscious choice.	<ol style="list-style-type: none"> <li>1. Health warning on cigarette pack.</li> <li>2. Reminder to fill in tax return.</li> </ol>	Respects the autonomy of decision-maker and enhances target's rationality.
Second Degree Nudge	Behavioural or volitional limitations are exploited so as to bias decisions in a favoured direction.	<ol style="list-style-type: none"> <li>1. An opt-out organ donor regime is instituted.</li> <li>2. The office smoking zone is placed at a distance from the work area.</li> </ol>	The target could, on reflection, unearth the nature and effect of the nudge – but is unlikely to do so because of behavioural limitations and the tendency to exhibit an 'automatic' response.
Third Degree Nudge	Framing strategies, emotional responses or covert techniques are used to influence decisions or shape preferences.	<ol style="list-style-type: none"> <li>1. A campaign promotes healthy eating with the slogan: 'Don't lose your looks, junk the junk food!'</li> <li>2. Shocking images are used to control behaviour – as when photographs of lung cancer victims are used to control smoking.</li> <li>3. Unpublicised subliminal TV messages are used to encourage e.g. healthy eating or abstinence</li> </ol>	The target is influenced but reflection is obstructed or reflection materially fails to unpack the nature and extent of the decision or preference shaping.

Source: Baldwin, 2014

## Ethical and practical problems of nudging and boosting, in particular on autonomy (II)

# Interim conclusions

1. Behavioural-informed regulation and green nudges in particular should complement, rather than replace, traditional policy and legal instruments.
2. Behaviour environmental law should be based upon transparency: nudges should only be deemed ethically legitimate as long as it is possible for the object of the nudge to « unmask the manipulation » (token transparency criterion from *Bovens*).
3. Boosts should be deployed for « good people » (those whose morality would make them be consciously and willingly non-compliant agents).
4. The use of boosts should, whenever possible, precede the use of nudges.
5. Further research is needed on the use of « nudge »-like instruments for environmental sustainability.

Thank you for your attention.

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