Nudging as a policy instrument. How choice architects pursue health, wealth and happiness in the information age

Anders Esmark

Department of Political Science
University of Copenhagen
ae@ifs.ku.dk

Introduction

The nudging agenda spearheaded by Thaler and Sunstein's roadmap to more 'health, wealth and happiness' (2009) has positioned itself at the forefront of a surge of interest in behavioural economics, social psychology and experimental research in public policy-making (Thaler 2015, Halpern 2015, Shafir 2013, Oliver 2013, 2015, John 2016) and a corresponding theory of 'libertarian paternalism' concerned with the issues of legitimacy and law (Sunstein 2000, Thaler and Sunstein 2003, Rachlinski 2009, Sunstein 2014, Alemanno and Sibony 2015). The defining idea of the nudging agenda, based on these sources, is that public policy makers and administrators should become 'choice architects' strategically designing the context for individual choices in order to mitigate cognitive biases and flaws that stand in the way of more individual and collective welfare in policy areas such as, but not limited to, health, energy, transportation, climate change, education, personal finance and civic participation.

In contrast to this image of a pending behavioural revolution in public policy, the article links nudging to the informational turn in governance and policy instrumentation that has established itself across the various public sector reforms in recent decades. At verge of its ten year anniversary, the nudging agenda has yet to be analysed more systematically as a tool of government and policy design. Such an analysis makes it possible to dispense with some of the more overstated claims to

novelty pinned to the behaviourist agenda. However, the point of the article is not only to provide the nudging debate with a much needed degree of context. Approaching nudging from the perspective of more established debates in public management also makes it possible to better appreciate what *is* new and potentially innovative about the nudging agenda: the particular operationalization of communicative governance based on extensive use and combination of informational tools. Thus understood, the importance of the nudging agenda has less to do with a pending behavioural revolution than an informational turn in policy design, which will only become more pervasive with the advance of the information age.

The article develops this argument through the following steps. First, the nudging agenda is linked to the governance agenda and its constitutive principles of connective governance, risk and performance management. Secondly, nudging is distinguished from the archetypical approach to information-based policy instrumentation: the public information campaign. Thirdly, nudging is discussed in the context of a broader informational turn in policy instrumentation and regulatory thinking. Fourthly, the article examines the implications of the informational turn more specifically as an increased emphasis on 'nodality' and 'organization' in recent decades due to proliferation of informational networks based in digital ICT's, adding important insights into how these policy instruments are used and linked. Fifthly, the article proceeds to the operational level of nudging interventions, providing the first comprehensive modelling of information-based techniques used in nudging interventions across policy domains.

Why nudge? From libertarian paternalism to governance

The broader reasoning behind nudging interventions is usually associated with the political and legal theory of libertarian paternalism, which was developed well before the nudging agenda itself (Thaler & Sunstein, 2003). Indeed, critical discussions of the nudging agenda have more or less

univocally focused on the intellectual and ideological ancestry, inconsistencies and inadequacies of libertarian paternalism as the key to understanding the nudging agenda {Barnett, 2016; Leggett, 2014, Rebonato, 2012}. However, a brief, programmatic and largely ignored declaration by Thaler and Sunstein suggests a somewhat different background for the nudging agenda: '*we are not for bigger government, just for better governance*'(2009, p. 15).

Seen through the prism of the established distinction between New Public Management reforms and the diverse post-NPM reforms that received their conceptual focal point with the notion of New Public Governance, it would be tempting to conclude from this allusion to good governance, prompted by libertarian paternalism and behavioural economics, that the nudging agenda is rather straightforwardly aligned with NPM thinking (Christensen & Lægreid, 2007; Jessop, 2011; Lodge & Gill, 2011; Olsen, 2006; Osborne, 2010; Pollitt & Bouckaert, 2011). This is, however, less a foregone conclusion if we look at the reference to governance as a precursor to the actual practices invested in nudging interventions rather than a programmatic summary of theoretical and ideological affiliations. From this perspective, the nudging agenda rather combines the three constitutive principles of the governance paradigm of public sector reform and policy development: connectivity, risk and performance

(I) *Connective governance* bears similarities to network governance and collaborative governance (Agranoff 2007, Scott and Thomas 2016). However, it refers more directly to the proliferation of informational networks and digital technologies that stands at the centre of recent reflections about the policy instrumentation in the digital age, as well as the implementation of digital ICT's usually debated in the specialized literature on e-governance (Budd and Harris 2009, Hood and Margetts 2014) and the broader concept of digital era governance (Dunleavy et al. 2006). Rather than implementation of technology and digitalization, even in the broader sense of these terms, the

guiding principle of connective governance is an 'imperative but difficult transition to a network state' (Castells 2005, 15) geared to the challenges of the 'network society' that define the fundamental structures and processes of the information age (Castells 2000-2004).

The structures and processes include, inter alia, connectivity (the organization of networks in nodes and hubs ensure multiple points of connection), globalization (networks have the potential for global reach, albeit national interventions may still ward off networks), speed (networks can process information faster than other forms of organization), flexibility (networks can be build and modified faster than other forms of organization), scalability (networks can be formed and reformed to suit any level of action), complexity (networks provide a form of 'organized complexity'), self-organization (networks can form and function without central or hierarchical guidance), recursion (networks process information in a non-linear and modulating way) (Castells, 2005; Chadwick, 2013; Crozier, 2007; Lash, 2002; Roberts, 2015).

As a leitmotif for state adaption to these challenges, the transition to a network state involves a pervasive reorientation towards informational and communicative governance (Bang 2003, Hajer and Wagenaar 2003) and ultimately a complete 'transformation of political management, representation and domination under the conditions of network society' (Castells 2005, 16). The nudging agenda highlight an important aspect of this transformation: the use of connectivity to systematically shape the *individual choice-making of citizens* in relation to stated policy objectives. For the nudging agenda, networks and connectivity presents an opportunity for the creation and management of *embedded individual choice* through so-called 'choice architecture'. While this objective may appear overly instrumental and individualizing to some, nudging interventions should nevertheless be seen as an established form of public meta-governance, increasingly complementing

the stakeholder involvement, mutuality, negotiation, deliberation and identity-building usually highlighted in the debate on network, collaborative and communicative governance.

(II) *Risk* can be defined as the 'effect of uncertainty', leading to a loss of certainty, control and insurance capacity for governments (Renn and Schweizer 2009, Beck 1996). In public policy, the effect of uncertainty received one of its most and enduring formulation with the discovery of the wicked problem as the default nature of most policy problems, in no small measure related directly to the proliferation of informational networks (Rittel and Webber 1973). Even if attempts to deal with wicked problems were not originally connected to the concept of risk, they now stand at the centre of risk management and governance (Head and Alford 2015). Adding to this development has been the increasingly cataclysmic effects of the inability to deal with risks in context defined by looming catastrophes such as global financial crisis, overpopulation, climate change or natural disaster (Daniels, Kettl, and Kunreuther 2006).

Risk management, correspondingly, aims to develop 'resilient' organizations, states and societies capable of dealing with wicked problems, uncertainty and looming catastrophes. Such resilience depends on the cultivation of a deep commitment to continuous risk assessment, risk awareness and application of risk calculus defined by the principal analyst of risk society simply as 'reflexivity' (Beck, 2006). In order to manage uncertainty and adapt to ever-changing circumstances, state and citizens alike must cultivate a deep commitment to reflexivity, i.e. a willingness to constantly assess and change behaviour based on continuous assessment and calculation of risks. The nudging agenda can be considered a particularly pronounced example of a government-citizen relation modelled on the idea of such reflexivity. Again, the particular focus of the nudging agenda is the individual level and hence the development of *individual resilience* through consistent application of risk calculus to individual welfare choices. Nudging interventions, correspondingly, consists in the accumulation

and dissemination of information meant that can heighten risk awareness and facilitate the application of risk calculus

 (III) Risk management goes hand in hand with *performance management*. Performance measurement and performance information provides the certainty and objective facts needed to avoid governmental fatalism in a situation defined by contingency, uncertainty and the commitment to reflexivity. Extending Power's original point about audit practices, performance measurement and information have become a 'powerful institution of risk processing' (1999, 139). In contrast to the organizational control still at the heart of most auditing and inspection practices, the purpose of performance information in nudging interventions is to facilitate the risk processing of individual citizens. Correspondingly, performance information take on a broader and more expansive meaning in nudging interventions, comprising a whole range of means for making individual performance available as test for ongoing choice-making.

Nudging intervention can also be said to serve the broader goal of scientific and evidence-based policy (Van Dooren, Bouckaert, and Halligan 2015), and in particular the experimentalist agenda that sets the gold standard of this ambition (Sanderson 2002). Nudging interventions are often designed as experiments and/or based on previous experiments, thus incorporating them in the ongoing production of knowledge and evidence seen as the primary source of policy development in performance management. This commitment to experimentation and testing, however, does not merely make test subjects of citizens, but potentially also involves them in the broader goal of performance governance, i.e. the 'co-designing, co-deciding, co-producing and co-evaluating public services in society' (Bouckaert and Halligan 2008, 189).

Is nudging old campaigns in new bottles?

A nudge is defined in the following way by its main architects: 'A nudge, as we will use the term, 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' (Thaler and Sunstein 2009, 6). At a first glance, the definition is nominally empty: it merely states what governments are *not* supposed to do, i.e. impose legal prohibitions and sanctions or fiddle excessively with economic incentives. Or, taking Sunstein and Thaler's background into account: a nudge is simply what falls outside the conventional realm of law and economics. Whereas proponents of nudging tend to see this definition as evidence of a novel and innovative approach based on the insights of behavioural economy and psychology, a policy instrumentation perspective would suggest that it rather places the nudge in a reasonably well-known category of tools.

Based on Vedung's well-known distinction, the definition can be seen to exclude 'sticks' and 'carrots', placing nudging in the category of 'sermons', i.e. the governmental use of information for purposes of 'moral suasion' and 'exhortation' (1998, 33), emblematically expressed by the public information or communication campaign (Mendelsohn 1973, Weiss and Tschirhart 1994, Rice and Atkin 2013). This impression is further substantiated by the fact that the nudging debate is rife with references to textbook-like public information campaigns concerning issues such as safe driving, the perils of smoking, recycling etc. (Thaler 2015, Sunstein 2015). Moreover, the nudging agenda has been characterized as mixture of the traditional public information campaign and 'smart information provision' based on the insights of the behavioural paradigm (John 2013, 2016). However, the image of nudging as a traditional public information campaign injected with behavioural insights and new technology offers only a superficial treatment of the role of information and communication in nudging interventions.

Thaler and Sunstein have not reflected upon this issue in much detail or substance, but do offer a brief entry point to the issue more or less in passing: '[critics] might object that if we permit information campaigns that encourage people to conserve energy, a government propaganda machine will move rapidly from education to outright manipulation to coercion and bans' (2009, 235). On the one hand, the quote does acknowledge a link between nudging interventions and the traditional public policy campaign. On the other hand, it also highlights concerns about governmental purposes and practices associated with traditional public campaigns that are potentially at odds with the overall logic and scope of nudging interventions: those of propaganda and education.

(I) With respect to the former, Thaler and Sunstein are clearly not wrong to suspect accusations of building a new propaganda machine designed to manipulate free choice (Rebonato 2012, Hansen and Jespersen 2013). However, such accusations are often based on a rather broad understanding of propaganda as everything that is not purely technical or supposedly 'neutral' information. In more substantial terms, propaganda can be defined as communication for the purpose of establishing and/or maintaining domination through suppression of information, deception, distortion, manipulation, the manufacturing of consent etc. (Herman and Chomsky 2002, O'Shaughnessy 2004). Judged against this standard, nudging interventions are in fact defined more by the attempt to avoid propaganda than the opposite. Even if a rather blunt understanding of good and bad welfare choices, one-sided advocacy and persuasion are certainly found more often in nudging interventions than their architects sometimes like to admit, they also remain largely committed to openness, publicity, facts and reflexivity.

(II) The educational purpose is, on the other hand, readily acknowledged by public choice architects, which would seem to reaffirm the bond between nudging and the traditional public

policy campaign. However, the voiced concern about the use of coercion and bans must also be taken into account here. The use of coercion and bans is not intrinsically linked to propaganda, but rather concerns the commitment of choice architects to free choice, autonomy, self-determination and reflexivity of citizens. Due to this commitment, the nudging agenda is characterized by an ambiguous commitment to 'educational campaigns involving distracted driving, seatbelt buckling and drunk driving' (Sunstein 2014, 139), coupled with persistent concerns about the threshold between nudging and 'nagging' forms of disciplinary and 'aggressive' campaigning illustrated by the interpretation of graphic health warnings in anti-smoking campaigns as part of a 'slippery slope' towards bans and penalties (Thaler and Sunstein 2009, 235).

The educational public information campaign is certainly the most immediate predecessor to nudging in terms of information-based policy instrumentation. However, public choice architects are also in fundamental opposition to the paternalistic, bureaucratic and ultimately disciplinary understanding of the educational purpose vested in the traditional public information campaign, expressed in exemplary fashion by the idea of the 'sermon' (which should be taken literally rather than as a metaphor). More specifically, nudging interventions are defined through and through by the attempt to educate citizens without the entire apparatus of command-and-control, injunctions, detailed behavioural norms, prohibitions and the threat of sanctions in which the traditional public information campaign is deeply ingrained. This development, however, is not merely a matter of questioning the traditional public information campaign and its underlying idea of the sermon as a viable template for public communication. It is rather indicative of a more fundamental informational turn in policy instrumentation and regulatory thinking as such.

The informational turn in policy instrumentation: turning the toolbox upside down

Libertarian paternalism has been equated with 'soft paternalism' opposed to 'hard paternalism', echoing the distinction between hard and soft 'governance' (Sunstein 2014). The distinction between soft and hard governance is, however, of little value from a policy instrumentation perspective (Zehavi 2012). The fact that nudging interventions shun prohibitions, sanctions and heavy-handed use of economic control in favor of communication and information does not simply make nudging interventions 'soft'. What is at stake is rather a general transition from command-and-control polices to information-based and more or less voluntary policies (Noonan 2014), or from deterrence' to a 'compliance' and 'responsive regulation' (Ayres and Braithwaite 1994, 41).

The conventional approach to policy design, illustrated in exemplary fashion by Vedung's inventory of policy instruments, relies on a logic of 'authoritative force', according to which 'prohibitions' and the 'economic means of control' are the most important policy instruments – in that order (1998, 42-44). Sermons, for their part, arrive at a distant third and mainly serve an auxiliary support function to sticks and carrots, having modest behavioral effects in its own right due to the lack of coercive force and tangible rewards (1998, 35). With the compliance approach, the logic is inversed: legal provisions, licenses, sanctions and punishment are, albeit still vitally important, essentially an auxiliary function to persuasion.

Subsequent developments have only served to make this reversal and the underlying schism in regulatory thinking even more pronounced (Parker 2013). The new challenges and opportunities offered by digital information and communication technologies, in particular, have served to consolidate the information-based alternative to deterrence, command-and-control and the logic of authoritative force that more or less defines the common sense of regulatory governance, bureaucracy and administrative modernity as such. This development has, however, involved an

additional transformation of individual instruments according to their reversed order of application and the new emphasis on informational logic vis-à-vis the logic of authoritative force. The information-based approach to policy design and instrumentation has moved even further away from the interpretation and application of instruments as sticks, carrots and sermons, complementing the reversal outlined in embryonic form in the original pyramid of enforcement strategies. This development can be illustrated as follows:

Figure 1 about here

Figure 1 is not intended to pass judgment on regulatory effects, nor does it suggest a wholesale transformation from one type of regulatory thinking to another. Both the theory and the practice of policy design is currently involved in an ongoing back and forth between the two regulatory paradigms and their respective approaches to policy instrumentation, often within the same policy area (Leviner 2008, Tombs and Whyte 2013, Noonan 2014). Nevertheless, regulatory thinking and practice based on the logic of authoritative force may not reign quite as supreme as it used to. Against this background, nudging and the construction of choice architecture appears as a particularly paradigmatic expression of the new emphasis on information and a corresponding revision of old instruments in the search of new and potentially more and efficient ways to enforce policy across most or all domains in the portfolio of advanced liberal democracies.

Indeed, the construction of choice architecture can be seen as a manual for revision and recombination of policy instruments from an information-based perspective. In addition to nudges, construction of choice architecture involves attention to non-salient costs, incentive conflicts and

the eradication of perverse incentives (Thaler and Sunstein 2009, 107). However, public choice architects must avoid rewards and fines that impose heavy costs on choice makers (Sunstein 2014, 55). Legal standards, for their part, should be used in a non-prohibitive and non-punitive way, dislodged from the conventional threat of sanctions (Sunstein 2014, 55). The primary function of legal standards is to set the 'default' of any particular architecture, i.e. the 'associated rule that determines what happens to the decision maker if she does nothing' (Thaler and Sunstein 2009, 94). Moreover, legal standards play a crucial role in imposing disclosure requirements ensuring that the information needed in the construction of choice architecture is available and transparent (Sunstein 2014, 139). However, the nudge itself remains the crucial component of choice architecture.

Nudging = nodality + organization

Whereas the notion that sticks, carrots and sermons remain the basic options in policy design and instrumentation comes up against certain analytical limits due to its inherent reliance on the logic of authoritative force, Hood's inventory of nodality, authority, treasure and organization provides a more general and elaborated framework (1983). In particular, nodality and organization provides an important alternative to the rather restrictive idea of sermons and persuasion. Moreover, the NATO framework has proved resilient due to its reliance on cybernetic theory, which is not only highly general, but also eminently well suited to describe the increasing influence of communication technology and informational networks in recent decades. Indeed, this development was the immediate cause for Hood and Margetts' later reflections on the NATO-typology in the 'Digital Age' (2007, 2016), which is, for all intents and purposes, synonymous with the 'Information Age' (Hood 2008).

Although the information age is seen to effect authority and treasure as well, two claims stand out here: 1) nodality is 'the government instrument that has been most strongly affected by digital age

technology, in both collecting and distributing information'(Hood and Margetts 2007, 189) and 2) 'of all the NATO tools, it is perhaps for the tool of organization, in its most literal sense, that the digital age has brought the clearest change' (Hood and Margetts 2007, 119). Setting aside the normal procedure of crowning one winner only, both claims are in fact merited. However, nudging interventions also shed light on certain aspects of the transformation of nodality and organization in the information age, and in particular the link between the two, not yet fully covered by existing reflections on the ongoing transformation of these instruments.

Hood and Margetts do in fact offer a brief discussion of nudging as an example of the increased importance of nodality in the information age (2016, 149). However, this point is subsumed under a broader theoretical argument about the ability of 'generic' approaches such as the NATO-typology to capture the transformations associated with the information age, as well as the compatibility with so-called 'mixed-tool' approaches focused on the combination of instruments. Nudging is thus used as a brief illustration of the point that 'most policies are in practice a mix of available tools and the questions are of the emphasis placed on nodality within that mix rather than replacing it with (say) authority, which is rarely viable' (2016, 150). This is a sound conclusion. It is, however, also merely a starting point for a line of argument that needs further development.

(I) Nodality refers to the property of 'being in middle of an information or social network', although not necessarily 'dead centre' (Hood 1983, 4). In the information age, this property is subjected to the 'universalization of nodality', meaning the multiplication of centres in the informational flows of society and the potential loss of governmental centrality due to the proliferation of networks based on new digital communication and information technologies (Hood and Margetts 2016, 149). On the so-called 'effector' side of nodality, this development makes it increasingly difficult to ensure attention for governmental 'broadcast' messages to the population at

large in dense information networks often dominated by technically superior corporations, just as 'bespoke' messages targeted at individual citizens increasingly become subject to hacks and breaches. Faced with problems at either end of the spectrum between individual and general messages, governments gravitate towards the middle, making the increased use of 'group-targeted' messages a key trend in the information age (Hood and Margetts 2007, 189).

This trend is indeed confirmed by nudging interventions insofar as they are tailored to specific social groups based on the particular choice involved. However, nudging interventions also involve extensive use of communication media that tends to operate along the entire spectrum from general to individual messages. In general, nudging interventions rely extensively on 'new', social, interactive and largely digital media. However, nudging interventions also include 'old' electronic mass media and decisively low-tech media such as posters, road-signs and flyers. Nudging interventions makes use of the media best suited to the job, making the construction of choice architecture a matter of assembling a specifically designed 'hybrid' media systems based on different media technologies and the 'evolving interrelationships among older and newer media logics' (Chadwick 2013, 24).

The variable use of media is also reflected in the kind of group segmentation underpinning nudging interventions. The overriding principle of segmentation in nudging interventions, moreover, is a form of socio-economic risk profiling, identifying groups particularly exposed to the risk of bad health, lack of education, poverty, exclusion from democracy etc. Depending on how age, gender and geography is combined with such risk profiling, the groups targeted by nudging interventions are rather heterogeneous both qualitatively and quantitatively, oscillating between smaller groups and groups that are more or less de facto populations.

Even though nudging interventions primarily operate on the 'effector' side of nodality, the so-called 'detector' side can also be integrated in the construction of choice architecture. When such integration is found, which is not always the case, choice architecture involves a proactive search for highly specific information through government-controlled channels that clearly sets itself apart from the more established forms of such 'direct inquiry': spying and polling (Hood 2007, 27). A governmental homepage providing performance information to school-seeking parents can also double as an entry mask that ensures logging and storing of actual choices of schools. Hospitals and health centres involved in the dissemination of knowledge about a how to prevent a particular health problem are, more often than not, conducting trials and tests generating new information about the very same problem. This form of direct inquiry adds an important dimension to the emphasis on the new abundance of open channels available for governmental 'scrutiny' in the information age (Hood and Margetts 2007, 26).

(II) Nudging interventions also rely extensively on organization, which is to say the 'arrangement' of land, buildings, materials, equipment and people as effectors and detectors: whereas nodality works on 'knowledge and attitudes', organization works on 'your physical environment or even on your person' through so-called 'direct action' and 'treatments' (Hood 1983, 5). In nudging interventions, the use of organization is found in instances such as smart construction of roads to increase safety, buildings designed to make staircases more accessible than escalators, trash bins with integrated holders for recyclable cans and bottles, paper dispensers showing a vanishing rain forest, light bulbs indicating energy use, urinals with targets etc. In other words, the construction of choice architecture not only requires media and communication competence, but also architects in the normal sense of the word, urban planners, industrial designers and engineers.

The overriding trend found in existing observations of the effector side of organization runs parallel to nodality: governments gravitate toward 'group treatment' at the intermediate range between individual and at-large treatment (Hood and Margetts 2007, 120). The amendments to this trend noted in the discussion of nodality also apply here: nudging interventions operate along the entire spectrum from the individual to the general, often in ways that combine aspects from different levels of treatment. There is, however, an additional amendment in the case of organization: nudging is concerned with the often neglected and 'humdrum' aspects of organization, i.e. mundane and everyday aspect of organization, rather than the more extreme and largely disciplinary, corrective and punitive aspects usually emphasized. Nudging has little to do with marking, custody, deportation, flogging, mutilation etc. (Hood 1983, 72-82).

This emphasis on the disciplinary side of organization is no less prominent in reflections on the information age (Hood and Margetts 2007, 110). Indeed, the increased governmental surveillance capacity through digitally enhanced 'scanners' and 'turnstiles' seem to reinforce this link on the detector side of organization (Hood and Margetts 2007, 119), making 'dramatic new surveillance technology' one of the major developments in the information age (Hood 2008, 10). This development of surveillance and policing practices has also been taken up with great vigor in critical media studies (Trottier and Fuchs 2015). Even if such practices are readily apparent and certainly do call for critical reflection, however, they do not necessarily apply well to nudging interventions. When organization is used for detection in nudging interventions, which is far from always the case, it is predominantly for purposes of feedback or activation.

The more important tendency brought to the fore by nudging interventions is the increasing integration of nodality and organization in the information age. In nudging interventions, physical objects are increasingly integrated in the proliferating informational networks, in effect making

buildings, roads and other mundane technologies de facto communication media. This convergence

of nodality and organization also seems to be the underlying point in Hood's discussion of

'architecture', although without any reference to nudging or choice architecture, as a 'sort of

instrumentality that involves the physical structuring of environments so as to shape behaviour,

such as street lightning, speed bumps, or the sort of software architecture that does not accept

anything outside a pre-set range of responses' (Hood 2007, 139). In order to explore this type of

instrumentality in more detail, however, it is necessary to turn to the level of specific nudging

techniques and tools (Lascoumes and Le Galès 2007, 4).[i]

Nudging at work: the six techniques of nudging

There is, however, no agreement about what the techniques and tools of choice architects actually

look like. Existing attempts to discuss nudging from the perspective of policy design and

instrumentation have singled out individual elements of choice architecture such as norms, defaults

and social influence as tools in a rather broad sense (Moseley and Stoker 2015, John 2013, Leggett

2014). However, a comprehensive and systematic model of nudging techniques is still missing. The

behaviourally inspired bulk of the nudging literature, for its part, is mainly preoccupied with

compiling lists of cognitive biases and flaws that are then translated into policy design principles in

somewhat ad hoc fashion (Shafir 2013, Thaler 2015).

Although such lists have limited value from an a policy design and instrumentation perspective, the

underlying distinction between two cognitive systems called the 'Automatic system' and the

'Reflective system' by Thaler and Sunstein (2009, 21) is indeed important to the understanding of

nudging interventions. The two systems are also referred to as 'system 1' and 'system 2' in

behavioural economics (Kahnemann 2011, Thaler 2015), 'dual process theory' in psychology

(Evans and Stanovich 2013), and the 'elaboration likelihood model of persuasion' in

communication theory (Simons and Jones 2011, Petty and Cacioppo 1986). System 1 involves cognitive processes that are fast, uncontrolled, unconscious, effortless, associative and skilled, but also based on heuristics, cues and associations responsible problematic shortcuts and biases. System 2 comprises slow, controlled, effortful, deductive (logical and calculating) and rule-following processes of cognition and decision-making.

For choice architects, this distinction separates two fundamentally different modes of nudging. Techniques targeting system 1 thus involve the deliberate manipulation of such heuristics and cues, in particular through priming and framing. Although such techniques are considered contentions due to their overtly manipulative nature and affinity with electoral and commercial campaigns, they remain readily available for public choice architects in pursuit of higher individual or collective welfare rather than electoral or commercial success. The more ideal path of intervention for choice architects, however, is activation of system 2 in order to generate more deliberate, reflective and reasoned forms of decision-making (Halpern 2014, John et al. 2013, Stoker, Hay, and Barr 2015). Figure 2 provides an overview of these two paths of intervention and their respective techniques at the disposal of public choice architects.

Figure 2 about here

Nudging interventions are typically based on only one or a few of these techniques. Even if the ideal nudging intervention, in terms of maximizing regulatory effect, would in principle consist in a full-scale application of all six techniques, coupled with incentives and defaults, such a concerted and integrated government intervention has yet to be seen. Concrete applications of nudging techniques are highly diverse, spanning different policies and interventions. In the absence of a single case illustrating the use of all six techniques, the ensuing sections first provide a general elaboration of each technique, followed by a brief illustration of its application across three broad

fields of intervention: government attempts to increase a) healthy food choices b) energy efficiency and c) private savings and pensions.

1.1) *Mapping*: proceeding from the assumption that people are unlikely to spend much time looking for the often substantial and complex information needed to make sound choices, public choice architects can take it upon themselves to 'structure complex choices' and provide an informational map guiding individual choice, often considered the ideal nudging technique judged by the standard of free choice and reflection (John et al. 2013, 64). However, mapping involves more than disclosure and dissemination of raw data. The basic operation of mapping consists in the production and publication of performance information, using the tools of calculation, comparison and ranking. This approach is summarized in the so-called RECAP-principle (Record, Evaluate and Compare Alternative Prices), put forth as a method of simplifying and comparing information in otherwise intransparent areas such as cell phone calling plans, credit card schemes, insurance schemes, mortgages and Medicare (Thaler and Sunstein 2009). Broadening the scope somewhat, the 'P' in the RECAP-principle can be said to stand for performance rather than prices in a narrow sense, e.g. ranking of schools according to grade averages facilitating choice for school-seeking parents.

The field of a) healthy foods choices is home to one of the more widespread mapping practices: nutritional labelling. Well known from some systems of consumer protection, declarations of content and calorie information have been incorporated into the nudging agenda and given rise to various health labels and grading systems simplifying information and facilitating comparison even more. In a recent meta-analysis documenting the effect on dietary behaviour, nutritional labelling and calorie information features as the most prominent nudging technique (Arno and Thomas 2016). In the field of b) energy efficiency, similar forms of labelling have also been used and tested, with the EU label system being the most developed and effective (Newell and Siikamäki 2013).

However, the development of informational maps on energy efficiency also involves the broader practice of energy audits and provision of 'tailored' information (Abrahamse et al. 2007). Government drives to c) increase private savings and pension funds have, for their part, applied the RECAP-principle to financial products in order to provide citizens with the financial 'literacy' and 'capabilities' needed to conduct adequate social risk management (Holzmann 2014).

1.2) *Feedback* is closely aligned with mapping, but uses information more systematically and directly to illustrate effects of right and wrong choices, thus adding a stronger push in the direction of what the choice architects aim for: 'the best way to help humans improve their performance is to provide feedback. Well-designed systems tell people when they are doing well and when they are making mistakes' (Thaler and Sunstein 2009, 99). Such systems can take the form of 'red light' warning systems such as roadside speed displays (as opposed to speed traps and heavy fines preferred in the bureaucratic paradigm of regulation), as well as the ubiquitous use of warnings and images of lungs damaged by smoking on cigarette packages (as opposed to heavy taxes on tobacco) and ozone alerts intended to reduce driving and emission (Noonan 2014). However, nudging interventions often gravitate towards 'green light' systems designed to tell people when they are 'doing well'.

In the case of a) food choices, feedback systems are offered by most health departments through homepages, applications for mobile devices and dietary advisors operating out of hospitals, making it possible to get immediate or at least regular assessment of diets and eating habits down to the level of each individual food consumed. The b) energy consumption reports now supplied to homeowners in several countries are a prominent example of feedback. Such reports are also based on simplification and comparison, but also provide regular and up-to-date information on actual energy consumption online or offline (Abrahamse et al. 2007). The 'Ambient Orb', a device

lighting up green as energy consumption goes down, provides even more instant and visually pleasing feedback serving the same function (Thaler and Sunstein 2009, 206). Timely feedback is of course difficult for c) saving and pensions due to the time-lag between choice and effects. However, refined online calculators can add a level of feedback in the form of rather detailed financial prognosis and scenarios for retired life.

1.3) The use of *social influence* utilizes a tendency to align behaviour with perceived norms of the social community and peer groups (Cialdini 2007, Dolinski 2016). Social influence is in this sense also the basic technique behind the factual statement of social norms and compliance (e.g. most people actually pay their taxes, vote and abstain from drugs) well known from the traditional public information campaign. However, nudging interventions often adopt a more personal and emotional approach, using social exemplars to embody the communicated norms, either in the shape of common members of the peer group or social ambassadors such as movie stars and athletes, adapting celebrity politics to the domain of policy campaigns (Wheeler 2013). Furthermore, social influence can be turned into more direct forms of peer pressure by adding an element of disclosure and direct (dis)approval, e.g. the use of faces and emoticons offline or online, and, in one of the more curios tools of nudging, the use of cardboard figurines 'watching' the driving behaviour of parents dropping of their kids at school. Finally, upping the ante somewhat, nudging can involve the actual disclosure of behaviour to a specific peer group, such as neighbours being informed about recycling practices (John et al. 2013, 50).

Government attempts to a) change dietary choices run the full gamut from conventional health campaigning to one of the more prominent examples of celebrity campaigning, the 'Food Revolution' pursued by TV-chef Jamie Oliver in partnership with U.K. and U.S. schools. Active use of peer group norms and peer pressure also remains in the mix (Robinson et al. 2014). The same

span of activities can be observed with b) 'Energy-Efficient Celebrities' complementing more traditional communication about the social norm of energy efficiency and the addition of social norms and peer group reference to the feedback on energy consumption already provided by energy reports (Allcott 2011). Although the use of social influence to c) increase pensions and savings has traditionally relied on conventional forms of campaigning, the use of 'edutainment' and packing messages into popular TV-series have also been discussed as a way to increase financial literacy through the 'star/peer' effect (Holzmann 2014, 35).

2.1) Turning to the automated system, the least contentious technique for public choice architects is *gaming*. Gaming seeks to utilize the intuitive, associative, skilled and flow-like nature of the automated system through an invitation to playing and creating. Gaming has never been discussed explicitly in the nudging debate, but largely resembles the 'activation' mechanism in information exposure (Donohew, Palmgreen, and Duncan 1980), which has made 'user activation' a mantra for commercial marketing in the realm of new social media. The active involvement has exempted gaming from the reservations voiced against priming and framing in the nudging debate. However, activation still means automation rather than reflection. The perhaps most infamous examples of nudging, the 'Fly in the Urinal' originally used to reduce the 'spillage' problem in the male toilets at Schiphol airport, is essentially gaming applied in a very mundane aspect of organization.

Although technologically dissimilar, gaming is also at work in the a) plethora of applications for mobile devices that has turned the simple practice of calorie-counting into a game by offering pre-set or self-made challenges as well as the option to compete against others using the same application. Even if such applications are far from always offered by health departments themselves, information on foods and suggested intake are typically based on government recommendations and data. Within the same policy domain, 'healthy cook-off's' such as the

'Cooking up Change' between high school students have become recurring events. Gaming has also been put to work in b) energy conservation efforts through 'goal setting' (Abrahamse et al. 2007) and competition between individuals, households and firms facilitated by 'Green Web Applications' (Scheele 2013). Challenges to invent better energy solutions and ways to change social practices can add a more playful and creative dimension to purely competitive games. Gaming is less apparent in the case of c) savings and pensions, but adding competitive element to the pursuit of more funds in retirement is not entirely alien to government campaigns or homepages either.

2.2) *Framing* is usually portrayed as a complement to priming. Whereas priming influences *whether* audiences think about particular issues, framing suggests *how* audiences should think about particular issues (Scheufele and Tewksbury 2007, 14). Due to this potential interference with the standard of free choice and reflection, public choice architects remain ambiguous about the use of framing: 'Frames are powerful nudges, and must be selected with caution' (Thaler and Sunstein 2009, 40). Examples of framing favoured in the nudging debate are mainly drawn from direct state-citizen interaction at the micro-level (e.g. wording of treatment options offered to patients), but as discussed and analysed extensively in media studies, the societally most important frames are 'media frames' (Chong and Drucker 2007). Such media frames can be analysed both in terms of individual attributes assigned to issues in the media as well as meta-frames more akin to discourses and 'interpretative schemes' promoting particular problems and solutions based on specific causal relationships and moral standards (Rahn, Gollust, and Tang 2016).

One of the most consistently used frames in government approaches to a) healthy food choices is the fat 'epidemic', aligning overweight with other potentially cataclysmic threats to public health that demand exceptional counter-measures. The 'learning' frame, linking healthy diets to the learning ability of children, has also been widely applied. The practice of placing unhealthy food in

the least accessible place in school cantinas extends the latter frame into the domain of organization. As for b) energy efficiency, frames such as 'sustainability', 'climate change' and 'generational responsibility' have served to imbue the issue with a much deeper and more emotional significance than the mere economic gain of the individual consumer. Government campaigns intended to c) boost savings and pensions have, for their part, relied extensively on a 'security' frame, intended to establish insufficient funds as a primary threat to individual citizens and their families.

2.3) *Priming* can be defined as a strategic attempt to introduce an issue in the associative network of individual cognition through the repetition and/or strategic design of a particular piece of information. Successful priming thus implies the ability to establish a reference point for associative connections and hence affect otherwise unrelated judgements and decisions due to the accessibility of the node, i.e. its presence in short-term memory due to recent and/or frequent repetition, or the applicability of the node to new and different pieces of information. As discussed at length in the political communication literature, priming is one of the principal goals of at-large campaigning (Scheufele and Tewksbury 2007). In the nudging debate, priming has been discussed mainly in terms of 'anchoring', i.e. the technique of offering apparently 'irrelevant cues' and mental 'anchors' such as numbers, e.g. prices and tax levels, that can be used in order to 'ever so-subtly suggest a starting point for your thinking process' (Thaler and Sunstein 2009, 77).

In the area of a) healthy food choices, priming people into thinking about obesity through more or less aggressive campaigning, typically using ideal weight, Body Mass Index (BMI) or suggested waist-line measurement as population-wide 'anchors', has long been a staple of government interventions. The use of smaller plates, containers and bowls works as an anchor in the domain of organization, second only to nutritional labelling as the preferred instrument of nudging interventions (Arno and Thomas 2016). Similarly, b) reduction of energy consumption has been

pursued through conventional priming of the issue as well as the use of more incandescent lightbulbs as organizational anchors. Fully or partially government-run campaigns intended to c) increase savings have, for their part, primed the issue under slogans such as 'Savings Matter', 'Save for Your Future' and 'Choose to Save' (http://www.choosetosave.org/).

Conclusion

We should not be misled by the branding savvy of key authors to see nudging as a passing fad, nor should we assume that the relevance of nudging begins and ends with the enthusiasm for behaviourist economy and social psychology in government. Analysing the contribution of the nudging agenda to policy design and instrumentation more systematically lead us both to acknowledge the historical pretext for nudging interventions as well as the innovations nudging brings to policy design and instrumentation in the context of the information age. In this sense, there is a good deal to learn about the 'shape of things to come' from the nudging agenda, just as the nudging agenda has a good deal to learn from a more systematic assessment of its instruments, techniques and tools. The article has taken a first step in this mutual learning process.

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[i] In contrast to Lascoumes and Le Gales' definition of techniques and tools as, respectively, devices and micro-devices "types", techniques are used here to signify practices of intervention related to a distinct mechanism, whereas tools refer to the more policy specific application of such techniques.

Figure 1: Turning the toolbox upside down

Conventional Regulation, Bureaucracy, Administrative Modernity

1. Rules
   'sticks', orders, command, sanctions, hierarchy

2. Money
   'carrots', economic means of control, market

3. Communication
   'sermons', campaigns, propaganda, persuasion

Responsive Regulation, New Public Governance, Communicative Governance

1. Communication
   informational flows, networks, knowledge

2. Money
   'economy', incentives, motives

3. Rules
   targets and goals, mandates, standards

Choice Architecture

1. Nudges
   information, guidance

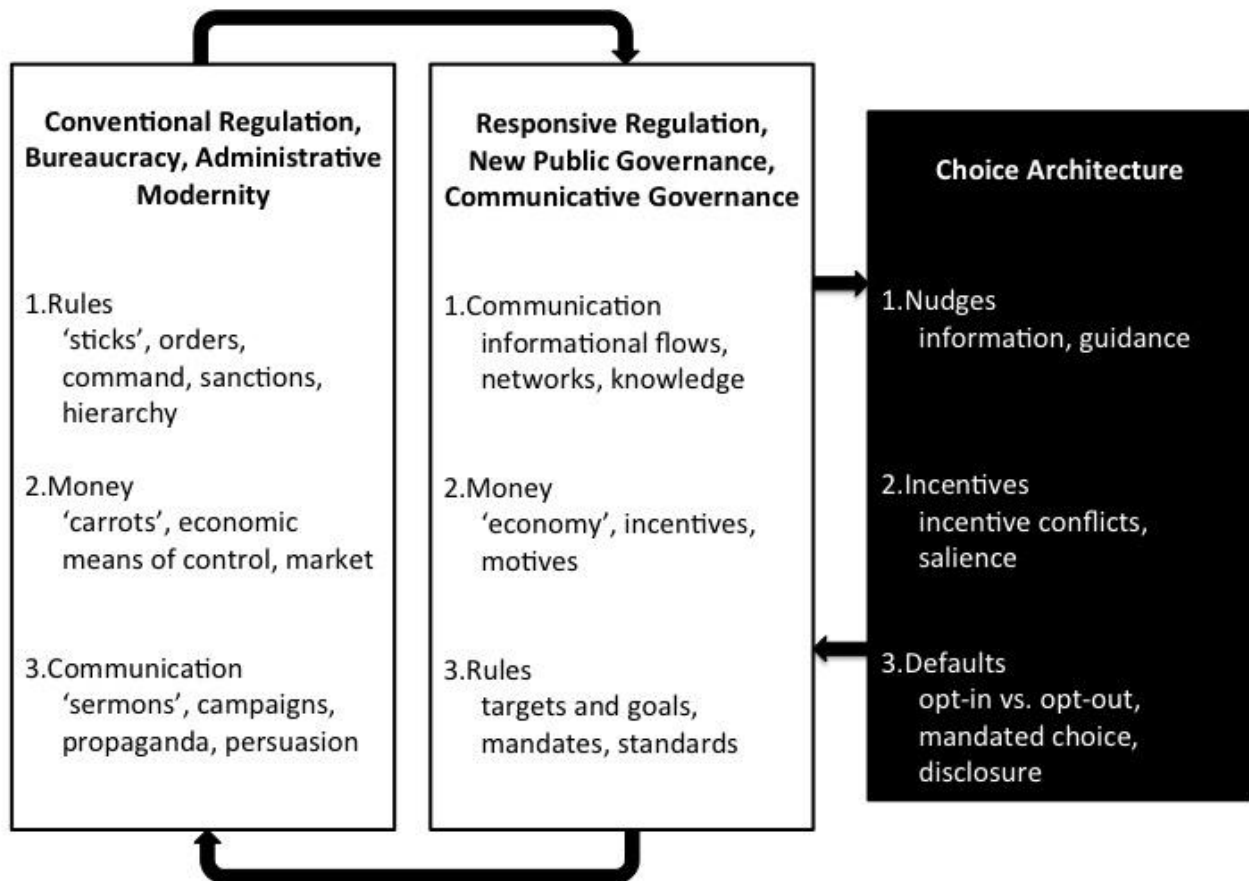2. Incentives
   incentive conflicts, salience

3. Defaults
   opt-in vs. opt-out, mandated choice, disclosure

Figure 2: Nudging Techniques