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**At the Intersection of Behavioural Economics, Nudging and Regulation:  
Rethinking the process of nudge design for regulation**

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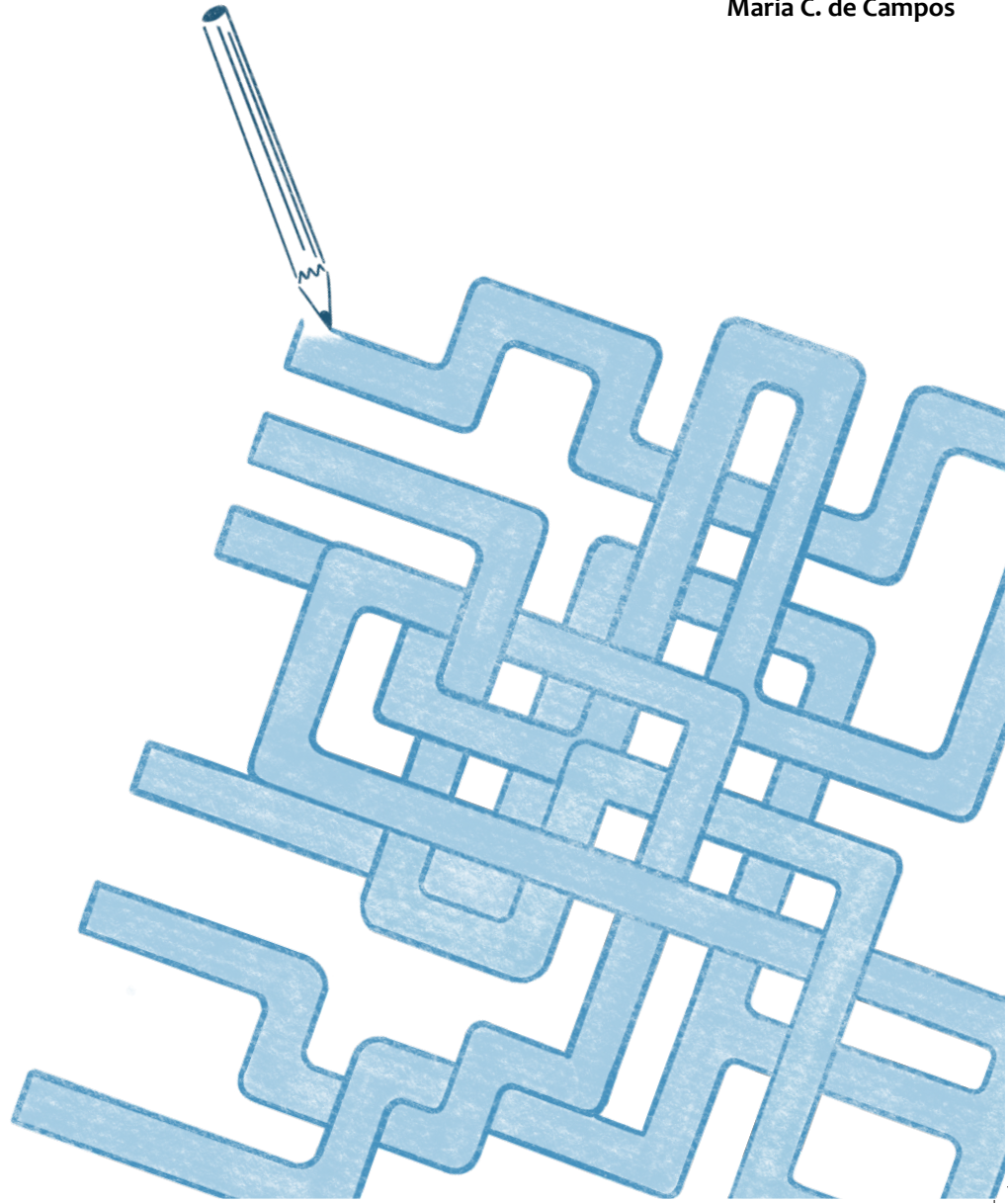
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AT THE INTERSECTION OF BEHAVIOURAL ECONOMICS, NUDGING AND REGULATION

**RETHINKING THE PROCESS OF NUDGE DESIGN FOR REGULATION**

Maria C. de Campos



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At the Intersection of Behavioural Economics, Nudging and  
Regulation:

Rethinking the process of nudge design for regulation

Op het kruispunt van gedragseconomie, nudging en  
regulering:

Een heroverweging van het ontwerpproces van nudges voor  
regulering

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ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA



Universität Hamburg





*Para os meus Pais*





*Sê paciente; espera  
que a palavra amadureça  
e se desprenda como um fruto  
ao passar o vento que a mereça.*

Eugénio de Andrade



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## List of acronyms and abbreviations

AFM	Autoriteit Financiële Markten [ <i>Dutch Authority for the Financial Markets</i> ]
BIT	Behavioural Insights Team
CSR	Corporate Social Responsibility
EC	European Commission
EU	European Union
FCA	Financial Conduct Authority
FCTC	Framework Convention on Tobacco Control
FDA	Food and Drug Administration
OECD	Organisation for Economic Cooperation and Development
OIRA	Office of Information and Regulatory Affairs
RCT	Randomised Controlled Trial
RIA	Regulatory Impact Assessment
SBST	Social and Behavioural Sciences Team
TFEU	Treaty of the Functioning of the European Union
TNCO	Tar, Nicotine and Carbon monoxide
UK	United Kingdom
US	United States of America

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# 1. Introduction

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## 1.1 Research questions

Behavioural economics has identified several instances where individual behaviour departs from the rationality predictions of neoclassical economics. Under these developments in behavioural economics the concept of *nudge*<sup>1</sup> appeared, as an intervention able to steer individual behaviour in welfare-enhancing directions without using coercion or incentives. While having emerged inside the academic realm, the concept was translated very early on to the policy sphere through a process of “policy translation” (Jones, Pykett, & Whitehead, 2014). Behavioural teams were created inside governments and regulatory bodies, with the United Kingdom (UK) and the United States (US) leading this process and the European Commission (EC) slowly embracing these insights. Gradually, nudging started to be seen as a new policy tool – and even as a regulatory instrument – capable of overcoming the disadvantages of other tools.

This thesis investigates the viability of implementing nudges through regulation. Focusing on the incorporation of nudging in regulation and, in particular, on its *design process*, the first **research question** this thesis intends to answer is the following:

- **What are the implications for regulators as nudge designers of incorporating iterative experimental testing into their own design practices and processes? Can iterative experimentation be used in regulatory nudge design?**

Nudges outside regulation are routinely designed using experiments of all kinds. This thesis intends to answer whether design premises rooted in iterative

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<sup>1</sup>Nudging, as a concept, was introduced in *Nudge: Improving Decisions About Health, Wealth, and Happiness*, the 2008 book by Richard Thaler and Cass Sunstein and consequently the title of the book has often come to be used to mean the same as “nudging”, the noun. In this thesis, I have decided to use the term *nudging* for the concept and the term *nudge* only as a count noun (e.g. a nudge, the nudge, nudges) or as an attributive adjective (e.g. nudge design).

experimentation are still valid in the regulatory space, a space that nudging has entered into, but not the one where it originally emerged. As nudging left academia to enter policy and regulatory discourse, also the premises that inform the design of this tool accessed these new contexts. However, whether iterative experimentation is an adequate process to design nudges in the regulatory sphere has not been investigated, a gap that this thesis intends to address.

At this stage, the analysis remains positive. In particular, the thesis provides insights on how regulators can design nudges using iterative experiments, in other words, it investigates the implications of iterative experimental testing – the adoption of experimental methods in an iterative way – a widespread methodology to design nudges outside regulation. This positive analysis paves the way for a more normative discussion. In fact, designing nudges using the premises of iterative experimental testing is possible at the regulatory level, but at a cost and burden for regulatory nudge designers. Therefore, this thesis also discusses how nudging can be feasibly designed and provided as a regulatory tool, with this being the second research question that this thesis addresses:

- **How can nudging be more efficiently designed and provided as a regulatory tool? How can we lower its design and provision costs?**

Since the most widespread nudge design methodology – iterative experimental testing – makes nudging a costly and burdensome tool to design, and considering the opportunity costs of its design and its performance in the regulatory context, it becomes important to explore ways that can lower the design costs of this tool for regulators.

Not only do these research questions address a gap in both nudging and regulation lines of research, it also remains to be seen how a tool born and developed in other contexts (e.g. academic, policy delivery) can be feasibly incorporated in regulation. Since the concept has been translated from the academic arena directly into the policy field – and into regulation, in particular – the question of how nudging can enter this new space gains importance. Do the widespread ideas around the design

of nudges in other spheres still apply when nudging is a regulatory tool? These are the ultimate questions this thesis sheds some light upon. With the concept's translation from academia into the regulatory space, its design processes may have to be adapted to this reality. Addressing these questions from such an operational point of view will also allow calling into question the pervasive idea that nudges are not onerous and burdensome tools.

It is important to note at this point that the thesis is not about whether nudging should be used or not, but it is rather concerned with how this tool should be designed and provided at a stage of the regulatory process *where nudging has been chosen already*.

## **1.2 Relevance and contribution**

### **1.2.1 Relevance and contribution to Law**

Much ink has been spilled about behavioural economics and nudging inside the legal community. Behavioural economics has indeed produced a whole stream of research called “behavioural law and economics” entirely dedicated to the legal and policy implications of behavioural and cognitive biases.

Behavioural economics represents an important contribution to the law in several ways. Not only can it improve our understanding of the behaviour of legal actors (e.g. judges, lawyers, legislators) and the effects of the law, but it can also inform the law on how to achieve certain goals.<sup>2</sup> Behavioural economics can enhance the understanding of legally relevant behaviour “with more accurate assumptions about human behavior, and more accurate predictions and prescriptions about law” (Jolls, Sunstein, & Thaler, 1998, p. 1474). In particular, behavioural economics can assist in positive, prescriptive and normative approaches to the law (Jolls et al., 1998, p.

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<sup>2</sup> On the importance of taking behaviour into account for the efficacy of the law, the behavioural and psychological insights relevant for the law and the empirical nature of the behavioural analysis of law, see also Tor (2008). In addition, the author addresses important gaps between behavioural research and legal settings.

1474). In fact, a behavioural approach, when associated with other approaches, “may assist in the normative evaluation of the law” (Tor, 2008, p. 314).

Behavioural economics has also contributed with new regulatory and policy tools to influence behaviour (Chetty, 2015; Bubb & Pildes, 2014). While behavioural sciences have the potential to inform several regulatory initiatives that enhance the choice architecture of individuals, nudges have certainly been the most widely discussed in the legal literature. Behavioural law and economics has expressed a clear preference for tools that preserve freedom of choice (Bubb & Pildes, 2014). More often than not the discussion has remained on a normative level, addressing concerns such as paternalism and legitimacy. However, not so much is known about how nudge design can fit into the regulatory process or how legislators and regulators can truly bring nudging into practice as a regulatory tool.

The thesis is relevant from both a theoretical and policy perspective. On the policy side, it develops tangible policy recommendations on the design and provision of nudging as a regulatory tool. In recent years, nudging has gathered a lot of interest, but not so much is known about how this tool can fit into the particularities of the regulatory world. This thesis analyses whether the premises of nudging’s design process – developed outside regulation and reliant on iterative experimental approaches – still apply when nudging is a regulatory tool, that is, whether iterative experimentation can be used in regulatory nudge design. Nudging’s arrival in regulatory domains has been accompanied by a strong enthusiasm for the premises of its design process rooted in iterative experimentation; however, whether these design premises are adequate to the regulatory world has not yet been investigated.

On a more theoretical level, this thesis adds to the literature on regulation and regulatory impact analysis, with its analysis of the implications of nudge design and iteration for regulatory nudge designers. In the legal arena, academic discussions on nudging have not only leaned towards normative aspects, but additionally, even those more practically oriented have analysed the tool’s impacts on individuals. This thesis brings regulators and legislators to the academic debate.

Finally, and still on a more theoretical level, the thesis also attempts to delineate the different spaces that nudging has occupied and how those spaces relate to the law and the role of the state. In fact, while nudging is often discussed as a monolithic and uniform concept, it has materialised in ways that reflect distinct underlying roles of the state, individual behaviours, goals and rationales. Normative discussions about nudging should take these differences into account. By clarifying such distinctions, chapter 3 represents an important contribution, especially considering the amount and diversity of literature in this research area that cloud such differences.

### **1.2.2 Relevance and contribution to Economics**

Behavioural economics has identified departures from rationality, self-interest and self-control and their implications on economic behaviour and outcomes. Documenting and incorporating these deviations into economic models not only improves predictions of the effects of traditional policies, but it can also generate “*new welfare implications*” [emphasis in original] (Chetty, 2015, p. 2). In addition, behavioural economics has also contributed with the introduction of new policy tools to influence behavioural outcomes, namely tools that respect freedom of choice and do not use coercion or monetary incentives. Nudges – popularised in a 2008 book by Cass Sunstein and Richard Thaler – place themselves here. In fact, apart from identifying biases and heuristics with a role in individual economic decision-making, behavioural economists have taken the next step of devising and testing tools to steer individual behaviour in directions more in line with normative preferences (e.g. Loewenstein & Haisley, 2011).

This thesis investigates the viability of bringing nudging into the regulatory space. Nudges may have been conceived, developed and tested in an academic context closely linked to the development of behavioural and experimental economics, but rapidly made their way into public policy and the regulatory space. What this thesis does is to assess the design process of nudging as a regulatory tool and investigate how design ideas conceived outside the regulatory sphere can be adapted to this

new reality, so as to design and provide this tool more efficiently and thus contribute to a more successful transfer of this concept from academia to the regulatory arena.

### 1.3 Approach

The main approach used to answer the research questions of this thesis is economic analysis of law. Positive law and economics concerns the analysis of the effects of legal rules. In particular, positive economic analysis “uses the assumptions, and logical reasoning, of economics” to study the effect of legal rules (Ogus, 2006, p. 24). This thesis examines nudging as a regulatory instrument, focusing its positive analysis on the impact of this tool’s design and provision process upon legislators and regulators as nudge designers. The burden of iterative experimentation and the opportunity costs of such intense design efforts for regulators as nudge designers are identified.

The identification of potential benefits of regulatory nudges (namely through their impact on individual behaviour change) is also a part of the positive analysis of this thesis. In fact, positive analysis is concerned not only with the different effects produced by a legal rule, but also its goals. The impact on the final addressees of nudges is thus important in that it remains the goal of nudge designers.

Considering the behavioural effects of nudging in the regulatory domain is instrumental to assess whether the burden and costs of nudging’s iterative and experimental design process are warranted in this context. In this regard, while the thesis does not empirically test nudging’s behavioural effectiveness, it does review such evidence for a particular case study (chapter 5) and explains why expectations on nudging’s behavioural performance in the regulatory space should be kept low (chapter 6). The thesis is interested in nudging’s *design process* in the regulatory domain; the analysis of behavioural effects is significant only to the extent that it can be juxtaposed to the costs of iterative experimentation for nudge designers.



This positive analysis paves the way to discuss what rules, processes and interventions should be like or, in this case, how nudging's design process should be structured when nudging is a regulatory instrument. Normative analysis goes beyond the effect of a certain rule or the attainment of its goal to a more comprehensive assessment of desirable arrangements or outcomes. The normative dimension of this thesis consists precisely of recommendations on how nudge design costs can be lowered when nudging is provided as a regulatory fix or how nudge designers can design nudges more efficiently.

It is also important to note that behind normative recommendations is the idea that the regulator or legislator is rational and efficient in that the rule-maker will try to maximise the benefits of nudging and minimise this tool's costs. As we will see, with the exception of defaults, the benefits of nudges measured by their expected effects on individual behaviour are relatively weak in the regulatory context. Therefore, the thesis will provide guidance on how to lower nudge design costs for the regulatory nudge designer, as there is scope to lower them. Again, this analysis takes rationality and efficiency as a normative guide in that the regulator or legislator attempts to provide a regulatory solution at the lowest cost. To put it differently, after a nudge has been chosen as a tool, the regulator's goal will be to minimise the costs of its design and provision.<sup>3</sup>

However, it may be the case that a tool's cost or burden is an aspect that the regulator actively pursues in order to remain a relevant actor and attract public resources. It may also be the case that a more comprehensive welfare analysis would push the legislator towards other solutions or that the very choice of a regulatory nudge reflects regulatory capture by certain private interest groups. However, this is

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<sup>3</sup> Individuals may suffer from behavioural biases, which have informed the tool under scrutiny in this thesis. Also regulatory bodies and legislators can suffer from bias. While regulators and legislators may be better equipped to develop mechanisms that keep bias under control, behavioural economics research is being extended to public decision-makers. However, even if the rationality of regulators is called into question and mechanisms to control bias do not work, assuming that a regulator wants to minimise costs in the design and provision of a tool can still be an ideal normative benchmark. In fact, as explained in section 2.2.5.4, a natural inclination to deviate from rationality and efficiency actually strengthens the importance of retaining this value as a normative guide.

not a concern of this thesis: whether nudges are superior or not to other tools or whether they should be used at all is a prior concern that will only be addressed when discussing the appeal of nudging in chapter 2 and the opportunity costs of iterative testing in chapter 6. This is not where the contribution of this thesis resides. For the normative analysis and the recommendations of this thesis, it is assumed that nudging has been chosen as a regulatory solution and that regulators and legislators are interested in providing it at the lowest cost.

Finally, even if economic analysis (both positive and normative) is the crucial approach used to answer the main research questions, the thesis resorts to different methods, such as case study analysis (chapter 5) and conceptual analysis (chapter 3).

#### **1.4 Limitations**

It is important to already acknowledge some limitations of this thesis. Firstly, this thesis is not a full cost-benefit analysis of nudging. There are other costs of regulatory nudges (such as costs on rational decision-makers, opting-out costs, potential decreased decision-making capacities of nudged individuals or even costs imposed upon firms as implementing parties), which will only be briefly mentioned. As already explained, as far as costs are concerned, the thesis focuses mostly on the costs borne by regulators and legislators as nudge designers.

Likewise, when it comes to the benefits of this regulatory tool, the thesis focuses mostly on effects upon individual behaviour for mainly three reasons. They can be a measurable proxy for improvements in social welfare; they also tend to be invoked in practice as a goal of nudging for those advocating the use of the tool; finally, and most importantly, the pursuit of behavioural effectiveness greatly influences the design process of nudges. Nudges can have other benefits (which may even follow from the failure of regulatory alternatives), but these will only be briefly discussed. For the purposes of this thesis, the regulator or legislator is interested in *efficiently* designing and providing nudges, which explains why this thesis focuses on the *main benefits and costs for the regulator*, namely behavioural effects and design costs,

respectively. Naturally, any efficiency gains acquired in the design process of nudging by legislators and regulators translate not only in gains for these actors, but also in gains for society at large.

Finally, the costs and benefits of nudging identified in this thesis cannot be fully measured and compared against each other. There is nonetheless scope to lower the design burden of regulatory nudging; it is on this design cost side that the thesis will make a contribution to.

## 1.5 Structure and summary

**Chapter 2** introduces the concept of *nudge* and the actors involved in its development, followed by nudging's translation from academia into policy and regulatory practice and discourse. The discussion continues with the rationales for intervention in the presence of behavioural biases. Since intervention rooted in behavioural justifications can be based on different rationales and materialise through different tools, the reasons that may justify the appeal of nudging are identified. The normative debate that nudging has triggered and some pitfalls of this tool are also discussed. This chapter intends to present core debates around nudging.

**Chapter 3** starts by categorising different nudge interventions, using a classification based on who is *designing* and who is *implementing* them. Private, public and regulatory nudges emerge as fundamentally distinct categories that should inform normative discussions around nudging. This conceptual chapter also identifies operational challenges that each of the categories faces, with a focus on regulatory nudges, the main interest of this thesis. With its three categories of nudges, this chapter delineates the different spaces that nudging has seized.

**Chapter 4** is dedicated to *the design process of regulatory nudges*. In particular, this chapter explains how experimentation requirements entered the regulatory dimension of nudging, it defines iterative experimental testing and describes the two dimensions of iteration: trial-and-error and renewal. It also identifies the four

experimental alternatives within regulators' reach and the costs and implications of these approaches. In other words, this chapter analyses the burden for regulators of bringing iterative experimental testing – a widespread method for nudge design outside regulation – into their own design practices for each experimental alternative (laboratory experiments, experiments reliant on the cooperation of firms, experimental regulation and legislative and regulatory processes as experimental platforms).

**Chapter 5** investigates the *burden of nudging's design process and the costs of the two dimensions of iterative experimentation imposed upon regulators*, using the case study of the European Union (EU) tobacco warnings. In order to do so, this chapter examines how the provision, the design and the rotation of these warnings evolved in EU law. The design of these tools has become reliant on laboratory and online experiments and the warnings themselves have become increasingly dynamic. This has been achieved at an increased actual and potential cost for the European Commission, the institution upon which the EU legislators delegated warning design and revision. The benefits of this nudge design process and rotation approach are nonetheless doubtful and called into question in this chapter.

Once the design challenges of nudging as a regulatory instrument have been analysed, this thesis discusses ways to lower the design burden identified. Besides the emergence of nudging into policy and regulation domains and the challenges analysed in chapters 4 and 5, also the opportunity costs of iterative experimentation and the performance of nudging in regulation represent important reasons why iterative experimentation may not be an adequate design process for nudging as a regulatory instrument. Therefore, **chapter 6** proposes an *alternative* design process for regulatory nudges better aligned with the reality of regulatory design that nudge designers should consider.

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## 2. Nudging and Behavioural Economics

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### 2.1 Introduction

This chapter introduces the concept of *nudge* and the rationales for public intervention in the presence of behavioural phenomena. It starts by addressing the concept of nudge and the attempts made to clarify it. This chapter continues with the actors interested in the concept and the transfer process of nudging from academia into policy and regulation, with a view to reiterating the relevance of the research questions of this thesis. Once nudging has been introduced as a policy and regulatory tool, the chapter addresses the challenges posed to welfare analysis by justifying public intervention on departures from revealed preference and an additional rationale to intervene that takes into account the interaction between behavioural phenomena and market practices.

After the rationales behind more general behaviourally informed intervention have been identified, the different tools that may be called for and the reasons that may justify the appeal of nudging in particular will be discussed. The normative debate that this tool has triggered and some of its pitfalls are also addressed.

### 2.2 Nudging: concept, taxonomies, main actors and policy transfer

#### 2.2.1 Concept

Nudging has become a popular and overreaching concept, identifying elements of “choice architecture” such as defaults, social norm messages or even commitment devices. The concept of *nudge*, popularised in the 2008 seminal book *Nudge: Improving Decisions About Health, Wealth, and Happiness*, was originally defined as:

“any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not

mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not” (Thaler & Sunstein, 2008, p. 6).

According to the authors, the concept intends to be both paternalistic and libertarian. Indeed, a nudge allows the design of contexts of choice that lead towards a certain option, while individuals still retain their freedom of choice. In a paper by the same authors that preceded the publication of their book, libertarian paternalism – the authors’ theoretical framework for the nudge concept – was defined as “an approach that preserves freedom of choice but that authorizes both private and public institutions to steer people in directions that will promote their welfare” (Thaler & Sunstein, 2003, p. 179). A nudge is a tool between incentives and strong paternalism: “A nudge is a tool for influencing people without using incentives, which are the lifeblood of economic theory, and without enforcing behavior, the essence of hard paternalism” (Gigerenzer, 2015, p. 362).

People’s behaviour is far from the rational *homo oeconomicus* idealised by economic theory.<sup>4</sup> Behavioural research has revealed that decision-making processes are deeply affected not only by countless biases and heuristics that prevent individuals from making optimal choices, but also by seemingly irrelevant contextual factors. These findings on the variety of factors that affect behaviour beyond economic incentives may have important policy implications: “choice architects”, that is to say, private and public institutions involved in the design of contexts of choice, can interfere with those decision contexts in ways that help individuals make better decisions “as judged by their own preferences” (Thaler & Sunstein, 2008, p. 10).

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<sup>4</sup> This chapter does not review behavioural evidence relevant for economic purposes or which biases play a role in economic decision-making. Literature on this topic abounds. I refer the reader to Jolls et al. (1998) on the three bounds: “bounded rationality”, “bounded willpower” and “bounded self-interest”. See also DellaVigna (2009) when the author explains how behavioural economics reveals that individuals deviate from neoclassical economics in terms of “nonstandard preferences”, “nonstandard beliefs” and “nonstandard decision making”. For instance, under “nonstandard preferences”, evidence on self-control issues and risk preferences is discussed and on “nonstandard decision making” aspects related to framing or limited attention are addressed. On biases and heuristics, it is also important to mention the well-known Kahneman/Gigerenzer debate in psychology on how these should be interpreted. For more details on this debate, see Vranas (2000).

As any particular choice architecture arrangement is unavoidable, choice contexts can be redesigned in a way that benefits those who are making suboptimal choices without harming those behaving rationally (Camerer, Issacharoff, Loewenstein, O'Donoghue, & Rabin, 2003). In line with this approach, the original choice sets and incentives are maintained. Even if not all possible welfare-enhancing changes in choice architecture have a paternalistic intention, this approach has become known as “libertarian paternalism” or “asymmetric paternalism”. In fact, in spite of the concept's association with paternalism, its scope of application goes beyond decisions benefiting the individual. Several rationales can indeed be called for when using behaviourally inspired tools such as nudges (an aspect that will be discussed in section 2.3).

### **2.2.2 Additional conceptual clarifications**

The meaning of nudging does not seem to be clear, with the fragmentation of behaviour change scholarship contributing to this state of affairs. Behaviour change is part of an interdisciplinary effort, with every discipline developing independently and using its own language and practices (Spotswood & Marsh, 2016; Feldman & Lobel, 2015). As Burgess (2012) also points out, “The boundaries between behavioural economics, various forms of ‘nudging’, social marketing and psychology are not clear, but they all inform the policy mix that is now generally known as ‘nudging’” (p. 4). This is of little value when it comes to the delineation and precision of the concept. In fact, the concept has been erroneously used as a synonym for “behavioural economics”, “behavioural insights”, “behaviourally informed regulation” and “libertarian paternalism”, even though these are all different concepts.

Behavioural economics is a branch of knowledge that incorporates insights from psychology to better explain economic decision-making (Lourenço, Ciriolo, Almeida, & Troussard, 2016; Lunn, 2014). Its development as a distinct discipline

dates back to the 1950s and the work of Herbert Simon on bounded rationality.<sup>5</sup> Behavioural insights refer to long-standing findings about human behaviour coming from various disciplines such as psychology, economics and the neurosciences. Behavioural insights constitute an “input to the policy process” and, more significantly, they “can be fully integrated with and inform other traditional forms of intervention (i.e. regulations, incentives, information requirements)” (Lourenço et al., 2016, p. 10). Behavioural insights may serve as a basis for a wide range of policy tools. Behaviourally informed regulation is a broader concept that encompasses measures adopted based on a richer understanding of human behaviour (whether nudges or not).<sup>6</sup>

Misunderstandings do not, however, end here. As nudges made their way into new policy areas, the concept has been inaccurately used to designate economic incentives in areas of lifestyle behaviour where monetary rewards or penalties have been largely absent. This is the case of directly paying individuals to do something beneficial in the long run (e.g. exercise) or stop a detrimental activity (e.g. smoking). These tools change economic incentives, so identifying them as nudges is inaccurate.<sup>7</sup> Innovatively applying them in a context where psychology has had a longer tradition does not change the fact that they are, in their essence, material incentives.<sup>8</sup> This lack of precision in the use of the concept seems to be already present in Sunstein and Thaler’s book, where, as pointed out by Gigerenzer (2015,

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<sup>5</sup> See, for instance, chapter 1 of Jones, Pykett, and Whitehead (2013).

<sup>6</sup> According to Alemanno and Spina (2014), empirically-informed regulation includes rules that reflect human behaviour and promote certain goals while respecting individual autonomy. It mainly consists of information disclosure, defaults and simplification. For Sibony and Alemanno (2015), empirically-informed regulation concerns “the application of behavioural insights to policy-making [*reference*]” (p. 5). Their understanding is in line with that of Sunstein (2011). However, empirically-informed or evidence-based regulation seems to be a much broader concept than behaviourally-informed regulation, including regulation grounded on evidence, not necessarily behavioural evidence.

<sup>7</sup> Nudges may nonetheless be compatible with incentives. See page 17 on how nudges may be used to label initiatives that use monetary incentives.

<sup>8</sup> While traditional economic incentives are not nudges, even when used to influence behaviours that nudges usually target, anti-incentives might fit the definition. The term refers to the use of a reward of an undesirable behaviour (e.g. paying a smoker to quit a cessation program). If initial temptation is resisted, the chances that one pursues the intended behaviour increase (see Ayres, 2012).



p. 363), the authors incorrectly identify a program that makes use of monetary incentives to reduce teenage pregnancies as an example of a nudge.

Other misunderstandings on the use of the concept abound. For instance, Mongin and Cozic (2018) identify cooling-off periods as a nudge, as they counteract overconfidence, whereas for Di Porto and Rangone (2015) a cooling-off period is not a nudge. A cooling-off period, which the authors consider an empowerment strategy that helps to overcome emotional reactions, may create the possibility of deliberation, but “it does not necessarily, as such, prompt it” (Di Porto & Rangone, 2015, p. 48). The inaccurate use of the concept is problematic. Indeed, the inaccurate use of the word to designate virtually every aspect with an impact on behaviour has major implications on its meaning: “almost everything that affects behavior has been renamed a nudge, which renders this concept meaningless” (Gigerenzer, 2015, p. 363).

Hansen (2016) is one of the authors who have tried to bring some clarity to an ill-defined concept.<sup>9</sup> After highlighting flaws in the original definition and analysing the relationship between nudging and other concepts (such as incentives, choice sets and information), the author provides the following improved and revised definition of a nudge, adding positive conditions to the original concept:

“A nudge is a function of (I) any attempt<sup>10</sup> at influencing people’s judgement, choice or behavior in a predictable way, that is (1) made possible because of cognitive boundaries, biases, routines, and habits

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<sup>9</sup> See also Hansen (2019) for a critical view on the original definition of nudging and the four different approaches developed on the concept.

<sup>10</sup> This attempt is intentional. For the important distinction between intention and accident in choice design, see Hansen and Jespersen (2013). The writers of *Nudge* claim that choice architecture has consequential effects on behaviour, even if its design is accidental or unplanned. However, Hansen and Jespersen (2013) argue that intention and deliberation on the side of policy-makers behind the design of choice architecture comes with “special obligations” (p. 12). Intention is the “conceptual precondition of normative evaluation” and its presence in choice design has major implications for responsibility in design (Hansen & Jespersen, 2013, p. 10). According to them, “the anti-nudge position is not a literal non-starter, but imposes special obligations on choice architects” (Hansen & Jespersen, 2013, p. 12). Even Sunstein acknowledges the role of intention in the design of nudges: “for most purposes, I will be emphasizing intentional design, because that is what raises ethical issues” (Sunstein, 2016, p. 36).

in individual and social decision-making posing barriers for people to perform rationally in their own self-declared interests, and which (2) works by making use of those boundaries, biases, routines, and habits as integral parts of such attempts.

Thus a nudge amongst other things works independently of:

- (i) forbidding or adding any rationally relevant choice options,
  - (ii) changing incentives, whether regarded in terms of time, trouble, social sanctions and so forth, or
  - (iii) the provision of factual information or rational argumentation<sup>11</sup>
- (Hansen, 2016, p. 174).<sup>12</sup>

This corresponds to the “technical” definition, one that does not specify any particular motive behind an intention to change behaviour. Hansen (2016) explains his preference for this technical definition: the author argues that nudging is not necessarily done with a libertarian paternalistic motive; market actors can use it too for their own ends. This technical definition is not attached to any “political ideology” (Hansen, 2016, p. 174). The nudge concept and libertarian paternalism may overlap, but remain distinct. Nudging is a tool to get behavioural change and libertarian paternalism is about the goals (Hansen & Jespersen, 2013).<sup>13</sup> Nudging and libertarian paternalism can be seen as two different concepts, with libertarian paternalism being a “particular kind of advocacy of nudges” (Barton & Grüne-

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<sup>11</sup> In Hansen’s view, providing information per se does not fit the definition of a nudge. Information is not necessarily “called for” by biases, but it may rather just respond to individuals’ limited information. Besides, information purports to influence both “Econs” and “Humans” (Hansen, 2016, p. 168).

<sup>12</sup> This resembles the definition of Hausman and Welch (2010). See Hansen (2016) for an explanation on his additions to Hausman and Welch’s (2010) nudge concept.

<sup>13</sup> This distinction is also useful to differentiate the concerns expressed by libertarian paternalism (as an end) and those of a nudge (as a means) when nudging citizens:

“For the Libertarian Paternalist, this amounts to how she can know what ends citizens prefer as judged by themselves, and be motivated to respect these in public-policy making [*sic*]. For the nudge approach to behavioural change, the problem amounts to whether this approach, considered as a means, is compatible with democratic public policy-making, and in particular, with its cornerstone of democratic consent” (Hansen & Jespersen, 2013, p. 12).

Yanoff, 2015, p. 342). However, the above definition can be slightly changed so that the two concepts converge (Hansen, 2016, pp. 171-172). The libertarian paternalistic definition of a nudge naturally advocates a libertarian paternalistic “motive”.

On incentives, it is important to note an aspect that Hansen (2016) clarifies. The definition above of the nudge concept excludes attempts to influence behaviour through a *significant* change of incentives<sup>14</sup> that *affects rational agents*. This lack of influence on rational individuals, which Hansen (2016) calls “fundamental principle”, is crucial in identifying a nudge. According to the author, the use of the word “significantly” in his definition is what allows the inclusion of incentives that affect “Humans”, but not “Econs” (Hansen, 2016, p. 164). The structuring of economic incentives may then be compatible with the definition of a nudge, as long as incentives fail to impact the behaviour of rational individuals. Lotteries, for instance, represent rearrangements of economic incentives that do not impact “Econs” (i.e. rational agents), but can have substantial impact on “Humans” through the overestimation of small probabilities (Hansen, 2016, p. 164). The same for how a tax payback is returned: it should not matter whether it is paid as a lump-sum or over time, but each strategy produces very different results on behaviour, as reminded by Hansen (2016).

In sum, a nudge regards one way of applying behavioural findings in policy (Lunn, 2014). It is a “specific tool that is employed to help choice repair” (Soman, 2015, “9 Choice repair” section, para. 2). It finds justification in flaws of individual decision-making; therefore, it has been mostly encouraged in areas where redesigning contexts may help individuals make better decisions for themselves. As nudges tend to present more or less explicitly a “right” choice in key decision nodes, individuals who do not have a strong preference, or who do not value the decision enough, or who require additional information may end up making a better decision than in the absence of the nudge. This approach also differs from social marketing, an

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<sup>14</sup> The word “significant” is an important one. Sunstein (2013b) argues that “economic incentives can be large or small, and as the incentive gets smaller, it approaches a nudge” (“Don’t blink” chapter, para. 24). How one differentiates between a “large” and a “small” incentive is nonetheless an empirically challenging question.

approach that puts its efforts into persuasion (Hallsworth & Sanders, 2016). With a view to further understanding the nudge concept, section 2.2.3 discusses some of the taxonomies and categorisations that can be found in the literature.

### **2.2.3 Taxonomies**

Nudging includes a diverse set of interventions implemented by different actors. The concept includes many “different devices” (Baldwin, 2014, p. 834). This has unsurprisingly led to the development of several taxonomies and frameworks in an attempt to improve clarity around such a fuzzy concept. Generalisations that fail to reflect the diversity of tools that the concept comprehends abound in the debate around nudging. Taxonomies may then prove to be particularly helpful for those who engage in the normative discussion about the legitimacy of nudging.

Sunstein (2014b) categorised nudge techniques into ten groups. These include defaults (e.g. the automatic enrolment into a pension scheme), simplification (of existing governmental programs, for instance), social norms (e.g. stressing that most people pay tax on time), increases in convenience (such as making healthy food more accessible), information disclosure (e.g. environmental costs of energy use), warnings (such as cigarette warning labels), pre-commitment strategies (e.g. committing to stop drinking), reminders (for instance, via e-mail, text message or letter for obligations such as paying bills), implementation intentions and information on the “nature and consequences” of previous choices (Sunstein, 2014b). A categorisation that further aggregates some of these categories by “architectural mechanism” splits them into “defaults and anchors”, “physical architecture” and “deliberation tools” (Yeung, 2012, p. 130).

Most nudges in Sunstein’s categorisation fall into the category of information provision strategies, but intend to be more than that. By exhibiting concerns of what information to deliver, how and through which means, when and how frequently, these nudges intend to be smarter techniques of information provision. Other types of nudges represent more fundamental changes in choice environments. Defaults, for instance, have been particularly discussed in areas such

as organ donation and retirement savings plans. In a world where people are sure of their preferences and ready to express them, a default such as presumed consent on organ donation should not matter. However, aspects such as ill-defined preferences and behavioural biases have granted the legal system the opportunity to set desirable defaults. Leveraging on inertia and loss aversion (Sunstein, 2017), defaults are controversial, but perceived as more appropriate when preferences are homogeneous or when people make “bad” decisions in the absence of default options.

Other categorisations are based on intervention design. On the grounds that taxonomies may fail to be evidence-based, Münscher, Vetter, and Scheuerle (2016) developed their taxonomy inductively from documented interventions. The authors identify three “choice architecture intervention techniques”, in particular “decision information” (the reframing, simplification and salience of information, or providing a social benchmark), “decision structure” (changes in defaults and changes in effort, range and consequences of options) and “decision assistance” (where providing reminders and facilitating commitment strategies fall into) (Münscher et al., 2016, p. 514).

Other taxonomies can be found in the nudge literature. Nudges can also be distinguished by the goals they advance. Some aim at advancing the well-being of individuals (paternalistic or pro-self nudges), others target third-party externalities or the protection of the public interest, also known as pro-social nudges (Barton & Grüne-Yanoff, 2015; van Aaken, 2015). As Feldman and Lobel (2015) note, “many interventions that draw on behavioral insights are concerned with third-party externalities and the need for central coordination. [references]” (p. 306). This distinction is often not straightforward in practice, as a nudge may have a combination of goals. Nudges can also be distinguished by the behaviour that they target (habitual behaviour or one-shot).

Another distinction is based on the cognitive process that nudges address. A classification based on Kahneman’s dual system (system 1 and system 2) can be

found in the literature. According to Kahneman (2011), system 1 is automatic and system 2 is reflective. Hansen and Jespersen (2013) propose a nudge categorisation based on this distinction: type 1 and type 2 nudges both affect “automatic modes of thinking”, but type 1 nudges influence behaviours rooted in automatic thinking, while type 2 ones intend to impact behaviour “anchored in” the reflective system (Hansen & Jespersen, 2013, p. 14). Similar to this distinction is the one of Barton and Grüne-Yanoff (2015), with nudges being distinguished according to the cognitive process involved: “heuristics-triggering”, “heuristics-blocking” (in the sense of exploiting or controlling biases) or “informing”.

Baldwin (2014) goes further in the distinction between type 1 and type 2 nudges, as the author considers different degrees of interference with decision-making autonomy. In the author’s framework, “First Degree nudges” are the ones most respectful of autonomy, as they engage reflective thinking (e.g. information or reminders), and “Second Degree nudges”, such as defaults, count on biases to guide behaviour (Baldwin, 2014, pp. 835-836). The latter’s greater impact on autonomy comes from the fact that they work with little awareness; the individual can nonetheless “*on reflection*” [emphasis in original] identify the presence of the nudge (Baldwin, 2014, p. 836). Finally, “Third Degree nudges” involve aspects regarding “framing”, “salience” and “affect”, making them more intrusive on autonomy (Baldwin, 2014, p. 836). In fact, contrary to second-degree nudges, people may be unable to identify the nudge and its impact, even with ex post reflection.

Baldwin’s distinction between second- and third-degree nudges resembles Hansen and Jaspersen’s (2013) differentiation between “transparent” and “non-transparent” nudges. A “transparent” nudge is provided in a way that makes the “intention” of the intervention and the “means” used evident to the nudged individual, while a “non-transparent” nudge does not allow the individual to “reconstruct” such “intention” or “means” (Hansen & Jaspersen, 2013, pp. 17-18). The authors further combine the type of system targeted (type 1 or 2) with transparency, with four different nudges emerging (Hansen & Jaspersen, 2013).

Categorisations are significant, not only to inform normative discussions, but also policy choices. In fact, it is important to understand the mechanism behind suboptimal behaviour and to decide “whether the solution should attempt to eliminate an individual’s intuitive response by engaging the rational mind, or should use the power of the intuitive processes to change choices without engaging the rational mind” (Amir & Lobel, 2008, p. 2116).

This section does not exhaust all possible categorisations. Other taxonomies abound in the literature and many more are expected to emerge, taxonomies being after all “a thriving line of business in academia” (Sibony & Alemanno, 2015, p. 12). Section 2.2.4 below discusses the main actors involved in the development of the concept.

#### **2.2.4 Who is interested in nudging? Main actors and recent developments**

Regulators, administrative bodies and public administrations have increasingly shown interest in behavioural sciences. Deviations from rational decision-making have important implications for the formulation of policy. Text alerts can reduce the probability of incurring overdraft charges, being provided with the average energy consumption of an energy-efficient neighbour can generate energy savings, automatic registration leads to a higher number of users of a certain program. These are a few examples where behavioural sciences have provided solutions to change behaviour or behavioural outcomes.

Many more examples can be found in policy reports from the Behavioural Insights Team (BIT)<sup>15</sup>, the Organisation for Economic Cooperation and Development (OECD) and the European Commission documenting applications ranging from health and education to energy and consumer policy (Dolan, Hallsworth, Halpern, King, & Vlaev, 2010; Service et al., 2014; The Behavioural Insights Team, 2015, 2016, 2017; Lunn, 2014; OECD, 2017a; Lourenço et al., 2016). Also the World Bank's *2015 World Development Report* was dedicated to the incorporation of behavioural insights into development issues (World Bank, 2015).<sup>16</sup> Behavioural insights have indeed caught the attention of governments and institutions around the world, with the British Behavioural Insights Team leading as a success case. This section summarises recent developments in the UK, the US and the EU.

In 2010, the first team inside a government committed to the incorporation of behavioural sciences was created in the UK. With Richard Thaler (co-author of *Nudge*) as one of its advisors, the team was committed to making use of behavioural sciences to improve the functioning of government services for citizens. Since its inception, the BIT has conducted several randomised controlled trials (RCTs)<sup>17</sup>, exploring and testing policy options in a wide range of areas. They have been

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<sup>15</sup> See Halpern (2015) and Hallsworth and Sanders (2016) for a detailed account of the British experience in setting up a behavioural unit inside the government. In *Inside the Nudge Unit: How Small Changes Can Make a Big Difference*, David Halpern (2015), current Chief Executive of the BIT, explains the difficulties of the behaviour change agenda before 2010, during the Tony Blair administration, and the inside story behind the setting up of the unit in 2010. Hallsworth and Sanders (2016) explain the reasons behind the appeal of nudging to the Conservatives in the UK at the time. However, as the authors point out, the interest in behavioural sciences already existed prior to the creation of the unit. In 2004, the Prime Minister's Strategy Unit – during the Labour administration – published the report *Personal Responsibility and Changing Behaviour* on how public policy could be enhanced by behavioural interventions and, in 2009, the Cabinet Office commissioned a report on the application of behavioural sciences to public policy from the Institute for Government that ended up being adopted across the public sector, the famous *MINDSPACE* framework (Hallsworth & Sanders, 2016). See also Burgess (2012) for a critical analysis of the introduction of nudging in UK policy-making.

<sup>16</sup> Other organisations involved in the application of behavioural economics to development are the Abdul Latif Jameel Poverty Action Lab (also known as J-PAL), a research centre at the MIT (Massachusetts Institute of Technology), and the Busara Center for Behavioral Economics, a non-profit research organisation (see Bhanot and Deshpande, 2018).

<sup>17</sup> See the *Test, Learn, Adapt* framework in Haynes, Service, Goldacre, and Torgerson (2012) on the use of randomised controlled trials in policy design and evaluation. Widely used in clinical research, RCTs have made their way into the social sciences. This methodology minimises bias by randomly allocating participants between intervention and control treatments, facilitating causal inference.



nudging people to pay taxes on time, sign up for organ donation, donate to charity, among others (Service et al., 2014; The Behavioural Insights Team, 2015, 2016). The team's work has focused on simplifying bureaucracy in different areas, while incorporating behavioural approaches into public policy and exploring non-coercive alternatives to traditional regulation.

The team's culture of experimentation is perceived as one of the reasons behind its success and credibility inside the government, as it has allowed for the impact of interventions to be identified and measured. In fact, since most behavioural research comes from laboratory experiments that disregard the surrounding environment – which has an important influence on individual behaviour – the team decided to use a more realistic tool to evaluate its initiatives: the above-mentioned randomised controlled trials (Hallsworth & Sanders, 2016). Their effort on accurate evaluation was crucial to reduce suspicion about the team's mandate amongst sceptical officials and to create a “virtuous cycle” of cooperation with other governmental departments (Hallsworth & Sanders, 2016, pp. 118-119). Experimentation also contributed to further the dissemination of evidence-based policy-making. Finally, another reason for their success lies in the broader commitment not to nudes alone, but to policies informed by the behavioural sciences as “an analytic lens” (Hallsworth & Sanders, 2016, p. 118).

Units similar to the BIT have emerged outside the UK. Other countries have decided not to create a unit, but to develop expertise in different governmental departments. Denmark, for instance, does not have a nudge unit, but many of its governmental departments belong to the Danish Nudging Network (Soman, 2015). Indeed, an alternative to the creation of a single team that works in cooperation with other governmental units is to build capacity within existing ones (Sunstein, 2014b).<sup>18</sup>

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<sup>18</sup> On the different organisational models of behavioural teams, see the examples in Lunn (2014, pp.34-35). See also the three institutional models in OECD (2017, p. 35) and OECD (2018, p. 153).

The increasing incorporation of behavioural insights into government and regulatory policies has also been matched by academia and non-profits. In academia one can identify the emergence of research centres such as the Toronto University Behavioural Economics in Action at Rotman (BEA@R) in Canada and in the non-profit sector institutions like ideas42 (Soman, 2015). As the OECD (2017a) points out, “Outside government, several behavioural insights organisations exist to bring public, private, voluntary and academic sectors together as well” (p. 24).

The US has also been a leading example in the incorporation of behavioural insights. In 2011, Executive Order 13563<sup>19</sup> encouraged agencies to incorporate behavioural insights in regulation “for the first time ever” (Alemanno & Spina, 2014, p. 440). Executive Order 13563 invited agencies to identify “regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public”, including “warnings, appropriate default rules, and disclosure requirements as well as provision of information to the public in a form that is clear and intelligible” (Executive Order 13563 of January 18 2011).

Associated with this effort is Sunstein’s appointment as head of the Office of Information and Regulatory Affairs (OIRA) in 2009. His mandate was marked by several behaviourally informed initiatives, as Sunstein himself has claimed.<sup>20</sup> In 2015, another Executive Order instructed agencies to identify opportunities where behavioural insights could generate improvements in “public welfare, program outcomes, and program cost effectiveness” and to develop strategies for incorporating and evaluating the impact of such insights in their programs (Executive Order 13707 of September 15 2015<sup>21</sup>).

This 2015 Executive Order also created the Social and Behavioural Sciences Team (SBST), mandated to advise governmental agencies and help them integrate behavioural insights in their practices. While the team is no longer active since early

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<sup>19</sup> Executive Order 13563 of January 18 2011. Improving Regulation and Regulatory Review. Federal Register, Vol. 76, No. 14.

<sup>20</sup> See Sunstein (2013b) for Sunstein’s view on this period.

<sup>21</sup> Executive Order 13707 of September 15 2015. Using Behavioral Science Insights to Better Serve the American People. Federal Register, Vol. 80, No. 181.

2017<sup>22</sup>, the work of the SBST focused on making policies cost-effective, increasing program uptake and streamlining processes and access to governmental programs (Social and Behavioural Sciences Team, 2015). Congdon and Shankar (2018) not only discuss how the SBST was created and the policy areas it focused on, but also how the team ceased to exist in 2017 with a new government. These authors nonetheless contend that “outside of the specific context of the federal government, advances in behavioral economics and policy continue apace” (Congdon & Shankar, 2018, p. 89). Furthermore, even if the development of behavioural sciences in the US government has come to a – temporary or permanent – halt, that does not mean that the US cannot be used as an example of the policy application of behavioural sciences. In fact, as discussed in section 3.6.1.1, the US has implemented many legal and regulatory nudge applications.

At EU level, behavioural sciences have also caught the interest of policy-makers, although the incorporation of behavioural insights at this level is seen as “circumstantial” (Alemanno & Spina, 2014, p. 441). Some Directorates of the European Commission have stood out in this engagement. Directorate-General Health and Consumers, in particular, pioneered the take up of behavioural sciences in the European Commission, having conducted several market and behavioural studies on consumer protection issues since 2010 (Ciriolo, 2011; van Bavel, Herrmann, Esposito, & Proestakis, 2013). The Joint Research Centre of the European Commission also created a Foresight and Behavioural Insights unit in 2014 (Loureño et al., 2016).

While some European initiatives incorporate behavioural concerns, these are not being considered in a systematic manner, in the view of Alemanno (2016a). In the author’s own words, except for “a few isolated initiatives” that take behavioural insights into account, “the EU – similarly to its own Member States – has not yet shown a general commitment to systematically integrate behavioural insights into policymaking” (Alemanno, 2016a, p. 272). However, behavioural insights are already

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<sup>22</sup> See Congdon and Shankar (2018).

part of the EC's Better Regulation Guidelines and Toolbox (European Commission, 2017a, 2017b), an aspect discussed in section 2.2.5.3.

The behavioural agenda has also seen the light of day in policy and regulatory initiatives at national level. Lourenço et al. (2016) and the OECD (2017a) provide an overview of such initiatives across a wide array of policy areas carried out by legislators, governments and regulatory bodies, covering interventions that range from the delivery of governmental programs to regulatory initiatives. It is important to note that behavioural insights can inform such interventions more or less explicitly (Lourenço et al., 2016). That is, there are initiatives that, while not resulting from an explicit attempt to incorporate behavioural evidence, can nonetheless “be found to be aligned” with such evidence a posteriori (Lourenço et al., 2016, p. 15). They are not necessarily nudges, but behaviourally inspired policies more generally.

### **2.2.5 The policy transfer of nudging: from a book to policy and regulatory teams**

Nudging may have emerged in academia and a book may have disseminated it, but it was translated very early on into the policy sphere through a process of “policy translation” (Jones et al., 2014). As discussed in section 2.2.4, nudging has been absorbed by a myriad of state and non-state organisations working on very different fronts and policy fields and with very distinct (and in many cases non-existent or loose) regulatory mandates.

With regard to the application of nudging across the UK administration, Jones et al. (2014) discuss the “political malleability” of the concept. The arrival of nudging in a series of policy areas results from a “process of social and spatial embedding” that has turned this instrument into a “default” tool to address various “social ills” (Jones et al., 2014, p. 54). These authors put forward three types of translation: a “*social* translation” [emphasis in original] from academia into policy and politics, a “*spatial* translation from the US to the UK” [emphasis in original] and a third translation – a “*temporal* translation” [emphasis in original] – representing a political

shift from a Labour to a Conservative government in the UK (Jones et al., 2014, p. 55). While they are all connected to a very large extent, for the purposes of this thesis, the “social translation” dimension is the most important.

#### **2.2.5.1 Understanding policy transfer**

A whole stream of research in the social sciences is concerned with processes such as “lesson-drawing”, “policy diffusion” and “policy transfer” (Dolowitz & Marsh, 2000, p. 5). Closely associated to the transfer of ideas and knowledge from one country to another, these concepts – with some nuances – concern the “process in which knowledge about policies, administrative arrangements, institutions etc. in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and/or place” (Dolowitz & Marsh, 1996, p. 344). According to these authors, while “lesson learning” is focused on policy transfer that is voluntary rather than an external imposition, policy transfer is broader, encompassing both voluntary and imposed transfers.

Dolowitz and Marsh (1996), the “landmark” paper on the topic according to Benson and Jordan (2011), address core questions regarding policy transfer, such as what policy transfer is, who is involved in it, why it occurs, what exactly is transferred and what aspects may facilitate or hinder the transfer process. All are relevant questions that must be addressed when tracing the transfer process of nudges from academia to policy and regulation.

On *who* is involved, Dolowitz and Marsh (1996) identify mostly political actors. Among them are “elected officials”, “civil servants” and “supra-national institutions” (Dolowitz & Marsh, 1996, p. 345). Academia is not mentioned as one of the actors involved in policy transfer. However, transfer may involve primarily the state, but it also engages “knowledge-based actors involved in the export of ideas” (Stone, 2001, p. 3). In this regard, Stone (2001) discusses the role of academia in policy transfer: among others, academic scholars can be directly engaged in policy transfer through assistance to policy-makers and they can contribute to research agendas focused on bridging the gap between academia and policy.

In the particular transfer process of nudging, academia has been an active actor not solely as a producer and lender of knowledge, but also as an involved party in the incursion of the concept into policy. Actors other than academic researchers also seem to have played a role in the policy transfer of nudging from academia. John (2018), writing on the dissemination of behavioural insights outside academia, specifically acknowledges this:

“Academics were not the only ones doing the translating. The classic intermediators were those working for think tanks and policy institutes who like to sift through the vast output of academic journals, find out what research is hot, and then do literature reviews” (John, 2018, p. 57).

Policy transfer has evolved from being a concept with “state-centred roots” to encompass many more relevant spaces and non-state actors (Benson & Jordan, 2011). As Benson and Jordan (2011) remind us, many non-state actors are engaged in knowledge transfer across borders. With regard to nudging, rather than simply occurring between different geographical locations and jurisdictions, the transfer process also entailed a move from different social frames, in particular from academia to policy.

According to Jones et al. (2014), an emphasis on the “internationalisation” of knowledge and experiences fails to consider the “complex” web where policy transfer takes place (p. 56). This web includes spatial networks beyond the international sphere, such as “the spatial networks that connect policy makers and think tanks”, “the spatial mobility of policy ideas” and “the specific spatial contexts in which policies are implemented” (Jones et al., 2014, pp. 56-57). Policy transfer is ingrained in complex networks “from the international to the regional and urban” (Jones et al., 2014, p. 56). This web played an important role in the dissemination of nudges across different social arenas.

With regard to *why* policy transfer occurs, a distinction can be made between “voluntary” and “coercive” transfer. On the one hand, coercive policy transfer is

often associated with the role of supra-national organisations in spreading certain policies to the developing world (Dolowitz & Marsh, 1996). On the other hand, voluntary transfer can be triggered by several factors. One of the most important is “some form of dissatisfaction” by the government or the public with the current state of affairs (Dolowitz & Marsh, 1996, p. 346). Dissatisfaction with traditional policies has also been a trigger behind the emergence of nudging in policy discourse. According to Dolowitz and Marsh (1996), the general uncertainty about the root causes of problems or impacts of past decisions can also prompt the voluntary pursuit of policies from elsewhere.

Stone (1999) adds other more general “forces” such as “time, institutional architecture, political culture, and state structures” (p. 54). Policy learning might also trigger policy transfer and even lead to “a more coherent transfer of ideas, policies and practices” (Stone, 2001, p. 13). Learning, too, seems to have been an important mechanism in the transfer of nudging from academia to policy. All these forces may not only deal with the “why” question, but also explain how easy or difficult the transfer process is.

On the subject of *what* can be transferred, Dolowitz and Marsh (1996) identify different “objects” susceptible of lending themselves to policy transfer. These objects include “policy goals, structure and content; policy instruments or administrative techniques; institutions; ideology; ideas, attitudes and concepts; and negative lessons” (Dolowitz & Marsh, 1996, pp. 349-350). Nudging, as a concept and an instrument, easily lends itself to such a process.

On the *factors that enable or hinder policy transfer*, Dolowitz and Marsh (1996) explain that a policy’s “transferability” may be affected by its “complexity” (p. 353). The existence of resources – political, administrative and economic – is also crucial, as Dolowitz and Marsh (1996) underline. On the transfer of nudging, the simplicity of the tool and its focus on a single goal (i.e. behaviour change) might have facilitated its transfer into policy.

On the enabling processes of policy transfer, Jones et al. (2014) emphasise the need to “consider the notions of policy *learning*, of epistemic *communities*, and policy *communication* within specific infrastructures of governance, in order to understand better the ‘peopled’ processes of policy transfer” [emphasis in original] (p. 57). The exact processes and platforms where communication takes place are seen as crucial for successful transfer.<sup>23</sup> Dolowitz and Marsh (1996, 2000) provide a coherent framework to think about policy transfer, but the *how* question in their attempt to answer core questions about policy transfer seems to remain underexplored. These enabling mechanisms have also played a crucial role in the transfer of nudging into policy.

With its roots in comparative politics, policy transfer has become an important avenue of research to explain processes of transfers of knowledge and policies from one context to another. Jones et al. (2014) even call for the need to move beyond a “mechanistic transfer of policy” and properly adapt or translate policies from one arena to the specificities of another arena (p. 57). Sections 2.2.5.2-4 provide an in-depth perspective on the transfer of nudging.

#### **2.2.5.2 The transfer process of nudging: at the interface of academia and policy**

Jones et al. (2014) discuss how libertarian paternalism was “imported” into UK politics (p. 58).<sup>24</sup> First, they focus on the political environment that made the flourishing of such an idea possible. In other words, they first focus on the environment welcoming nudges and the conditions in this scenario that made UK

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<sup>23</sup> Policy transfer may occur between individuals, organisations or networks. Stone (2001) discusses the role of networks in policy transfer, namely how they function to spread ideas.

<sup>24</sup> For more detailed accounts of the rise of behavioural insights in the UK, see also Jones et al. (2013). These authors trace the emergence of the behavioural agenda, from its intellectual basis in behavioural economics to implementation in the UK. Also John (2018) explains how behavioural knowledge in academia inspired later policy developments. In chapter 4, this author provides a detailed explanation on the reasons that allowed nudging to translate to the policy sphere, an account similar to that of Jones et al. (2014). Both Jones et al. (2013) and John (2018) explain the historical emergence of the behavioural agenda, in particular the academic development of behavioural economics as an autonomous research project.



politics amenable to the introduction of a new concept. The authors then explain the processes through which libertarian paternalism was translated “from academic knowledge based in the USA-dominated discipline of behavioural economics to a set of policy initiatives (and arguably a programme for government) in the UK” (Jones et al., 2014, p. 58).

Several reasons explain the openness of the British political environment to libertarian paternalism (Jones et al., 2014). The first reason regards a general perception among policy-makers that traditional tools were no longer effective and that the state had to develop a strategy to more meaningfully engage citizens. As mentioned above, dissatisfaction with existing policies can be an important reason behind voluntary policy transfer. Individuals tend to resist command-and-control rules and nudging was viewed as a way to overcome these perceptions and engage citizens in policy co-production. Secondly, there was a belief that libertarian paternalism was “*morally beneficial*” [emphasis in original], as it encouraged individual responsibility and limited state overreach, while providing decision guidance to individuals (Jones et al., 2014, p. 59). Thirdly, a “*fiscal challenge*” [emphasis in original], or a strain on governmental resources, might have had a role in the flourishing of libertarian paternalism (Jones et al., 2014). Nudges not only place more responsibility on individuals, but they are also perceived as cheap to implement.

Several processes also made it possible to embed nudging in the UK policy-making landscape. Jones et al. (2014) focus on documents, events and actors that were key to the translation of nudging from academia to government. They mention, for instance, that well-known academics in the behavioural sciences, such as Daniel Kahneman, Robert Cialdini and Richard Thaler, were invited to speak in British policy circles.

This contact might have been facilitated by the fact that there was already behavioural work under way in a few policy areas. To a certain extent, nudging and libertarian paternalism came to legitimise and provide reasoning for scattered policy

developments that were already taking place in the UK (see Jones et al., 2014, p. 61). The interest in behavioural sciences was also furthered through the recruitment of civil servants with a background in behavioural economics. This recruitment aimed to create a specialised network across different departments, revealing an intention “to construct an epistemic policy community that would be informed by the insights of the behavioural sciences” (Jones et al., 2014, p. 62).

Also key documents were crucial to the dissemination of behavioural sciences amongst civil servants and policy-makers. Reports such as *MINDSPACE* published in 2010 (Dolan et al., 2010) or *Personal Responsibility and Changing Behaviour* published in 2004 (Halpern et al., 2004) are a case in point. John (2018), in turn, also acknowledges this dissemination through key publications: “In the wake of *Nudge*, a range of publications emerged, partly influenced by it, partly doing their own research” (p. 60).

This story is in line with both the academic and policy accounts of events. The records of both David Halpern, on the policy side, and Richard Thaler, on the academic side, are good examples of such ties between both areas. Halpern (2015), head of the Behavioural Insights Team, provides an inside story of the behavioural developments inside policy circles in the UK, from the scepticism of the first behaviour change policy paper to the creation of the Behavioural Insights Team. Also his account of events evokes the policy translation explained in Jones et al. (2014). For instance, both Halpern (2015) and Jones et al. (2014) mention the visits of Cialdini and Kahneman to the UK administration. The active role of behavioural researchers, especially Richard Thaler, in the development of the first governmental nudge unit is also clearly traceable in Halpern’s reflection.

The team’s main objective was to find ways to help people make better choices. In order to do so, the team turned to the literature, with Halpern (2015) himself acknowledging the tight links between US academia and the UK policy setting. In fact, as acknowledged by the author, “an early objective would be to try out some of the most prominent and best-evidenced ideas from the wider literature, and from

the US in particular” (Halpern, 2015, “The 2010 government launches the Nudge Unit” section, para. 7).

The role of academia was crucial in the successful transfer of nudging into UK policy-making. When outlining the main reasons behind the BIT’s accomplishments, Halpern (2015) refers to “scholarship” or deep knowledge of behavioural literature as a key driver. Identifying the academic experts that can “form an expert advisory group” has also been a main ingredient for the BIT’s success, alongside administrative and political support (Halpern, 2015). Halpern (2015) highlights the hiring of experts in behavioural and social sciences as fundamental for the team’s later success. Apart from behavioural expertise and political support, the BIT also benefited from the advice of Thaler “as well as the good wishes of a small clutch of other academics” (Halpern, 2015, “The 2010 government launches the Nudge Unit” section, para. 19).

One of the criteria that Halpern (2015) also provides for choosing priority interventions was the amenability of an intervention “to systematic testing and trialling, with good management data in place” (Halpern, 2015, “The 2010 government launches the Nudge Unit” section, para. 8). As mentioned before, the simpler the policy is, the more amenable it becomes to processes of policy transfer. The simplicity, focus and directness of nudging towards a single goal have made it amenable to the testing that Halpern (2015) envisioned.

Halpern’s (2015) version of events is also in agreement with that of Jones et al. (2014) on the political environment.<sup>25</sup> In fact, such an environment favoured solutions that strengthened personal responsibility and limited the state’s influence. Halpern (2015) acknowledges that the setting up of another team with a clear deregulation mandate – the “Red Tape Challenge” team – also greatly fostered the BIT’s success.

As other authors have also noted, an approach focused on nudging individual behaviour is consistent with a neoliberal agenda that defends a minimal role for the

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<sup>25</sup> See also Hallsworth and Sanders (2016) on this.

state and that is interested in less restrictive alternatives to command-and-control to regulate individual behaviour. Maryon-Davis (2016) clearly expresses this idea of resistance, in words that do not apply only to regulation in the health domain:

“Today’s most liberal governments tend to resist calls for regulatory approaches to health behaviour. They are averse to regulating industries such as the tobacco, alcohol and food industries for fear of interfering with companies’ rights to sell their legal products and their legal obligation to shareholders to maximise profits. They tend to be even more reluctant to pass laws directly curtailing the personal freedoms and behaviour of individuals” (Maryon-Davis, 2016, pp. 74-75).

The appeal of tools such as nudges is also related to developments – and associated criticism – of the regulatory state. The 20<sup>th</sup>-century regulatory state was accompanied by critiques of regulation, namely the identification of “failures of government regulation” (Ramsay, 2012, p. 9). The idea that the government was not well placed to regulate, lacking knowledge and rationale for intervention, gained prominence in the last quarter of the 20<sup>th</sup> century. As Ramsay (2012) reminds, this resulted in the emergence of “new forms of governance in neo-liberalism” that targeted the consumer, “the subject of consumption” (p. 10). Such fundamental shift in the regulation of markets seems to be linked to broader processes of deregulation and privatisation and the resulting increased choice set for the individual:

“Deregulation and privatisation often imposed greater choices on individuals (eg pensions). Forced to make choices, individuals were invited to regulate themselves according to particular norms of behaviour. Thus in consumer finance markets individuals must learn the appropriate norms of credit and savings behaviour and become financially literate. More recently insights from behavioural

economics have been harnessed to ‘nudge’ individuals to change their behaviour” (Ramsay, 2012, p. 10).

It comes therefore as no surprise that the development of nudging in the UK happened under a Conservative government. In time, the BIT model was exported to other countries and the team evolved from a governmental unit to a social purpose company, with offices abroad: in short, it has become a “British export success story” (Quinn, 2018).

Richard Thaler, too, provides an inside story on the arrival of nudging to UK politics in *Misbehaving* (Thaler, 2015). From his first contact with the leadership of the Conservative party until the establishment of a behavioural unit after Cameron’s rise to power, Thaler’s description of events is consistent with Halpern’s. The team’s goal was to incorporate findings from behavioural science “to improve the workings of government”, something which had not been done before: “There was no manual for this task, so we had to figure it out on the fly” (Thaler, 2015, “Nudging in the U.K.” section, para. 15). Academics would become instrumental in the success of this task.

The narrative that nudging has moved from academia to policy is shared by other authors who have tried to keep track of the main events behind the appearance of behavioural economics in policy. As John (2018) puts it, “The nudge agenda has been assisted by skilful advocacy by academics and entrepreneurs, so its terms and understandings have entered the mainstream of debate and public policy” (p. 5). In the author’s view, behavioural sciences have been subject to a process of “translation” into policy: “this translation is an important development, a case study of how an academic programme can directly influence public policy” (John, 2018, p. 55). Also Hallsworth and Sanders (2016), involved in the creation of the BIT, when referring to the new empirical evidence developed by economics and psychology, claim that behavioural findings “have increasingly been incorporated into policy analysis and design in recent years” (p. 115). Such translation is noteworthy, as it has

triggered an irreversible process. In fact, the authority of academia explains how nudging easily entered policy, without contestation from policy-makers.

### **2.2.5.3 The transfer process of nudging: from academia and policy to regulation**

The arrival of nudging in policy in its broadest sense has also meant the emergence of nudging in regulation. Regulators became interested in this tool as well as organisations involved in regulatory design and better regulation, such as the European Commission and the OECD.

In the UK, for instance, regulators and enforcers such as the Office of Fair Trade (now the Competition and Markets Authority) and the Financial Conduct Authority (FCA) have been paying close attention to the implications of behavioural sciences for their own work.<sup>26</sup> The FCA's Occasional Paper No. 1 *Applying behavioural economics at the Financial Conduct Authority* (Erta, Hunt, Iscenko, & Brambley, 2013), dating back to April 2013, constitutes nothing more than a first attempt to delve into the behavioural world. Erta et al. (2013) not only summarise the most important lessons from behavioural economics to retail financial markets, but also analyse in a comprehensive manner how this novel area can be used in the regulation and supervision of corporate conduct. The implications of behavioural findings for competition authorities have also been noted (Walker, 2017; Nuñez, 2017).

The importance of nudging – and behavioural economics more generally – has also been acknowledged by major organisations in regulatory design and convergence such as the European Commission and the OECD. The 2017 *Better Regulation Guidelines* and *Toolbox*<sup>27</sup> by the European Commission (European Commission, 2017a, 2017b) and the 2018 *OECD Regulatory Policy Outlook* (OECD, 2018) accept the increasing role of behavioural economics in regulation. As early as 2015, the

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<sup>26</sup> See also Lunn (2014) on these developments.

<sup>27</sup> The *Better Regulation Guidelines* are principles followed by the European Commission in the drawing up of new proposals or evaluation of existing ones. The *Toolbox* complements and provides further details on the Guidelines.

OECD, a key organisation in the dissemination of regulatory practices, acknowledged behavioural insights as the “new frontier for regulatory policy” (OECD, 2015, p. 51).

Behavioural insights can be used in different stages of the regulatory process. In particular, behavioural insights can be used to identify and better understand a problem. Behavioural biases have also been identified as a possible justification for policy intervention in the 2017 *Better Regulation Toolbox* by the European Commission, together with market and regulatory failures and values like equity (European Commission, 2017b). The EC and the OECD<sup>28</sup> also perceive behavioural sciences as an important input for the design of policy options. In fact, the Toolbox acknowledges that individual choices may vary depending on context; different elements can then inspire the design of regulation that takes behavioural biases into account, including information simplicity, range of choice alternatives, defaults and option or attribute prominence. The Toolbox also notes that “More effective policy instruments could emerge if insights provided by behavioural theory and empirical studies are available” (European Commission, 2017b, p. 118).<sup>29</sup>

Besides their role in justifying intervention and designing policies, behavioural sciences can also be used to assess the impact of a rule or anticipate consequences of legal change. Rules impacting individual behaviour “often display varying degrees of effectiveness due to the behavioural response of individuals” (Renda, 2015, p. 93). Assessing policy impacts on individuals not only calls for the contemplation of their behavioural response, but also for considerations on how the policy affects other substantive dimensions of choice for the individual. These dimensions are important for any policy option under scrutiny that can affect consumers, including nudges. At this stage of assessing impacts, the experimentation culture that

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<sup>28</sup> See also OECD (2017a) and OECD (2018) on the need to integrate behavioural insights in the policy cycle, in particular at its early stages.

<sup>29</sup> Also Lunn (2014) in a report for the OECD explains that behavioural insights can assist in the design of regulation through the simplification of information and choice, the setting of defaults and the promotion of convenience, the increase of salience and debiasing.

behavioural economics has brought to policy may add to regulatory impact assessments (RIA) (Lunn, 2014).

Also the role of behavioural sciences in the interpretation of existing EU regulation on unfair commercial practices has been noted. In particular, the European Commission's Guidance of the 2005 Unfair Commercial Practices Directive encourages courts and authorities to assess the misleading nature of a practice "by taking into account the most recent findings on behavioural economics" (European Commission, 2016a, p. 53).<sup>30</sup>

Another significant development concerning the impact of behavioural economics on regulation is the appointment of Cass Sunstein – co-author of *Nudge* – as head of the White House Office of Information and Regulatory Affairs from 2009 to 2012 (as mentioned in section 2.2.4). Described by Sunstein as the "cockpit of the regulatory state" (Sunstein, 2013b), OIRA oversees regulation in the US, working as a point of acceptance or refusal of regulations. Detailing his experience as head of OIRA, Sunstein states: "I argued in favor of the use of "nudges" – simple, low-cost, freedom-preserving approaches, drawing directly from behavioural economics" (Sunstein, 2013b, "Introduction - The cockpit of the regulatory state" section, para. 7).

Behavioural economics and nudging have not only caught the attention of regulators, but also nudges have seen the light of day in many specific legal and regulatory initiatives. Section 3.6.1 will review a few of these initiatives introduced in the US and the EU. Examples such as the introduction of default contributions in retirement savings plans or graphic warnings in tobacco packages reveal the impact of nudges on regulatory initiatives across several policy areas.

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<sup>30</sup> See also Sibony (2015) on how behavioural insights can contribute to enhance the interpretation of the EU's legal framework of unfair commercial practices.



Developments in behavioural economics are important to regulation.<sup>31</sup> As they refine our understanding of individual behaviour, behavioural insights can be used to identify and better understand a problem, introduce alternatives to traditional command-and-control (such as nudges) and assess the effectiveness and compliance with rules by considering behavioural responses (Renda, 2015). Behavioural insights are increasingly being considered in regulation, with nudges as a tool being contemplated and used.

#### **2.2.5.4 The emergence of nudging in regulation: justifying the research questions of this thesis**

Discussions about policy transfer, policy learning and the development of nudging have proved to be important to understand that the arrival of nudges in policy was not a product of chance, but rather an intentional phenomenon that counted on the effort of both academic researchers and policy-makers. As nudging left academic discourse to enter into policy and regulatory areas, it has become important to analyse whether (and how) nudging can be designed and implemented for a regulatory reality. How can nudging be *translated* rather than simply *transferred* to the regulatory context?

This concept and tool was not the only object of transfer or translation into the regulatory realm. The premises that guide nudge design in other spheres, iterative testing in particular, also penetrated regulatory reality. Nudging was not transferred alone, but rather accompanied by its design premises in other spaces. However, nudge design and provision, *as we know them*, may have to adapt to this new context. As literature on policy transfer also acknowledges, transfer can occur with differing degrees, ranging from “copying” – or absolute transfer – to “emulation” or mere “inspiration” (Dolowitz & Marsh, 2000, p. 13). By the same token, the transfer or

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<sup>31</sup> Behavioural economics seems to have gained so much importance that it went from a section in the 2015 *OECD Regulatory Policy Outlook* (OECD, 2015) to a whole chapter in the 2018 update of the Outlook (OECD, 2018).

translation of nudging into regulation need not be total. In other words, nudging may need a *tailored* transfer of design practices into regulatory reality.

As translation processes are neither fixed nor circumscribed in time and space, but are rather changing and ongoing, this thesis contributes to a more successful transfer of nudging into the regulatory realm. In fact, it remains to be seen how the design of nudges can be truly incorporated into regulatory processes. How such incorporation is to take place requires assessing the implications of incorporating nudges through regulation using the premises of iterative testing – the ones guiding nudge design in other domains – which is addressed in chapters 4 and 5 *infra*.

Delving into the successful translation of nudging from academia to regulatory domains with efficiency concerns in mind is all the more important, since regulators themselves may not necessarily take these concerns into account when designing nudges. Many reasons can explain why policy-makers and bureaucrats might deviate from efficiency values.

Explanations on “excessive government” from public economics can assist in understanding such reasons. First, bureaucrats may not be driven by the pursuit of the public good, but rather abide by more self-interested values. As they cannot pursue increased income, they are motivated by “nonpecuniary goals” (Hindriks & Myles, 2006, p. 85). Factors such as power, which influence bureaucrats’ utility, might result in an increased size of their bureau: the bureaucrat essentially aims at maximising “the size of his bureau in order to obtain the greatest nonpecuniary benefits” (Hindriks & Myles, 2006, p. 85).

Secondly, the methods behind budget determination and resource allocation can also result in excessive government. If the bureaucrat heading a particular department experiences increases in utility with the budget allocated to their department, a department budget will increase over time (Hindriks & Myles, 2006). Given that each department is competing for resources, money and prestige, the pursuit of efficient processes might be overlooked.

Thirdly, since the bureaucracy has the monopoly over the supply of many goods and services, an oversupply of such goods according to the levels desired by “specialists” (e.g. policy experts) may occur. Fourthly, bureaucracy is vulnerable to corruption and to the creation of rules for the sole purpose of receiving bribes from those wanting to circumvent such rules. A fifth reason behind governmental growth underlines the lack of transparency between the bureaucracy and voters. Finally, public services often benefit a particular group, while costs are more broadly imposed, which can result in increased public spending (Hindriks & Myles, 2006).<sup>32</sup>

Valid explanations for why regulators may deviate from efficiency values reiterate the importance of the research questions of this thesis, which are concerned with the design and provision of nudges in an efficient manner. In other words, possible natural inclinations to depart from efficiency confirm the relevance of research questions that retain efficiency as an ideal normative benchmark. Also important to note in this regard are the biases of policy-makers, which can play a role in departures from efficiency too. While such biases might also substantiate the need to search for more efficient processes, these will be discussed in section 2.3.3.1 as arguments put forward against intervention grounded on behavioural findings.

## **2.3 From neoclassical economics to behavioural economics: new rationales for intervention**

A nudge is one of the regulatory interventions associated with the presence of behavioural phenomena. This section aims to discuss the rationales introduced by behavioural and cognitive biases. While these might be considered on their own and thus call for the reduction of decision-making mistakes (section 2.3.1), their interaction with market practices provides an additional rationale for intervention (section 2.3.2).

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<sup>32</sup> See Hindriks and Myles (2006) for a summary of these theories of public sector growth.

### 2.3.1 Behavioural biases: departing from revealed preferences

Rationality is a core assumption in neoclassical economics. In neoclassical models, people process information, have well-defined preferences, discount the future exponentially and time-consistently and behave self-interestedly. The identification of a utility function is crucial for this maximising behaviour. Individuals have stable preferences and maximise utility or well-being, given their preferences, constraints and available information. The neoclassical account of regulation leaves little role for the state. The market outcome is efficient; therefore, only in the presence of market failures – namely externalities, natural monopolies, asymmetric information and public goods – should the state interfere.<sup>33</sup>

Behavioural and experimental research has nevertheless challenged the assumptions of neoclassical thinking, suggesting that individuals systematically depart from these ideals. Rather than being entirely rational, individuals have two systems of decision-making – “system 1” and “system 2” – as per the influential work of Kahneman and Tversky’s dual system (Kahneman, 2011). “System 2” is a reflective one, close to the reasoning of the *homo oeconomicus*; while “system 1” is emotional and automatic, capable of making people decide against their own interests. Deviations from self-interest and self-control also exist. These predictable deviations from optimality have allowed behavioural economists to develop models that incorporate departures from rationality, self-interest and self-control.

While behavioural economics may still have many similarities with neoclassical economics (e.g. account of phenomena based on individual behaviour), it differs markedly in the assumptions of its models, adopting more realistic assumptions of human behaviour.<sup>34</sup> Some economists may argue that what defines a good model is the accuracy of its predictions, but behavioural economists defend more realistic assumptions. More realistic behavioural models can provide an additional rationale for intervention under the market failure framework, particularly in consumer

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<sup>33</sup> See, for instance, Hindriks and Myles (2006) on these departures from efficiency.

<sup>34</sup> It is important to note that these assumptions have been criticised on the grounds that they come from unreliable evidence. See section 2.3.1.5.

markets, where information asymmetries and imperfect competition have traditionally been the reasons to regulate. Intervention may then be needed to bring individuals' behaviour towards optimality. As Sunstein (2013c) clarifies, "Paternalism, whether hard or soft, creates "as-if" rationality" (p. 1895).

Since the market might not self-correct, either through sellers' education or learning by consumers<sup>35</sup>, behavioural biases might result in welfare losses for individuals, therefore calling for intervention. Policies and instruments that intend to guide individuals towards more optimal paths of decision-making might then be designed. Nudges – the main focus of this thesis – are among the policies that can be considered.

The presence of behavioural biases poses nonetheless a fundamental problem: if it is no longer possible to rely on revealed preference, what welfare criterion can policy-makers use? In neoclassical economics, individuals are maximising utility, or in other words, an individual's choice is already optimal. What happens when this is no longer the case? Section 2.3.1.1 below summarises the problems for welfare analysis caused by a departure from revealed preference triggered by behavioural economics.

#### **2.3.1.1 Departing from revealed preferences: the problem for welfare analysis**

Social welfare analysis concerns the normative evaluation of policies. It is essentially divided into two steps. One step starts by determining how policies affect individual well-being or welfare<sup>36</sup>, while the other aggregates individual well-being, achieving a social ordering over different states of the world. The former step intends to capture policy effects, while the latter assesses the social benefits of those effects.

For the purposes of policy analysis, behavioural considerations must differentiate between models of decision-making that describe choices and normative models

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<sup>35</sup> See section 2.3.3.2 on these points.

<sup>36</sup> What is economic welfare and how it relates to individual choice in standard welfare economics is a matter of intellectual discussion. For a summary, see Bernheim (2016).

that describe well-being (Bernheim & Rangel, 2005).<sup>37</sup> Traditionally, this distinction has not been done, as neoclassical economics conducted welfare analysis under the revealed preference paradigm (Bernheim & Rangel, 2005). For neoclassical economists, people want what they choose, so the role left for the state is to maximise social welfare in a way that respects the individual preferences revealed through their choices. The choices of individuals already result from a process of maximisation of a utility function subject to a budget constraint; therefore, the state should simply infer preferences from observed choices. A policy choice is deduced from the observation of individual choices. Behavioural and welfare parts of models are the same and market intervention is only needed to correct market failures.

Under the neoclassical approach, individuals have well-defined and stable preferences and maximise utility according to such preferences, which the policy-maker deduces from observing choice. However, if individuals may not actually choose what they want – as claimed by behavioural economics – welfare analysis can no longer rely on revealed preferences to determine how policy affects individual well-being. Traditional welfare analysis depends on the paradigm of revealed preference to evaluate the implications of regulatory options, but if revealed preferences contradict stated preferences, which ones should policy-makers use? How can they find out true preferences?

Before delving into the answer, it is important to better understand to what extent behavioural economics challenges core welfare analysis assumptions. Bernheim (2016), in particular, discusses how behavioural economics re-examines core premises of welfare analysis, namely deference to individual judgement, stable preferences and choices guided by preferences.<sup>38</sup> According to Bernheim (2016), rather than challenging the presumption that individuals are the best judges of their

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<sup>37</sup> Throughout the text, models describing choice refer to choice or positive models; models describing well-being are referred to as welfare or normative models. See also Bernheim (2016) on this “two-step approach”.

<sup>38</sup> See also Bernheim and Rangel (2005) on how behavioural economics has dealt with the relaxation of core assumptions in welfare analysis: “coherent preferences”, “preference domain”, “fixed lifetime preferences” and “no mistakes”.

own well-being, behavioural economics questions our indirect judgements, that is, our judgements on the relationship between alternatives (or courses of action) that lead to outcomes we care about: “A direct judgment pertains to outcomes we care about for their own sake – our “ultimate objectives” – whereas an indirect judgment involves alternatives that lead to those outcomes. Behavioral economics impugns various indirect judgments, but not direct ones” (Bernheim, 2016, p. 17). As choices usually involve indirect judgements, these can cause “misunderstandings” (Bernheim, 2016, p. 21). For Bernheim (2016), rather than an absolute deference to choice – as in standard welfare analysis – we should “defer to consumer’s direct judgments and correctly informed indirect judgments” (p. 21).

On stable preferences that guide our choices, Bernheim (2016) labels true preferences or experienced utility as “fictions” (p. 20). In the author’s view, constructed preference is the one most faithful to the truth. In constructed preference, “I aggregate the many diverse aspects of my experience only when called upon to do so for a given purpose, such as making a choice or answering a question about my well-being” (Bernheim, 2016, p. 20). Furthermore, the author argues that choice is a “constructed judgement”, which means that other “constructed judgments” such as self-reported well-being should be “equally admissible” in welfare analysis (Bernheim, 2016, p. 21). Bernheim (2016) further evaluates a welfare framework based on self-reported well-being instead of choice, highlighting not just its limitations, but its potential “as an indicator of what people would likely choose” rather than a precise and direct measurement of well-being (p. 32).

On the welfare analysis conundrum posed by behavioural economics, as Bernheim and Rangel (2005) explain, there are essentially “two main schools of thought”. One of them actually maintains its observance to revealed preferences for the purposes of policy evaluation, regarding behavioural biases as an extension of the “preference domain” (Bernheim & Rangel, 2005, p. 2). The authors mention Gul and Pesendorfer (2001) as one example of such school of thought where the preference domain is extended. This school does not distinguish between choice models and

models that describe well-being. The preference domain is extended, while keeping the assumption that choice comes from the maximisation of a “single coherent objective function” (Bernheim, 2008, p. 3).

A distinct school of thought allows for the relaxation of revealed preference for welfare analysis, introducing the above-mentioned dichotomy between positive models (on policy effects) and normative models (on well-being). The authors identify several instances where revealed preference cannot be a guide to inform policy and explain how welfare analysis has dealt with the relaxation of assumptions such as “no mistakes” (Bernheim & Rangel, 2005). These instances justify a departure from the revealed preference paradigm towards one that separates between models for choice and models for well-being.

However, given the discretion that a departure from revealed preference can represent, Bernheim and Rangel (2005) raise important questions, in particular on what basis such departure can be invoked or justified and how we can identify true preferences in this case. In fact, while revealed preference can prevent a condemnation of individual choices, the same is no longer true when departing from this principle.

#### **2.3.1.2 Departing from revealed preferences: different criteria**

With regard to criteria for overturning revealed preference, Bernheim and Rangel (2005) advocate the use of evidence coming from psychology and the neurosciences on possible limitations of mental processes used in decision-making. They call for high quality scientific evidence, given the political danger associated with departures from revealed preference. In fact, while the separation between positive and normative models allows policy-makers to address problems with behavioural roots, it certainly opens the door to virtually any policy intervention more in line with individuals’ “true” preferences. This makes the identification of thresholds all the more important (Bernheim & Rangel, 2005).



Loewenstein and Haisley (2011) criticise this approach on the grounds that such type of psychology and neuroscience data does not (and might never) exist. In their words, “we suspect that it will be many years, if ever, before we are able to interpret patterns of brain activation to make inferences about what type of choices should count as welfare enhancing” (Loewenstein & Haisley, 2011, p. 219). According to these authors, Bernheim and Rangel’s (2005) approach involves a “subjective” reliance on judgements of experience utility (Loewenstein & Haisley, 2011, p. 219).

Loewenstein and Haisley (2011) propose a different approach. Their approach entails the implementation of behaviourally inspired policies “when welfare judgments tend to be relatively straightforward” (Loewenstein & Haisley, 2011, p. 221). Such judgements are “straightforward” in a set of circumstances and conditions identified as “dominance”, “clearly negative outcomes” and “self-officiating” (Loewenstein & Haisley, 2011). “Dominance” refers to situations where individuals are not getting as much money as they could or when they are wasting opportunities to increase their income. “Clearly negative outcomes” encompass instances where decisions are leading people “down a detrimental path” with undesirable outcomes (Loewenstein & Haisley, 2011, p. 222). This resembles the call of Glaeser (2006) to intervene only “where there is strong evidence of self-harm” (p. 156). “Self-officiating” instances concern those in which people report that they would be better off if their behaviour was different (Loewenstein & Haisley, 2011).

Also Beshears, Choi, Laibson, and Madrian (2008) identify circumstances where normative and revealed preferences diverge, that is to say, instances where departures from revealed preferences are justified. These are instances of “passive choice”, “complexity”, “limited personal experience”, “third-party marketing” and “intertemporal choice” (Beshears et al., 2008). For instance, passive choice is concerned with situations where individuals do not express their choice actively – as in the case of defaults – while complexity refers to high “up-front problem-solving costs” on decisions (Beshears et al., 2008, p. 3). This complexity can be strengthened not only by the number of available options, but also by the time

distance between choices and consequences. Limited personal experience regards situations where individuals have limited opportunity for feedback on their decisions.

Once a departure from revealed preference has been identified, it is still necessary to learn about individuals' true preferences. As this section has discussed, the instances where such departure is justified is not a matter of consensus. Section 2.3.1.3 deals with learning about true preferences, once the need to depart from revealed preference has been established.

### **2.3.1.3 Learning about true preferences**

On finding out about individual preferences, Bernheim and Rangel (2005) defend the parameterisation of two different models – a positive one for choices and a normative one for preferences. The evidence used to overturn the revealed preference paradigm shall then be used to make certain structural assumptions about decision-making. As preferences and choices are somewhat related, the parameters of the preference model will be a subset of those in the choice model. Preferences can therefore be uncovered by estimating the positive model and making certain structural assumptions. Bernheim (2008) clarifies:

“The first strategy is to offer a model of an imperfect decision process. With sufficient knowledge (or assumptions) concerning the manner in which that process maps preferences into choices, one can invert the mapping and recover preferences from choices”  
(Bernheim, 2008, pp. 9-10).

In short, choice data combined with certain structural assumptions on decision-making processes can be used to estimate positive models for choice and normative models for preferences. If the parameters used in the normative model are a subset of the parameters of the positive one, choice data might be the only type of data used. In the interpretation of the results, non-choice data, however, is used to justify

the structure assumed, so indeed the strength of any conclusions depends on the reliability of non-choice data.

In fact, relying entirely on choices to infer preferences does not seem to be possible. Kőszegi and Rabin (2008) explain why choice data alone does not embody any welfare value and why welfare analysis needs “choice-unobservable assumptions”: “well-being may depend not just on the outcome resulting from choice, but on the choice set itself. Yet the effect of different choice sets on well-being is not observable by the choices taken within each choice set” (Kőszegi & Rabin, 2008, p. 1821). This explains why the authors endorse “new methods to measure well-being” (Kőszegi & Rabin, 2008, p. 1822).

Bernheim and Rangel (2005) note that estimating two different models does not mean completely discarding revealed preference, but rather invoking a principle of “*selectively* revealed preference” [emphasis in original] (p. 13). As Loewenstein and Haisley (2011) further explain about Bernheim and Rangel’s approach, their measure of welfare is based on choice, but limits the range of choices that indicate welfare, that is to say, they “adopt a welfare criterion that, in effect, surgically removes “bad” choices from the set of choices that count” (Loewenstein & Haisley, 2011, p. 218). According to Loewenstein and Haisley (2011), the main issue of this approach is how to determine which choices should be considered or not, as previously explained. Alternatives include choices that are made with a certain frequency or asking individuals about which decisions should be considered for welfare purposes, but taking into account non-choice data is crucial to justify the structural model.

Bernheim and Rangel (2005), too, concede that non-choice data can be used to more reliably estimate normative models. Self-reported preferences or measures of well-being or physical states may allow an improved estimation of structural parameters. An enhanced normative model with the use of non-choice data raises nonetheless at least two concerns, which Bernheim and Rangel (2005) identify and simultaneously tone down. One concern regards the additional assumptions behind the structural model about the relationship between non-choice data and actual

decisions, which many view with suspicion. Bernheim and Rangel (2005) nonetheless explain that those assumptions can be tested with data from psychology or neuroscience and that the revealed preference paradigm itself also makes assumptions not directly based on choices. Another concern has to do with the possible lack of reliability of self-reported data: when asked about a hypothetical decision, people might not take such a scenario as seriously as they would if the decision was real. In addition, if preferences conflict with moral norms, people might also misreport their preferences. Context can also affect reported preferences. The authors remain nonetheless confident about the role of non-choice data in enhancing behavioural welfare analysis<sup>39</sup>, allowing for the possibility to combine both choice and non-choice data in structural estimation.

Bernheim (2016), too, reiterates that non-choice evidence is crucial. Not only measures of self-reported well-being shall be used as predictors of choice, but also “one can expand the set of co-predictors to include other types of subjective evaluations, and possibly even biometric reactions” (Bernheim, 2016, p. 33). However, mapping judgements into choice poses one problem that Bernheim (2016) acknowledges:

“Unfortunately, our understanding of many (perhaps most) choice phenomena remains partial and imperfect. The uncomfortable aspect of this approach is that it *requires* us to take strong stands concerning the nature of preferences and decision processes, even when – if we are honest with ourselves – we must acknowledge that we have very

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<sup>39</sup> In section 2 of Bernheim, Bjorkegren, Naecker, and Rangel (2013), the authors discuss the limitations of non-choice data and approaches to deal with this type of data. Hypothetical questions are fraught with bias and two types of solutions can be considered: one type fixes the question (e.g. resorting to strategies that attempt to make the decision real) and another solution corrects the bias ex post, using statistical calibration. In their paper, the authors explore a solution closer to the second alternative, looking for a relationship between real and hypothetical choices, and using these hypothetical choices as a predictor. In fact, while acknowledging that they have many limitations, “measures of elicited preferences are indisputably correlated with actual choices, and are therefore potentially useful, if not as *predictions* of real choices, then at least as *predictors*” [emphasis in original] (Bernheim et al., 2013, p. 2).

little basis for doing so” [emphasis in original] (Bernheim, 2016, p. 37).

While advances in knowledge might diminish this concern in the future, this problem has important associated challenges and ramifications such as the fact that behavioural models can produce different normative implications or that many positive models can explain the same choice mapping, as reminded by Bernheim (2016).<sup>40</sup>

This separation between normative or welfare models, on the one hand, and positive or choice models, on the other hand, together with the different possibilities to estimate normative models explained above resemble Chetty’s (2015) differentiation between experienced utility and decision utility and the “three nonpaternalistic methods” to identify experienced utility (Chetty, 2015, p. 3). One of these methods regards “directly measuring experienced utility based on self-reported happiness”, another one entails eliciting revealed preferences from a particular “environment where agents are known to make choices that maximize their experienced utilities” and, finally, a third possibility amounts to using a “structural model of the difference between decision and experienced utilities” (Chetty, 2015, p. 3). In this tripartite distinction, experienced utility refers to well-being and decision utility concerns “the objective the agent maximizes when making choices” (Chetty, 2015, p. 2). Behavioural biases might generate differences between the two and, for the purposes of welfare analysis, experienced utility is the one used.<sup>41</sup>

Regarding the first method, while “happiness” has an advantage over revealed preference to evaluate welfare-enhancing policies due to its independence from actual choices and its straightforward approach, it comes with many problems (Loewenstein & Haisley, 2008). Loewenstein and Ubel (2008) offer a detailed explanation on why self-reported happiness can be problematic as a welfare

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<sup>40</sup> See Bernheim (2016) for a more detailed explanation.

<sup>41</sup> Experienced utility was originally proposed by Kahneman and reflected an approach where welfare was to be evaluated on reported measures of happiness (Loewenstein & Haisley, 2008). See Kahneman and Sugden (2005) on using experienced utility as a basis for policy analysis.

criterion: people adapt to changing circumstances, quickly returning to original happiness levels. For instance, studies have revealed that people with chronic diseases show happiness levels similar to those reported by healthy individuals. As Loewenstein and Ubel (2008) remind, “hedonic adaptation” is “strong enough” for circumstances not to have a very salient impact on well-being (p. 1799). Therefore, relying on reported happiness would mean that extreme and undesirable conditions would not be assigned the “negative value” expected (Loewenstein & Ubel, 2008). Furthermore, experienced utility based only on happiness fails to consider important dimensions of experience that people also value such as capabilities. The authors further conclude that since neither revealed preference nor reported happiness are solid welfare criteria, “evaluations of welfare will inevitably have to be informed by a combination of both approaches, patched together in a fashion that depends on the specific context” (Loewenstein & Ubel, 2008, p. 1797). However, even if there are good reasons to be wary of reported happiness for the estimation of normative models, it can be used as a non-choice data alternative in structural estimation.

The second method that Chetty (2015) identifies requires finding a context where agents optimise and use revealed preferences in that domain to draw conclusions on optimal policy. One of the advantages of this approach, shared with the subjective well-being one, is that it does not require an exact specification of the behavioural model of individual choices. This is advantageous, since many behavioural models could explain choices and differences between decision and experienced utility. One downside of this method is that it might not be possible to find a context “where behavioral biases do in fact vanish” (Chetty, 2015, p. 26). The third method identified in Chetty (2015) – “structural modeling” – corresponds to the method described by Bernheim and Rangel (2005). Although it relies on “strong modeling assumptions”, one of the advantages of this approach is that it is possible to infer true preferences using choice data (Chetty, 2015, p. 26).

Even if the approaches above are flawed, they reveal that it is possible to describe “experienced utility and optimal policy in a disciplined, nonpaternalistic manner”

(Chetty, 2015, p. 27). Furthermore, as Chetty (2015) notes, the welfare prescriptions coming from neoclassical models will be wrong if experienced utility and decision utility diverge. Section 2.3.1.4 identifies other criteria to learn about individual preferences.

#### **2.3.1.4 Other approaches to learn about preferences**

Another welfare criterion, and one that does not deviate much from revealed preference, is “informed decision utility”.<sup>42</sup> Under this approach, individual choices are respected, if decisions are informed ones, that is, individuals are placed under a frame of informed choice from which preferences are inferred. Similar to Bernheim and Rangel’s approach, “informed decision utility” is based on choice, but instead of using non-choice data to exclude choices that do not further welfare, it improves individuals’ information before decision-making, that is, before eliciting choice (Loewenstein & Haisley, 2011, p. 219). To a certain extent, this approach to learn about preferences resembles the second approach identified in Chetty (2015), in that it tries to get the preferences of the individual from a frame of mind that diminishes the impact of bounded rationality: the individual is not only provided with the necessary information, but can dedicate full cognitive efforts to this information and make a decision in a rational state of mind.

Loewenstein and Haisley (2011) identify the main problems of this approach to learn about preferences. One disadvantage is that information does not address mistakes arising from self-control, but only those that occur due to “incorrect information” (Loewenstein & Haisley, 2011, p. 220). Another drawback is related to the fact that very different informational interventions can be devised, each with a different impact on decisions. Each particular way to supply information frames decisions differently, which makes this approach an impractical one, as discussed by Loewenstein and Haisley (2011):

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<sup>42</sup> See more in Loewenstein and Haisley (2011, pp. 219-220).

“Deciding which decisions to inform and how to inform them, therefore, will require some independent welfare criterion, the lack of which is the very problem that informed decision utility was intended to solve. As was true for the choice-subset notion proposed by Bernheim and Rangel, therefore, we suspect that in practice such decisions are going to be informed, at least in part, by recourse to judgments about which types of information will make decision makers happy or well off in some other sense – that is, by experience utility” (Loewenstein & Haisley, 2011, p. 220).

Another welfare criterion relies on “capabilities”. This approach, developed by Martha Nussbaum and Amartya Sen, consists of a measure of welfare based on human capabilities, namely on what people can achieve given the opportunities available to them (see Loewenstein and Haisley, 2011). Even if it addresses the problem of hedonic adaptation posed by experienced utility, an approach based on capabilities is also impractical, given the impossibility to reach a consensus on what capabilities should be valued and how.

Beshears et al. (2008), in turn, provide an overview of different approaches to learn about preferences. The first one corresponds to the structural estimation proposed by Bernheim and Rangel, which has been discussed already. A structural model has a behavioural component and a number of “normative axioms” that translate the behavioural parameters into normative preferences (Beshears et al., 2008, p. 7). When people stay with the default even when they report that such default is not in their best interest, Beshears et al. (2008) endorse an “*active decision mechanism*” [emphasis in original] whereby individuals are forced to express their preferences (p. 8). Another method – “asymptotic choice” – is an approach that takes the behaviour arising from time and experience as a normative benchmark (e.g. savings decisions of experienced workers in a retirement savings scheme). Normative preferences can also be inferred from “aggregated revealed preferences”, “self-reported preferences” and “informed preferences” (Beshears et al., 2008).



“Aggregated revealed preferences”, as the name suggests, contain information about aggregated behaviour, which might have normative value even if individuals make mistakes. “Self-reported preferences” is another method – albeit with some disadvantages that have been mentioned already – that can be used to infer real preferences. Finally, “informed preferences” are those that individuals express when they have gained information before deciding, either on their own or assisted by an advisor. This way of inferring preferences corresponds to the “informed decision utility” approach explained in Loewenstein and Haisley (2011).

All of these approaches may uncover true preferences, but there is still no consensus emerging on which approach is the most suitable to this endeavour.

#### **2.3.1.5 Behavioural welfare analysis: further difficulties**

Behavioural economics does not prevent normative analysis, as “in many cases, it is possible to modify and extend the tools of empirical welfare analysis without abandoning familiar methodological principles” (Bernheim & Rangel, 2005, p. 62). Also Chetty (2015) notes that “behavioral economics represents a natural progression of (rather than a challenge to) neoclassical economic methods” (p. 1). In short, behavioural considerations still allow for welfare analysis.

Behavioural economics does introduce a new rationale for public intervention, namely improvements in welfare brought about by reducing the “frequency and consequences of mistakes” (Bernheim & Rangel, 2005, p. 46). However, while the previous sections have attempted to summarise possible approaches behind welfare analysis when departing from revealed preference, a general framework still seems to be lacking, with behavioural welfare analysis being carried out on a case-by-case basis. Furthermore, regardless of the approach used to identify true preferences, behavioural welfare analysis still entails value judgements. Even deciding to overturn

the principle of revealed preference involves some sort of value judgement.<sup>43</sup> In spite of the proposed approaches discussed to overturn this principle, different authors have pointed out that the data available to do so is insufficient.

In fact, the difficulty in departing from revealed preference has been widely discussed in the literature. Schwartz (2015), for instance, claims that the choices of rational and biased consumers are often “observationally equivalent” (p. 1378). Unable to infer true preferences, the regulator would need a “theory of cognitive function” to assess whether choice is a product of bias or not. In the absence of such a theory, “cognitive-based regulatory interventions often are poorly grounded” (Schwartz, 2015, p. 1373). Lepenies and Małecka (2015), too, voice their concerns with the reliability of behavioural knowledge “as a basis for policy recommendations” (p. 435).

The fact that behavioural economics does not offer a theory or model of human behaviour is closely related to the source of behavioural knowledge. Experimental and laboratory results do not lend themselves to generalisations that can subsequently translate into a theory: “laboratory and empirical results are difficult to transform into a model of human behavior suitable for normative policy analysis” (Arlen, 1998, p. 1777). This happens for several reasons, among them the fact that biases tend to be circumstantial in nature and that individuals are prone to the influence of multiple biases in their decisions (Arlen, 1998). Decision-making is also highly dependent on the richness of local contextual factors, which makes behavioural evidence susceptible to low external validity. As Schwartz (2015) summarises, “The lack of a cognitive theory, the heterogeneity of consumer populations, and the lack of a “subtheory” of bias interaction together show that the regulator cannot sensibly make direct inferences from subjects’ laboratory choices to

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<sup>43</sup> Despite the difficulties in identifying criteria for overturning the principle of revealed preferences, Glaeser (2006) makes an additional clarification when pointing out that “bounded rationality” might provide a clearer case for intervention than self-control issues. In fact, according to this author, intervention grounded on bounded self-control requires “trading off the welfare of people at one point in time with people at some other point in time, and this requires tricky social welfare decisions” (Glaeser, 2006, p. 136). The author also highlights that a “first-best response” to issues of self-control might lie in devices that enhance the exercise of self-control.

consumers' market choices" (p. 1380). Bernheim (2016), too, concedes that it is difficult to generalise:

"One of the main lessons I take from the empirical literature in behavioral economics concerns the prevalence and complexity of context-dependent choice patterns. There is growing evidence that the details of decision problems not only matter, but do so in ways that are difficult to systematize outside of limited domains. Even choice patterns that behavioral economists consider "well established" appear to be context-dependent. [references] As a result, our theories often perform rather poorly when we test their predictions in contexts that do not closely resemble those in which they are calibrated [references]" (Bernheim, 2016, p. 40).

This concern with generalisability, external validity and strength of behavioural evidence – and whether such knowledge is robust enough to call for public intervention – is linked to another key concern on whether behavioural biases play a role in the contexts policy is interested in. Institutional constraints influence individual behaviour and, as Langevoort (1998) notes, "we cannot be sure that biases found in artificial settings will be pernicious in real life" (p. 1522). Mitchell (2001), too, addresses many issues behind the generation of behavioural evidence and how such evidence might not extrapolate to legal contexts.

In sum, the above criticism falls into one of the three categories identified in Rachlinski (2011) as the main concerns with behavioural law and economics. Firstly, behavioural phenomena rely on laboratory findings; secondly, there is no "coherent underlying theory" and thirdly, institutions might "weed out" biased behaviour (Rachlinski, 2011, p. 1681). However, notwithstanding the possible objections to departures from revealed preference, behavioural insights have left academic discourse and have invaded policy practice. Long before the academic debate is settled, behavioural phenomena are being considered in policy design and several

tools to address them are being contemplated. This provides additional support for the research questions of this thesis.

### **2.3.2 Behavioural biases interact with market practices: an additional rationale for intervention**

As explained in section 2.3.1, behavioural biases provide a new rationale for intervention, namely the reduction of mistakes in individual decision-making, which creates a series of difficulties for welfare analysis. Behavioural anomalies combined with market practices can, however, provide additional reasons for intervention.

#### **2.3.2.1 Behavioural biases in isolation: limitations**

When making decision-making mistakes, it is as if individuals imposed an externality on themselves, which is why those mistakes have also become known as “internalities” (Herrnstein, Loewenstein, Prelec, & Vaughan, 1993). Policies that address those biases and bring behaviour to optimality can be designed (e.g. Loewenstein & Haisley, 2011).

Such a rationale for intervention that attempts to correct individual behaviour has been subject to criticism, namely around welfare, as it has already been discussed. Other critics have pointed out that rationality and efficiency remain quite present in proposals that aim at improving individual decision-making: “the neoclassical models of rational choice and of the competitive market loom in the background of choice architecture” (Santos, 2011, 714). A rationale for intervention based on reducing mistakes only intends to bring individual behaviour to optimality in order to further the efficiency and competitiveness of markets (Santos, 2011). In fact, proposals under this rationale have the sole purpose of designing “contexts of choice that make rational choices viable” (Santos, 2011, p. 707).

Rationality has been rejected “as a *positive* description of behaviour” [emphasis in original], but it has nonetheless been retained as a normative benchmark (Whitman & Rizzo, 2015, p. 412). As Whitman and Rizzo (2015) reiterate, policies that improve behaviour intend to bring it closer to the ideal of rationality that

“behavioral paternalists” believe is false: “If it were not for these deviations, their argument for paternalism could not even get off their ground, as there would be nothing to fix” (Whitman & Rizzo, 2015, p. 415).

Other authors have identified this incongruity. Berg and Gigerenzer (2010), for instance, claim that for behavioural economists “individuals who deviate from axiomatic rationality should aspire to minimize deviance and conform to the neoclassical ideal as much as possible” (p. 149). In this sense, behavioural economics does not seem to truly depart from rational choice<sup>44</sup>, as rationality remains “the unquestioned gold standard for how humans ought to behave” (Berg & Gigerenzer, 2010, p. 147).<sup>45</sup> This acceptance of rationality as a normative ideal can already be found in Sunstein’s work when he writes that “Some forms of paternalism move people in the directions that they would go if they were fully rational” (Sunstein, 2013c, pp. 1894-1895).

The rationale of decreasing decision-making mistakes (section 2.3.1) is indeed connected to efficiency considerations. Under this rationale, paternalistic considerations may hide a more fundamental goal of pursuing efficiency and making individuals perform better in markets. There are several connecting points between the first rationale of decreasing decision-making mistakes and efficiency. First, market efficiency also depends on individuals behaving rationally (Ogus, 2004). Behavioural biases may also prevent individuals from being a force of competitive pressure on the market (Nuñez, 2017). In addition, as Bar-Gill (2012) explains, consumers respond to perceived – rather than actual – benefits and prices, which may result in market practices that weaken the forces of competition. To the extent that behavioural biases may negatively affect competition in the market, the first rationale mentioned here may also fit the market failure framework. It is also important to note that behavioural biases may exacerbate information asymmetries – a traditional market failure – given the difficulties faced by individuals in acquiring

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<sup>44</sup> See also Rachlinski (2011) on how behavioural law and economics does not really reject the basic premises of economics.

<sup>45</sup> See Berg and Gigerenzer (2010) on other criticism of behavioural welfare analysis, such as its adherence to processes of decision optimisation.

and understanding information and their susceptibility to the way such information is framed.

However, this perspective assumes that regulatory intervention substantiated in behavioural science intends only to correct biases to bring behaviour to optimality. Behavioural factors can nonetheless trigger other rationales for intervention, in particular when interacting with market practices, as explained in section 2.3.2.2 below. This second rationale highlights the contexts in which decisions are made and the fairness of such contexts taking into account behavioural and cognitive aspects. This second rationale may have the efficiency of markets in mind, but it is closer to other values such as fairness or equity. As reminded by Morgan and Yeung (2007), approaches based on efficiency play a role in regulation, but also values such as social justice and redistribution are relevant in public interest theories of regulation.<sup>46</sup>

### **2.3.2.2 Behavioural biases in context**

While behavioural “anomalies” alone might be invoked as a rationale for intervention, their combination with other factors can produce *additional* rationales for regulatory intervention. In fact, and especially from a regulatory perspective, more than being problematic on their own, biases and heuristics might create potential for regulatory intervention because they can be exploited and exacerbated by choice architecture, most of which is designed by business actors. The interaction between “consumer psychology” and “market forces” can cause a “behavioural

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<sup>46</sup> See Morgan and Yeung (2007) on welfare economics approaches and substantive political approaches, both falling under public interest theories of regulation. In fact, both efficiency and fairness fit public interest theories of regulation. The authors also present other theories (private interest theories of regulation, which highlight the role of self-interested actors, and institutionalist theories of regulation, which underline the role of institutions and systems).

market failure”<sup>47</sup> that results in a welfare loss calling for intervention (Bar-Gill, 2012, p. 4).<sup>48</sup>

Human psychology and markets interact in ways that might not help individuals (Bar-Gill, 2012). From a regulatory perspective, the fact that irrational tendencies might be exploited in the market sphere in a harmful way is of the utmost importance. This type of harmful choice architecture, also labelled “sludge”, concerns nudge “techniques” designed “for less benevolent purposes” (Thaler, 2018). It covers aspects that make it easy to engage in “self-defeating behavior” or that add harmful frictions to the decision-making environment so as to discourage behaviour in someone’s “best interest” (Thaler, 2018).

In this sense, regulatory intervention may no longer be perceived as having a paternalistic intent, but it protects the individual from harm by others, making it compatible with Mill’s harm principle, according to which power against someone’s will is only justifiable in the presence of harm to others. As McCrudden and King (2016) clearly note:

“Another crucial aspect of the reality of regulation is that traditional regulation is usually based on preventing harms resulting from *producers*. Regulation that is targeted by government at commercial organizations can hardly be regarded as raising any concerns about paternalism. [reference] In Sunstein’s view of the world, however,

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<sup>47</sup> A term also used by Sunstein (2013c; 2014a) and Bubb and Pildes (2014), the “behavioural market failure” terminology has not gained widespread usage. For a summary of the dissemination of this concept, see the introduction in Lunn (2015). According to Lunn (2015), one of the reasons to conceive behavioural concerns as market failures “is to get them taken seriously by those whose instinct is to caution against excessive government intervention” (p. 318). Also Viscusi and Gayer (2015) mention “behavioral failures” (p. 974), as these cognitive and behavioural phenomena entail departures from rationality assumptions of consumer choice models. While they may be conceived as market failures, the exact policy implications of behavioural phenomena on their own – unlike those of other traditional market failures – are difficult to ascertain and involve some sort of value judgement. The term has nonetheless also been used to refer to the interaction between biases and market practices, the rationale discussed in this section.

<sup>48</sup> Bar-Gill (2012) argues that contractual complexity and salient benefits with deferred costs, which characterise contracts, are the result of the interaction between market forces and biased consumers. According to this author, rational-choice theory cannot fully explain the design of consumer contracts. The author focuses on one regulatory solution: disclosure.

producers sometimes simply drop out of the picture, and with them the harm that they can cause, leaving only the ostensibly paternalistic relationship between government and consumer to be worried over” [emphasis in original] (McCrudden & King, 2016, p. 103).

Contrary to what is often conveyed in the literature, many of the issues associated with paternalism can also be reframed as reducing harms caused by firms.<sup>49</sup> Many problems in society “arise from both economic and behavioural factors (e.g. firms’ exploitation of consumers’ behavioural biases)” (Loewenstein & Chater, 2017, p. 26). As Oliver (2015) also notes: “The use of behavioural economic phenomena to inform open regulation against harms imposed by the supply side offers an alternative to using these phenomena to manipulate or coerce the demand side” (p. 710). In the presence of such negative effects on individuals, coercive restrictions on business conduct might be devised.

The impact of the broader context or choice architecture designed by business actors has been recognised by many authors. Barr, Mullainathan, and Shafir (2013), for instance, while acknowledging that the market might be “neutral” or attempt to overcome biases, concede that there are circumstances where “the market would like to exploit or exaggerate consumer fallibility” (p. 445). The corresponding regulatory implications of this exploitation have also been recognised. Bhargava and Loewenstein (2015) defend that “policymakers should aggressively protect consumers from *behavioral exploitation* by firms” [emphasis in original] (p. 398). The authors even suggest that such exploitation should widen the rationale for consumer protection. Information asymmetry might not be the only element plaguing

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<sup>49</sup> Authors like Dworkin (2010) may disagree. When making a distinction between “pure” and “impure” paternalism, Dworkin (2010) provides the example of cigarette manufacturing: cigarette manufacturing may be forbidden on the basis that it causes harms to consumers, but “the basic justification is paternalist because the consumer consents (assuming the relevant information is available to him) to the harm” (Dworkin, 2010). This instance of “impure” paternalism is distinguished from externalities: the consumer consents to the harm, which is not the case in the presence of externalities. However, not only is the “relevant information” often not provided or provided in far from digestible means, but also this perspective ignores the vast amount of behavioural evidence on how susceptible we are to the traps in our environment that make it very difficult to interrupt our “consent” to harm.



consumer markets; in fact, “a steady-state in which firms exploit consumer biases and inattention” may play a role too (Bhargava & Loewenstein, 2015, p. 398).

In a series of articles, Hanson and Kysar (1999a; 1999b; 2000) discuss the concept of “market manipulation” or the exploitation of consumer bias, which the authors understand as a “new sort of market failure” (Hanson & Kysar, 1999b, p. 747). According to them, “market outcomes frequently will be heavily influenced, if not determined, by the ability of one actor to control the format of information, the presentation of choices, and, in general, the setting within which market transactions occur” (Hanson & Kysar, 1999b, p. 635). Given that individuals are prone to behavioural tendencies, business actors will exploit those tendencies to capture social surplus. Their view is such that, rather than exogenous influences on behaviour, biases are endogenous.

It is nonetheless important to note that such manipulation is not necessarily driven by malicious intent, but can be explained by competition forces. In fact, as Ramsay (2012) explains, firms may have to exploit behavioural biases to remain competitive and they can end up out of the market if they avoid certain practices, which is why “Collective and credible ‘hands-tying’ might be required by businesses to shift the structure of competition” (Ramsay, 2012, p. 62).

Individual (and consumer) behaviour is the product of a myriad of factors, with the activity of firms being one of the most important from a regulatory perspective. Acknowledging the role of forces other than the individual and their own agency widens and strengthens the potential scope for intervention, especially on the supply side of the market.

Finally, apart from being invoked on their own (section 2.3.1) or in their interaction with market practices (as explained in this section), biases can also be invoked as a reason for regulatory intervention when individual behaviour is associated with negative externalities, even if this link is a distant one. Regulatory intervention focused on such behaviour might force the individual to internalise those costs (Ogus, 2006). However, externality reasons should be raised with care, as the gain

acquired from diminished externalities has to be compared to intervention costs. As Ogus (2006) notes, such costs “should include not only the costs of compliance of all those subject to the legal requirement, but also the administrative costs of the legal and other machinery necessary to achieve this end” (Ogus, 2006, p. 233).

In short, additional arguments can justify behaviourally informed intervention. These other rationales invoked in the presence of behavioural vulnerabilities not only downplay the welfare conundrum discussed previously, but also provide a glimpse of the limitations of looking at behavioural phenomena *only* as behavioural failures.

### **2.3.3 The implications of behavioural findings: more intervention, or less intervention?**

The rationales for intervention invoked in the presence of behavioural biases have been introduced above. However, some authors claim that behavioural evidence actually calls for less intervention, their argument predicated on the fact that biases affect policy-makers too; other authors trust the corrective forces of the market.

#### **2.3.3.1 Biases affect policy-makers too**

Viscusi and Gayer (2015) stand out among the authors advocating caution in the use of behavioural evidence to support regulatory intervention. According to them, “government policies are subject to a wide range of behavioral failures” (Viscusi & Gayer, 2015, p. 1006). In particular, Viscusi and Gayer (2015) argue that regulators themselves are not only affected by behavioural biases, but also fall prey to “public choice incentives” that could result in welfare-reducing policies that ultimately “enhance regulatory control or favor the influence of powerful special interests” (p. 978). Furthermore, in the authors’ view, insofar as policies are the result of a “majority voting system” – and hence reflect the preferences of the “median voter” – their sub-optimality can be expected. Viscusi and Gayer (2015) also explain why we can expect private decision-makers to be less prone to mistakes than public actors, namely because of stronger incentives to enhance one’s decision-making.

Glaeser (2004), in turn, also elaborates on the biased policy-makers argument. More than trusting the market's corrective ability, Glaeser (2004) distrusts the state's ability to successfully devise policies that bring behaviour to optimality: "as errors in the political market will be more severe than errors in the product market, psychological realism should make us more, not less, wary of government intervention" (Glaeser, 2004, p. 408). If individuals make mistakes, one cannot assume that the state will be better able to steer them; therefore "incorporating psychology into welfare economics should only buttress the traditional economists' belief in limited government" (Glaeser, 2004, p. 412).

In a later paper, Glaeser (2006) explains in more detail why the limits of cognition may provide support for less public intervention. In Glaeser's (2006) models, when rationality limits are endogenised, "the quality of government decisionmaking decreases even faster than the quality of private decisionmaking" (p. 134). According to this author, not only do consumers have more incentives to correct decision-making mistakes than bureaucrats, but it is also cheaper for firms to persuade a few bureaucrats than numerous consumers, which makes bureaucracy particularly prone to bias.

Cooper and Kovacic (2012) also argue that if regulators too can be affected by behavioural biases, then we should be wary of regulatory intervention. According to these authors, "political pressure will cause rational regulators to choose policies that are not optimal from a consumer standpoint" and bias will "exacerbate" this (Cooper & Kovacic, 2012, p. 56). Kuran and Sunstein (1999), in what seems to be very likely one of the earliest attempts to investigate the impact of bias on political behaviour, explain the role of the availability bias in regulation.

The application of behavioural insights to political actors<sup>50</sup> may be a growing field, but "The choices of bureaucrats, regulators and lobbyists are to a large extent still uncharted territory" (Schnellenbach & Schubert, 2015, p. 409). Since biases might

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<sup>50</sup> For a review of this literature following different political actors (voters, politicians and bureaucrats and lobbyists), see Schnellenbach and Schubert (2015).

explain policy-makers' reasons or directions to regulate, Tasic (2011) makes a preliminary attempt to identify some of the biases that may lead to "regulatory error".<sup>51</sup> These biases add another layer to the known limitations faced by policy-makers and regulators, such as lack of knowledge<sup>52</sup> or self-interested public choice concerns. It is also important to note that, while many authors argue that behavioural findings do not entail more state intervention, arguments grounded on biased policy-makers belong to the few using the same behavioural findings as those calling for intervention.<sup>53</sup>

### **2.3.3.2 The market as a corrective mechanism**

Other authors argue that behavioural biases do not warrant intervention. These market supporters claim that consumers can discipline the market. The mere existence of attentive, responsive and rational consumers is enough to correct wrongful business conduct. Furthermore, even biased consumers have the ability to learn from mistakes. In fact, the standard argument in economics is that market forces and competition will eliminate bias in equilibrium.<sup>54</sup> Experience and learning by consumers or education by sellers might reduce the impact of biases in markets<sup>55</sup> and allow for the elimination of decision mistakes.

Competition and markets may, however, exacerbate bias (Bar-Gill, 2012; Glaeser, 2004). Competition may force firms to align their market practices with individual

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<sup>51</sup> While regulators may present biased behaviour, these biases can differ from those displayed in individual decision-making. The biases of regulators presented in Tasic (2011) illustrate that difference.

<sup>52</sup> See Rizzo and Whitman (2009) on the "knowledge-based obstacles" that paternalists face.

<sup>53</sup> Also arguments grounded on decreased learning abilities make use of behavioural evidence to justify their wariness for intervention (see Klick and Mitchell, 2006).

<sup>54</sup> See also Tor (2008) on the different mechanisms through which markets might eliminate biased behaviour and how these arguments on market discipline fail.

<sup>55</sup> See Bar-Gill (2008; 2012) for a critical analysis of these arguments. For a different line of argumentation more confident in the role of markets, see Epstein (2006) on existing legal and market arrangements being sufficient to address human mistakes. Among other aspects, the author underlines that using the legal system to protect individuals from mistakes imposes undue burdens that outweigh the efforts that individuals should carry out to protect themselves. Furthermore, using the legal system to protect individuals from mistakes will change fraud incentives in the opposite direction. See also the exchange of arguments between Epstein (2008), defending a wary approach towards regulation of consumer markets, and Bar-Gill (2008), on the need for regulation to address the exploitation of biases.

psychology, resulting in the exploitation of bias. In addition, there are markets in which the scope for feedback and learning is limited (e.g. retirement savings, mortgage market). As Tversky and Kahneman (1986) note, “effective learning” needs “accurate and immediate feedback” (p. 274). Such learning might nonetheless not be possible, if the conditions for “effective learning” to take place are not met, which is the case in many consumer markets.

Additionally, sometimes we simply do not learn from our mistakes and other times, even if we do, the consequences may be too harmful or it may be already too late to make use of such increased knowledge (Conly, 2013). Harmful consequences can hit individuals for several reasons, among which the inability to completely understand the ramifications and implications of decisions, overconfidence, limited attention, an infrequent interaction with certain decisions combined with lack of knowledge and too many options to choose from.

“Interpersonal learning” might also be rendered irrelevant when products are not standardised or consumers have different use patterns (Bar-Gill, 2012).<sup>56</sup> Furthermore, firms do not really have an incentive to educate consumers: “There are many markets in which firms do not have an incentive to educate their own customers or even the customers of their competitors” (Gabaix & Laibson, 2006, p. 509). Also Bar-Gill (2008) argues that it is not clear why a seller would choose to educate consumers over “going with the flow” (p. 751).

In essence, competition and learning forces may not have the strength needed to produce a corrective effect. Whether these forces work depends on the context and market, as Bar-Gill (2008) notes, which means that their value should be empirically determined, rather than assumed *ex ante*. In the author’s words, “while learning and competition may well alleviate mistakes in one market, this might not happen in another market” (Bar-Gill, 2008, p. 751). Furthermore, even if markets may not

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<sup>56</sup> Bar-Gill (2012) identifies different types of consumer learning: besides “intrapersonal” and “interpersonal” learning, consumers can also learn through “expert advice” (pp. 26-30). The author explains the limits of these types of learning in producing corrective effects. For a positive account of learning in consumer markets, see Epstein (2008). See also experimental literature on the role of experience and the market in attenuating biases and social preferences (List, 2003; 2006).

work as corrective forces of biases, they might nonetheless produce broader incentives for firms to produce devices that mitigate bias. This will be addressed in chapter 3 when discussing private nudges.

In sum, behavioural phenomena might call for more or less intervention, but no consensus in the literature on the regulatory implications of behavioural sciences seems to have been reached so far. There are authors even suggesting that the implications of behavioural findings should be about teaching people about their own biases (Gigerenzer, 2015). In spite of the contested nature of behavioural findings, these insights are already informing regulatory initiatives, with nudging having a lead on policy and regulatory reform in a multitude of areas. Section 2.6.1 highlights some of the reasons that might place nudging at an advantage.

## **2.4 The full regulatory toolkit**

The rationales discussed in section 2.3 have important implications beyond that of extending the scope to intervene.<sup>57</sup> Firstly, as additional rationales, they entail close monitoring of market developments, practices and the assessment of their abuse of behavioural bias (e.g. Oliver, 2015). Secondly, once such assessment has determined that public interference with choice architecture is required, the whole range of regulatory options must be contemplated.

This last implication is particularly important, especially given the recent emphasis on nudging. While many behaviourally inspired tools can be envisaged and contemplated in response to the rationales for intervention outlined above, nudging has imposed itself:

“Among the few prescriptive efforts aimed at elaborating operational frameworks able to incorporate behavioural insights into the

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<sup>57</sup> While behavioural biases may be an important factor for intervention, their presence can also mitigate market failures and thus suggest less intervention. For instance, the adverse selection in insurance markets may not happen if individuals do not optimise, which suggests that, in this case, the presence of a behavioural bias might alleviate a traditional market failure. This is a point raised by Bubb and Pildes (2014, p. 1603).

regulatory process, the emerging concept of ‘nudge’ – due to its vulgarizing character – has imposed itself as the most promising” (Alemanno, 2015a, p. 315).

This is an aspect acknowledged by several authors. Bubb and Pildes (2014), for instance, claim that, by focusing on tools that preserve individual freedom of choice, “BLE [*behavioural law and economics*] inappropriately truncates its policy analysis” (p. 1638).<sup>58</sup> Oliver (2015), in turn, argues that “libertarian paternalism is not the only framework in which behavioural economics can inform policy” (p. 700). Sibony and Alemanno (2015) recognise this too: nudging “is slightly misleading because it describes only one form of behaviourally informed public action” (p. 7). And, for Loewenstein and Chater (2017), a nudge is ultimately not more than “a single concrete and powerful illustration of a much broader range of behaviourally informed policy tools” (p. 28).

A nudge is just one of the tools of the regulatory spectrum. In fact, several regulatory tools may be justified in the presence of behavioural phenomena. More traditional policy instruments may find justification in behavioural sciences. Besides nudging, other techniques or instruments can be conceived: disclosure, taxes on certain behaviours, prohibitions or restrictions on individual behaviour and other regulation on business conduct that restricts and frames the ultimate choice architecture of individuals (e.g. restrictions on advertising, restrictions on the physical environment, product regulation).<sup>59</sup> For instance, Oliver (2015) differentiates between “libertarian paternalism” (or nudging), “coercive paternalism”

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<sup>58</sup> See Bubb and Pildes (2014) on the contradiction between behavioural findings and choice-preserving regulatory solutions.

<sup>59</sup> In this respect, see table 1 in House of Lords (2011, p. 10), which identifies different types of interventions, and the table in Di Porto and Rangone (2015, pp. 55-56). See also Ogus (2004) on different instruments of social regulation from information provision to taxes and licensing. See Ramsay (2012) for a summary of the different “techniques of regulation”. Hanson and Kysar (1999a) also discuss “enterprise liability”. According to these authors, “market manipulation” cannot be addressed through traditional “command-and-control” regulation: regulators will not be able to “recognize manipulation” and any regulatory attempt will be counteracted by firms (Hanson & Kysar, 1999a, p. 1555). However, the incentive scheme brought about by liability makes firms internalise social costs.

(i.e. restrictions on individual behaviour) and “behavioural regulation” or “budge”, with this last one referring to obligations on firms to reduce harms (Oliver, 2015).

Baldwin, Cave, and Lodge (2012) provide a much more comprehensive categorisation of “regulatory strategies” that identifies all possible regulatory strategies called for by a wide range of rationales. The state’s direct intervention consists of seven different techniques: “command and control”, “incentive-based regimes”, “market-harnessing controls”, “disclosure regulation”, “direct action and design solutions”, “rights and liabilities” and “public compensation/social insurance schemes” (Baldwin et al., 2012, pp. 106-130).<sup>60</sup> In particular, “command and control” regards the use of the “force of law” to frame business conduct, impose “positive actions” and entry conditions into a market; “incentive-based regimes” make use of incentives (i.e. taxes or subsidies); “market-harnessing controls” entail the use of “competitive forces” to achieve certain ends (e.g. competition laws, franchising, regulation by contract); “disclosure” involves aspects related to the provision of information to individual consumers; “direct action” entails the use of state resources to achieve a certain end (e.g. public ownership); “direct design” regards the design of the environment in a way that prevents certain harms or minimises their chances of occurring; “rights and liabilities” concern the allocation and structure of rights and obligations and; finally, “public compensation/social insurance schemes” regard the use of “compensation or insurance” to prevent “undesirable behaviour” (Baldwin et al., 2012, pp. 106-130). The authors place nudging of individual behaviour in “design” regulatory approaches, as this tool involves the redesign of decision-making environments.

However, while nudging can be regarded as a design approach from the perspective of the individual, it can also be a command-and-control strategy from a business perspective. In fact, regulatory approaches based on the design of individual choice architecture constitute real restrictions on business conduct. They might nonetheless differ according to how far they interfere with individual choice architecture, that is,

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<sup>60</sup> On these different techniques and their challenges, see chapter 7 of Baldwin et al. (2012).



they may interfere more or less fundamentally with choice architecture, as explained below in section 2.4.1.

#### **2.4.1 The regulatory spectrum: interference with choice architecture**

Nudging is far from being the only behaviourally inspired instrument. Several solutions can be developed to address biases and control harms caused by the interaction between businesses and consumer psychology. Regulatory tools designed in response to behavioural biases – and their interaction with market practices – can target the design of individuals’ choice architecture more or less fundamentally, that is, closer to or further away from individuals’ point of decision-making.

When it comes to individual choice architecture, downstream tools are closer to individuals, while upstream ones act more *ex ante* upon the choice architecture that individuals ultimately face. Put differently, regulatory tools may aim at individuals more directly – e.g. nudges, mandates on individual behaviour – or indirectly – e.g. advertising prohibitions – with the latter more indirect measures acting more fundamentally on choice architecture. In fact, while the two types of regulation (upstream and downstream) represent an obligation or restriction on business conduct, they differ from the individual’s perspective in terms of visibility, proximity and interference with choice architecture. This distinction resembles the one provided by Jolls and Sunstein (2006) on the strategies of the law to address bounded rationality: “debiasing” or “insulating outcomes” from the effects of behavioural bias. “Debiasing” operates “directly” on individual behaviour, while “insulation” is “designed to curtail or even entirely block choice”, so that legal outcomes are no longer dependent on bounded rationality (Jolls & Sunstein, 2006, p. 200).

Traditional market regulation is often grounded on preventing harms caused by producers (McCrudden & King, 2016). In the exercise of instrument contemplation, the regulator may conclude that designing regulation that fundamentally modifies a choice architecture arrangement originally organised by business actors may be more appropriate than designing solutions directly targeted at the “correction” of

the individual. More than nudging, behavioural economics might suggest the development of regulation “designed to budge the private sector away from socially harmful acts” (Oliver, 2013, p. 698).

Regulation that does not directly target consumers might more fundamentally address problems. Bhargava and Loewenstein (2015), in their call for an extended behavioural policy kit, encapsulate this idea when they say:

“While nudges should remain an important part of the policy toolkit, insights from BE [*behavioural economics*] have the potential to expand this toolkit and more aggressively address the underlying causes of problems. Because these fundamental causes generally involve market failures due to externalities, imperfect information and competition, and widely recognized limits to consumer decision making, the policies emerging from such insights need not be more controversial than the policies espoused a decade ago by the initial set of papers” (Bhargava & Loewenstein, 2015, p. 397).

These measures are not about addressing individuals directly on what to do or what not to do, but about *how the state can assist in more fundamentally framing the way choices are presented to individuals*, as a response to the interaction between firms and consumer psychology. If markets are making use of behavioural insights in detrimental ways for consumers, this begs the question of why regulators should refrain from the use of the same knowledge to detect harmful practices and design better regulation. Failing to do so might actually place regulators at a disadvantage:

“A refined understanding of emotional and cognitive processes makes it possible for marketers to devise more subtle, clever and effective ways to influence consumers. If, on the other hand, the law stays blind to the underlying logic of the very practices it seeks to regulate, it puts regulation of commercial practices at a cognitive disadvantage compared to regulatees” (Sibony, 2015, p. 84).

The effectiveness of more fundamental measures on individual behaviour is likely to depend largely on business compliance and enforcement efforts, unlike the effectiveness of measures proximal to the individual such as information-based nudges, which depends mostly on individuals' motivation and voluntary behavioural change. In fact, while both types depend on business compliance to ultimately reach individuals, tools proximal to the individual entail an additional condition to be effective: voluntary individual change.

Focusing on market conduct may not only have more predictable outcomes on individual behaviour, but it may also share the responsibility or burden for behavioural outcomes between individuals and market players in a more balanced and fair manner. Failing to properly regulate business conduct may burden individuals in domains where they have little capacity, knowledge, interest or time to make informed decisions. Furthermore, more fundamental regulation that targets choice architecture rather than the individual may have other advantages: it does not entail the costs of "pursuing individuals" such as "personal embarrassment" or "resentment" (Conly, 2013, p. 130).

#### **2.4.2 Solutions focused on the individual: limitations**

If, to a large extent, the problem might lie in the broader exploitative choice architecture devised by the market, targeting the individual might simply not work. Both measures that mandate certain individual behaviours and measures that respect freedom of choice might not be feasible solutions. On the one hand, mandating behaviour through prohibitions can result in angry or depressed individuals (Conly, 2013).<sup>61</sup> It may also result in the loss of "a kind of introspective skill necessary to being an authentic person" (Conly, 2013, p. 74). On the other hand, regulatory choices that target the individual while preserving freedom of choice might be weak, particularly "when firms have incentives to undermine consumer choice" (Bubb & Pildes, 2014, p. 1600). A combination of "optimizing firms" and "nonoptimizing

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<sup>61</sup> See Conly (2013) for a detailed discussion.

consumers” might call for traditional regulation and measures that decrease firms’ incentives to exploit consumer bias (Bubb & Pildes, 2014, p. 1600).

The weakness and limited effectiveness of tools that preserve individual freedom of choice are indeed important limitations. As Trenchard-Mabere (2016) contends, “focusing on specific behavioural cues without addressing the wider context or system that is generating these cues is likely to have limited sustainable impact on behaviour at population level” (pp. 270-271). Marteau, Ogilvie, Roland, Suhrcke, and Kelly (2011), on the subject of health and the efforts of industry in shaping choice architecture, concur:

“Without regulation to limit the potent effects of unhealthy nudges in existing environments shaped largely by industry, nudging towards healthier behaviour may struggle to make much impression on the scale and distribution of behaviour change needed to improve population health to the level required to reduce the burden of chronic disease in the UK and beyond” (Marteau et al., 2011, p. 265).

Scrutinising the role that market conduct regulation might play in addressing choice architecture issues reveals the fragilities of solutions strongly focused on individuals. These solutions tend to neglect structural, institutional and market determinants of choices. Such narrow focus has indeed been one of the criticisms addressed to nudging (Marteau et al., 2011, Goodwin, 2012; Alberto & Salazar, 2012). An emphasis on the individual as a unit of analysis places an unwarranted burden on individuals for their own decisions, while it dismisses social, economic and cultural structures and forces under which behaviour is performed (e.g. Spotswood & Marsh, 2016). Furthermore, as Leggett (2014) notes, nudging tends to neglect the unequal distribution of individuals within social structures, namely their unequal access to (economic or other) resources that play a critical role in enabling or constraining choice.

To conclude, notwithstanding the limitations – and advantages – of regulatory frameworks that target the individual more or less directly, such frameworks can all

be considered potential solutions to address the rationales mentioned in section 2.3. The contemplation of the “full set of policy implications that follow from behavioral social science” (Bubb & Pildes, 2014, p. 1600) is indeed a process that entails taking into account the advantages and drawbacks of a vast array of regulatory tools. Furthermore, these are complementary rather than being mutually exclusive. Upstream measures can be used in combination with instruments that target the individual more directly. This combination and mix might actually be needed to achieve effectiveness at population level or other goals such as policy consistency.

## **2.5 Rationales of intervention and regulatory toolkit: a summary**

Sections 2.3 and 2.4 provided an overview of the rationales behind behaviourally informed regulation and the distinct regulatory solutions that might be called for in their presence. In fact, behavioural biases alone as well as their combination with market practices may call for tools that go beyond those directly targeting the individual. This is particularly important given the focus of this thesis on nudging, a tool that directly addresses the individual. Nudges may have imposed themselves in the spectrum of behaviourally informed tools, but they are far from being the only instruments regulators can use. Placing nudges in a broader spectrum of tools is also important to acknowledge their regulatory nature, an aspect that will be discussed in the next chapter.

## **2.6 Nudges in the regulatory toolkit**

Behavioural economics may offer new rationales for intervention. Such intervention can also materialise through multiple regulatory tools. Section 2.6.1 highlights the arguments in favour of nudging and section 2.6.2 discusses the normative concerns that this tool has raised and some of its potential downsides.

### 2.6.1 The reasons behind the use of nudges: the advantages

This section discusses the reasons that might favour the use of a nudge. It is important to note at this point that more often than not nudging is a complement to traditional regulatory tools; however, there may be cases where nudging is “in competition with” tools such as mandates or taxes (McCrudden & King, 2016, p. 77). Regardless of whether in any particular case a nudge is in competition with other tools, this section provides reasons that favour the use of nudging, which is particularly important given the focus of this thesis on the incorporation of nudges into regulation.

First of all, nudges can be seen as a first best instrument if freedom of choice is valued on its own. People remain free to choose for themselves when this instrument is used. In their introduction to *Nudge*, Thaler and Sunstein (2008) argue that libertarian paternalism is “liberty-preserving” (p. 5). This is what Smith and McPherson (2009) term “formal liberty”, as it concerns the absence of barriers (e.g. legal) on choices; but there is also “substantive liberty”, understood as the “opportunity for autonomous reflection” (Smith & McPherson, 2009, p. 330). The authors highlight the importance of the broader context under which a nudge is provided to satisfy this dimension of liberty. A nudge might respect liberty in its negative dimension; however, how it is framed and presented determines its respect for positive or substantive aspects of liberty.

Other authors have argued that nudges do not respect freedom of choice. Wright and Ginsburg (2012), for instance, contend that nudges represent a threat to autonomy and individual freedom. Their criticism focuses on Thaler and Sunstein’s understanding of liberty as the mere protection of choice.<sup>62</sup> However, formal liberty may allow placing regulatory tools in a spectrum and ranking them according to the

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<sup>62</sup> Wright and Ginsburg (2012) argue for a broader conception of liberty, similar to the substantive liberty mentioned above, which regards the process element of freedom. In their view, nudges do not respect this dimension of freedom and the contribution to welfare of allowing people the freedom to choose and make mistakes. Mitchell (2005), too, argues that there are alternatives more in line with libertarian principles and that, even if choice is not blocked, “often the exit will not be costless” (p. 1276).

degree to which they represent an interference with individual freedom, with nudges being one of the least interfering with choice. Sunstein and Thaler (2003) underline this aspect when they argue that nudging embodies “a relatively weak and nonintrusive type of paternalism, because choices are not blocked or fenced off” (p. 1162).

This respect for freedom is very much related to another possible reason for the use of nudging. Final addressees might prefer a light intervention that does not interfere with freedom of choice. In fact, individuals may be strongly supportive of lighter information-based nudges (Sunstein, Reisch, & Rauber, 2018). This may result in policy-makers’ preference for the use of nudges.

Thirdly, nudges can be a first best policy when there is an intrinsic value in the respect for heterogeneity. As Sunstein (2016) puts it, “freedom-preserving approaches tend to be best in the face of diversity” (p. 189). In this scenario, nudging is optimal because it helps biased individuals without hurting rational ones. This corresponds to the asymmetric paternalism discussed in Camerer et al. (2003): “it creates large benefits for those who make errors, while imposing little or no harm on those who are fully rational” (p. 1212). This is the case of nudges such as defaults or framing. Helping the biased without hurting the rational also means that nudges can have distributional consequences that the planner may be interested in advancing. In addition, as Camerer et al. (2003) contend, nudges address two important concerns: the first is that behavioural biases are not “universal” and therefore paternalistic policies can impose “undue burdens” on those behaving rationally; the second regards the “early stage of development” of behavioural economics, which still calls for caution (Camerer et al., 2003, p. 1214). Furthermore, as Camerer et al. (2003) underline, an approach that minimises costs to rational individuals while maximising benefits to biased ones “fits well within a richer conception of efficiency” (p. 1223).

The fact that nudges can help the biased – without hurting the rational – leads to the fourth reason behind the appeal of nudging. Nudges can be best if there is

uncertainty about what is driving behaviour, that is to say, if there is uncertainty about which model (neoclassical or behavioural) explains the behaviour observed. As Chetty (2015) argues, “Model uncertainty can thus provide a new argument for the use of behavioral nudges” different from the usual rationale of libertarian paternalism (p. 3). In the presence of model uncertainty, nudges might be optimal as they “can change behavior and increase welfare if agents suffer from behavioral biases without distorting behavior if agents optimize” (Chetty, 2015, p. 3). When policy-makers ignore the model that best explains individual behaviour, nudges can become an optimal solution. In fact, policy decisions are often made without any certainty about the positive model behind, with both neoclassical and behavioural models being able to explain available evidence.

In essence, if we are unsure about whether evidence justifies a departure from revealed preference, nudges might be an optimal policy. Observed choices are either the result of a process of maximisation or the result of biased decisions. If those optimising are not sensitive to a nudge, but this instrument impacts the decision-making of biased individuals, then a nudge becomes a “weakly dominant policy”: “Nudging is optimal irrespective of one’s prior beliefs on the two models because it is a weakly dominant policy” (Chetty, 2015, p. 28). Camerer et al. (2003) concur with this idea: “These policies impose minimal costs if the conservatives are right, and maximal benefits if rationality and will-power are as bounded as many behavioral economists believe” (p. 1222). Nudges can increase welfare in the presence of model uncertainty, while other policies invariably affect the behaviour of both rational and biased individuals. This differentiated impact gives nudges an advantage over other tools, which are often criticised for imposing a “one-size-fits-all” solution that makes some individuals worse-off.

The presence of uncertainty might favour the use of a nudge. It is worth noting, however, that this implies that nudging has an effect on the behaviour of biased individuals and does not distort the behaviour of rational ones. However, as we will see in sections 6.2.2 and 6.2.3, in the regulatory sphere the impact of nudges on



individual behaviour – with the exception of defaults – is generally not noteworthy. Furthermore, in practice, there are successful nudges that can distort the behaviour of rational individuals too. For instance, default rates on retirement savings may have increased the contribution rate of biased individuals (those under-saving before the nudge), but likely decreased the contributions of individuals who were saving optimally before the default, and who would have otherwise saved more.<sup>63</sup> In reality, nudges can distort the behaviour of rational and biased agents.

Model uncertainty may also produce different regulatory implications. Some authors claim that if it is ambiguous which model is driving behaviour, then it should be assumed that bias did not play a role. As Schwartz (2015) puts it, “when the facts are unobtainable or ambiguous, regulators should assume that bias did not affect the consumer’s contracting choice because the assumption is autonomy preserving, administrable, and coherent” (p. 1373).

In spite of these concerns, model uncertainty can be an important rationale behind the use of a nudge. Model uncertainty is also closely related to the fifth reason that may put nudges at an advantage, namely the risk of errors by policy-makers. Nudges can be preferable over other tools if there is a risk that the government makes a mistake about whether decisions result from rational choice or bias: “If choice architects blunder, at least it can be said that people are entitled to go their own way” (Sunstein, 2015, p. 449).<sup>64</sup> Bubb and Pildes (2014) add public choice concerns of capture and behavioural biases of public decision-makers to the limitations of government that may render a nudge preferable to regulatory alternatives: “nudges might still be better than traditional regulatory tools once one takes these risks of governmental failure into account” (p. 1605). Sunstein (2016) makes a similar point

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<sup>63</sup> See more on this example in Bubb and Pildes (2014, p. 1618).

<sup>64</sup> As discussed in section 2.3.3.1, the possibility of mistakes by public decision-makers can also be an argument against intervention altogether.

when discussing the diminished risk to capture issues: favouring “choice-preserving approaches is a significant way of reducing interest-group power” (p. 190).<sup>65</sup>

While nudging may be called for in the presence of governmental failure, irrespective of whether this failure comes from lack of information, bias or capture, these risks do not totally disappear simply because a tool that is respectful of choice is used. The fact that choice is preserved may lead policy-makers to reduce attentiveness. This is a concern raised by Bubb and Pildes (2014):

“the illusion that the opt-out option provides a safety valve should the default not be optimal might cause policymakers to pay less attention to choosing the level at which to set the default rule than they would to choosing the level of a direct mandate” (Bubb & Pildes, 2014, p. 1605).

The sixth reason for the appeal of nudges resides in the political environment. Nudges can be chosen if the political context does not favour substantive regulation on business and individual conduct, as nudging finds support on both sides of the political spectrum. In fact, nudges “should appeal to everyone across the political spectrum” (Camerer et al., 2003, p. 1254). Passing laws and regulations is a hard and long political process. Nudges intend to provide a middle ground between libertarians and paternalists.<sup>66</sup> Whether nudging is libertarian or paternalistic is

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<sup>65</sup> It is nonetheless important to note that capture concerns may also apply to nudges. Regulatory capture is a theory of regulatory failure that highlights the submission of regulators to forces such as pressures from the subjects of regulation (Ogus, 2004). Bubb and Pildes (2014) acknowledge the difficult relationship between nudges and capture:

“Soft paternalist measures run the risk of being less visible than more traditional regulations and mandates, which could make the political dynamics more prone to capture rather than less (or the other way around); soft measures that emerge from agencies might well be less subject to deliberative-process measures designed to enhance sound outcomes — such as notice-and-comment rulemaking and cost-benefit review” (Bubb & Pildes, 2014, p. 1605).

Also the fact that nudges may be comparatively less restrictive than other tools on business conduct may make this tool more susceptible to public choice concerns. In fact, it cannot be ruled out that the recent focus on the tool is explained by capture. However, it falls beyond the scope of this chapter to compare nudges with other regulatory tools on this dimension.

<sup>66</sup> In the view of Bubb and Pildes (2014), the aim of behavioural law and economics to provide an appealing solution to traditionally opposing political views explains why the full implications of behavioural science have not been pursued.

nonetheless a matter of debate, with some claiming that nudging is not paternalistic enough, others that nudging is not at all libertarian and others that “Sunstein and Thaler’s attempt to reconcile the traditionally opposed concepts of libertarianism and paternalism does not hold together” (Mitchell, 2005, p. 1276).

Finally, nudges are often seen as a low-cost alternative (e.g. Sunstein, 2011), particularly when compared to other tools. This might be another reason to choose this tool. However, as this thesis will explain, regulatory nudges are not as low-cost as usually perceived: the iterative experimentation requirements they come with impose a high burden on regulators as nudge designers.

This section has outlined the reasons that might be raised to justify the use of a nudge in any particular regulatory context. These rationales, discussed above, might be subject to criticism or counterargument. This identification exercise remains nonetheless important, given the research questions of this thesis. These questions deal with the practical design and provision of nudging as a regulatory instrument, implicitly assuming that a legislator or regulator has already decided to use the tool in a stage of contemplation of options, a stage *prior* to the *actual design* stage of nudging.

### **2.6.2 Libertarian paternalism and the pitfalls of nudges: a normative debate**

The behaviour change agenda has sparked an intense – and still ongoing – debate amongst policy-makers, economists, legal scholars, psychologists, sociologists and political scientists on the role and legitimacy of the state in regulating individual behaviour using behaviour change techniques such as nudges. Even if different plausible rationales might substantiate behaviourally informed intervention and the use of distinct instruments, the possibility of interfering with choice has ignited an old debate between proponents of interventions that limit individual autonomy and those who argue for individual freedom. Unlike laws that restrict individual behaviour with clear third-party externalities, the support for measures that regard lifestyle choices and harm to the self – the object of much of the nudge agenda – is not so straightforward (Maryon-Davis, 2016).

Dworkin (2010) defines paternalism along three dimensions. One is that paternalism interferes with an individual's autonomy; a second dimension is that such limitation is done without the individual's consent; and finally, the third dimension is that this is done to improve the individual's welfare or advance the individual's interests (Dworkin, 2010).<sup>67</sup> Proponents of paternalistic intervention argue that there are circumstances in which individuals do not have the information, ability or self-control to make optimal decisions.<sup>68</sup> The state can then advance policies that steer people in the direction they would have gone if they had had the information or self-control. Libertarians, however, believe that the state should not interfere with people's autonomy.

Libertarian paternalism, the framework behind the nudge concept, put forward by Thaler and Sunstein (2003), intends to be a middle ground between both extremes. Rather than the preferences of the policy-maker, it intends to take individuals' true preferences as a basis of intervention. Libertarian paternalism has nonetheless been subject to intense criticism from both sides. On the one hand, libertarian paternalism has been accused of being too libertarian and of advancing a neoliberal agenda (e.g. Leggett, 2014). On the other hand, liberalism proponents argue that libertarian paternalism ignores the value of individual liberty to economic welfare (Wright & Ginsburg, 2012). There is indeed a disagreement between those who worry about the state manipulating citizens and those who believe that nudging is used not to properly regulate businesses. Nudging has sparked quite distinct reactions. As Hansen, Skov, and Skov (2016) suggest, this disagreement is also a geographical divide, rooted in the different political traditions of Europe and the US:

“One set of worries pertains to the threat of science being utilized by policy makers to manipulate citizens. Another set of worries pertains to whether nudging is being used as an excuse to roll back traditional

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<sup>67</sup> See also Dworkin (2013) on different definitions of the concept and the difficulties in defining paternalism.

<sup>68</sup> See Conly (2013) on an argument for “coercive paternalism”.

regulatory efforts. This latter worry has been most prominent in Europeans' response to nudging; the US response has been worried more about the paternalistic aspects of the approach" (Hansen et al., 2016, p. 241).

Grüne-Yanoff (2012), for instance, claims that nudging reduces liberties, either through the increased "arbitrary power" provided to regulators or due to their influence on individual choice processes. Whitman and Rizzo (2007) voice their concern about paternalist slippery slopes. Nudges might pave the way for more regulation and invasive interference in certain areas of life. Others have mentioned that the market can supply the necessary solutions for behavioural problems. The debate is ongoing.

Some criticism focuses on the challenges that behavioural economics poses to welfare analysis. These challenges were discussed in section 2.3.1.5. Among them are concerns over behavioural evidence, how it is generated and how it can produce implications for policy contexts. Libertarian paternalism has also been accused of failing to justify why welfare should precede liberty as a policy value (Mitchell, 2005). Another related set of criticism regards policy-makers, namely that they may, too, make mistakes and lack the necessary information to design behaviourally informed interventions. Both sets of criticism are nonetheless not nudge specific, but rather addressed at interventions that intend to bring individuals' behaviour closer to their "true" preferences.

As already mentioned, libertarian paternalism has also been criticised for failing to acknowledge other forces that shape behaviour. As Leggett (2014) observes, nudging ignores "fundamental elements that are commonplace elsewhere in the social sciences", in particular that individuals "are unevenly distributed within social structures" before being nudged and that the context where they make decisions "is itself a historical product, and one shot through with the traces of previous decisions, contestations and relations of power" (p. 11). The social-democratic approach the author offers, besides acknowledging the legitimacy of the state to

steer behaviour “in the public interest”, allows that such public interest might involve protecting citizens from commercial attempts to change their behaviour (Leggett, 2014, pp. 14-15).

This section does not purport to be an exhaustive review of the arguments for and against libertarian paternalism or to present an in-depth analysis of any of the arguments since the literature on this topic abounds. It rather briefly presents a few of the concerns of this debate, especially those that seem to apply particularly to nudging.<sup>69</sup>

One of those concerns regards the ability to learn. Sunstein often compares a nudge to a GPS (Sunstein, 2014b). Similarly to a GPS, a nudge increases navigability and guides people towards a certain course of action, but people are still free to choose their own path. It is worth noting, however, that as a GPS may worsen our natural ability to navigate in physical environments, so it is also possible that nudges deteriorate our ability to choose for ourselves. Having a central authority that nudges individuals towards certain behaviours may decrease their ability to learn and result in an “infantilisation” effect.

However, the existence of this infantilisation effect “is an empirical question, and is likely to vary across policy-domains” (Yeung, 2012, p. 145). Not only is it unclear whether nudges decrease one’s ability to learn, but also there is much uncertainty about whether nudges result in decreased autonomy<sup>70</sup> and poorer decision-making ability or whether they bring enhanced preference change in the long term. Bovens (2009) discusses this idea. In fact, while acknowledging that nudging may result in infantilisation in the long run, the author contends that “things ain’t necessarily so. Cognitive dissonance, habituation, acquiring a taste for the good-making features in

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<sup>69</sup> For a review, see Sunstein (2015), where the author organises the debate around the following themes: welfare, autonomy, dignity, manipulation and biased policy-makers. See also Rebonato (2014) for a discussion on several arguments of the libertarian paternalism debate.

<sup>70</sup> Autonomy is a dimension of liberty that the advocates of libertarian paternalism fail to consider (see Yeung, 2012). See also Yeung (2016) for an account of how different forms of choice architecture (coercion, inducements and nudges) interfere with individual freedom and the conditions under which this interference may be justifiable.

*Nudged* actions may bring about long-term preference change as well” [emphasis in original] (Bovens, 2009, p. 215).

Libertarian paternalism poses other fundamental questions. In fact, it raises concerns about manipulation of choice and interference with autonomy. According to Grüne-Yanoff (2012), libertarian paternalism is manipulative, since it intends to change individual behaviour while circumventing rational deliberation.<sup>71</sup> Yeung (2012) also suggests that nudging may interfere with autonomy when it “seeks to exploit cognitive irrationalities” (p. 148). The author reminds us that liberty is not solely about freedom of choice, but also entails respect for autonomy (Yeung, 2012, p. 135).

Transparency from policy-makers might be essential to keep citizens fully informed on the uses of nudge tools. However, when “subliminal” practices are used, transparency may undermine effectiveness: “these techniques do work best in the dark” (Bovens, 2009, p. 217). Some questions naturally follow, namely whether a trade-off between effectiveness and transparency truly holds in practice and how it can be tackled.<sup>72</sup>

In sum, nudging poses normative concerns that represent important potential downsides to take into consideration when using this tool.

## 2.7 Conclusion

This chapter started with the concept of nudge and the different attempts made to further clarify it, the actors most involved in its development and the concept’s emergence in the policy and regulatory landscape as a result of policy transfer. The

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<sup>71</sup> See Wilkinson (2013) on when nudges are manipulative and Hacker (2018) on the relationship between nudging and autonomy.

<sup>72</sup> Empirical evidence is in line with the idea that transparency does not impact nudge effects. See Loewenstein, Bryce, Hagmann, and Rajpal (2015) and Kroese, Marchiori, and De Ridder (2016), two papers that explore the impact of nudge transparency on behaviour using a paternalistic nudge, and Bruns, Kantorowicz-Reznichenko, Klement, Jonsson, and Rahali (2018) for an experiment that tests the impact of transparency using a pro-social nudge. In both the pro-self and pro-social cases, behaviour did not seem to depend on the transparency of the nudge.

policy transfer framework is useful to justify the relevance of the research questions of this thesis.

The chapter further expanded on the rationales for intervention triggered by the presence of behavioural biases and the challenges for welfare analysis of departing from revealed preference. Since many tools in the regulatory toolkit may be called for by behaviourally informed rationales, the reasons that may justify the appeal of nudges were identified. The chapter concluded with an overview of the normative debate that nudging has triggered.

Throughout this chapter many reasons were invoked to support the relevance of a research question focused on the efficient design and provision of nudges as regulatory instruments. In addition to policy transfer, other reasons included the fact that nudging is being used, in spite of the normative concerns it may pose. The fact that the design process of nudges has not yet been studied is another reason behind the relevance of the research questions of this thesis, as explained in chapter 1. Other reasons will be identified in the following chapters.

This chapter has also contributed to clarify where this thesis is placed with regard to the research efforts on this topic. While academic endeavours have focused on the normative aspects of nudging or its impact on individual behaviour, the pragmatic, practical and novel approach of this thesis intends to bring regulators and legislators as nudge designers to the debate.

By assessing how nudging can be incorporated into regulatory practice, this thesis intends to contribute to this tool's successful translation from academia to regulation. The analysis of how the design of nudges *can* be incorporated into regulation using the premises of iterative experimental testing remains positive **(chapters 4 and 5)**. The last concluding chapter will move towards a more normative analysis, assessing how *should* the process of nudge design be tailored to the particularities of the regulatory space **(chapter 6)**. Given that applying the premises of iterative testing to regulatory nudges is a burdensome process, this last chapter will provide ways to lower this burden. This is all the more important since



policy-makers might not undertake this task: “We suggest that policymakers are unlikely to invest the time translating behavioral research into its policy implications, and researchers interested in influencing public policy must therefore invest substantial effort, and direct that effort differently than in standard research practices” (Amir et al., 2005, p. 443).

Before going into the design process of nudges (**chapter 4**), the next chapter (**chapter 3**) delves deeper into the concept, by making a distinction between different nudges and placing regulatory nudges in a broader categorisation of the concept.



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## 3. A Conceptual Framework: Private, Public and Regulatory Nudges

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### 3.1 Introduction

This chapter distinguishes nudges according to who is behind their *design* and who is behind their *implementation* (state or private actors). Put differently, nudges are categorised based on the difference between two stages (design and implementation) and the different actors (state or private actors) behind each stage. This distinction allows for three different combinations in which the state and private actors may design and implement nudges, originating three types of nudges: *private nudges* (designed and implemented by private actors), *public nudges* (designed and implemented by the state) and *regulatory nudges* (designed by the state and implemented by private actors, namely firms).

Breaking down the concept is an important contribution, since it improves clarity around such an ambiguous concept and sheds light on normative discussions. While it has been the object of prolific normative discussions, nudging has indeed materialised in many different ways. This chapter also identifies some of the instances where each of the above categories meets the law. Nudges can indeed intersect the law in fundamentally different instances.

Besides providing a categorisation of nudges that attempts to clarify the concept and position regulatory nudges in the broader set of nudges, this chapter identifies and discusses design and operational challenges – as well as potential solutions – faced by each of these three types of nudges, an aspect overlooked in the debate to date. To this effect, greater emphasis is placed on nudges designed by the state and implemented by businesses (regulatory nudges), the main focus of this thesis. As such, important examples of legislative and regulatory nudge initiatives across different policy areas (including, but not limited to, consumer protection and public health) are provided throughout the analysis.

This chapter also aims at bringing to the nudge debate an important point: the discussion of the practical operational challenges that regulators may have to deal with when using nudges. Nudging may have become known as a light intervention, but once the design and operational challenges behind this tool are explored, this widespread idea is called into question. While many of the challenges identified are not nudge specific – but pervasive of regulation in more general terms – nudging has not yet been systematically discussed in light of such challenges. In this sense, this conceptual chapter also intends to bring the challenges of regulation into the nudge debate.

Exploring the materialisation of nudging as a regulatory tool – and the challenges it faces when used in legislative and regulatory initiatives – is an important exercise that challenges a few ideas about nudges that pervade the literature. One of them is that nudging is a tool that does not need legislation or regulation. Nudge initiatives may indeed need the law to materialise.<sup>73</sup> The novelty of the concept may reside in this regulatory potential; and if this potential is to be realised, then nudges may need some form of legislation or regulation (no matter how soft) to materialise. This also means that nudging may not be the cheap and light alternative initially advertised when this tool was brought into the regulatory landscape.

Analysing the design and implementation of nudges through different actors also allows questioning other ideas around this concept, one of them being the idea that governments are nudging individuals to behave better and more in line with their own intentions. In fact, public nudging by the government is often not so much about pro-self goals, but goals that the state needs to advance (e.g. pay taxes on time). Another idea that is challenged is that the executive power is manipulatively using nudging without proper checks and balances. Therefore, and following

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<sup>73</sup> See, for instance, House of Lords (2011, p. 10) on behaviour change initiatives and nudging as an alternative to legislation and incentives. Alemanno and Spina (2014) point out that “A frequent observation made about behaviorally informed regulation is that it does not amount to “law””(p. 443). While nudging may be an alternative to legislation, it may also be provided through legislative or regulatory means: “nudges’ themselves may be provided through regulatory means and thus are not necessarily an alternative to regulatory tools” (Alemanno, 2012a, p. 37).

Sunstein’s advice to avoid the “trap of abstraction” (e.g. Sunstein, 2015), a review of the work of behavioural units – in particular the Behavioural Insights Team – is presented. While a part of their work – in particular the one often associated with nudging – is embedded in administrative practices where the government has leeway to act, another subset of their contribution is about providing a behavioural perspective to regulatory initiatives.

With an understanding of the concept based on its *actual* use (rather than a strict definition), this chapter attempts to organise nudge initiatives and to place regulatory nudges under a categorisation of nudges. In fact, this chapter intends to delineate the different spaces and arenas in which nudging has entered.

A few preliminary notes may be worth discussing. The first is to clarify the specific understanding of nudging that is being used in this chapter. Nudging is understood as an intentional and slight change in choice architecture that guides individual behaviour in the pursuit of a certain pro-self or pro-social goal<sup>74</sup>, without making use of monetary incentives or coercion. As such, this understanding does not comprehend the exploitation of biases done by firms in their profit interest to remain competitive. Nudges are also seen as tools ultimately targeted at individuals: the behaviour of individuals is the one the nudge intends to impact, not that of businesses – even though business compliance may be particularly important to achieve that primary goal of targeting individual behaviour (especially for regulatory nudges).

This understanding is only a basic guide. Rather than drawing on a precise definition, this categorisation reflects the concept’s *actual use* to label different initiatives.<sup>75</sup> More important than a precise definition is the difference between *design* and *implementation*. With that in mind, this chapter attempts to organise nudge

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<sup>74</sup> See section 2.2.3. See also Sunstein (2016) on the distinction between “harm-to-self nudges” and “harm-to-others nudges”. “Harm-to-self nudges” aim to “protect people from harming themselves, or to make it easier for them to benefit themselves” (Sunstein, 2016, p. 31). “Harm-to-others nudges” address a market failure or harm to third parties.

<sup>75</sup> This use is often quite inaccurate, as already mentioned in chapter 2.

initiatives according to that distinction and to discuss the operational challenges that they face.

Other aspects are worth noting. In particular, with regard to nudging by the state, this chapter abstains from more fundamental discussions on individual preferences<sup>76</sup> or whether nudging is an appropriate policy tool with respect to others in the policy toolkit.<sup>77</sup> Thus, it simply assumes that the policy-maker is interested in using the tool. Any considerations on the enforcement of regulatory nudges and how those considerations differ between regulatory instruments also remain aspects outside the scope of this chapter. On a final note, this chapter remains general with regard to decision-making contexts, that is, no focus is placed on any particular set of sectors or decision-making contexts; however, most examples concern consumer protection and public health, regulatory areas in which nudging has been particularly welcomed.

### **3.2 Nudge design and implementation: making distinctions**

Once the ban on super-sized sugary drinks was proposed in New York by then mayor Michael Bloomberg, an outpouring of criticism – mainly from beverage companies – followed.<sup>78</sup> Richard Thaler posted on Twitter: “To state the obvious: a BAN is not a NUDGE. The opposite in fact. So don’t blame Bloomberg’s ban on large soda cups on us” (R\_Thaler, 2012).

This proposed ban would not forbid New York citizens to drink as many sugary drinks as they wanted, but that would be made slightly more difficult. The cap on the size of the biggest containers created a small barrier: those with a strong preference for more than 0.47 litres of soda would have to buy more than one (now smaller) cup instead. This proposal was substantiated on decades of behavioural research that reveals individuals’ unawareness about the impact of contextual factors

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<sup>76</sup> This was discussed in the previous chapter and the issue of preferences is again addressed in section 3.6.4.2.iii. The heterogeneity of preferences and ill-formed preferences may in themselves constitute operational challenges for the regulator designing a nudge.

<sup>77</sup> The reasons that may favour the use of nudging were identified in chapter 2 (section 2.6.1).

<sup>78</sup> See Grynbaum (2012).

(e.g. portion sizes) on food and drink intake (e.g. Wansink, 2004; 2006). Assuming that most consumers do not know (or even notice) how much of a drink they have at one particular moment, this measure had the potential to reduce sugar intake in the population of New York. This was, in brief, the basic rationale behind it. Is Thaler right when he claims that this measure is a ban and not a nudge? His remark reveals the prevalent confusion between a nudge's final addressees (individuals) and its implementing parties (businesses).

Depending on whether he is referring to individuals or businesses, Thaler's remark may make a lot of sense or none at all. As far as policy is concerned, there is a major distinction between what this measure means when viewed from the individual's perspective and what it means when viewed from the business's perspective. Where businesses are concerned, their freedom to sell drinks in super-sized containers would clearly be restricted. The measure would represent a ban for companies in that a prohibition to sell oversized containers would constitute a constraint on their autonomy to conduct their business. However, when it comes to individual behaviour, the proposed measure would not forbid people from drinking sugary drinks and as such it would not be a ban on individual behaviour.<sup>79</sup> Sunstein (2016) addresses this in a footnote of *The Ethics of Influence: Government in the Age of Behavioral Science* about another nudge: "Note as well that a disclosure requirement is a mandate, and no mere nudge, for the people on whom the requirement is imposed. It might be a nudge for consumers but a requirement for producers" (p. 13).<sup>80</sup>

Local rules did not intend to introduce a prohibition on sugary drinks, which would have been a much tougher form of regulating individual behaviour; such a prohibition would have been a ban on both businesses to sell sugary drinks and on consumers to drink them. The law can make use of bans, prohibitions and mandates

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<sup>79</sup> Perhaps those more philosophically inclined might argue otherwise.

<sup>80</sup> Also later on Sunstein (2016) observes:

"It is important to acknowledge that some nudges preserve freedom of choice for one population (such as consumers), while mandating action from some other population (such as producers). Suppose that the government requires large employers to adopt automatic enrolment plans either for retirement or for health insurance. If so, employees are nudged, but employers are coerced" (Sunstein, 2016, p. 27).

to regulate individual behaviour in several instances (e.g. prohibition of smoking in closed public spaces, mandatory use of helmets). From an individual's perspective, that would not be the case here.<sup>81</sup> The measure would rearrange choice architecture, so as to make it slightly more difficult to drink more than 0.47 litres of soda at a time. As far as regulation of individual behaviour is concerned, the measure was a nudge (and not a ban), which means that regarding this proposal as a limit to individual liberty "is to misunderstand "choice architecture"" (Burkeman, 2012).<sup>82</sup>

A nudge is indeed different from a ban. What Thaler failed to mention in his Twitter post is that this is only the case from the perspective of the individual. A nudge may be a "third way" between hard command-and-control and no intervention (e.g. Thaler & Sunstein, 2008; Amir & Lobel, 2008), but for the individual alone, not for a business. In fact, as businesses may be the ones implementing nudges, these tools represent a restriction on their conduct. Research has repeatedly noted that nudges may be a freedom-preserving alternative to regulation (e.g. Thaler & Sunstein, 2008). This observation, however, may be inaccurate in cases where nudges impose real obligations on business conduct.

Clarifying this distinction is important. In fact, the concept of nudge put forward by Thaler and Sunstein in *Nudge* says nothing about the *actors, means and mechanisms* through which the concept is to become operational. Companies can manipulate choice architecture directly, the state can also do it in the services and domains it administers and provides (e.g. changing the default on organ donation) and the third alternative is that the state regulates individual choice architecture through business regulation. Given that the agent behind the design of a nudge is not necessarily the one responsible for its implementation, three combinations in which this may happen can be identified: private actors such as firms design and implement nudges

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<sup>81</sup> Carrying smaller cups instead of just a big one can also represent a cost increase through an increase in inconvenience. In addition, it can be argued that smaller-sized drinks tend to be more expensive and thus a ban of large cups also represents an increase in price for the consumer. Whether the measure is intended to work due to its nudge element or incentive element (i.e. prices) is impossible to disentangle. Considering the measure above as a nudge only implies nonetheless assuming that such a measure would not have any impact on prices for consumers.

<sup>82</sup> See the comments of Wansink and Just (2012) on the ban.



(*private nudges*), state designs and implements nudges (*public nudges*) and finally the state designs nudges for businesses to implement (*regulatory nudges*). The following table summarises this idea:

**Table 1. Types of nudges**

	<b>Private nudges</b>	<b>Public nudges</b>	<b>Regulatory nudges</b>
Design	Private actors (e.g. firms)	State	State
Implementation	Private actors (e.g. firms)	State	Firms

As we will see, widely discussed nudge examples come under each of these categories. For the purposes of the analysis, the “state” can include parliament, local or central government or regulatory agencies.<sup>83</sup> In all the cases above, the final addressees are individuals, either as citizens (when directly addressed by the state) or as consumers or workers (when directly addressed by firms). However, only through public nudges is the state addressing citizens directly. Through the potential promoter role in private nudges<sup>84</sup> and the designer role in regulatory nudges, the state addresses businesses directly and individuals indirectly.

### 3.3 Nudging intersects the law

The distinction made above between private, public and regulatory nudges also sheds light on the meeting points between nudging and the law. Public nudges and

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<sup>83</sup> For the purposes of this chapter, the state includes all these actors and the law includes both legislation and (subordinate) regulation. As defined in the *The Governance of Regulators, OECD Best Practice Principles for Regulatory Policy* (OECD, 2014), regulators are “entities authorised by statute to use legal tools to achieve policy objectives, imposing obligations or burdens” (OECD, 2014, p. 17). As the same report also notes, a regulator “may take a variety of institutional forms”: it can be a unit in a ministry or a separate body, it can be municipal or regional authority, it can be subject to international standards, and so on (OECD, 2014, p. 18). The word “regulation” is understood to mean rules issued by a parliament, government or an authorised regulatory entity that represent obligations on business actors and individuals. The exact institutions with regulatory power differ between countries, that is, how regulatory power materialises institutionally is country (and even sector) specific.

<sup>84</sup> This role can involve setting up a system of incentives for the adoption of nudges or threatening with future legislation in case businesses fail to self-regulate and adopt a certain nudge. See section 3.4.1.

regulatory nudges resemble the two instances in which nudging meets the law identified by Sibony and Alemanno (2015). The authors claim that nudging meets the law in two circumstances: when public entities themselves nudge citizens and when the state engages in “counter-nudging” of exploitative nudging practices going on in the market (Sibony & Alemanno, 2015, p. 18). The first instance is about guiding behaviour by a public entity “in the public interest”; the second instance regards cases “where public authorities react to exploitation of biases by market forces by regulating private nudging<sup>85</sup>” (Sibony & Alemanno, 2015, p. 18).

On nudge implementation through legal or regulatory means, Sibony and Alemanno (2015) distinguish between both instances. The authors further explain that public nudging can materialise through “administrative practices” and may not demand legislation, while “counter-nudging” or regulating the nudges carried out by the private sector (i.e. private nudging) usually makes use of command-and-control tools (Sibony & Alemanno, 2015, p. 19). Sibony and Alemanno’s (2015) understanding is further expanded on in this chapter with a view to providing a more precise identification of those instances where nudging meets the law, as follows:

- Privately designed nudge solutions may represent a third instance in which nudging meets the law, as the state may have here a potential promoter role (see section 3.4);
- When provided through administrative practices and arrangements, public nudges may also pursue an important goal for the law, which constitutes a more direct meeting point between this category and the law. This will be addressed in section 3.5 on public nudges;
- “Counter-nudging” may also imply the design of nudges by the state (and not only more traditional tools) to be implemented by corporate actors, not

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<sup>85</sup> Private nudging here refers to nudging carried out by private firms in their profit interest to steer consumer behaviour; the private nudges of the categorisation presented in this chapter regard nudges designed and implemented by private actors (not necessarily firms) in the pursuit of a benevolent interest (e.g. reducing decision-making mistakes). This was discussed in section 3.1.

just to address private corporate nudging, but also to minimise decision-making mistakes or reduce externalities of individual behaviour (as argued in section 2.3);

- While they may be command-and-control tools, regulatory nudges may also embody softer tools (e.g. resulting from an informal agreement with industry).

These examples may extend the meeting points with the law, but they are all just examples. All the three categories identified (private, public and regulatory nudges) may meet the law in a wider sense of having to respect overall legal and constitutional frameworks. However, these less direct meeting points and sources of potential conflict between nudging and other legal rules and principles are outside the scope of this thesis. This chapter therefore adopts a narrower stance of meeting the law; in fact, the more *direct routes* through which nudging intersects the law identified in each category are narrower and have generally to do with the nudge *acting as law* (being provided by state actors in their legal or regulatory capacity), being *promoted by state action or pursuing a legally relevant goal*.<sup>86</sup>

These points will be addressed in later sections. In what follows, each of the three types of nudges and their main operational challenges (and solutions) are analysed. Again, each of these categories includes very different initiatives that may more directly meet the law for different reasons. They have distinct ramifications and challenges, which makes their analysis all the more relevant.

### 3.4 Private nudges

This category comprehends nudges designed and implemented by private actors. It includes i) nudges introduced in existing products as attempts of firms (and industries) to self-regulate and address externalities of their activity; ii) nudges introduced in product design to help consumers regulate their own behaviour and

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<sup>86</sup> These meeting points with the law differ from the understanding of Cserne (2016) on nudging being legal or extra-legal depending on whether it represents a “mode of governance” different from law.

iii) nudges tested and implemented in cooperation between private parties (e.g. firms, non-profit organisations), academia and even the public sector to test solutions that help individuals change their behaviour (e.g. save energy). Each set of private nudges is addressed separately.

### **3.4.1 Self-regulating benign nudging**

This category of private nudges concerns attempts by the private sector to pursue a paternalistic or public interest goal. This type of nudging includes private sector initiatives such as those documented by the “AIM – Nudge for Good Initiative”, an initiative by the European Brands Association. This initiative includes interventions from different companies that translate benevolent behavioural considerations into existing products. They seem to represent corporate self-regulatory efforts, as discussed below.

According to a presentation available on their website (AIM, n.d.), companies can design nudges that help their consumers close the gap between intentions and actions towards “healthier and more sustainable” options. The “AIM – Nudge for Good” has identified “priority focus areas” that match “public policy goals” where behavioural change is critical and aligned with Sustainable Development Goals, such as “balanced diets and active lifestyles” (AIM, n.d.). The initiative itself provides companies with a “toolkit” to design “nudge for good” strategies. The website contains several case studies from diverse popular brands, with examples featuring smaller portion or package sizes.

The “AIM – Nudge for Good Initiative” represents an attempt to provide a framework for this type of private nudging. These self-regulation efforts resemble corporate social responsibility (CSR), but Alemanno (2016b) distinguishes between AIM’s “benign corporate nudging” and CSR: while CSR places business and society in confrontation, “nudging for good” relies on the cooperation between business and consumers to attain a common goal (p. 16). According to Alemanno (2016b), “benign corporate nudging” also entails a proactive stance from companies, rather than the “reactive” reaction commonly associated with CSR. In this proactive

stance, companies jointly and cooperatively work with consumers in order to identify the social costs of consumption and work on solutions to be incorporated in existing products to diminish those costs.

Another crucial aspect of “benign corporate nudging” has precisely to do with the fact that the social issues addressed are “tied to the core business”, rather than generic in nature (Alemanno, 2016b, p. 16). This is an important distinction. As Alemanno (2016b) further explains, “benign corporate nudging”, or what this chapter understands as private nudges designed by business actors to address social challenges, adds a “social dimension to the value proposition of a company” in ways that “might act as a game-changer for an entire industry” (Alemanno, 2016b, p. 17). Companies embracing this path are “practicing one of the most powerful forms of strategic corporate social responsibility” (Alemanno, 2016b, p. 22).

It is worth noting that while the recent interest in behavioural sciences by the state has been often viewed as the borrowing of ideas that have long existed in the private sector, the private sector has started to seize the behavioural economics discourse to label “nudge for good” type of initiatives. While the techniques might not differ much, the public policy goal seems indeed to have penetrated business practices and discourse.

Whitehead, Jones, Lilley, Pykett, and Howell (2018), in their chapter about the “neuroliberal<sup>87</sup> corporation”, elaborate on firms’ appropriation of “neuroliberal insights”.<sup>88</sup> As Whitehead et al. (2018) contend, there are firms that seem to be “creatively engaging with neuroliberal insights in order to forge novel governmental relations between themselves and their clients” (p. 139). According to the authors, this commercialisation process of “neuroliberal insights” has materialised through the arrival of consultancies that offer behavioural advice to corporations on how to

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<sup>87</sup> Whitehead et al. (2018) propose a framework called “neuroliberalism” defined as “*the use of behavioural, psychological and neurological insights to deliberately shape and govern human conduct within free societies*” [emphasis in original] (p. 1). This framework allows for a critical assessment of emerging neuroliberal practices.

<sup>88</sup> See chapter 7 of Whitehead et al. (2018) about the “social responsibility of corporations” in welfare-improving behaviour change.

relate with their consumers or how to redesign their work practices (Whitehead et al., 2018, p. 140).

The authors advance two explanations for the interest of companies in behavioural insights or how “to interpret the emerging practices of corporate neoliberalism” (Whitehead et al., 2018, p. 152). One has to do with a change in the relation between firms and the broader social and economic environment they are in, following events that discredited traditional business models. A “shift in the underlying rationality of companies” and the emergence of “a new form of business logic” (Whitehead et al., 2018, p. 153) seem to be in line with Alemanno’s (2016b) explanation on the potential of embedding “benign corporate nudging” in firms’ core values. Whitehead et al. (2018) acknowledge nonetheless that this does not truly require a departure from the profit motive, “but it does suggest a recognition that corporate interests may be well served by understanding and anticipating where long-term risks may lie” (p. 153). Another reason behind the dissemination of “corporate neoliberalism” – which the authors find more convincing – lies in “broader regulatory pressures” (Whitehead et al., 2018, p. 154). In their view, companies are increasingly being asked to devise strategies to reduce debt, promote healthy behaviours, among others. As further noted below, the state may also develop strategies to promote this type of self-regulation.

Self-regulatory efforts to promote social goals such as sustainable production might be a promising way for the development of nudges that help consumers improve their choices. Pursuing this type of self-regulation leadership may allow a company to build a positive image. This sort of initiative might also allow a transition from “empty and cosmetic notions such as responsible consumption” to “shared responsibility between companies and society” regarding consumption (Alemanno, 2016b, p. 22). Moreover, as Alemanno (2016b) quite enthusiastically acknowledges, companies have expertise that they can easily leverage to encourage positive behaviour change, an aspect that makes them better equipped than other parties

(such as governments) to engage in this endeavour. Self-regulation can also work as a way to signal that the state does not need to intervene.

Self-regulation can play a role in the development of this nudge category; however, the question on which factors can trigger such a process remains. Consumers may be crucial in pushing for self-regulation (Haufler, 2001). Consumers not only call for high quality and low priced products, “but they also increasingly expect business to produce them in ways that do not have negative consequences for society” (Haufler, 2001, p. 11). Such demands can certainly change companies’ incentives to engage in self-regulation.

However, consumers pushing forward an agenda of beneficial nudges that address negative (social and environmental) consequences of consumption sounds possibly too optimistic. This shift depends on whether people are aware of their own decision-making mistakes and externalities of consumption, which leaves a limited role for this category of nudges, at least demand-driven ones. Irrespective of any stance on present and future consumer demand, these nudges remain largely in the realm of market developments, therefore being of distant relevance to the law. There is nonetheless a role for the state.

In fact, while expecting companies’ voluntary initiative or consumers to demand those efforts might be too naive, there is indeed an important role for the state to play. Whether through incentives or regulatory threat – systems of “carrots or sticks” – the state can promote the adoption of these tools under a concerted and strategic approach.<sup>89</sup> The state is already using this power; the benign nudging discussed here is already emerging because of regulatory pressures, as mentioned before:

“many forms of corporate behavioural government, within and beyond the energy sector, can be understood as a response to regulatory pressures. Similar regulatory pressures to reduce personal

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<sup>89</sup> The role of the state here is nevertheless different from the role in (co-)regulatory nudge initiatives – discussed in section 3.6 – where the state plays a more active role in the design of nudge tools.

debt and irresponsible lending can be seen in the financial sector. So too, regulatory pressures are informing healthy lifestyles initiatives in the food and drinks industry. In the awarding of commercial licenses and the enforcement of government codes of conduct, the state can still generate regulatory regimes that can drive corporate neoliberal initiatives” (Whitehead et al., 2018, p. 154).

The state might also be able to promote the adoption of nudges by setting standards and goals for a certain industry that grant companies the freedom to devise tools to attain those goals (including possible nudges). Performance or goal-based regulation may result in the adoption of nudges.

Unless governmental regulation represents a tangible risk or systems of incentives are established, this category of private nudges is unlikely to be a legally relevant one. In other words, either society’s “pressure” for CSR is strengthened or private firms can only be expected “to provide nudges that are either in line with their profitability or are directly or indirectly mandated by the government” (Beggs, 2016, p. 147). Consumers may be demanding, but they still lack an understanding of their own decision-making mistakes and an active attitude regarding the implications of production and consumption. This means that any self-regulatory efforts seen here are unlikely to be demand-driven, but rather state promoted. Initiatives such as the “AIM – Nudge for good” represent initial voluntary steps, but policy relevant examples highlight the role of the state.

The promoter role of the state is indeed revealed in prominent examples of nudging. An example from the UK made use of regulatory threat: in particular, the “midata clause” passed into law in 2013 gave the Secretary of State for Business the power to mandate firms to provide their customers with their own data in machine-readable format (Halpern, 2015). While this clause inserted in primary law “still required a Minister to secure secondary legislation if they wanted an industry or sector to comply”, it seems to have pushed some companies to do it voluntarily



before they were forced to (Halpern, 2015, “Midata’ - taking the friction out of markets” section, para. 15).

In sum, the development of this type of private nudges depends essentially on two stakeholders: the consumer and the state. Although consumers are generally not aware of their decision-making mistakes or implications of consumption, the state may itself take an active stance in promoting these nudges in the private sector. In fact, the state has a role in self-regulation: “Governments can also find ways to leverage the private sector to promote its policy goals. They can promote industry self-regulation by using carrots and sticks – threatening regulation and providing incentives for self-regulation” (Haufler, 2001, p. 116).

Before addressing the next category of private nudges, it is important to note that the self-regulatory efforts by businesses discussed here not only represent corporate efforts to promote social goals, but also attempts to help consumers regulate their behaviour. “Benign corporate nudging” is thus self-regulatory in two senses: on the one hand, it represents voluntary corporate attempts to pursue sustainability in their product design; on the other hand, it can also constitute a means through which consumers self-regulate their own behaviour.

### **3.4.2 Nudge products**

Other private nudges that incorporate benign nudging in product design do not really represent corporate self-regulatory efforts. Unlike the initiatives described above, which incorporate behavioural insights in existing products, the initiatives discussed in this section embed nudges in the core design of a new product to promote behaviour change. As Abdugaridov (2016) notes, “behavioral technologies can help consumers simply by redesigning their products to limit human errors” (p. 161). These are nudges where profit maximisation and individual long-term interests are aligned, which is why Beggs (2016) termed them “Pareto” nudges. According to the author, “it’s not actually that difficult to find examples where companies use the principles of behavioral economics to not only enhance their profitability but also better align consumers with their long-term best interests” (Beggs, 2016, p. 127).

Abdulkarimov (2016), too, observes that not all companies have incentives that clash with consumers' interests.

Many examples seem to come under this sub-category.<sup>90</sup> Wendel (2016) explores examples that intend to help people exercise more, adhere to medication or improve their money management. Other examples include, for instance, a device connected to the electricity meter that measures total energy use in real time, providing total watts used (and costs) and emitting different colours for energy consumption (see Jespersen, 2012). Another example is that of a device that can be attached to a shower's tap and gives instant feedback on water consumption (see iNudgeyou, n.d.).<sup>91</sup> These are mere illustrations of devices and technologies supplied by the market that can assist consumers in decision-making.

These private nudges that help the consumer make responsible and sustainable decisions, but which do not really represent self-regulatory attempts by the private sector, may also be important from a legal perspective. As they may collect personal data and even interfere with physical integrity, these nudges may have to conform to laws and regulations related to product safety, data protection and privacy. They may not be provided through law, but still meet the law in these more indirect ways.

Apart from health and personal finance examples, this type of private nudges remains "scattered across many industries and technologies" (Wendel, 2016, p. 102). In fact, while examples abound, the market development of this sub-category largely depends on consumers' awareness of their own decision mistakes. If consumers

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<sup>90</sup> See Wendel (2016) for an overview of private sector applications of nudges in consumer products, especially in consumer technology. The author explores the routes through which nudges are reaching the private sector and provides examples in health and finance. The book chapter also tries to categorise private sector nudge initiatives by the obstacle to individual action that they address. According to Wendel (2016), nudges can be designed to capture our attention ("cue"), counteract our fast reactions ("reaction"), help us evaluate costs and benefits of actions ("evaluate"), make it easy to act ("ability"), counteract procrastination ("timing") and overcome availability biases ("experience"). Beggs (2016) also provides examples of privately supplied beneficial nudges. See also Joinson and Piwek (2016) on smart technologies that build on feedback and personalisation.

<sup>91</sup> Other examples are more intrusive as is the case of a wristband which is connected to one's bank account and provides an electric shock once one has spent more than a self-imposed limit (Jones, 2016).

acknowledge their own decision-making mistakes – and I would add the social and environmental implications of their decisions – “they will demand self-control and other external regulations on their own behaviour, in which case they can (and often will) be privately supplied by firms” (Camerer et al., 2003, p. 1252). In most cases, however, people are unaware of their own mistakes, which means that they will not demand protective devices “for the very reason that they are needed” (Camerer et al., 2003, p. 1252). Besides, even when aware of their flaws, individuals might still make mistakes.

Private demand coming from an acknowledgement of our own shortcomings and implications of behaviour is then unlikely to happen, which may leave a very limited role for this category of nudges, at least demand-driven ones, an aspect that also affects the sub-category in section 3.4.1. These two sub-categories of nudges are then unlikely to become more than a list of business case studies. Furthermore, apart from a shortage of demand arising from consumers’ lack of understanding on the implications of their behaviour, other challenges may have to do with variable or unstable demand. Additional difficulties may concern the incentives of firms and consumer heterogeneity: if firms have incentives to nudge consumers away from their long-term interests or if consumer preferences are heterogeneous, markets will fail to supply “Pareto nudges” (Beggs, 2016, p. 147).

### **3.4.3 Other private nudges**

The third type of private nudges concerns those tested and implemented in academia, or in partnerships between researchers and the private sector. Several examples abound in the literature. Allcott and Rogers’s (2014) study, testing the impact of social comparison messages on energy consumption, Milkman, Minson, and Volpp’s (2014) and Calzolari and Nardotto’s (2017) studies on the impact of nudges on gym attendance are a few of those examples.

While the nudges discussed in sections 3.4.1 and 3.4.2 focused on nudges developed and implemented by corporate entities, countless private nudges have actually been tested as a result of the cooperation between private parties (e.g. companies, non-

profit organisations), academia and even governments to help individuals self-regulate their own behaviour (e.g. go to the gym more often, save more energy or money). Some of the nudges and applications that have made their way into issues of development can also be included here.<sup>92</sup>

Analogous to the previous two types of private nudges, this sub-category is aimed at enhancing the decision context of individuals with a paternalistic or social goal at heart.<sup>93</sup> These nudges remain largely irrelevant for the law, that is, they do not intersect the law in the more direct routes considered in this chapter. However, they might carry potential to inspire legal and regulatory initiatives. In addition, some of these nudges, when done in cooperation with the state in support of public policies, may actually be public nudges, a nudge category discussed in section 3.5.

#### **3.4.4 A summary of private nudges**

The following table summarises the previous sections:

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<sup>92</sup> The 2015 *World Development Report* by the World Bank on practical applications of behavioural science in developing countries is again worth noting (World Bank, 2015).

<sup>93</sup> Other private nudges seem to have the interest of the institution designing the nudge in mind rather than that of the individual or final addressee (e.g. nudges that encourage individuals to donate more to a charity). These nudges resemble more traditional marketing attempts.

**Table 2. Types of private nudges**

<b>Types of private nudges</b>	<b>Examples</b>	<b>Meeting the law<sup>94</sup></b>
Corporate efforts to self-regulate and to help the consumer	Reducing food portion sizes, reducing the level of sugar in sugary drinks	They may intersect the law through self-regulation (and thus preempt the need for regulation) and leave a promoter role for the state.
Market technologies and products to help the consumer make better decisions	Devices/apps to monitor energy and water consumption	None in the narrower sense.
Nudges tested and documented by researchers or through informal partnerships between academia and other players	Nudges tested to encourage people to go to the gym more often, save money, etc.	None in the narrower sense.

In sum, different types of private nudges have been identified so far. Only one of the identified types meets the law in the sense looked at in this chapter: the private nudges that represent attempts by the private sector to self-regulate its own conduct and steer individual behaviour in the pursuit of social goals. Benign nudging may leave for the state a promoting role, through incentive systems or regulatory threat.

Again, this is an explicit way in which private nudges meet the law; but these nudges may intersect the law in a wider sense (e.g. conflict with legal and constitutional rules), which is an aspect that remains beyond the scope of this thesis. For instance, as mentioned above, private nudges may incorporate technologies that have to respect important legal frameworks on data protection and product safety, less direct ways in which these nudges meet the law. Furthermore, private nudges tested informally (e.g. academic research) can inspire regulatory and legal initiatives, also a less direct meeting point between nudging and the law.

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<sup>94</sup> See section 3.3.

The private nudges discussed in this section remain circumscribed from a regulatory perspective. To the extent that all of these interventions embody solutions designed, tested and supplied by private actors, the regulatory and legal relevance of this entire category remains limited. The examples discussed here are scattered and do not truly reflect any strategic incorporation of nudges at larger scales in entire industries.

### **3.4.5 Other challenges and solutions**

This section is largely focused on the challenges faced by self-regulatory nudges – the first type of private nudges, discussed in section 3.4.1 – even if some are applicable to the other types of private nudges.

Self-regulation is often seen as a way to discourage substantive state intervention, while making companies appear well intentioned. Initiatives led and funded by an entire industry might reflect nothing more than a fictitious attempt to address social issues and as such the public might not perceive them as genuine. Self-regulation has nevertheless positive elements for both state and firms in that, on the one hand, it makes it easier for companies to conceive and implement initiatives themselves, which is likely to increase compliance and, on the other hand, it lowers (and it may even pre-empt) the need for state intervention and monitoring.<sup>95</sup>

As already mentioned, companies have the expertise and knowledge that allows the design and development of nudge initiatives. Knowledge on individual behaviour and on the (technical and cost) feasibility of a nudge may make them more suitable than regulators to design nudges.<sup>96</sup> There are nevertheless important challenges, one

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<sup>95</sup> See Haufler (2001) and Parker (2002) on the advantages and drivers of self-regulation. For a summary of self-regulation, meta-regulation and regulatory networks, see also Baldwin et al. (2012).

<sup>96</sup> See also Abdugaridov (2016) on why nudges should be left to the market. The author defines regulatory nudges as “regulatory policies that use behavioral economics to change consumer behavior” (Abdugaridov, 2016, p. 161) and compares the regulatory process and the process used by companies to design new products, concluding that nudge design requires a “flexible, iterative approach” only seen in the private sector (Abdugaridov, 2016, p. 160). The author also concludes that nudging should be left to private companies; it should be noted, however, that markets and state tend to design substantively different nudges in both goals and targeted behaviours, as this chapter also intends to illustrate. While state-designed nudges may compete with corporate-designed nudges, in many instances they do not. Furthermore, as this thesis intends to argue, regulatory nudges may not require an iterative design approach.

of them being that companies may apply behavioural insights in contexts very different from the academic ones they were generated in (Wendel, 2016), which may pose a problem for their effectiveness. This is a challenge that nudge products (the second sub-category of private nudges discussed) may also face. The bright side is that companies have access to the consumer, which makes it easier to engage in testing through the use of experiments (often called A/B testing in the business world).

Another important challenge that firms may face when implementing nudges that they have themselves designed is that the consumer may doubt the firm's intention. This is likely to be exacerbated when a nudge is not incorporated from the very beginning in the design of a product, which might compromise the goal and effect of the nudge. A nudge that does not primarily intend to increase sales may result in "dissonance in the mind of the consumer" and not be truly perceived as "credible" (Alemanno, 2016b, p. 18).

The resistance and distrust brought about by an apparent disparity between a company's action and its profit motive might be overcome by involving consumers in the creation process of nudge interventions. In other words, allowing consumers to participate in the "construction site of the architecture of consumption" may be a way to diminish resistance (Alemanno, 2016b, p. 20). According to Alemanno (2016b), another alternative to reduce consumer resistance is to design interventions that promote behavioural change at the moment of consumption of the product, not its sale. As Alemanno (2016b) clarifies, nudging consumers to consume less by packaging a good in a smaller container amounts to "benign corporate nudging", but trying to persuade them to get the product in the first place amounts to traditional marketing.

Overcoming consumer resistance may be key to the success of private nudge interventions. Once possible distrust is overcome, "benign corporate nudging" might be better welcomed by the public than a state-led initiative, as it might avoid the negative reactance from individuals that a top-down state-driven intervention

can create. Furthermore, companies might have certain advantages in carrying out both design and implementation of nudges. At the design stage, they can test what works and involve consumers in the co-creation process of initiatives; they can also easily implement the nudges they have created as they are in direct contact with the consumer.

In design stages, the main issue remains one of incentives. While it is not necessarily the case that business and consumer interests are not aligned – in which case the take-up of benign nudges at corporate level is facilitated – “it’s important to recognize that there are limitations on the ability (or, perhaps more accurately, willingness) of private markets to provide nudges that are helpful for consumers and, conversely, to refrain from providing nudges that are harmful to consumers” (Beggs, 2016, p. 126). The issue of incentives may not be applicable to the private nudges introduced in section 3.4.3: as these nudges are predominantly designed and implemented by non-governmental organisations or partnerships with academia, the conflict between nudge designer/implementer and individual may not exist.

Private nudges – designed and implemented by private actors – are a vast category on their own. Most nudge interventions documented in behavioural literature can likely be included here. Section 3.5 deals with nudges that can be more seriously understood as public policy solutions, as they are designed by the state. However, as this section explains, not all behavioural interventions designed and implemented at state level directly meet the law.

### **3.5 Public nudges**

This section focuses on nudges designed and implemented by the state. They correspond to what Sibony and Alemanno (2015) identify as the second instance in which nudging meets the law: “But nudging and the law meet in a second situation too. This occurs when public entities themselves, similarly to what private operators do, seek to nudge citizens into certain behaviour, such as agreeing to donate their organs” (p. 11).



This immediately narrows down the scope of this category of nudges, as it only includes areas where the state addresses citizens directly. In other words, relevant nudges here are those designed and implemented by the state, naturally in those areas that the state directly administers and where it establishes direct contact with citizens. From a choice architecture perspective, this means that nudges designed and implemented by the state have limited space: most of our choices as individuals take place in the market sphere, rather than in direct contact with the state. Put differently, the contexts of choice under the direct control and mandate of the state represent a narrow subset of decision environments in market economies. The fact that these nudges are designed and implemented in areas under direct state control also leaves more scope for nudges at the local and national level and a rather limited scope for public nudges devised at EU level, as the EU “has virtually no direct contact with its citizens” (Alemanno, 2016a, p. 282).<sup>97</sup>

Examples in this category are numerous and comprehend nudge initiatives such as defaults on organ donation, defaults on voter registration, text message reminders for individuals to pay a fine or show up in job interviews scheduled by job centres, social norm messages for people to pay their taxes on time and even tax lotteries. However, not only is the category of public nudges (designed and implemented by the state) a small category – given the relatively small size of choice architecture under the direct control and implementation of the state – but also only very few of them are actually provided through legal means or higher acts of government.

Most public nudges remain within the realm of administrative informal practices, which is an important aspect that, as already mentioned, Sibony and Alemanno (2015) acknowledge when distinguishing between public nudging and the regulation of private nudging:

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<sup>97</sup> Alemanno (2016a) identifies three reasons for the lack of direct interaction between the EU and its citizens: areas requiring direct interaction with citizens such as public health and taxation remain with the Member States, the implementation of EU policy is primarily done by the Member States and the provision of public services is also done by the Member States.

“While pure public nudging can be implemented through administrative practices and does not always require legislation, regulation of private nudging<sup>98</sup>, even when behaviourally informed, tends to take the form of classic command and control rules” (Sibony & Alemanno, 2015, p. 19).

This category may include many policy relevant nudges, but most of them are not provided through legislation. Lepenies and Małecka (2015) underline this too when they state that most current nudge policies “are not a part of a legal system” (p. 430). They may encompass wide policy space – as revealed through the variety of nudges in policy delivery – but limited legal one: they do not surface the legal realm or they are not legally visible. In fact, out of the examples above only very few have been provided through some high level act (e.g. defaults on organ donation, tax lotteries). Most remain administrative changes in policy delivery. Baldwin (2014) notes this too: “Many nudges, however, will not demand legislation and may be triggered administratively” (p. 845). This observation supports the claim found in the literature that most nudges are not part of the legal system and yet allow “policymakers to influence people’s behavior more quickly, more effectively, and without putting effort into cumbersome legislative and deliberative processes” (Lepenies & Małecka, 2015, p. 430).

It has become clear, therefore, that there are two types of public nudges: public nudges provided by the legal system and those provided through rearrangements in administrative procedures in public services and policy delivery. The latter, that is, public nudges that do not surface the legal realm, are discussed in section 3.5.1, since they remain the ones that have made more of an impression, especially in terms of variety.

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<sup>98</sup> See footnote 85 on this meaning of private nudging.

### 3.5.1 Public nudges that do not surface the legal realm

These public nudges are used in the everyday practices of government activity in the implementation and delivery of public services and policies. Examples include re-organising the way in which job centres work, exposing citizens to messages that encourage them to recycle or using reminder e-mails for people to show up for a doctor's appointment or their kids' vaccination appointments. These examples correspond to the two "dimensions" of policies that John (2018) refers to: one involves "the communication flow to the citizen" and another "an alteration of standard operating procedures", in other words, "the rules and routines of public agencies that intersect and structure the choices of citizens and other actors" or even "how public organisations operate internally" (John, 2018, pp. 5-6).

Nudges have often been associated with developments of modernisation taking place in the public sector involving its relationship with citizens as well as innovative experimental forms of policy.<sup>99</sup> As John (2016) points out, behavioural sciences have been used to "correct for poor delivery systems and to compensate for past failures to engage citizens" (p. 114) or "to improve delivery and public managements as an add on to standard routines and practices" (p. 124). Behavioural sciences have an advantage in enhancing these processes, as they can follow the individual in each step of the decision-making journey and identify instances in need of improvement. In fact, as John (2018) puts it: "A behavioural approach can examine each link in the chain, find out about the behavioural cues needed to improve the transmission of commands and responsiveness to context, and then improve the delivery of the policy" (pp. 8-9).

These public sector nudges embody more informal arrangements. The fact that these practices do not so explicitly meet the law does not in any way remove any concerns of legitimacy and manipulation that this sort of nudging may pose, the analysis of which, however, falls outside the scope of this thesis. Furthermore, there

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<sup>99</sup> See Jones and Whitehead (2018) on the role of experimentation in supporting innovation in the public sector.

are public nudges that, without being provided through law, pursue nonetheless an important goal for the law (as section 3.5.1.2 illustrates). Moreover, they can also be called for by legislature. For instance, the Belgium Chamber of Representatives approved in 2018 a motion for the application of behavioural sciences in the health domain.<sup>100</sup> In essence, the lower house of the Belgium Parliament asked the Federal Government to take behavioural sciences into account, in particular to choose domains in health where they shall be applied, engage in the design and evaluation of nudges and integrate them in a systematic manner.

Before analysing how nudges have made their way into the modernisation of the public sector, public services and policy delivery – which will be done through the analysis of the BIT’s work in section 3.5.1.2 – section 3.5.1.1 explains how and why public nudging has also been associated with ideas of co-production.

### **3.5.1.1 Co-production**

Regarding the administrative practices and the behaviourally inspired changes introduced in the delivery of public programs and interventions, it seems worth noting the role of co-creation and design thinking.<sup>101</sup> Public sector nudging and the re-organisation of public services is closely linked to broader processes of modernisation in the public sector and administration that intend to simplify public services and make them more user-centric and effective, which has often been achieved through co-production and design thinking. As Junginger (2016) puts it, “It is necessary to co-design, co-develop, co-create and co-produce to understand

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<sup>100</sup> See *Résolution relative à l’application des acquis des sciences du comportement dans le cadre des soins de santé en Belgique*, 5 juillet 2018, Chambre des Représentants de Belgique [Resolution on the application of behavioural sciences in health care, July 5th 2018, Belgium Chamber of Representatives] (<http://www.lachambre.be/FLWB/PDF/54/2474/54K2474006.pdf>).

<sup>101</sup> For a summary of design thinking as an approach to public policy, see Mintrom and Luetjens (2018). For a summary of co-design, see Blomkamp (2018). For summaries of co-production in the public sector, see Howlett, Kekez, and Poocharoen (2017) and Sorrentino, Sicilia, and Howlett (2018). On co-creation in public service delivery, see Voorberg, Bekkers, Timeus, Tonurist, and Tummers (2017). It is also worth noting the broader field of behavioural public administration, the study of the behaviour of citizens, public employees and managers or the use of a behavioural approach to study public administration (see Grimmelikhuijsen, Jilke, Olsen, and Tummers, 2017).

problems not only from the view of the public organization or the law-makers, but also from the view of the everyday citizen” (p. 332).

While identifying the support for co-production in the *Personal Responsibility and Changing Behaviour* report (Halpern et al., 2004) – an important report in the emergence of the behavioural agenda in the UK – Jones, Pykett, and Whitehead (2013) elaborate on the reasons behind the support for co-production. In particular, co-production offers the possibility to engage individuals in the conception and delivery of policies, which is perceived as essential for policies to succeed:

“The idea of the co-production of policy at the interface of government, individuals and communities is a central theme within the report. The idea of co-production appears to work on two levels: 1) at a normative level, it supports a deeper form of engagement of individuals within the design, delivery and enactment of policy; and 2) at a more practical level, it suggests that government policy is much more likely to succeed if citizens feel a sense of responsibility for it. To these ends, notions of co-production are simultaneously progressive addenda to the behaviour change agenda (ensuring that its psychological practices do not undermine the democratic process), and a natural outgrowth of more-than-rational theories of human action (recognizing the importance of emotional attachment, reciprocity and cognitive consistency in motivating human behaviours)” (Jones et al., 2013, p. 30).

These processes of co-production have been used from central to local policy-making. The local level, due to its proximity to the community, is a policy-making level that particularly lends itself to co-creation. In fact, not only does nudging have a significant potential at the local level<sup>102</sup>, but also at this level the participation from the community in its design process is facilitated. There are also additional

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<sup>102</sup> See John et al. (2011) on the different ways in which local authorities can engage citizens in issues such as volunteering or recycling.

advantages, namely the fact that the local level easily allows the involvement of behavioural researchers and may present less implementation problems (Amir et al., 2005, p. 450).

John (2018) underlines precisely the potential of nudging at the local level, a level where issues of policy delivery strongly arise. According to the author, “There is a considerable local potential from nudge in the range of organisations that work in the locality and have to face the delivery issues in public policy that nudge policies are so good at addressing” (John, 2018, p. 145). Furthermore, nudging may have a role in encouraging more reflective and civic “think” strategies at the local level, as John et al. (2011) discuss. The authors’ proposed “think” approach to policy, which should complement nudge approaches, regards precisely the involvement of citizens in the design process of policy solutions to increase effectiveness and legitimacy. These solutions address social problems regarding ways of consuming, recycling, dealing with waste or transportation, behaviours that materialise at the local level. In fact, John et al. (2011) call for “a local and decentralized approach to citizen involvement and behaviour change” that incorporates experimentation and the use of local partnerships “to develop a genuinely creative and evidence-based form of local policy-making” (John et al. 2011, “Plan of the book” section, para. 13).

John et al.’s (2011) observation that nudges can prompt a dialogue between citizens and authorities about behaviour change strengthens the importance of bottom-up approaches. Furthermore, the authors suggest that it is the enabling role of government – rather than its direct involvement – that facilitates effectiveness, which is why it may be beneficial for public authorities to work with partners when delivering interventions.

It is indeed important to underline not only processes of co-creation and the amenability of the local level to the development of nudging, but also the potential role of private players in the implementation process of public nudges. On the implementation of public nudges, there are public nudges that may be created by the state (on its own or in co-creation processes) and implemented by a private

actor. This has been facilitated by the emergence of organisations that assist in policy implementation. As Soman (2015) highlights:

“at the level of governments and public welfare organizations, there have been a number of instances of agencies adopting behavioral insights to improve the delivery of public programs and processes. The ecosystem has been strengthened further by the development of academic institutes (e.g., BEA@R at Toronto) and not-for-profits (e.g., ideas42) that support behaviorally informed policy and welfare programs” (Soman, 2015, “Everything Matters” section, para. 9).

For instance, ideas42, a prominent organisation dedicated to the application of behavioural sciences, also cooperates with public authorities in the design and implementation of behavioural interventions. As explained on their website, their *Gov42* initiative involves their partnership with states and cities in order to smoothen the interaction between citizens and public programs and spaces: “Wherever people interact with public services – from traffic safety and parking tickets to pre-K programs and health clinics – behavioral science can provide insights to help governments build better outcomes and experiences” (ideas42, n.d.). John (2017a) also underlines the cooperation with researchers – through “an official evaluation or in another form of partnership” – to test the impact of “a new way of doing business in the public authority” (John, 2017a, p. 478).

Finally, the local level has also been associated with flexible and experimental arrangements of nudge provision. Experiments are being used to find what works to achieve behaviour change and engage citizens (John et al., 2011). The recursive experimentation of public nudges at the local level becomes particularly important when they address habitual behaviours or behaviours that need repetition before becoming ingrained. As the impact of nudges might not be lasting, interventions may need to be repeated and reinvented to keep their effectiveness, which reiterates the need for citizens’ continuous engagement. Nudges might have to be integrated in wider processes of permanent dialogue between citizens and local authorities:

“nudges work best when seen as part of the local policy process – part of the necessary interaction between policy-makers and citizens. This would imply that nudges should be repeated and varied by these local agencies, as they learn from experience. (...) In this way, the time-limited nature of nudges is not a disadvantage because public agencies and other partners are continually using a wide range of time-limited strategies to improve public policy” (John et al., 2011, “Experimenting with Ways to Change Civic Behaviour” section, para. 11).

Public nudging has been associated with interventions taking place at the local level, but it also has shown potential at other levels of decision-making. This becomes clear with an analysis of the BIT’s different lines of work in section 3.5.1.2 below.

#### **3.5.1.2 The work of behavioural units: the Behavioural Insights Team**

It is important to take a close look at the work of behavioural units that have been created inside governments and the public nudges that they have implemented. Governmental units with behavioural expertise such as the BIT have become famous for helping people pay taxes on time, save energy and register for organ donation. But what exactly do they do? The focus in this section is placed on the BIT as, being the first of its kind, it has a considerable number of reports published about its work. It is undoubtedly a leading unit, with similar ones later created having followed the BIT’s lead and advice. The team has also raised concerns that governments are using behavioural insights illegitimately to manipulate citizens; going through the team’s different lines of work is important to tone down these abstract concerns.

As discussed below, most of the team’s work remains largely irrelevant from a legal and regulatory perspective, since their interventions concern mostly administrative practices in existing processes of the executive. Whether concentrated in a single unit or dispersed across governmental departments, behavioural knowledge has stepped in to improve existing procedures and policies. This in itself tones down



concerns that the state is using behaviourally inspired tools without proper checks and balances.<sup>103</sup> As Sunstein (2016) also notes:

“the work of the Behavioural Insights Team in the United Kingdom and the Social and Behavioral Sciences Team in the United States has produced significant changes in behaviour, including dramatic increases in the take-up of important programs, but generally without raising serious ethical issues. A look at concrete practices puts the ethical issues in far better perspective. [reference]” (Sunstein, 2016, p. 26).<sup>104</sup>

### **i. Administrative arrangements**

The BIT’s reports allow for the separation of the team’s work into different lines of action. One important line of their work, where nudges have made an important contribution, concerns their cooperation with other public departments as a provider of behavioural expertise. In this exercise, the BIT has attempted to help these departments identify opportunities in which behavioural insights might be applied. The team’s contributions in this domain have been mostly of an operational nature. In order to simplify and facilitate the interaction between government and citizens as well as to improve the functioning of public services, the unit has streamlined processes, improved programme delivery and assisted in ways to enhance the attainment of policy goals by changing internal processes.

This type of work addresses a set of administrative arrangements and practices, which may be more or less formalised. Regardless of their broader relevance from a

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<sup>103</sup> Again, the fact that these nudges do not surface the law does not eliminate normative concerns. However, analysing specific practices and the goals that they pursue tones down some of these concerns.

<sup>104</sup> Regarding this behavioural team, one issue raising concern has been their transformation into a social purpose company. In 2014, the team became a social purpose company owned by the UK Government, Nesta (an innovation charity) and their employees (The Behavioural Insights Team, 2016). They have offices abroad and work closely with the UK private and public sector as well as other governments and international organisations. According to John (2018), the team arrived at a stage where being inside government was a constraint to conduct trials, access materials or employ people, which explains why the BIT became a social purpose company (p. 81). With this move, “privatisation has reached beyond public services and utilities to include an actual government policy team” (Niker, 2014).

policy perspective, these arrangements and practices remain largely irrelevant from a legal perspective. They include the informal administrative arrangements mentioned before. This type of action likely fits what Sibony and Alemanno (2015) call “simplification”. The authors clarify the legal value of this type of behaviourally informed intervention: “From a legal standpoint, simplification typically involves low-level legal instruments, such as administrative guidance documents requiring forms to be shortened and some information made more salient, official letters to be written in plain language, and red tape cut” (Sibony & Alemanno, 2015, p. 16).

However, it is important to note that, as administrative practices, some of these approaches play an important role in furthering legally relevant goals (e.g. compliance). In fact, and incorporated in this first line of work regarding the above-mentioned operational and administrative contributions, it is important to highlight the team’s work in areas of enforcement and compliance. Their report *Applying behavioural insights to reduce fraud, error and debt* provides some examples of this. One example, in cooperation with Her Majesty’s (HM) Revenue and Customs department, tested social norm messages in letters to increase tax debt payments and tax compliance (The Behavioural Insights Team, 2012). Their cooperation with the UK’s Driver and Vehicle Licensing Agency is another example of this line of work, with letters being designed to increase the collection of car taxes (The Behavioural Insights Team, 2012; Service et al., 2014). Another example results from their cooperation with the West Midlands Police: the team reframed the penalty notice sent to speeding drivers, in order to increase penalty payment compliance and reduce re-offence (The Behavioural Insights Team, 2016).<sup>105</sup>

These examples represent administrative practices that can nonetheless be important from a legal perspective in that they pursue an important goal for the law (compliance, in this case). In other words, there are nudges that, while not provided through legal means, can nonetheless work as an important auxiliary to law

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<sup>105</sup> Other examples can be identified, such as personalised text reminders being used to enforce the payment of court fines; again, their work in the report *Applying behavioural insights to reduce fraud, error and debt* (The Behavioural Insights Team, 2012) is worthy of mention.

enforcement. These uses are the ones behind the claim that some behaviourally informed interventions are a cheap alternative to costly enforcement mechanisms.

## **ii. The BIT's contribution to regulation**

The team has done much more than the innovative task of spreading the word of behavioural sciences to other governmental departments to improve their processes and programme delivery. Some examples of their work represent important contributions to law and regulation. In fact, and in an attempt to elaborate on the BIT's role in regulation, it is important to highlight their work in consumer policy, especially in the area of information provision and redress.

The BIT has had an active role in developing proposals that enable consumers to access relevant data about the goods and services they use. Their report *Better Choices, Better Deals* (The Behavioural Insights Team & the Department for Business Innovation & Skills, 2011) along with Halpern's more detailed account in his book *Inside the Nudge Unit* (Halpern, 2015) reveal the team's involvement in the development of regulatory proposals with a clear behavioural component. For instance, regarding the "midata" initiative – as stated before, an initiative focused on providing consumers with data on their consumption in machine-readable format to facilitate comparison and switching – the BIT led discussions in a taskforce that brought together businesses and consumer associations (Halpern, 2015). Their work on this front brought about important results. In fact, the "midata clause" – which, as mentioned before, gave the Secretary of State for Business the power to mandate firms to provide their customers with their consumption data in machine-readable format – was passed into law by the Enterprise Bill in 2013 (Halpern, 2015).

The last example shows the BIT's unique and critical role in leading the discussion of behaviourally informed regulation. In a similar vein, their contribution to a regulatory framework of electronic cigarettes can also be highlighted. The team regarded electronic cigarettes as a product that could help smokers who were trying to quit, since switching one habit to a less harmful one is clearly easier than quitting altogether: e-cigarettes "seemed much more likely to work as an effective substitute

given their similar feel, movements and perhaps even physiological effects of a cigarette” (Halpern, 2015, “The curious case of electronic cigarettes” section, para. 4). According to Halpern (2015), the team’s position was one that strongly opposed the ban of the product from the market and rather encouraged regulation focused on the quality and safety of this product.<sup>106</sup> Whether their position on the regulation of e-cigarettes is desirable or not from a public health perspective is out of the scope of this section, but what this example once again illustrates is the BIT’s active role in shaping behaviourally informed regulation.

The collaborative approach adopted by the team in regulatory efforts with the inclusion of important business stakeholders is in line with “institutionalist theories of regulation”<sup>107</sup>, which view regulation as a collective endeavour rather than a top-down process of conflict between public and private interests. In this collaborative sense, the role of the state is to set a vision and engage stakeholders, rather than to impose rules in a top-down fashion.

Their work showcases a unit that not only initiates behaviourally inspired projects – on its own and in cooperation with other departments – but also a team that can provide input to initiatives other than nudging, making sure that regulation contemplates a behavioural dimension. It is indeed worth noting that their work on a regulatory front goes beyond nudging; additionally, any nudges that may emerge from this work do not really fall under the type of nudges discussed in this section – designed and implemented by the state – but rather those designed (or co-designed) by the state and implemented by businesses.

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<sup>106</sup> See chapter 8 of Halpern (2015) on the twists and turns of the policy debate about e-cigarettes in the UK.

<sup>107</sup> I draw again the reader’s attention to Morgan and Yeung (2007) on the distinction between public interest theories of regulation, private interest theories of regulation and institutionalist theories of regulation.

**Table 3. The work of the Behavioural Insights Team: a summary**

	Area of work		
	Internal processes inside public administration		Regulation (BIT as behavioural stakeholder, discussant, initiator or co-initiator of behaviourally inspired regulation)
<b>Examples</b>	Reminders to show up in hospital appointments, implementation intentions in job centres	Reminders for tax payments or fines	“Midata” clause, recommendation on regulatory framework of e-cigarettes, testing policy options in cooperation with the private sector
<b>Meeting the law</b>	None in the narrower sense.	They are relevant for advancing legally important goals (enforcement and compliance).	They are relevant for regulation, not for the realm of public nudges.

### 3.5.1.3 Goals advanced

As explained in section 3.5.1.1, public nudges at the local level tend to be about furthering pro-social goals, not really helping individuals bridge the gap between their behaviour and preferences or addressing the exploitation of behavioural biases (the rationales discussed in section 2.3.1 and 2.3.2). Likewise, public nudging carried out at national level to simplify programmes and services and their delivery is not so much related to these goals either.

In fact, on the matter of administrative practices – and some light has been shed on this point by the examples of the BIT above – it is important to note that these public nudges have little to do with the reasons invoked in the previous chapter for intervention (section 2.3). Within this context, the state is usually attempting to advance goals such as compliance or a more efficient use of public resources.

This very different goal of efficiency in programme and service delivery is important when it comes to normative considerations about nudges in this context. Normative

concerns on the state paternalistically nudging citizens are not applicable here. In fact, this type of public nudging introduced in areas of policy delivery is rather about pursuing a legitimate goal of the state (i.e. the efficiency and effectiveness of public resources) through rearrangements in administrative services, policies and practices.

### 3.5.2 A summary of public nudges

The following table summarises the two types of public nudges:

**Table 4. Types of public nudges**

<b>Types of public nudges</b>	<b>Examples</b>	<b>Meeting points with the law</b>
<b>Provided by legal/regulatory means</b>	Organ donation, tax lotteries	They are part of the legal landscape.
<b>Administrative practices and policy delivery</b>	Reminders to pay fines or show up in hospital appointments	Some may pursue legally relevant goals (e.g. enforcement).

In sum, two types of public nudges have been presented. While one category consists of nudges that are part of the legal landscape, the other remains largely in the realm of administrative practices and the delivery of public services. The latter nudges tend to pursue pro-social goals as well as efficiency and effectiveness in the provision of public services and policies. These rationales differ from the ones invoked for regulatory nudges (see section 2.3.), even if they are both state-designed nudges. This also means that public nudges and regulatory nudges differ in the underlying role of the state at stake in their design. In the former case, the state implements nudges as the provider of public services and policies; in the latter, the state acts in its regulatory capacity.

Finally, these differences in goals and underlying role of the state also mean that public nudges and regulatory nudges can also be distinguished by the types of behaviours that they target and the views of the individual vis-à-vis the state on which they rest.

### 3.5.3 Challenges and solutions

The fact that this category on its own is circumscribed to settings or choice architecture arrangements in which the state is in direct contact with its citizens does not mean that their development is free from practical challenges.

As consumer distrust may pose a significant challenge for companies to overcome when designing and implementing nudges by themselves, likewise state-led nudge initiatives may create negative reactance for both types of public nudges discussed. As an illustration, in the Netherlands, passing a default on organ donation in the lower house of representatives led people who had opted in under the previous system to actually opt out, thus voicing their disagreement with the idea that the state can impose its will over that of individuals.<sup>108</sup> Anticipating this challenge might be an important consideration for the policy-maker.

Public reaction is also an aspect discussed by John et al. (2011) in their book on public nudges implemented at local level. As already mentioned in section 3.5.1.1, public authorities might find it beneficial that the public nudge comes from a third party rather than the state, which obviously forces them to look for local partners. In a time featuring suspicion of policy-makers, nudge interventions may work better if implementation is done by a party other than the government (John et al., 2011). Public reactions to the possibility of manipulation by the state become relevant in the discussion of operational challenges to the extent that they may affect the viability and effectiveness of a state-designed nudge.

These challenges affect both types of public nudges, those provided through legal means and those embodying operational administrative changes. Other challenges are specific to each type. For instance, public nudges that do not surface the law become a problematic category, prone to accusations of illegitimacy. As Alemanno and Spina (2014) argue, the idea that the state may influence citizens' behaviour calls for the "need to ensure that these tools are subject to appropriate control of public

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<sup>108</sup> See the NRC newspaper articles on donor de-registration following the likely introduction of an opt-out system for organ donation in the Netherlands: Bolle (2016) and Back (2016). The law was eventually passed in 2018 and it will enter into force in 2020 (see Lieber, 2018).

power” (pp. 444-445).<sup>109</sup> Whether the fact that these initiatives do not surface the legal realm demands the development of a code of conduct to guide the use of behavioural sciences by public authorities<sup>110</sup> or whether such code would simply just create a false sense of security are discussions beyond the scope of this chapter. However, the goals that such public nudges pursue and their concrete applications tone down these concerns.

Another challenge that public nudges provided administratively face is related to the content of the intervention. Even if pursuing legitimate goals, this type of behaviourally informed interventions may pose data protection and intrusiveness concerns. In this regard, the example in the BIT’s 2012 report on letters sent to individuals who have failed to pay a tax on their cars using a picture of the recipient’s own vehicle is an insightful one (The Behavioural Insights Team, 2012, p. 26). Individuals might perceive this level of personalisation and granularity as excessive, even if the nudge has a legitimate goal.

Another challenge for nudges that do not surface the law may actually be the law itself. As Halpern (2015) points out, there may be “quasi-legal” challenges, for instance, when the wording of a particular document is already set out in a piece of legislation. When the wording of a document is already set forth in legislation, it becomes rather difficult to re-draft such a document (e.g. letter) for simplification or nudge design purposes.

Nudges that do not surface the law may indeed face challenges, but so do nudges that do. In fact, nudges that surface the law more directly may still be objectionable. Sunstein’s (2016) remarks concur with this idea: “democratic authorization ought not by itself to dissolve otherwise reasonable objections to manipulation. The most obvious problems arise if the national legislature has illegitimate ends” (Sunstein,

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<sup>109</sup> See Alemanno and Spina (2014) on the need for “checks and balances” of informal behavioural tools.

<sup>110</sup> It is worth mentioning the report *Tools and Ethics for Applied Behavioural Insights: the BASIC Toolkit*, the practical and ethical guidelines for policy-makers interested in applying behavioural insights to public policy developed by the OECD (2019). See also Fabbri and Faure (2018) on guiding principles for the design and development of behavioural policies.



2016, pp. 105-106). There are nonetheless official checks and balances for the law, which tones down this concern.

Other operational challenges (on existing behavioural evidence, for instance) apply when the state engages in the design and implementation of nudges. For instance, one concern is that repeated exposure to behaviourally inspired interventions will produce “diminishing returns” (Sanders, Snijders, & Hallsworth, 2018, p. 150). However, these will be discussed under the next nudge category (regulatory nudges) in section 3.6 below, the most relevant category for the purposes of this thesis.

### **3.6 Regulatory nudges**

Two different categories of nudges have been discussed so far, as well as some of their more direct meeting points with the law and the operational challenges encountered in design and implementation stages. The first category – private nudges – does not meet the law so directly: it comprehends mostly market solutions supplied to consumers in new or existing products, the role reserved to the state being circumscribed in this instance. The second category – public nudges – remains confined to those settings in which the state establishes direct contact with citizens. Not so many public nudges directly meet the law.

Section 3.6 addresses a third category: regulatory nudges, those designed by the state and implemented by business. In this case, nudges are designed as part of attempts by legislators and regulators to influence individual behaviour through regulation, so this is the nudge category that more explicitly touches the law in the narrower understanding of *meeting the law* adopted in this chapter. In here, nudging acts as law, as per the terminology of section 3.3.

Regulatory nudges are some of the solutions that can be conceived to regulate and interfere with market practices. The possibility to interfere with private sector nudging – which may also include the introduction of regulatory nudges – regards what Sibony and Alemanno (2015) understand as the first instance in which nudging meets the law: “regulation of private nudging is the first point of contact between

law and nudging” (p. 11). In other words, interventions may be devised to “regulate the corporate activity of context shaping” (Sibony & Alemanno, 2015, p. 18). Furthermore, this sort of regulation might not only intend to counteract harmful and misleading market practices, but also externalities of individual behaviour and behavioural biases (as explained in sections 2.3.1 and 2.3.2).

Section 3.6.4 addresses design and operational challenges of regulatory nudges. Before going into those practical challenges, it is nonetheless important to keep some examples in mind. Indeed there is a plethora of regulatory nudge examples to be ultimately implemented by businesses. These examples might be useful to understand the discussion that follows not only on the practical challenges, but also on the novelty of nudging. It is precisely within this regulatory context that the concept seems to have revealed part of its novelty, as discussed below.

### **3.6.1 Examples of legislative and regulatory nudge initiatives**

The market for credit cards is one where behavioural biases such as time-inconsistent preferences and over-optimism result in clear welfare losses for the consumer. Behavioural sciences may inform several consumer protection solutions in this market – and nudges may well be some of them: making the “dangers of making the minimum payment” salient, providing yearly statements on the cost of credit, increasing the minimum payment and implementing pre-commitment devices (Ramsay, 2012, pp. 66-67). This section identifies legislative and regulatory nudge initiatives designed by the state and implemented at business level in the US and the EU. It does not intend to be an exhaustive list, but rather provide vivid examples of regulatory nudges.

#### **3.6.1.1 The United States**

The Credit Card Accountability, Responsibility and Disclosure Act was passed into law in 2009. Some of the consumer protection provisions it introduced made use of nudges. One of them was the introduction of a particular default: the refusal of transactions exceeding a credit limit (instead of a fee) was set as the default (see

Lunn, 2014, p. 27). Lenders were also required to include in statements two types of calculations: the time and cost of paying off one's balance through minimum payments and the cost of making this payment over 36 months (Lunn, 2014, p. 27). To avoid an “anchoring effect” on the minimum payment, credit card statements compare the costs of these two alternatives. The introduction of other behaviourally informed measures such as the prohibition of inactivity fees or an extended notification period for changes in terms and conditions have made this Act “one of the most prominent applications of behavioural economics to policy” (Lunn, 2014, p. 27).

Another US example is the default introduced by the 2010 Affordable Care Act on the automatic enrolment in health care plans, with employers with over 200 employees being required to automatically enrol their employees in health care plans (see Sunstein, 2014a).<sup>111</sup> Finally, also food has been the object of behaviourally informed nudge measures, with the introduction of calorie labelling requirements in restaurants and food chains.<sup>112</sup>

### **3.6.1.2 The European Union**

Many behaviourally inspired nudge initiatives can be identified at EU level in a wide range of policy areas. In fact, contrary to claims that the application of behavioural evidence at EU level has been limited (e.g. Alemanno & Spina, 2014), behavioural insights are already included in the European Commission's *Better Regulation Guidelines and Toolbox* (European Commission, 2017a, 2017b). This is a significant step towards formally acknowledging the potential contribution of behavioural insights to the design and review of European initiatives.

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<sup>111</sup> For more US examples such as the encouragement of employers to adopt automatic enrollment pension plans introduced by the 2006 Pension Protection Act, see Sunstein (2014a).

<sup>112</sup> To implement the labelling requirements on nutrition introduced by the Affordable Care Act in 2010, the Food and Drug Administration (FDA) developed measures that entered into force in 2018. See Food and Drug Administration (2018) and Sunstein (2014a).

At EU level, an important default was introduced in a 2011 Directive, known as Consumer Rights Directive.<sup>113</sup> Pursuant to article 22 of the Directive, traders have to ask for explicit consent from the consumer for any additional payments beyond the “main contractual obligation”; such consent can no longer be inferred from default options. This means, for instance, that firms offering additional services to their main activity can no longer present those options to consumers with pre-selected boxes (e.g. travel insurance can no longer be pre-ticked when buying a plane ticket).<sup>114</sup> Before the Consumer Rights Directive, consumers had to untick pre-checked boxes in case they were not interested in these services. Inertia and inattention made the default stick, possibly causing detriment for consumers who were subscribing to ancillary services that they did not want. Money is ultimately the consumers’, so any expenses in addition to the main one should result from their explicit consent and active choice.

On online gambling, the European Union has resorted to recommendations to Member States rather than a piece of EU legislation. A 2014 Recommendation by the European Commission<sup>115</sup> calls on Member States to introduce changes in their national regulatory frameworks regarding aspects such as information requirements, commercial communication, self-imposition of limits, the use of alerts on winnings and losses and self-exclusion mechanisms.

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<sup>113</sup> Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council, OJ L 304, 22.11.2011, pp. 64–88.

<sup>114</sup> This default is an example of a counter-nudging initiative, that is to say, a regulatory initiative to counteract a misleading practice going on in the market. As an illustration, a famous Italian competition case against Ryan Air highlights the misleading nature of practices in the airline market regarding travel insurance. Ryan Air, in particular, used to default its clients into buying insurance and, in order to opt out, the consumer had to select the option “No Grazie” (No, thanks) from a list of countries of residence (see Autorità Garante della Concorrenza e del Mercato, 2014).

<sup>115</sup> Commission Recommendation of 14 July 2014 on principles for the protection of consumers and players of online gambling services and for the prevention of minors from gambling online (2014/478/EU), OJ L 214, 19.7.2014, pp. 38–46.

In the domain of tobacco, Directive 2014/40/EU<sup>116</sup> [2014 Revised Tobacco Products Directive] introduced several changes in the packaging and labelling of tobacco products. Among others, mandatory graphic health warnings were introduced. These will be discussed in chapter 5.

With respect to EU initiatives, it is also important to underline the efforts to conduct market and behavioural research at EU level by the European Commission mentioned in chapter 2. These studies on issues such as food information, energy labelling and social media advertising might inspire potential future regulatory initiatives.

Before addressing the main operational challenges of regulatory nudges at design and implementation stages, it is important to elaborate further on the understanding of regulatory nudges adopted in this thesis (section 3.6.2) and explain what makes nudging a novel concept and how regulation is related to such novelty (section 3.6.3).

### **3.6.2 Regulatory nudges and understanding adopted: clarifications**

Section 3.6.1 highlighted some examples of regulatory nudges. This section clarifies the understanding of regulatory nudges for the purposes of this thesis. Besides being designed by the state and implemented by business with a public policy goal in mind, there are other aspects worth clarifying.

For the purposes of studying the incorporation of nudging into the regulatory domain, the understanding of this concept will be close to its initial definition. A regulatory nudge is generally understood as an intervention that does not restrict individual choice – at least not to the extent to which other tools might – and which represents a *slight* choice architecture change at the point of decision-making. It steers people in a certain direction, without making use of monetary incentives or

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<sup>116</sup> Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC, OJ L 127, 29.4.2014, pp. 1–38.

coercion. This direction is dictated by either a pro-self or pro-social public interest goal and thus it might (negatively) reflect on the business activity of a firm or an industry. Unlike Hansen's (2006) definition, a normative goal is attached to the tool, which also allows for a departure from firms' nudging attempts.

The use of the word *slight* is intentional. In the original definition, Thaler and Sunstein (2008) mention "any aspect of the choice architecture", using as an example the placement of fruit at "eye level" (p. 6). Also Hansen (2016) understands nudging as "any attempt" to influence behaviour. However, from a regulatory point of view, "*any*" change in choice architecture that acts without forcing any course of action upon individuals or changing significantly economic incentives might interfere more or less fundamentally with choice architecture (as explained in section 2.4.1). Allowing "any" change would include regulation that acts more ex ante and upstream in individual's choice architecture (e.g. requiring retailers to display fruit prominently or display restrictions on the sale of tobacco).

"*Any*" change in individual choice architecture includes interventions that act more or less fundamentally in contexts of choice. However, if more distant ex ante measures were also considered in the understanding of regulatory nudging that would mean that tools that nudges complement or compete with in the regulatory sphere would be absorbed by the concept. After all, many legal and regulatory initiatives embodying restrictions on business conduct ultimately result in a restructuring of individuals' choice environments, without involving coercion on individuals or changing their incentives. Put differently, failing to make this distinction would include in the understanding of regulatory nudges a substantial amount of regulation on commercial and marketing practices that represents a much more fundamental interference with individual choice architecture. This self-imposed restriction on the understanding of nudging for the purposes of regulation means that nudges taken as such in spheres other than regulation might not hold the same status in the regulatory domain. The understanding and examples of private and public nudges may reflect a more inclusive and liberal approach than the one

taken for regulatory nudges. Adopting a more inclusive definition could nonetheless render the concept meaningless, while compromising the contribution of this thesis.

While numerous tools interfere with choice architecture without changing incentives or coercing individuals, regulatory nudges represent a *minimal* interference in this architecture, thus acting close to the point of decision-making. Regulatory nudges are not about “any” restriction on individual choice architecture done through ex ante regulation (i.e. not seen by the individual). They rather embody changes that operate closer to the individual.<sup>117</sup> In addition, by minimally changing individual choice architecture, they are presumably not as invasive on business conduct as other regulatory instruments.

This understanding matches the widespread academic understanding that regards nudging as a minimalist approach. In this respect, the distinction between “code” and “nudge” by Calo (2014) is insightful. Calo (2014) uses “code” when regulators make changes in the physical environment “to make certain conduct more difficult or costly”, whereas nudging refers to guidance towards certain behaviours (p. 775). The understanding of regulatory nudges as tools acting close to the individual – and choice architecture also encompassing measures that are more distant to individuals – is implicit in Bhargava and Loewenstein (2015) too, when they state that “a policymaker must decide whether to intervene proximally (e.g., mandating caloric displays), or more distally (e.g., reducing access to low-nutrient foods)” (p. 396).<sup>118</sup> Also the reference to the word *slight* bears resemblance to Mongin and Cozic’s (2018) understanding of nudging as “an intervention that interferes with the choice conditions *minimally* [emphasis added]” (p. 108). Bubb and Pildes (2014), too, describe nudging as a “minimalist” approach to regulatory action (p. 1595).

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<sup>117</sup> This closeness to the decision-making moment has been identified as one of nudging’s main limitations: “A clear limitation of Nudge lies therefore in its spatial ambitions, or lack thereof, and in its obsessions with the immediacy of the decision-making moment” (Jones et al., 2013, p. 171).

<sup>118</sup> Also Alemanno and Garde (2015) in the strategies to address non-communicable diseases distinguish between measures that target “individual behaviour” and those which target “the environment within which individuals make decisions” (p. 13).

In light of the above, regulatory nudges such as defaults and information-based nudges (e.g. warnings, labels, reminders, framed disclosure) are the main regulatory nudges in mind. In comparison to information-based nudges, defaults embody a higher degree of interference with decision environments. However, since they have been welcomed as important nudges in regulatory discourse, the design challenges discussed in the thesis might be applicable to them.

Nevertheless, the design challenges discussed in the following chapters are more applicable to nudges grounded on information. This is explained not only by their reliance on behaviour change for effectiveness, but also by their proximity and visibility to individuals. There is also a widespread idea that this particular type of nudges should be subject to intensive experimental testing.

### **3.6.3 What makes nudging a novel concept?**

Policy-makers eagerly welcomed the idea of nudging citizens. For instance, in 2010, David Cameron, then British Prime Minister, in a TED talk presentation entitled *The next age of government*, could not curb his enthusiasm. Cameron argued that our deeper understanding of human behaviour is “a great opportunity to put that knowledge and information to greater use” (Cameron, 2010). While referring to the frequently cited example of the use of social comparisons and targeted information in electricity bills, he pointed out the potential of nudging: “That sort of behavioural economics can transform people’s behaviour in a way that all the bullying and all the information and all the badgering from a government cannot possibly achieve” (Cameron, 2010).

However, the concept of nudge does not seem to be entirely new. Designing decision contexts in order to achieve particular ends is an idea that has been around for some time. Behavioural insights have been influencing governance since the 19<sup>th</sup> century (Jones & Whitehead, 2018, p. 314). John (2017a), in turn, traces the interest in policy experiments back to the 1920s. To an extent, interventions analogous to



the ones of the BIT described before had already been tried.<sup>119</sup> With this in mind, what exactly makes nudging an original concept?

Some elements justify the concept's novelty. One concerns the use of developments in behavioural economics to account for individual behaviour, which is an aspect underlined by Jones et al. (2013) when stating that “what marks out this new phase of behavioural government is that it is based on foundational claims of a fundamental shift in our understanding of the human condition” (Jones et al., 2013, p. 164). Besides the proliferation of new behavioural findings, the visibility that these have acquired in public policy also played a role:

“What renders the current efforts at integrating behavioral research into policy-making different than in the past is not only the broader number of empirical findings about human behavior that have been identified in recent times, but also that of being part of a more general trend visible in public administrations which raises the profile of how to affect decision-making” (Alemanno & Spina, 2014, p. 437).

Finally, aspects such as the inclination to regard individual behaviour as an “independent variable” influenced by public action and the relationship between psychological insights and experimental approaches are also novel elements of the recent “psychological state” (Jones & Whitehead, 2018).

### **3.6.3.1 Choice environments as an object of regulation**

Another reason explains the novelty of the concept. While design techniques may have been used for a long time to influence behaviour, until the publication of *Nudge* this endeavour remained overlooked as a focus of regulation (Yeung, 2016). Behavioural findings and the prescriptive nature of the nudge concept seem to have brought with them a new role for the law: the organisation of the context in which people make decisions. As Amir and Lobel (2008) point out, “*Nudge* and *Predictably Irrational* take a significant step beyond the documentation of behavioral biases and

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<sup>119</sup> See John (2017a) on early policy behavioural experiments and how the interest for these experiments changed over time. See also Jones and Whitehead (2018) on the experimental state.

attempt to identify general principles by which one may construct and improve policy” (p. 2117). The authors go even further, arguing that these books “provide the basis for a rich set of reforms in a myriad of legal fields” (Amir & Lobel, 2008, p. 2137).

The possibility to inform legal reform in many fields is what seems to account for the novelty of the concept and the enthusiasm around it. This potential to organise choice architecture through regulation or legislation also seems to distinguish nudging from other concepts such as social marketing. While some social marketing and nudge applications may overlap – as well as the issues that they address – social marketing was never regarded as a legal instrument or a concept susceptible to inform regulation. Contrary to social marketing, nudging is not about information given to the consumer or consumer attitudes, but the potential to change choice environments; in other words, nudging is not about changing the individual, but the structure in which choices are made (Bergeron et al., 2016, pp. 187-188).

Nudging’s added set of prescriptions to the behavioural sciences (e.g. Baron, 2010) meant a new role for the law. Changes in individual choice architecture could already be found in regulatory attempts, but they remained ignored as an entire possible object of intervention. In other words, solutions drawing on behavioural insights to guide individual behaviour already existed, but they were somewhat dispersed and not knowingly perceived as part of a choice architecture agenda.<sup>120</sup>

The concept of nudge provided an appealing and inclusive *framework* to previously scattered regulatory efforts and came with the potential to inspire many more legal initiatives. Stoker (2014) refers to this inclusiveness more generally at policy level: “The nudge paradigm developed by Thaler and Sunstein helps in turning those

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<sup>120</sup> For instance, the use of defaults to achieve a particular goal is not a new one. In the context of organ donation, Portugal set presumed consent on organ donation in a 1993 law, long before *Nudge* was published and defaults gained popularity as a tool. Under number 1 article 10 of Lei no. 12/93, of 22 April, “São considerados como potenciais dadores post mortem todos os cidadãos nacionais e os apátridas e estrangeiros residentes em Portugal que não tenham manifestado junto do Ministério da Saúde a sua qualidade de não dadores” [All national citizens, stateless persons and aliens residing in Portugal who have not expressly informed the Health Ministry they refuse to be donors are hereby considered potential post mortem donors].

disparate studies into a coherent framework for policy development” (Stoker, 2014, “Doubts about the Evidence Base for Nudge” section, para. 1).

### **3.6.3.2 New tools and new goals**

As explained above, the novel contribution of nudging consisted in the introduction of choice architecture as an object of regulatory intervention. The regulatory vision deeply embedded in nudging – and which seems to be the fundamentally new element of the concept – did not only provide the law with a new role and rationale for intervention or, put differently, with the “commitment to enhancing individual choice in regulatory design” (Amir & Lobel, 2008, p. 2125). The regulatory focus of nudging also brought new tools to regulate individual behaviour (e.g. Di Porto & Rangone, 2015) – adding to coercion, incentives, prohibitions, and persuasion – as well as new shapes and even new goals for existing tools. For instance, with regard to information provision, a tool with a long-standing tradition in regulation, nudging brought several alternatives for this technique’s content: framing, personalised feedback, reminders, warnings, simplification, to name a few. Considerations of content and timing in key decision nodes became critical. In fact, the behavioural turn in law and policy has attempted to make disclosure of information “helpful and informative” (Alemanno & Spina, 2014, p. 437).

When it comes to defaults, nudging gave them a new purpose: stickiness. Defaults consist of rules that apply unless the affected parties take action and they are pervasive in the legal system, especially in contract law. They are introduced “because the law needs *some* rule when the parties have not specified otherwise” [emphasis in original] (Willis, 2013, p. 1157). Defaults may be sticky, but that is not the main reason why they are designed. Nudge defaults are different. Their stickiness is what is exploited: they are designed “to alter the ultimate positions of the parties” (Willis, 2013, p. 1157).

The awareness of a default’s power to stick seems new to the law. As Sibony and Alemanno (2015) argue: “What the behavioural perspective brings to the existing use of defaults in the legal system is a degree of awareness and deliberation about

the power and weakness of defaults” (p. 15). This stickiness power of defaults opened regulatory opportunities for default setting that were overlooked before nudging made its way into regulatory discourse.

### **3.6.3.3 The framework and the tool: making distinctions**

With the regulatory vision of nudging, decision-making environments have become “a new object of governance” (Jones et al., 2013, p. 166). Nudging has also come with the acknowledgement that an enhanced understanding of human behaviour can be used not only to better design regulatory solutions, but also better predict the consequences of traditional regulation. It is nonetheless important to note that nudging, in particular the book *Nudge* and the debate it triggered, may have contributed to bring choice architecture to the forefront, but nudging as a regulatory tool has materialised through minimalist rearrangements in such architecture. Nudging, the *tool*, may have even overshadowed other instruments that can be used to shape decision-making environments. There is indeed a difference between nudging, as a *framework* with a regulatory vision, and nudging the *tool*, consisting of a minimal interference in the choice environment. Nudge examples above reveal such minimalist approaches.

The regulatory vision of nudging has brought to light the broader concept of choice architecture. However, it has limited its policy analysis to tools that preserve individual freedom of choice (Bubb & Pildes, 2014). In fact, nudging, as a tool, is only one of the instruments that can be used to rearrange choice architecture and likely one of the least intrusive on such architecture. From a regulatory perspective, nudging is a tool that acts closer to the point of decision-making.

### **3.6.3.4 Materialisation of nudging as a regulatory tool**

Nudging may have materialised through minimalist approaches, but its affinity with regulation, including its potential to be a regulatory tool, is an important one from a novelty perspective. As nudge interventions (and associated experiments) already

existed inside academia, private sector and even public administration, regulatory nudges seem to constitute a distinctly new category.

Nudging *can* be incorporated in regulation. While this understanding represents a novelty in the concept, it also implies accepting that, contrary to claims that nudging is an “extra-legal” tool that does not require legislation or regulation<sup>121</sup>, nudging may need the law and regulation to materialise. State-designed behavioural nudges may be provided through informal arrangements (as explained in section 3.5), but others are provided through legal and regulatory action, as the examples discussed above illustrate.

The potential of nudging to be incorporated in regulation means that nudging can be prone to the challenges of regulation that other regulatory instruments also face. Section 3.6.4 below discusses some challenges of an operational nature that regulators as nudge designers face. In fact, while there are claims that traditional regulatory tools are more costly than nudging, the design and implementation burdens analysed below reveal that regulatory nudges pose many difficulties too.

### **3.6.4 Design and other operational challenges**

This section discusses practical operational challenges and unintended consequences that regulators may face when designing and providing nudges targeted at the individual to be ultimately implemented by the private sector. Some of them are not necessarily nudge specific or circumscribed to the regulatory world. In fact, some challenges may apply to designers of public and private nudges, while others may apply to other regulatory tools (behaviourally inspired or not). However, these challenges have not been seriously and thoroughly considered in the discussion of regulatory nudges.<sup>122</sup>

The design and implementation challenges discussed are those seen from the perspective of the regulator as a nudge designer. These challenges and ramifications

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<sup>121</sup> This may well be the case in a subset of nudges: private nudges and some public nudges.

<sup>122</sup> A particular set of challenges specific to regulatory nudges will be addressed in this thesis: design challenges brought about by iterative experimental testing.

are organised by *source* – regulator, consumer and business – depending on where the challenge is located from the regulator’s perspective. This divide is not clear-cut, with some challenges fitting more than one source.

### 3.6.4.1 Regulator

#### i. Evidence and lack of knowledge

Academic discussions have identified several evidence gaps regarding nudges that still need to be tackled. Behavioural evidence on the impact of nudges has not yet clearly addressed issues such as their relative performance, their long-term effectiveness<sup>123</sup>, the interplay between effectiveness and transparency<sup>124</sup>, the transfer of a positive behaviour from one context to another or even the creation of negative spillovers, compensating behaviours and other perverse effects.

Negative spillovers and other unintended effects may indeed represent important challenges that are difficult to address and anticipate, creating the need to understand the underlying mechanisms behind effectiveness in more fundamental ways (Grüne-Yanoff, 2016). Understanding such mechanisms might be crucial to success: “If a nudge is based on a plausible but inaccurate understanding of behavior, and of the kinds of things to which people respond, it might have no impact” (Sunstein, 2017, p. 20).

It also remains unclear whether sustaining effectiveness may depend on making the nudge dynamic or even strengthening its content, that is to say, whether impeding the decay effect of a nudge depends on changing it periodically or even making it more and more extreme. Furthermore, as knowledge on how nudges work becomes more and more widespread, their effectiveness may be compromised.

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<sup>123</sup> See Sanders et al. (2018) on the problem of long-term effectiveness and the identification of instances where this issue does not appear: one-off behaviours (behaviours entailing a single action, therefore not requiring any follow-up to the intervention), resilient shifts (where the intervention is strong enough to produce lasting change without requiring follow-up stimulus) and environmental changes (e.g. changes in the physical design of environments). As already mentioned, in the context of regulation, fundamental changes in the individual choice context are not considered (regulatory) nudges.

<sup>124</sup> See footnote 72 on studies that suggest that transparency does not impact the effectiveness of nudging.

When it comes to exposure, Sanders et al. (2018) distinguish between “structured” and “unstructured” repetition, with “structured repetition” being repeated follow-ups of the same intervention and “unstructured” consisting of the exposure to the same kind of intervention by different actors. According to the authors, “In both cases, the concern is that we may have a prior expectation that approaches become less effective with repeated exposure” (Sanders et al., 2018, p. 150). On “structured repetition”, while some evidence points towards diminished effectiveness, other studies support the reinforcement of the initial behaviour. The authors nonetheless hope that our understanding of the variables contributing to these effects improves, as more studies are conducted. On “unstructured repetition”, assessing the impact of such exposure becomes more difficult and “less tractable to analysis” (Sanders et al., 2018, p. 151). While evidence in this domain is hard to obtain, it remains a major concern for nudge designers who might witness diminished effectiveness of their interventions as others use similar approaches to address other behaviours.

Another practical challenge has to do with the use of experimental findings to justify intervention. Much behavioural evidence comes from settings that fail to consider the richness of the real world. Furthermore, not only is it unclear whether such evidence can be applied at population level, but also whether it can be used to justify policy. In fact, reservations about nudging are also related “to deeper objections to employing the laboratory findings of cognitive psychologists as the basis for broad-based social and legal policy formation” (Yeung, 2012, p. 146).<sup>125</sup>

Besides the lack of evidence on the effects of nudging (and even contradicting results), evidence on the link between the particular behaviour a nudge is addressing and broader (e.g. health, environmental) outcomes may also be lacking. Alemanno (2012a) stresses this point and contends that, while the causal link between tobacco consumption and health outcomes may already be established, this is not the case in other areas such as obesity where nudges are being considered as potential tools. Due to the variety of factors behind the problem, “the scientific evidence proving

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<sup>125</sup> See also section 2.3.1.5 on the problems of behavioural evidence such as robustness or external validity.

the existence of a causal relationship between overconsumption and adverse effects is still lacking” (Alemanno, 2012a, p. 40), which may jeopardise the legitimacy of intervention in certain domains.

In addition to lack of knowledge on the effects of nudging and certain behaviours and their outcomes, regulators may also ignore the feasibility and costs for business of implementing a certain nudge. In fact, while their lack of knowledge on “when informed choosers would deem themselves to be better off” (Sunstein, 2016, p. 46) is often emphasised, another piece of knowledge that regulators may ignore is the burden for businesses of introducing a particular nudge. This is an important concern for nudge designers as the burden and cost that businesses face to implement a nudge may be ultimately passed on to consumers through higher prices, for instance.

## **ii. Administrative costs**

Behaviourally inspired solutions including nudges are not necessarily inexpensive ones. Incorporating behavioural considerations in the design, implementation and monitoring of regulatory solutions involves substantial costs. In addition to “research and development costs” and “operating costs”, these costs include the “continuous study as to whether the chosen design attains its intended effect, both at the micro and macro levels” (Amir & Lobel, 2008, p. 2122). Whether such efforts are useful requires “cost-benefit analysis” (Amir & Lobel, 2008, p. 2123). This thesis is devoted to this type of analysis from a design perspective, in particular to whether iterative testing ideas are justifiable in the design of nudges for regulation.

## **iii. Business rights and other legal and institutional barriers**

Sunstein (2016) identifies four values that should guide any government when engaging in behaviour change. The values that should ethically constrain public action are welfare, autonomy, dignity and self-government. However, these values consider only nudging’s final addressees (individuals) and not the ones ultimately responsible for this tool’s actual implementation (businesses). These values should



restrict the power of the state over individuals, not companies. Similarly, there are values and rights that restrict the power of the state over firms.

Clearly not every behavioural intervention documented in behavioural science literature is scalable or, in other words, lends itself to be considered as a regulatory fix. If behavioural evidence suggests that consumers are more likely to go to the gym if they pay a monthly fee rather than a yearly lump sum amount in advance, does that grant lawmakers the leeway to forbid gyms to offer the possibility of a lump-sum payment to their clients? Such a restriction would likely constitute an important interference with the freedom a gym has to choose which payment options are available to its clients. There may be other instances where a nudge interferes with business rights such as the right of free speech.<sup>126</sup>

To put it differently, when considering whether to use a particular nudge, a regulator may have to ponder the values and rights not just of individuals, but also those of businesses. In fact, regarding the “lifestyle” regulatory framework at EU level, firms “have systematically invoked fundamental rights when challenging lifestyle measures”, namely “the freedom of expression and information, the freedom to choose an occupation and the right to engage in work, the freedom to conduct a business and the right to property” (Alemanno & Garde, 2013, p. 1778).

There are rights – perhaps even constitutionally protected rights – a nudge may be interfering with whose protection is crucial in a market economy.<sup>127</sup> Even if certain business rights are not absolute, there is still a burden on public authorities to justify that a certain restriction is proportionate. For instance, in order to restrict free speech for higher reasons like public health, authorities “must establish that the restriction is proportionate, i.e. that it is both legitimate and no more restrictive than necessary to address specific public health concerns” (Garde & Friant-Perrot, 2015, p. 70).

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<sup>126</sup> See, for instance, Bowman and Bennett (2013) on the interference of tobacco warnings with companies’ right of free speech.

<sup>127</sup> This idea also relates to the risk that a nudge faces of being challenged in court, which is addressed in section 3.6.4.3.i.

Other legal constraints may be related with who is designing the nudge and whether the nudge designer has secured legislative support for developing certain rules. If such support has not been secured, this clearly has an impact on the nudge's value and enforceability upon business actors. In other words, the implementation of regulatory nudges that were designed without an explicit mandate from the legislator may depend on voluntary compliance from industry. This may push the regulator towards nudges that the industry finds more acceptable. In fact, regulators can only nudge when they have been given delegated powers; in their absence regulators may need "to resort to less-effective nudges simply because designing better nudges would require rulemaking powers that they currently do not have" (Abdugaridov, 2016, p. 176).

Also power fragmentation across several state bodies can be a barrier to the creation of nudges. Not only may it add to administrative costs, but it can also be a source of incoherence between interventions. If different legislators (e.g. EU and national) and regulatory bodies engage in nudge design on the same matter, this might lead to a scenario where the individual gets exposed to nudges with contradictory messages.

A final legal and institutional constraint concerns legislative and regulatory processes and their amenability to the introduction of an iterative nudge design process. Behaviour change may require an iterative and recursive approach that may not be compatible with the rigidity of regulatory processes: "producing effective nudges requires a more flexible, iterative approach, which the regulatory process cannot accommodate" (Abdugaridov, 2016, p. 160). Companies directly interact with consumers and recursively check whether their actions are producing the intended impact, but regulators may be constrained in their ability to do the same. This thesis will address this point.

The legal and institutional constraints identified here are critical and mostly specific to regulatory nudges. They also explain (along with other reasons) why regulatory nudges have been mostly circumscribed to disclosure, defaults and simplification

initiatives<sup>128</sup>, while nudges in other spheres usually contain a more diversified range of interventions.

### 3.6.4.2 Consumer

#### i. Behavioural effects and spillovers

Consumers are complex and their behaviours may interact in a dynamic way. Interventions designed to promote a particular behaviour may have consequences and spillovers beyond the specific behavioural outcome that they target. Given the array and interaction of interests that an individual has, nudges may produce spillover effects, that is to say, a nudge intended to advance one particular interest “will have unintended and possibly adverse effects on other interests that the individual may value just as much – if not more – than the one targeted by the nudge” (White, 2016, p. 23).

Understanding the complexity posed by the interaction between behaviours is crucial when designing nudges. Streams of behavioural research that attempt to gather a more systematic view of behaviour go by many names, including licensing, behavioural spillovers and compensating behaviours, thus reflecting this dynamic relationship across behaviours.<sup>129</sup> In fact, while the impact of an intervention can be strengthened by positive spillovers, “it can also be severely hindered, or completely

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<sup>128</sup> See, for instance, Alemanno (2015a) on disclosure, defaults and simplification:

“This emerging scholarship successfully identified a set of fully operational regulatory tools that, by reflecting empirical findings of human behaviours, promote regulatory goals while maintaining individual authority, ownership and control. [reference] It predominantly consists of disclosure requirements, default rules and simplification [reference]” (Alemanno, 2015a, p. 316).

Also Bubb and Pildes (2014), “The two key policy tools are again default rules and mandatory disclosure” (p. 1604).

<sup>129</sup> For literature in this area see, for instance, Mochon, Schwartz, Maroba, Patel, and Ariely (2016) on an health intervention based on incentives that had no negative spillovers in other domains; Khan and Dhar (2006) on the licensing effect in consumer choice where engaging in a good behaviour is followed by a more self-indulgent one; Catlin and Wang (2013) about the existence of a recycling option leading to an increased use of the resource; Tiefenbeck, Staake, Roth, and Sachs (2013) about a water conservation campaign that resulted in a negative spillover in energy consumption and Wisdom, Downs, and Loewenstein (2010) on the risk of compensating a low calorie meal with drinks and side orders.

jeopardized, by the occurrence of permitting effects<sup>130</sup>” (Dolan & Galizzi, 2015, p. 10). This explains why Dolan and Galizzi (2015) call for a policy approach that does not look at behavioural interventions in isolation, but rather embraces an analysis beyond “the initial splash from the first behavioral response” (Dolan & Galizzi, 2015, p. 10).

Apart from spillovers across behaviours, nudges may also have effects beyond the moment they are introduced. For instance, many authors have also pointed out that nudging may reduce decision-making ability and diminish responsibility over one’s decisions.<sup>131</sup> In other words, tools that protect the individual may lead to decreased thinking about decisions.

Interventions may not only have implications beyond the primary behaviour that they target or the moment of decision-making, but they may also impact individuals in different ways. Interventions may indeed come with important redistributive implications. Taking a more comprehensive approach to behaviour change is critical to ensure that a nudge does not jeopardise other crucial policy goals.

## **ii. Public acceptability, support and reactance**

Acceptance and public perceptions of a nudge by the general public may be particularly important when it comes to assessing whether the nudge will have its intended effect. Regulatory interventions have the potential to be more successful if they encounter public support. In fact, opposition (or its anticipation) can be strong enough to prevent nudge measures from being implemented.

Some papers attempt to understand people’s acceptability of these tools (e.g. in Europe, Reisch and Sunstein (2016); in the US, Jung and Mellers (2016), and Hagman, Andersson, Västfjäll, and Tinghög (2015) on a comparison between a

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<sup>130</sup> These are effects that work against the desired effect.

<sup>131</sup> For a discussion on learning, see also Sunstein (2016, pp. 59-62).

European country and the US).<sup>132</sup> While the assessment on acceptability requires a case-by-case analysis, Sunstein (2016) tries to summarise the main research findings in this area. According to the author, people do not have any particular view on nudging in general, with their assessment depending on the “purposes and effects” of nudges (Sunstein, 2016, p. 118). People are likely to approve of a nudge when its goal is legitimate, while favouring tools that preserve freedom of choice. However, nudges that endorse an illicit end or that contradict the interests of the majority of choosers are objected to (Sunstein, 2016, p. 119).

Bang, Shu, and Weber (2018) also suggest that people’s acceptability of an intervention depends on the motivations of the nudge designed. According to the authors, interventions that benefit the nudge designer are less acceptable than “those done for sustainability or health reasons” (Bang et al., 2018, p. 18). The experimental results of Arad and Rubinstein (2018) also reveal the importance of the designer’s motivation; the authors argue that there are people who negatively perceive soft interventions by the state, showing concerns about their manipulative nature and the interference of the state in private areas of life.

The source of an intervention matters for acceptability too. The importance of source is likely to depend on the intervention at stake and the exact intentions of the nudge designer. A difficult relationship between design source and acceptability emerges, depending on the type of intervention: “differences in acceptability of designs from government and corporate sources change per design” (Bang et al., 2018, p. 18). While acceptability depends indeed on the source of an intervention, there is “no simple rule of thumb about design decision acceptability as a function of source”, which increases the importance of design intentions (Bang et al., 2018, p. 18).

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<sup>132</sup> Sunstein, Reisch, and Rauber (2018) extend previous survey analysis to a broader and more diverse set of countries, coming up with a categorisation of countries: liberal democracies with a majority support for nudges that are aligned with most citizens and do not pursue illicit ends, countries with a majority of approval of “nearly all nudges” and a small group of countries where majorities support nudge adoption, but at much lower rates of approval.

Acceptability is also related to a possible behavioural effect: reactance. According to the theory of psychological reactance developed by Jack Brehm<sup>133</sup>, when people experience a threat to their freedom, they may react and adopt the behaviour under threat. In Arad and Rubinstein's (2018) study on attitudes towards paternalistic policies, some participants preferred to make a different choice than the one encouraged by government intervention as a sign of protest. Another example of reactance is the development of avoidance strategies by consumers themselves. For instance, smokers might easily be able to cover the warnings of their cigarette packages with cases made specifically for that purpose. Such reactance effects are an important set of considerations when designing nudges.

### **iii. Individual preferences**

If preferences are no longer revealed, but rather constructed; that is, if the regulator does not know what the individual prefers, designing behaviourally informed interventions becomes difficult.<sup>134</sup> Ramsay (2012) highlights this point with regard to consumer policy. Ill-defined preferences create difficulties: "To argue that the goal of consumer policy is 'consumer sovereignty' must prompt the question: which consumer? The consumer with short or long-term preferences?" (Ramsay, 2012, p. 63).

Constructed preferences pose another problem for policy justification. In particular, the "judged by themselves" standard, much advocated by Thaler and Sunstein (2008), might be difficult to apply. In fact, a critical issue regards preference formation with the introduction of a particular policy. The state using its power to introduce a specific measure may not only result in people preferring exactly the opposite of what the state is trying to regulate in the first place – the reactance effects identified above – but also the emergence of preferences over aspects created by the intervention itself. In the words of Sunstein (2016), "We cannot defend a particular nudge by reference to the "as judged by themselves" standard if

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<sup>133</sup> See Brehm (1989) for a summary.

<sup>134</sup> For a more complete discussion on finding out about individual preferences, see chapter 2 (section 2.3.1).

people's assessment is a product of whatever nudge has been put in place" (p. 49).<sup>135</sup> Besides, if consumer preferences are strong and too distant from the nudge, the intervention may not work. This is a reason also put forward by Sunstein (2017) for why nudges such as defaults may not work: "strong antecedent preferences".<sup>136</sup>

Difficulties in designing nudges also occur when preferences are diverse. Nudging tends to be a one-size-fits-all regulatory solution, which may not fit the preferences of many of its final addressees<sup>137</sup> and even negatively reflect on the regulator's goal. For instance, while increasing overall participation in a plan, defaults in retirement savings plans may not necessarily result in higher savings, as the rate for some individuals may be lower than what they would otherwise have chosen.<sup>138</sup> Consumer diversity may mean that several options and tailored solutions are needed, including, in this case, the possibility to combine a default with active choice.

Finally, it is important to note that a regulatory instrument such as nudging still places the complete burden of decision-making on the individual, that is, the individual is still free to choose. However, this may not be the individual's preference. As Willis (2015) notes, "Consumers do not want to understand all aspects of the transactions in which they engage" (p. 1354). This implies that a nudge may still call upon consumers to decide over aspects that they would rather not to or for which they incur too high costs to make an informed and autonomous decision. Furthermore, there are decisions that individuals still prefer to delegate, even on matters they care about (Conly, 2013).

Determining when individuals would like to remain free to decide and when they would rather have certain decisions made by a third party remains nonetheless an empirically difficult question for lawmakers and regulators.

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<sup>135</sup> See Sunstein (2016, pp. 48-49) for a more detailed discussion on this point.

<sup>136</sup> Sunstein (2017) summarises different reasons why nudges may not be effective, among which are strong preferences, reactance and compensating behaviours.

<sup>137</sup> On stronger forms of paternalism, see Conly (2013) on why the fact that some individuals will be prevented from doing what they prefer should not be an argument against paternalistic legislation (pp. 63-66). According to the author, not all laws benefit everybody equally and, as we accept such differentiated impact, we may have to compare costs and benefits to assess whether a particular measure is desirable.

<sup>138</sup> See Bubb and Pildes (2014, p. 1609 and p. 1618) and the discussion in page 79.

### 3.6.4.3 Business

#### i. The risk of being challenged in court

This risk relates back to the possible interference of nudges with business conduct. In fact, one of the risks that nudging runs is that of being challenged in courts by the businesses it affects. This is a risk that McCrudden and King (2016) warn about after presenting different legal questions and problems posed by nudging:

“We do argue, however, that successful legal challenges are a real risk, and that they could produce the worst of all possible regulatory worlds: a weak regulatory intervention that is liable to be challenged in the courts by well-resourced interest groups” (McCrudden & King, 2016, p. 138).

This happened, for instance, in the US, with regulation on tobacco warnings. Following the 2009 Family Smoking Prevention and Tobacco Control Act that delegated the design of tobacco labels to the Food and Drug Administration (FDA), the agency issued regulations on graphic warning labels for tobacco packages. These measures were challenged by the industry in two different cases, on the grounds they violated a constitutionally protected right: the right of free speech (Bowman & Bennett, 2013). The two courts hearing the cases came to very different conclusions. One decided in favour of the FDA, underlining that the images were factual disclosure of information and that “such disclosures implicated relatively weaker First Amendment interests than did those threatened when speech is suppressed” (Bowman & Bennett, 2013, p. e12). The other court ruled in favour of tobacco firms: pictorial warnings were not factual information, but an attempt to discourage smoking. Since the FDA did not show that they pursued this governmental interest, the images were eventually ruled to be unconstitutional.<sup>139</sup>

This risk of a nudge being challenged in court is intensified when there is no statutory support. This was the case, for instance, with the soda ban proposed in New York. It was not the “substance” itself of the rule that raised problems; in fact,

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<sup>139</sup> See Bowman and Bennett (2013) on these two cases.



in Abdugaridov's (2016) view, "It was the Health Department's failure to secure proper statutory authorization that led the court to invalidate the rule" (p. 176). The city's Board of Health was ultimately accused of exceeding its regulatory authority (see Grynbaum, 2014).

## **ii. The risk of being operationally challenged**

The final challenge discussed here concerns the risk that nudges face of being operationally challenged by companies in their implementation phase. Businesses can develop reactance strategies that undermine the mechanisms through which a nudge has an impact on individual behaviour, leading to scenarios that run counter the original spirit of regulation. In fact, a core challenge of behavioural regulation concerns not only taking individual behaviour into account, but also "the behaviors that firms are likely to exhibit in response to both consumer behavior and regulation" (Barr, Mullainathan, & Shafir, 2009, p. 55).

While the state is attempting to achieve a particular goal, public policy efforts may be undermined at business level. In fact, as Jones et al. (2013) also note for the case of gambling, but which extends to other domains, the state may be trying to limit the "gambling opportunities" that individuals can find, but "its efforts are being thwarted at every turn by the various tactics marshalled by the gambling industry in order to make gambling a central aspect of our everyday lives" (Jones et al., 2013, p. 80).

The fact that companies are the ones with ultimate access to the consumer means that they can develop actions and engage in strategies of creative compliance that render the nudge meaningless and ineffective. While critically analysing the overdraft default set in the United States that forbids banks from providing overdraft coverage by default to their clients, Willis (2013) identifies the main challenges faced by this measure and concludes that "firms can systematically undermine each of the mechanisms that might otherwise operate to make defaults sticky" (p. 1155), as they can control the way the default is presented and the opt-out process. This may be particularly harmful for those consumers who need the

policy default the most and who more easily fall prey to the tactics deployed by firms to convince them to opt out.

The author further contends that a policy set default will be slippery under certain conditions, namely “when (1) motivated firms oppose them, (2) these firms have access to the consumer, (3) consumers find the decision environment confusing, and (4) consumer preferences are uncertain” (Willis, 2013, p. 1155).<sup>140</sup> Defaults may appear to be helping consumers, but they are “doing little more than helping firms diffuse political demands for substantive consumer protection” (Willis, 2013, p. 1160). Willis (2013) brings up this challenge<sup>141</sup>, extending it beyond default setting:

“policy defaults intended to protect individuals when firms have the motivation and means to move consumers out of the default are unlikely to be effective unless accompanied by substantive regulation. Moreover, the same is likely to be true for “nudges” more generally, when motivated firms oppose them” (Willis, 2013, p. 1155).<sup>142</sup>

This perspective assumes that regulatory nudges go against business incentives, which is not necessarily the case, at least not for all firms in an industry. If the state is interested in enhancing road safety by introducing nudge type road signs, for instance, it might have to mandate it on companies managing roads. These measure do not really run against such companies’ interest, so implementation challenges or incentives to curb the rule might be diminished.

In this regard, it is also important to note that a beneficial nudge for consumers, which results in a particular obligation for businesses, may not be against their

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<sup>140</sup> The last two factors are also behind default stickiness, as Willis (2013, p. 1200) notes.

<sup>141</sup> Willis (2015) identifies the strategies that firms may devise to undermine disclosure strategies. Among them are “physically” or “psychologically” changing “consumer receipt of disclosures”, so as to undermine their effect, providing ways to chose the product other than disclosure or changing the product to diminish the usefulness of disclosure (Willis, 2015, p. 1322). See Willis (2015) on why disclosure and product design regulation may fail.

<sup>142</sup> See Willis (2013) for the case study of the prohibition to default consumers in overdraft coverage in the US and the effects it produced: “Not all banks energetically pursued overdraft revenue after the change in the law, but those that did have managed to achieve high opt-out rates, particularly among consumers with a history of frequent overdrafts and new account holders” (p. 1184). Willis (2013) also explains how banks made the policy default slippery, including strategies that made it easy to opt out and costly to stay with the default.

interest in a uniform way. For instance, while tobacco labelling requirements reflect negatively on an entire industry, energy efficiency labels reward the players with the most efficient products. A nudge may then work as an incentive for some firms and gain their endorsement. This type of ecolabel becomes not only a way to inform consumers and nudge them towards efficient products, but also an approach the state can use to push for higher quality in the market (Dubuisson-Quellier, 2016). More than being a way to steer demand, the label acts on the supply side.

### **3.6.5 Solutions**

The challenges identified and discussed above essentially reveal that contemplating nudges as regulatory tools comes with important considerations. In fact, many aspects on different fronts – regulators themselves, consumers and businesses – can compromise the viability of this instrument. These challenges are not necessarily insurmountable and briefly identifying potential solutions for some of the challenges is the main objective of this final part.

One of the solutions was identified by Willis (2013). The nudge can be fenced with further restrictions on business conduct. This particularly addresses business reactance strategies that may render a nudge ineffective. To make sure that defaults “are not undermined at the implementation stage”, “a web of surrounding regulation” may be needed, namely rules on how the default is presented and the process of opting out (Willis, 2013, p. 1160).<sup>143</sup> Willis’s (2013) conclusion can be extended beyond defaults. For example, graphic warnings in cigarette packages might have to be accompanied with detailed rules on how they shall be printed; otherwise businesses may devise strategies to undermine their effect.

This means that nudging might not be as cheap and light as usually perceived, but it may actually demand substantial restrictions on business conduct. This is an aspect also noted by Jones et al. (2013) when analysing the introduction of automatic

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<sup>143</sup> The author is nevertheless sceptical on the state’s ability to do so. See Willis (2013) for a more detailed analysis on the challenges of accompanying a nudge with regulation, such as monitoring and compliance.

enrolment in pension plans in the UK. In fact, automatic enrolment may be perceived as “a subtle and relatively minor shift” in the organisation of pensions in the UK, but it is based on “a far-reaching change to pensions law, especially in relation to the mandatory contribution that employers must make to the scheme” (Jones et al., 2013, p. 60).

Regulatory nudges may imply further surrounding restrictions on business conduct that can increase compliance burdens for businesses. Nudges may indeed involve substantial legal change: “the alleged benefits of behaviour change interventions – that they are subtle and less prescriptive and involve less regulation – are actually often based on significant changes to the laws that underpin various kinds of human activity” (Jones et al., 2013, p. 61).

In a similar vein, and still addressing the challenge of business reactance, regulators might prefer to accompany nudges with goal-based regulation or performance-based regulation. Rather than imposing specific rules, performance-based regulation “sets a measurable standard closer to the regulator’s ultimate goal and allows the regulated entity to choose how to meet that standard” (Willis, 2015, p. 1330).<sup>144</sup> A regulator might want to accompany a nudge (e.g. prohibition to default consumers in overdraft accounts) with a goal focused on outcomes (e.g. reduction of overdraft debt). These goals or performance measures might be attached not only to nudge effects on consumers, but also to companies’ efforts and compliance towards the goals the nudge contributes to. The state might also promote comprehension or suitability standards for firms to meet accompanied by field testing, according to Willis’s (2015) approach of performance-based regulation for consumer law.<sup>145</sup>

Another possibility may be building public consensus and demand for nudge interventions. This seems to address more challenges than the preceding solution.

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<sup>144</sup> See also Coglianese, Nash, and Olmstead (2003) on the advantages and challenges of performance-based regulation. Sugarman (2015) also discusses performance-based regulation to tackle lifestyle risks.

<sup>145</sup> Regulatory approaches relying exclusively on broader performance goals can also lead firms to develop their own private nudges to achieve compliance. In this case, such approaches resemble the incentive system the state can develop to encourage nudge uptake discussed in section 3.4.1.

By targeting the acceptability challenge, it may also deal with the misalignment of incentives that can result in corporate reactance.

The set of solutions identified and discussed in this section is not exhaustive and the approach the regulator takes depends on many factors, such as the severity of the problem the nudge intends to address or how far apart business and public incentives are, among others. Furthermore, when nudges are difficult to implement and present themselves as important changes for an entire industry, using time lags before full implementation might be crucial to counteract industry reactance and provide time for businesses to adapt.

Finally, an important solution that ought not to be dismissed – and that presumably addresses most of the challenges previously identified – concerns the co-design of nudges with both the private sector and the final addressees (consumers). Using command-and-control regulation to manage social issues poses many difficulties.<sup>146</sup> Businesses might engage in creative compliance strategies that render a nudge ineffective or challenge its content in court, consumers might negatively react to an intervention coming from the state, regulators might ignore the feasibility of a regulatory nudge initiative and the burdens imposed on business.

Taking a more collaborative co-regulatory approach in rulemaking might be an appropriate solution to all of these challenges. While this might be perceived as the state forgoing its regulatory responsibilities and avoiding substantive state action, engaging in the co-design of these tools might be crucial for their acceptability from the public. This explains why engaging businesses and individuals in the design process of nudging is such an important consideration, an aspect addressed again in chapter 6.

For nudging to succeed as a tool, the rulemaking process may need to include both consumers and businesses. This approach fits broader regulation trends, namely

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<sup>146</sup> See Parker (2002, pp. 8-12) for a summary of the criticism addressed to command-and-control regulation (including complexity, costs of compliance, creative compliance and monitoring and enforcement costs).

shifts from traditional command-and-control to “new governance” developments that include more collaborative rulemaking approaches.<sup>147</sup>

### **3.7 Conclusion**

With a view to improving the conceptual understanding of nudging, this chapter identified and discussed three different categories of nudges, considering who is designing and who implementing them. This allowed including regulatory nudges in a broader nudge categorisation and bringing the challenges of regulation to the debate about nudging. This chapter also identified the instances in which each of the categories more directly intersects the law and the main goals attached to private, public and regulatory nudges. A particular focus was placed on regulatory nudges; these will be investigated further throughout the remainder of the thesis. To start with, chapter 4 focuses on design challenges that regulators face when iterative experimental testing is adopted.

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<sup>147</sup> See Amir and Lobel (2008) on how nudging relates to the “new governance” school of thought; the authors discuss regulatory shifts from command-and-control regulation to more collaborative public-private interaction: from “adversarial enforcement” to the involvement of companies “in the legal process” (p. 2128).

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## **4. In Search of Perfection: Can Regulators Pay the Price of the Perfect Nudge? Behind the Scenes of the Design Process of Nudging**

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### **4.1 Introduction**

Nudging has inherited a strong tradition of experimental evidence. Preceded by decades of experimental and psychological research on our biases and heuristics, nudging has inherited the empirical requirements of the research on the behavioural foibles that have inspired this tool. As a starting point, this chapter identifies the reasons that have made nudging so strongly associated with experimentation, in particular iterative experimental trials. Nudging can nonetheless take a variety of forms and be designed and implemented by different actors. Therefore, as this thesis concerns regulatory nudges, the reasons why experimental evidence ideas of the RCT type from nudges in other spheres also managed to penetrate the regulatory discourse and practice of nudging are identified.

In a second stage, the implications for regulators as nudge designers of adopting such iterative experimental ideas into their own design practices are discussed. In other words, this chapter identifies the costs, burdens and challenges that nudge design conditional on strong ex ante experimental evidence requirements impose upon regulators. The iterative experimental design alternatives that regulators can use when designing nudges are identified as well as the challenges that they involve. The focus is on the possibility to test specific nudges and the burden imposed by this alternative at a stage of the regulatory process where regulators or legislators have already decided on the use of the tool. The design of the particular nudge that maximises behavioural effectiveness may also require several iterative attempts on the designer's side in order to uncover the particular shape of the "perfect nudge".

Given that successful nudges may not be so easily transposed into new contexts, nudge designers may take these concerns into account upfront at the design stage by either including in their investigation of "what works" a wider range of nudges or a

lower range of nudges, a cheaper option that runs the risk of more design iterations than its alternative. Both options impose design costs on regulators. Regulators may also choose to test their solutions in loco or in the laboratory. This chapter investigates these options, in particular it analyses four experimental alternatives: i) laboratory and online experiments, ii) experiments reliant on the cooperation of firms, iii) experimental regulation and iv) legislative and regulatory processes as experimental platforms.

In other words, this chapter addresses the design process of nudging and the experimental possibilities behind getting the nudge right. While several experimental alternatives exist, they all come at a cost without completely eliminating uncertainty for regulators about actual behavioural effectiveness. Experiments, especially those using RCTs, facilitate the identification of causality, but they do not entirely eliminate uncertainty on whether the effects found will work in the context, timing and population of interest.

The design and implementation challenges of regulatory nudges were identified in chapter 3 (section 3.6.4). As mentioned then, some of these challenges were shared with other nudge categories and even other regulatory instruments. In this chapter, not only do the challenges identified distinguish nudges from other regulatory tools that are not subject to demanding iterative testing processes at their design stages, but also some of the challenges identified here distinguish regulatory nudges from other nudge categories.

In fact, incorporating iterative testing in regulatory nudge design may pose challenges that other nudge designers (of private and public nudges) do not face. For instance, when relying on third parties to experiment with individuals, an aspect present in all of the experimental alternatives other than laboratory experiments, regulatory nudge designers may lose control over the experimental protocol; this is a challenge not faced by other nudge designers, who can directly experiment with their final addressees. Such reliance on third parties for actual experimentations also adds friction to an iterative design process, an aspect certainly not experienced in



the design of private nudges and with limited impact in public nudges. Legal certainty may be an important challenge too for the use of iterative experiments that most nudges outside the regulatory sphere do not face, since they do not need the law to materialise.

Investigating the burden that nudges impose upon regulators and the particular design challenges that they face is still largely unexplored territory in both nudging and regulation lines of research. On the one hand, discussions around regulatory burdens tend to focus on the burden imposed upon implementing parties, not on the parties designing the rules. On the other hand, research on the implications of the concept usually emphasises final addressees (i.e. individuals), not those designing it. This chapter's practical stance attempts to bridge the gap between these two streams of research and challenge the pervasive claim that nudges are low-cost tools.

This chapter is about how nudging in its regulatory dimension seized the idea of iterative testing, the several options that regulators have in terms of iterative experimentation and their implications for regulators as nudge designers. This thesis is concerned with the design stage of nudging, a stage in which this tool has already been chosen. Whether nudging should be used as a tool is decided in a previous stage. This chapter can be placed at the top row of Tor's (n.d.) framework where nudging should be used and it either succeeds or fails, in which case it needs to be "better designed". As Tor (n.d.) notes, a nudge may be wrongly put in place if other tools are more effective in improving welfare or if the nudge itself results from an "erroneous assessment of individuals' preferences" (pp. 2-3); this is, however, not a concern of this thesis, which deals with this tool's design process after nudging has been chosen by policy-makers. Furthermore, as discussed in chapter 2, nudging as a regulatory tool may be called for not so much to bring behaviour more in line with people's "true" preferences, but as part of a broader regulatory mix to address harms caused by the interaction between individual psychology and market practices, which is another reason why this thesis does not address the possibility that nudging should not be used in case it fails.

## 4.2 Nudging and experimental evidence

Decades of behavioural and psychological research have exposed the predictable patterns of individual behaviour. While some argue that many of those findings are highly contextual and not replicable, others claim that decades of research have collected solid evidence on our behavioural foibles. Empirical research on our biases and heuristics has certainly contributed to impose the same empirical requirements on nudge tools. It is nonetheless important to note that these two types of evidence, while often confused, are different; and while some would argue that the evidence on our biases is strong<sup>148</sup>, no one – to the best of my knowledge – would claim the same about nudges. Nudging has nonetheless inherited the experimental tradition of prior behavioural research.

This is not, however, the only reason why we have come to understand nudging as a concept grounded on evidence gathering, experimental evidence in particular. Additional reasons are behind this understanding. In fact, either as private nudges or public nudges – as per the categorisation of chapter 3 – nudges are often subject to iterative trials and RCT testing in order to identify the particular content that maximises behavioural effectiveness. This is surely the case of private nudges such as those developed in academic contexts, where testing is relatively straightforward and deeply ingrained in research methodologies. Also testing is a common practice in the business world (often called A/B testing).

In addition, public nudges tested as informal solutions to problems at the local level or those associated with processes of administrative simplification and innovation in the public sector (where the work of the Behavioural Insights Team and their famous *Test, Learn, Adapt*<sup>149</sup> framework falls into, as discussed in footnote 17 and section 3.5.1.2) are also linked to the idea of testing “what works”. Policy-makers’ desire to ground policy on evidence – and RCTs’ standing in hierarchies of evidence – has contributed to strengthen the association between nudging and experimental

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<sup>148</sup> In chapter 2 (section 2.3.1.5), we have seen that this claim has been challenged.

<sup>149</sup> See Haynes et al. (2012).

evidence. In fact, the use of RCTs for nudging in the policy sphere certainly feeds into a broader narrative of policy evaluation where RCTs have gained prominence. Whitehead et al. (2018) justify the rise of experimentation and RCTs in policy not only on a methodology transfer, but also on an aspiration to evidence-based policy:

“In many ways the application of randomized controlled trials (RCTs) reflects the transfer of a preferred evaluative methodology from the behavioural and psychological sciences into the field of public policy. The prioritization of RCTs does, however, also appear to reflect a desire to ground neoliberalism<sup>150</sup> on a sound evidence base and to characterize associated forms of policy as less a *psychological state* and more a pragmatic, *what works* style of government” [emphasis in original] (Whitehead et al., 2018, p. 26).

Another reason that explains why nudge tools are associated with evidence of the experimental kind has to do with the fact that these are solutions for which – due to their localised “surgical” nature – it is relatively easy to identify causality using experiments. The possibility to use RCTs facilitates the testing of different nudge treatments and the identification of “the one” maximising behavioural effectiveness. The ease of identifying and measuring nudge causal effects through RCTs or experiments has indeed contributed to the appeal of this tool and experimental methodologies. Randomised controlled trials not only offer a strong standard of evidence in the identification of causality, but also this methodology can produce “headline results that are easy to interpret as percentage point differences” (John, 2018, p. 5).

#### **4.3 The emergence of iterative experimentation requirements in the regulatory dimension of nudging**

Nudges have been strongly associated with experimental evidence (e.g. Jones & Whitehead, 2018). Nudging is in its essence a policy application of behavioural

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<sup>150</sup> See footnote 87.

economics, which itself has borrowed experimental methods. Even if they can take a multiplicity of forms and pursue many purposes, also regulatory nudges have been associated with such experimental requirements. As explained in chapter 2, nudging entered policy and regulatory realities through processes of policy translation. In this section, greater detail is provided on why experimental requirements in particular have also been absorbed by regulatory practice and aspiration. In fact, nudge design in spheres other than regulation is strongly associated with such methodologies, but they penetrated regulatory reality too.

Three reasons explain this dissemination of experimental requirements also among regulatory nudges. One resides on the side of the actors most known in policy circles for developing and implementing the concept, another focuses on developments in regulatory narratives and practices, and a third reason on the problems of relying on existing evidence. They are not necessarily listed in order of importance.

#### **4.3.1 Policy and academic actors involved in the dissemination of nudging**

The fact that organisations such as the BIT have been simultaneously involved – with different roles and degrees of involvement – in both areas of administrative simplification and initiatives of a regulatory nature<sup>151</sup> may have contributed to the dissemination of experimental evidence-gathering requirements in this last domain too. After claiming that the “remit” of the BIT extended well beyond nudges, Hallsworth and Sanders (2016) point out the team’s strong commitment to evaluation through RCTs. This commitment to experimentation may have been perceived as going beyond their most influential areas of experimentation in public policy delivery.

In fact, while the BIT’s interventions have largely focused on areas regarding policy delivery, the BIT has also been involved in discussions about consumer protection

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<sup>151</sup> See the BIT’s report on applying behavioural insights in regulated markets (Costa, King, Dutta, & Algate, 2016) or the report *Better Choices, Better Deals* (The Behavioural Insights Team & the Department for Business Innovation & Skills, 2011) as examples of the BIT’s involvement and stance in the regulatory domain.

and other regulatory frameworks (e.g. e-cigarettes), as discussed in section 3.5.1.2. Their head is also the national adviser of the “What Works initiative”, a broader initiative in the UK to disseminate the use of experimental approaches in policy (Jones & Whitehead, 2018, p. 317).

This involvement of a behavioural governmental unit in different areas of state action may have enabled the dissemination of experimental practices into regulatory dimensions too. In other words, trends in public administration and service delivery may have entered other areas through organisations involved in both policy delivery and regulation. In the case of the BIT, this process seems to have been strengthened by the international visibility that the team’s work acquired.

Regulatory practices may have also been influenced by the broader trends observed in the “psychologically oriented state”, a term coined by Jones and Whitehead (2018), namely by the “emphasis it places on knowledge that is grounded within experimental techniques” (Jones & Whitehead, 2018, p. 314). Experiments are not only promoted in government, but there is also an aspiration “to govern through the processes of experimentation”, reflecting a transfer of techniques from the behavioural sciences into government practices (Jones & Whitehead, 2018, p. 314). As a case in point, the foreword of the Occasional Paper No. 2 of the FCA, the financial conduct regulator in the UK, after praising the focus of the BIT on experimental trials, advocates the use of such approaches in regulatory domains to design tools such as mandatory disclosures:

“While RCTs are increasingly used in the public sector, to our knowledge this is the first use by a regulator in the UK. This method could be used to build evidence on the impact of a variety of important regulatory interventions, especially where consumer behaviour makes these interventions difficult to design effectively, such as mandatory information disclosures” (Peter Andrews in Adams & Hunt, 2013, p. 3).

The encouragement given to experimental approaches by authorities involved in regulatory design has also occurred at European level. The Joint Research Centre of the European Commission, the sole organisation at EU level with legislative initiative, has promoted the use of experimentation. Policy reports such as van Bavel et al. (2013) and van Bavel, Rodríguez-Priego, and Maghiros (2015) represent such enthusiasm for experimental approaches in EU policy-making more generally. van Bavel et al. (2013) even recommend such approaches once a particular policy option has been chosen: “It is also relevant once a particular option has been decided. For example, it may be sensible to run a small behavioural pilot study before committing to full-scale implementation” (van Bavel et al. 2013, p. 9).

Still at EU level, in a 2016 report by the European Commission on behavioural sciences applied to policy documenting several behavioural initiatives, the authors note that “few of the observed initiatives are *behaviourally-tested*” [emphasis in original], and therefore call for a more transparent and objective approach to the incorporation of behavioural insights (Lourenço et al., 2016, p. 16). Also as an advice to policy-makers in a report of the *Centre d’analyse stratégique* [Center of Strategic Analysis]<sup>152</sup>, Calvert, Gallopel-Morvan, Sauneron, and Oullier (2010), in the context of tobacco warnings, mention that governments should “use the growing body of neuroscientific and psychological information to refine their format and content” (p. 84).

Academic researchers actively associated with both nudging and regulatory affairs have also called for the use of experimental approaches in regulation. Sunstein (2014a), for instance, has advocated the use of experimental and quasi-experimental studies, even to test tools such as disclosure: “To the extent possible, agencies should study in advance the actual effects of alternative disclosure designs to ensure that information is properly presented and will actually inform consumers” (Sunstein, 2014a, p. 729). More recently, the author has nonetheless lamented the lack of experimental approaches in regulation (Sunstein, 2018, p. 96).

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<sup>152</sup> This organisation under the authority of the French Prime Minister initiated a programme on the policy uses of behavioural science in 2009.

The active involvement of behavioural and experimental researchers in the transfer of nudging into policy and regulatory realms also explains why experimentation requirements gained ground in regulatory circles. Under the guise of the authority of academia, nudging and iterative experimentation approaches were enthusiastically welcomed by policy-makers and regulators without much consideration not only for the contested and political nature of nudging, but also the adequacy of this tool's experimentation requirements to the regulatory world.

#### **4.3.2 Developments in regulatory discourse**

The second reason that facilitated the emergence of iterative experimental ideas in the regulatory discourse and design practices of nudging – and which is closely related to the first one – has to do with academic and policy developments in regulation calling for more evidence-based approaches. These approaches have made the nudge concept – highly grounded on experimental evidence – attractive to contemplate and absorb.

Regulatory trends increasingly support the use of cost-benefit analysis and impact assessments grounded on evidence before the enactment of regulation.<sup>153</sup> Such assessments should include not only the problem targeted, but also the policy goals and the instruments to achieve such goals. Even if they may serve different purposes, as will be discussed further in section 4.4.2, *ex ante* assessments intend to improve regulation, demand more objective criteria behind policy adoption and guide towards more rational policy options (Baldwin et al., 2012).

Experimental approaches fit well with broader regulatory developments such as better regulation agendas that call for measurable costs, benefits and impacts of potential regulation and sound justification for public spending.<sup>154</sup> Therefore, not

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<sup>153</sup> See chapter 15 of Baldwin et al. (2012) on the importance of impact assessments and the growth of better regulation agendas promoted by the European Commission and the OECD as well as the challenges of economic appraisals of regulation. Also Craig and de Búrca (2011) discuss the emergence of a better regulation agenda at EU level, entailing the simplification of the legislative process, impact assessments and the use of alternatives to regulation (p. 170).

<sup>154</sup> Regulatory impact assessment (RIA) is one of the cornerstones of the better regulation agenda at EU level. For a summary of better regulation, see Radaelli (2007).

surprisingly, nudging encounters “great currency amongst policy makers who seek evidence about what works”, since they are required to “design effective interventions” and properly justify public spending (Jones et al., 2013, p. 170). With their assessment of actual impacts, experiments are even seen as superior to regulatory impact assessments based on potential costs and benefits: “The emerging use of RCTs in policy-making is therefore perceived as an approach capable of assessing *in concreto* the impact of regulatory measures, in contrast to conventional regulatory impact analysis (RIAs)” [emphasis in original] (Alemanno & Sibony, 2015, p. 341).

The pursuit not only of measurable impacts, but also more effective tools may have played a role in the emergence of experimental ideas in the design practice and aspiration of regulatory nudges. As Alemanno and Sibony (2015) write, “The promise of behavioural informed policy-making is to increase effectiveness of policies” (p. 338).<sup>155</sup> If policy effectiveness is such an instrumental goal of better regulation agendas, an experimental approach enables the pursuit of this goal in a straightforward way. By allowing different policy options to run against each other and/or to iterate with different designs, a culture of constant experimentation is what offers the opportunity not only to arrive at an effective policy in the first place, but also to achieve its sustained effectiveness. This will be made clearer in section 4.4.1.

### **4.3.3 The problems of relying on existing evidence**

A third reason why experimental evidence in nudge design is highly encouraged in the regulatory context is related to the problems of relying on existing evidence. Associated with the development of experimentation in public policy is a perception that existing evidence on which to ground interventions is slim and that experiments are then needed to overcome this barrier and defend policies from those suspicious of their impact (Jones & Whitehead, 2018).

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<sup>155</sup> A promise that is very hard to achieve for a variety of reasons, as the authors remind.



When it comes to evidence, nudge designers can rely on existing evidence or test their own interventions before implementing them.<sup>156</sup> However, while using existing evidence is less costly than producing new evidence, it comes with the risk that the effects observed in different contexts do not apply in the context of interest. Existing evidence poses additional concerns that may push nudge designers towards experimentation. The first concern has to do with the nature of available evidence. Research on nudge effectiveness and cost-effectiveness is not only scarce, but it also tends to cover nudges other than regulatory ones.<sup>157</sup> This means that existing evidence may not be the kind of evidence the nudge designer is looking for.

Relying on existing evidence poses yet another issue. Empirical research is plagued with publication bias: positive effects are published, while null or contradictory results, even if published, may not get the same publicity (e.g. Trautmann, 2013). This bias may lead to overestimation of the effectiveness of particular nudges. Besides, nudge effects tend to be contextual, with difficult translation from one environment to the next.

It is also important to note that distrust about existing evidence is also related to another concern, namely the problems associated with non-experimental evidence. Observational evidence, for instance, makes it difficult to establish causality: correlation may be a sign of reverse causality or omitted variables (e.g. Engel, 2014). Randomised experiments are then seen as the top method for evidence gathering.

All these reasons explain why researchers have been pushing nudge designers towards iterative experimentation rather than existing evidence. Even if not yet widely used in regulation, and in the design of regulatory nudges in particular, randomised experiments are regarded as the “gold standard” of evidence production

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<sup>156</sup> A taxonomy by the European Commission reveals this distinction. The taxonomy distinguishes between three types of initiatives. Behaviourally-tested initiatives include those initiatives “being explicitly tested, or scaled out after an initial *ad hoc* experiment”, behaviourally-informed initiatives are those based on existing evidence with no prior specific experiment and the third kind – behaviourally-aligned initiatives – are those that “do not rely *explicitly* on any behavioural evidence” [emphasis in original], but where behavioural insights can be recognised (Lourenço et al., 2016, p. 16).

<sup>157</sup> See, for instance, Benartzi et al. (2017) on the cost-effectiveness of different nudges, most of which falling under the category of public nudges (see chapter 3).

in regulation (Greenstone, 2009, p. 116), to which the process of nudge design should also aspire to.

#### **4.4 Behind the scenes of nudge design: the cost and challenges of iterative experimental testing**

Thomas Edison is credited with saying that “genius is 1% inspiration and 99% perspiration”. In the nudge realm, published and available results usually present us with nudge “inspiration”: by the time we read the results, the nudge simply works, as if this had been magically done in a one-shot attempt. We fail to be told about efforts (if any) behind its conception. Whether positive results were preceded by rounds of testing and piloting is often not disclosed. The following sections will analyse the design process of nudging or the “99% perspiration” work, a process highly shaped by the pursuit of behavioural effectiveness.

##### **4.4.1 What is iterative experimental testing?**

As explained in section 4.3, nudges have been strongly associated with experimental evidence, in particular iterative experimental methodologies. A survey conducted by the OECD revealed that behavioural insights have influenced decision-making across public policy organisations not only through “diffuse knowledge” or “exposure to the literature”, but also via *experimentation* (OECD, 2017a, p. 40). The OECD has also acknowledged that behavioural insights entail “embedding experimentation in regulatory design and delivery and accepting the challenge of tackling the unknown with this “scientific” approach” (OECD, 2015, p. 52). Jones and Whitehead (2018), in turn, highlight the experimentation practices of the “psychologically oriented state” (p. 314).

But what exactly is iterative experimental testing? Iterative experimental testing entails the use of experimentation on an iterative basis in order to design the precise nudge content that is to be rolled out in an implementation phase. *Experimentation*, especially if conducted through RCTs, has clear advantages. Random assignment of

subjects to treatment and control groups ensures that they have “statistically similar distributions on every nontreatment dimension” (Abramowicz, Ayres, & Listokin, 2011, p. 935). While a perfect RCT may not be feasible, it remains nonetheless an ideal benchmark for experimentation.

#### **4.4.1.1 Trial-and-error: the first dimension of iterative experimentation**

*Iteration* is the learning process that allows the designer to arrive at the “perfect nudge” (i.e. the most effective one in a range of nudge variations). Understanding that RCTs are “part of a continual process of policy innovation and improvement” (Haynes et al., 2012, p. 32) means an implicit acceptance of continuous iteration in the search for behavioural effectiveness. According to this framework – *Test, Learn, Adapt* (Haynes et al., 2012) – once the results are observed in the “learning” stage, policy interventions should be adapted accordingly in the “adapting” stage. As John (2018) also clarifies, implicitly acknowledging the iterative nature of nudging’s design process, “policy-makers should not expect all of them [*nudges*] to work, but through failures and successes, they can design better nudges” (John, 2018, p. 97).

This “trial-and-error” approach has been first applied in medical research, but extended to many spheres of social research and policy (Manzi, 2012).<sup>158</sup> It is also the approach used by companies in the creation of consumer products, which involves an “iterative redesign and testing stage” with new information driving design updates (Abdugaridov, 2016, pp. 163-164). Bringing such an iterative process into regulatory nudge design fits well with how policy or regulatory processes should work in general in that also regulatory processes reach a stage of feedback loop, where ex post review assists in fine-tuning previous tools.

For nudge advocates, iterative experiments are a natural part of the process of finding out what works on a trial-and-error basis. After all, as there is uncertainty about how a nudge will perform in reality, series of iterations allow the nudge designer to learn about what works in the pursuit of effectiveness. In fact, when the

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<sup>158</sup> See chapter 7 of Manzi (2012) on the emergence and development of RCTs in medical research.

nudge designer comes across an ineffective intervention, one of the possibilities is “to learn from the failure and to try a different kind of nudge, with continuing testing” (Sunstein, 2017, p. 13).<sup>159</sup> More generally, behavioural researchers also acknowledge that testing and piloting are a natural part of their work, involving important efforts and costs (Amir et al., 2005, p. 451).

#### **4.4.1.2 Renewal or rotation: the second dimension of iterative experimentation**

Besides the idea of iteration to find the “perfect nudge” (i.e. the one resulting from a competition between different designs through an iterative process), *iteration* carries another important *dimension*. Even after an effective nudge has been found, iteration with further nudge alternatives should continue. According to the BIT’s *Test, Learn, Adapt* framework, after adapting a policy intervention to experimental findings, the designer should go back to the initial design stage and test new options: at the last stage of RCT development, rather than “assuming that perfection has been achieved”, the designer should consider “the potential for further refinement” (Haynes et al., 2012, p. 32). In fact, the last step of this framework is to return to the first step – the identification of policy options to compare – and further improve the comprehension of “what works”.

This idea of *nudge renewal or rotation* represents an important dimension of iteration in this design process. In fact, behind the notion of continuous experimentation – even once an effective nudge has been found – lies the acceptance that effects wear out and therefore the tool needs renewal to remain effective. An effective nudge yesterday may not be effective tomorrow, and thus should be renewed accordingly.

In conclusion, the idea of *behavioural effectiveness* is at the heart of nudge design through iterative experimentation. Nudges are designed to *be and remain* effective;

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<sup>159</sup> The other possibilities involve alternatives beyond testing: the first is essentially to stop and accept that “freedom worked”, another is to take stronger measures than nudges (Sunstein, 2017, p. 13). In this thesis, it is assumed that at the design stage of nudging the regulator has already passed the stage where nudges have been chosen as a tool, which is why these possibilities are not discussed. Besides, if nudging is detailed at subordinate levels of regulatory design, then these possibilities might not be feasible.

iterative testing is what allows for this quest. The pursuit of individual behavioural change is not only what drives the choice of this tool in the first place, but it also has implications on its design: a tool whose goal is to maximise and sustain effectiveness should be constantly fine-tuned; the *search for continuous behavioural effectiveness* is what justifies the use of experimentation with series of iterations.

#### **4.4.2 A note on regulatory impact assessment, the regulatory cycle and iterative experimental testing: similarities**

As already mentioned in section 4.3.2, one of the reasons for the absorption of iterative experimentation ideas by regulatory discourse regards developments taking place in the regulatory world, namely better regulation agendas and their commitment to regulatory quality. Both *ex ante* and *ex post* assessments are important tools of better regulation. A nudge design approach rooted in iterative experimental testing has important similarities with both the aims and the structure of impact assessments and the functioning of the full regulatory cycle. These similarities have indeed contributed to the dissemination of this methodology for nudge design in regulatory circles and discourse. In fact, the reasons behind the allure of RIA and an iterative regulatory cycle share similarities with those that made iterative experimentation highly endorsed in regulatory circles. The promise of causality that experiments offer is appealing to policy-makers constantly pursuing evidence to substantiate their policy proposals and rationality of decision-making processes in both initial design and reviewing stages of regulatory processes.

##### **4.4.2.1 RIA's goals and methodical approach**

Regulatory impact assessments (RIAs) are part of a better regulation strategy. Better regulation “usually encompasses the overall attempt to rationalize and simplify both existing and new legislation” (Allio, 2007, p. 73). Impact assessments are not only a crucial component of better regulation, but also of broader commitments to regulatory quality. Also known as “regulatory impact analysis” or “impact

assessment”, several definitions of this approach exist (Kirkpatrick & Parker, 2007, p. 2). Kirkpatrick and Parker (2007) define regulatory impact assessment as:

“a method of policy analysis, which is intended to assist policy-makers in the design, implementation and monitoring of improvements to regulatory systems, by providing a methodology for assessing the likely consequences of proposed regulation and the actual consequences of existing regulations” (Kirkpatrick & Parker, 2007, p. 1).

Originally, as the authors explain, RIA was understood as a process to identify the costs of regulation for business. However, its emphasis expanded to also cover other costs and benefits, especially economic, social and environmental effects (Kirkpatrick & Parker, 2007).

#### **i. RIA’s goals**

RIA serves several purposes, among which the support of evidence-based policies, the promotion of transparency and the use of a rational decision-making process (e.g. Kirkpatrick & Parker, 2007).<sup>160</sup> Dunlop, Maggetti, Radaelli, and Russel (2012) distinguish between four different uses of impact assessment: the “political”, which is about oversight of the bureaucracy; the “instrumental”, which highlights the enhanced understanding of the impact of regulation; the “communicative”, with impact assessment being used to allow policy-makers to communicate with stakeholders, and finally, the “perfunctory”, with impact assessment being required, but producing no impact, as it is used, for instance, to disguise pre-existing positions (Dunlop et al., 2012).<sup>161</sup>

RIA may have started in the US, followed by the UK, but it has disseminated to other countries too (Kirkpatrick & Parker, 2007). However, it was only in the early 2000s that the European Commission formalised the EU’s commitment to impact

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<sup>160</sup> See also Renda (2015) on the different rationales behind the use of RIA.

<sup>161</sup> On policy uses of evidence, see also Weiss (1979) on seven meanings of “research utilization”, such as the knowledge-driven model, the problem-solving model and the interactive model.

assessment (e.g. Renda, 2017).<sup>162</sup> Impact assessment is one of the tools of the better regulation agenda. According to Allio (2007), the emergence of the better regulation agenda at EU level has been associated with the pursuit of rationality in legislative production. Allio (2007) puts forward other reasons for the development of better regulation, such as the increasing role of the OECD in disseminating regulatory practices and frameworks, the changing role of the state (from an emphasis on macroeconomic stability to efficiency improvements in the presence of market failures) and an increasing amount of regulatory requirements developed at EU level. The emergence of the better regulation agenda is linked to “three sets of issues”, namely the evidence that regulation may not achieve its social goal, the acknowledgement of the importance of regulatory processes to governance and economic results and the inclination to engage in regulatory benchmarking with best practices (Allio, 2007, p. 77).

Impact assessments at EU level have similar goals to those already mentioned. Larouche (2009) reminds us of the economic rationale of improving the quality of decision-making, enhancing democracy and transparency, providing justification for policy choices and promoting accountability.<sup>163</sup> Furthermore, the main goal of impact assessment at EU level amounts to underpinning a decision “as to whether (subsidiarity) and how (proportionality) to intervene” (Meuwese & Senden, 2009, p. 144). Impact assessments also do not intend to replace political decision-making either<sup>164</sup>, which is why the European Commission has not included in its framework any “decision criterion”, such as the most cost-effective solution (Meuwese &

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<sup>162</sup> See Renda (2017) for a brief review on how impact assessment has emerged and evolved at EU level. Also Meuwese and Senden (2009) and Allio (2007) discuss impact assessment at EU level.

<sup>163</sup> Larouche (2009) mentions other purposes: remedying information deficiencies (with evaluation attempting to gather information that can be collected or that does not yet exist, in which case the analysis becomes about how to manage uncertainty) and securing commitment (with evaluation working as a “measure of certainty or predictability to private actors”) (pp. 52-55). See also Bohne (2009) on information deficiencies.

<sup>164</sup> On whether ex ante assessment constitutes a constraint on political decision-making, see Larouche (2009, pp. 46-48).

Senden, 2009, p. 144). These processes detail the trade-offs of different options while including stakeholder consultation.<sup>165</sup>

The goals of an iterative nudge design process echo some of the goals of the above-mentioned impact assessment. The pursuit of nudging's effectiveness bears a strong resemblance to the search for regulatory quality, effectiveness and simplification of impact assessment. In fact, and more broadly, at EU level, "*the commitment of the EC [European Commission] to continue applying BIs [behavioural insights] is presented in the context of the Better Regulation Agenda*" [emphasis in original] (Lourenço et al., 2016, p. 37). The potential to incorporate behavioural approaches in regulation "coincides with the continuing drive to embrace Smart Regulation; that is, the Commission's own brand of Better Regulation" (Quigley & Stokes, 2015, p. 62).

## **ii. RIA's methodology**

The similarities between RIA and the design process of nudges go beyond the *goals* to also meet the *method*. While impact assessment does place its emphasis on impacts, different stages are needed to arrive at such effects. Typical RIAs include a series of steps: defining the problem, identifying and assessing alternative options, collecting data, identifying the preferred option and ways for monitoring and evaluation (e.g. Renda, 2015). Consultation is also an important step, not only by enhancing action legitimacy, but also by providing practical knowledge on costs and benefits (Blanc & Ottimofiore, 2017). In this sense, more than a method to answer quantitative questions, RIA contributes to "speed up learning", in other words, the involvement of several stakeholders makes RIA a process that "stimulates social learning" (Jacobs, 2007, p. 18).

Following a rational and iterative methodology, RIA ensures that regulation goes through a well-structured and organised method in the way it is designed. The "methodical" stance used to prepare legislation views the legislative process "as a reiterative learning process" (Mader, 2001, p. 122). Moreover, such an approach

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<sup>165</sup> See Meuwese and Senden (2009, p. 149) for a summary of the features of the EU's impact assessment. See also European Commission (2017a).



assumes that “legislation is a rational activity that is aimed at realising specific purposes or goals, at achieving specific results in the social reality” (Mader, 2001, p. 122). Iterative testing in nudge design emulates the way in which regulation is generally conceived and designed in impact assessment stages, which also explains why this methodology has been so positively welcomed in regulatory circles.

#### **4.4.2.2 The regulatory cycle**

As section 4.4.2.1 explains, RIAs follow a rational methodology, a logic that extends more generally to the production of regulation. Once an option has been chosen at the political level and implementation has followed, retrospective or ex post review completes the regulatory cycle initiated with impact assessment. Ex post review is a stage intended to assess the effectiveness of implemented regulation (OECD, 2015). This stage might lead – or not – to the fine-tuning of previous regulation, but it is part of an iterative regulatory cycle that is never complete.<sup>166</sup>

Rationality and iteration are not only at the heart of impact assessment, but also represent important aspirations of the broader regulatory cycle. This also explains why the idea of iterative testing for nudge design gained ground in regulatory discourse and aspiration.

#### **4.4.2.3 RIA and the regulatory cycle: a summary**

Iterative testing is an engaging idea for regulatory nudge design, since it emulates the structured and rational *way* in which regulatory instruments are chosen and fine-tuned for *effectiveness* – both at *impact assessment stages* and *reviewing stages of an ideal iterative regulatory process*. Ex ante and ex post assessments have indeed been widely embraced, including at EU level, which also explains the appeal of nudging among EU policy-makers.

It is nonetheless important to note that actual iterative testing to design nudges tends to happen at a stage of the regulatory process beyond impact assessment, in

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<sup>166</sup> See Renda (2015, p. 57) on the policy cycle.

particular after nudging has already been chosen at a prior stage (impact assessment and legislative stage). In fact, iterative nudge design tends to take place at a stage where the tool has already been chosen, but its exact design is yet to be defined and detailed. As it will be discussed in chapter 5 for the case of tobacco warnings, this can create tension between impact assessment and political stages of the regulatory process, on the one hand, and nudging's design stage, on the other hand. The former stages are highly shaped by various competing goals; nudge design is influenced by one goal only: (behavioural) effectiveness.

Sections 4.4.3-7 will analyse the possibilities and implications for regulators as nudge designers of experimenting iteratively with regulatory nudges.

#### **4.4.3 Design choices**

When going for own iterative experimental testing before actual implementation, the nudge designer can choose one of two alternatives (or some other option along the spectrum)<sup>167</sup>:

- Test a large enough subset of nudges, an option that carries a high upfront certain cost, but also a higher chance of finding out an option that works in one iteration only;
- Experiment with a smaller subset of nudges, an option with a lower upfront cost that carries a higher risk of not finding out what works at a first attempt, therefore requiring further iterations with extra nudge variations, which may lead to uncertain future cost increases, depending on the number of iterations needed to arrive at the “perfect” nudge.

In the quest for nudge effectiveness, the nudge designer may also choose between testing nudges 1) in the laboratory or 2) in the field. These alternatives are analysed separately.

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<sup>167</sup> For the sake of simplicity, it is assumed here that the designer's choice is binary. In reality, what is a “large” or “small” set of nudges differs between contexts. The choice of the nudge designer is likely to be along the spectrum between these two extremes.

#### **4.4.3.1 Initial set of nudges and iterations: a trade-off**

Experiments often come first in the hierarchy of evidence. In randomised experiments, participants are randomly allocated to several conditions, including a control condition that does not expose subjects to any treatment. Randomisation across experimental conditions allows the experimenter to attribute causality to the intervention tested, measure it and control the effect of other variables. Since “random assignment creates groups that have statistically similar distributions on every nontreatment dimension”, the difference between the average response of the control group and that of the treatment group is attributed to the treatment (Abramowicz et al., 2011, pp. 935-936).

Experiments may be a highly desirable method to reach out for nudge effectiveness, but it is unrealistic to believe that all possible sets of nudge solutions can be tested. This explains why at initial design stages the nudge designer will conceive, design and test a set of nudges based on existing research. The same for policy more generally: since many “variations on policies” are possible, regulators can only expect to experiment with a small subset of a wider policy range (Abramowicz et al., 2011, pp. 961-962).

The idea of resorting to existing evidence (including theoretical evidence) in an initial stage is shared by policy actors as well. As Haynes et al. (2012) explain about RCTs: “Before designing an RCT, it is important to consider what is currently known about the effectiveness of the intervention you are proposing to test” (p. 20). This initial phase of reviewing evidence “is necessary to get a first impression of people’s attitudes and behaviour, and of the possible policy options available” (van Bavel et al., 2013, p. 11).

This method of finding out the best nudge resembles the comparative effectiveness methods used in medical research, where different treatments are compared so as to decide which one works relatively better, a method that contrasts with others that

study interventions in a rather isolated manner.<sup>168</sup> In fact, rather than evaluating a single option, “trials can be used to establish which of a number of policy intervention options is best” (Haynes et al., 2012, p. 21). Comparative effectiveness RCTs add to the already high costs of single intervention studies, due to the need of larger and representative samples:

“comparative effectiveness RCTs will often need to involve more subjects than general-efficacy RCTs, adding to the cost and time required to complete the investigations. Also, to draw conclusions about the value of different treatments relative to each other, CER [*comparative effectiveness research*] will likely need to detect small differences in outcomes. These differences may only become statistically significant when observed in a sufficiently large group of subjects. This increases the need to involve larger sample populations, making the studies even more expensive to conduct. [*reference*]” (Saver, 2011, p. 2178).

The first initial consideration on which nudges to actually test involves considering what existing research tells about their effectiveness. When designing the actual nudge content of an intervention for the purposes of testing and finding out “what works”, the nudge designer will often start with more than one nudge. While testing all potential nudge solutions is an impossible task, the nudge designer faces nonetheless a choice between a smaller set of nudges or a higher number of experimental conditions.

A smaller set of nudge variations has clear advantages. One of them is a lower upfront cost. Another advantage is the possibility to include more observations per experimental condition. However, the chance of not finding out a nudge that works

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<sup>168</sup> See Saver (2011) on comparative effectiveness research in health care and some of the challenges of translating its results into medical practice.

increases.<sup>169</sup> A null result comes with the subsequent need to carry an additional trial. Iterations may be a natural part of nudge design and experimental research more generally, but each additional round of piloting and testing adds up to total cost and burden for the regulator.

Alternatively, the nudge designer can start the testing stages with more experimental conditions. This certainly increases upfront costs, especially if requiring more participants to avoid reducing the study's statistical power and possibility of detecting an effect that exists.<sup>170</sup> More experimental treatments may be more costly upfront, but they also increase the chances of finding out the nudge that works using fewer iterations.

#### **4.4.3.2 The laboratory vs. the field: the costs of lowering uncertainty**

Besides choosing how many treatments or nudge interventions to begin with at the testing phase, the regulator as a nudge designer can also make a choice between testing such nudges in the laboratory or the field (or even both).<sup>171</sup> In the field, the regulator can also choose between relying on the cooperation of firms, engaging in experimental regulation and using the legislative and regulatory processes as experimental platforms.

This chapter does not intend to provide a comprehensive review on the advantages or disadvantages of the laboratory vs. the field. Several authors have elaborated on this and yet no consensus has emerged.<sup>172</sup> Rather, what this chapter aims to highlight is that the experiments within regulators' reach are costly and burdensome. The simulated and artificial nature of laboratory or online experiments, radically

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<sup>169</sup> A null result suggests that there is no real effect or that the experiment failed to detect an effect that does exist, which is known as type II error (van Bavel et al., 2015, p. 12). Minimising the chances of arriving at a null result involves sound sample size calculations ex ante or strengthening the content of interventions (van Bavel et al., 2015).

<sup>170</sup> See van Bavel et al. (2015, pp. 11-12) on the relationship between the number of treatment groups and sample size. Given the limitations in budget to increase sample size, the authors recommend experiments that test fewer conditions, so as to not compromise significance.

<sup>171</sup> See Engel (2014) on how these methods differ from survey data or vignette studies.

<sup>172</sup> See, for instance, Harrison and List (2004) on laboratory and field experiments in economics and their complementarity or Falk and Heckman (2009) on the controversy between lab and field experiments and the value of combining them.

different from the contexts regulators are interested in, may push them towards experimentation in the field, at increased costs. Also, incorporating iterative testing in field experimentation comes with specific challenges and costs to regulators that other nudge designers do not face. This chapter attempts to identify those challenges and costs.

In sum, this chapter aims to address the implications of iterative experimental testing for regulators as nudge designers through the lenses of the experimental alternatives available.

#### **4.4.4 Laboratory experiments**

A laboratory experiment has numerous advantages. Random assignment of subjects to treatment and control groups facilitates the identification of causal effects. Such high experimental control also facilitates replicability (e.g. Falk & Heckman, 2009). Iterations with several competing nudges become easier too. Regulators may also carry these out themselves, without requiring any outside cooperation or external contractor. Cost is another advantage, with laboratory or online experiments being cheaper than field ones. Laboratory and online experiments can also easily be combined with survey data for additional insights on behaviour.

Depending on whether they follow psychology or economics traditions<sup>173</sup>, laboratory experiments may provide more or less context to participants. However, even if context is provided, laboratory experiments conducted for the purposes of assessing the behavioural effectiveness of regulatory nudges are likely to be plagued with low external validity. This is particularly problematic, since the purpose of such experiments in the regulatory context is to predict nudge effectiveness in the real world. While this might be the case of experiments testing regulatory nudges, laboratory experiments in economics are generally praised for the control they provide, which allows identifying general behavioural principles and mechanisms (e.g. Camerer, 2015; Kessler & Vesterlund, 2015; Lunn & Choudhury, 2018).

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<sup>173</sup> See Croson (2005) on the differences between psychology and economic experiments, including context. See also Loewenstein (1999) for a critical analysis of experiments in economics.

#### 4.4.4.1 A note on online experiments

Experiments can be conducted in a laboratory or in an online environment. Online platforms such as Amazon Mechanical Turk or Prolific Academic, where experimental participants can be recruited and rewarded, increasingly allow quick and cheap experiments. Paolacci, Chandler, and Ipeirotis (2010) discuss some of the advantages of Mechanical Turk, including fast recruitment of subjects, anonymity and the possibility to easily conduct longitudinal studies.<sup>174</sup> They also grant access to a more diverse subject pool than laboratories in academic environments. For iterative testing, online experiments offer a clear advantage in comparison to offline experiments. In particular, iterations with different nudges are easier and more convenient to carry out: “Because the search space is often large, numerous cycles are needed, which gives the online laboratory an advantage due to its low costs and speedy accretion of subjects” (Horton, Rand, & Zeckhauser, 2011, p. 418).

While allowing immediate access to a large subject pool, online experiments are not without challenges. Subjects may not take the experiment seriously – since they tend to be poorly paid – or they may submit more than one response (Paolacci et al., 2010). In fact, one important challenge of online experiments “is uncertainty about the precise identity of the experimental subjects” (Horton et al., 2011, p. 405). Another disadvantage concerns the fact that, since participants can participate in multiple and similar experiments for many years (Paolacci et al., 2010), experimental results may lack independence. Non-random dropouts may also occur (Horton et al., 2011); and yet another problem may be a loss of control over the environment in which decisions are made.

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<sup>174</sup> See Paolacci et al. (2010) for a comparison between Amazon Mechanical Turk and other recruiting methods like the laboratory on dimensions such as “risk of experimenter effects” and “subject motivation” (p. 414).

Notwithstanding the challenges that they may pose – many of which can be overcome<sup>175</sup>– online experiments are increasingly being used for policy and research purposes.<sup>176</sup>

#### **4.4.4.2 Disadvantages of laboratory and online experiments**

Laboratory and online experiments come with important challenges. Participants, knowing that they are taking part in an experiment, may change their behaviour; they may also lack experience and self-select, which can distort results (Falk & Heckman, 2009)<sup>177</sup>, all of which are common objections to laboratory experiments.

External validity is also an issue in this type of experiments.<sup>178</sup> It tends to be the “price” to pay for high internal validity (Engel, 2014, p. 135). There are essentially three reasons why we can expect laboratory and online experiments testing regulatory nudges to have particularly low external validity.<sup>179</sup> One is the already too familiar reason that laboratory and online experiments fail to provide the richness of the context in which real decisions would take place:

“Regulators may laboriously tweak wording, font size, and graphics in their search for disclosures that are well-understood by consumer research subjects in the lab. But comprehension in the lab is not

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<sup>175</sup> See Horton et al. (2011) on the consistency between results in the laboratory and the online environment and how to overcome certain challenges of online experiments.

<sup>176</sup> See Nieboer (2020) on online experiments for the design of behaviourally-informed policy.

<sup>177</sup> See Falk and Heckman (2009) on a summary of the advantages and disadvantages of experiments. In the authors’ perspective, the criticism addressed to laboratory experiments in economics is unwarranted. See also Engel (2014) on the advantages of laboratory experiments.

<sup>178</sup> This is far from a settled debate in economics, in particular when it comes to testing economic theory. According to Loewenstein (1999), experiments in experimental economics only have high external validity when they intend “to represent the behaviour, and consequences of that behaviour, of people operating in highly structured markets” (p. F33). Levitt and List (2007) point out that the laboratory differs from natural environments on several dimensions, which may pose problems for generalisation. Camerer (2015) replies to Levitt and List (which again shows that we are still far from a consensus on laboratory experiments) arguing that generalisability is not a promise of laboratory experiments. Kessler and Vesterlund (2015) argue that only the “qualitative results” from a laboratory experiment matter from an external validity point of view.

<sup>179</sup> See also Tor (2008) on the more general discussion regarding issues of external validity in experiments conducted in non-legal settings.



comprehension in the field, where we are busy, distracted, and influenced by marketing and sales talk” (Willis, 2019).

This remains an important argument against frequent calls for continuous experimentation of disclosure. For instance, Lunn (2014), after providing mixed evidence on the impacts of disclosure, claims that disclosure rules should be tested for effectiveness precisely because of such contradicting evidence: “In most cases, there is no reason not to pre-test the specific form of simplified disclosure proposed for its effectiveness on decision making, either through a laboratory experiment, field experiment or trial” (Lunn, 2014, p. 42). However, how disclosure fares in a laboratory experiment is different from its real performance, where different factors play a role in decision-making.

Another reason why low external validity is likely to plague laboratory experiments in this context regards the subject pool. Even if nudge designers devote resources to gather a representative sample, they might not be able to minimise the uncertainty about the extent to which the subject pool is representative of the wider population facing the real nudge.

The third reason why laboratory and online experiments to test regulatory nudges are likely to have low external validity concerns the nature of these experiments, which might allow regulators to only test *proxies* of individual behaviour and not real behaviour. The very artificial nature of laboratory/online experiments may push regulators to the inevitability of testing regulatory nudges on proxies of behaviour such as behavioural intentions, comprehension or hypothetical behaviour. In this sense, experiments in the regulatory context may become closer to vignette studies, which differ from experiments “by being hypothetical” (Engel, 2014, p. 131). The actual advantages of laboratory experiments, in particular incentivised choice, may also not be realised. Sunstein (2018), too, acknowledges that experiments in the regulatory context might only provide this type of data:

“If randomized trials are not feasible, we might be able to design experiments in order to improve understanding of actual behaviour

by asking people concrete questions about what they would do if provided with certain information or if given a range of options” (Sunstein, 2018, p. 97).

Examples of online experiments carried out by the FCA reveal precisely the need to resort to hypothetical scenarios (e.g. Guttman-Kenney, Leary, & Stewart, 2018<sup>180</sup>; Adams, Guttman-Kenney, Hayes, Hunt, & Stewart, 2018). Policy designers might have to compromise on experimental designs that focus on *proxies* of actual individual behaviour.

Low external validity is likely to be a particularly important drawback for laboratory experiments with nudges in the regulatory context, as they represent a burden and cost for regulators, without significant advantages in terms of reduced uncertainty about the behavioural effects of nudging. This might push regulators to experimentation in the real world.

However, real experimentation with regulatory nudges brings further complications. Experimentation in the field is costly and operationally intensive.<sup>181</sup> In addition, iterations with different competing nudges become more difficult in the field. This difficulty is also strengthened by the fact that *design* and *implementation* stages for the purposes of experimentation are within the scope of distinct actors. In fact, real experimentation with regulatory nudges relies on other actors for implementation, namely companies.<sup>182</sup> It is important to note how different this context is from the public nudging context seen in the previous chapter, where the state can directly experiment with citizens in the services it provides: the state is both the designer and the implementing party. In the regulatory context, however, the state cannot address citizens directly; this relationship is necessarily mediated by firms. The fact

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<sup>180</sup> In this case, the experiment was conducted in cooperation with a credit card provider.

<sup>181</sup> For an overview of the detail and technical knowledge involved in the design of field experiments for policy purposes, see John (2017b). This book discusses the myriad of steps and considerations involved in the design and implementation of field experiments and the practical problems that may arise, including problems with implementation partners and logistical constraints.

<sup>182</sup> It is possible that nudge design by regulators and implementation by firms is also mediated by another party – experimental researchers – an element that introduces further frictions in the experimental process.

that the state cannot directly experiment with the final addressees of nudging represents an additional friction in the experimental process. Additionally, regulators may lose control over the experimental protocol. Three possibilities for real experimentation are within regulators' reach:

- relying on firms' efforts and cooperation;
- relying on experimental regulation;
- relying on nudging's enactment through legislative and regulatory processes.

These alternatives may present additional barriers (such as legal certainty) that other nudge categories analysed in chapter 3 do not face. Each of these experimental alternatives is discussed below. It is important to note that each of these field alternatives may be used alone or in combination with another field or laboratory option. This chapter does not intend to discuss which type of experimentation – laboratory or field – is superior, but rather analyse the detail, considerations and costs that they both involve.

#### **4.4.5 Experiments reliant on firms' efforts**

Regulators may rely on the (voluntary) efforts and cooperation of a few companies to design a particular nudge and test its effectiveness on individuals. This approach has clear advantages. One is that implementation and data collection costs are shifted to firms themselves (albeit not entirely, as explained below). Another advantage is that the regulator may access data about the performance of nudging in a real context with individuals in their natural decision-making environment. Furthermore, even if the regulator just manages to get the cooperation of one specific firm, this might already provide access to thousands of observations.

Another particular advantage – not shared by experimental regulation (discussed in section 4.4.6) – is that relying on firms' efforts hides the fact that the intervention comes from the state. Chapter 3 (section 3.6.4.2.ii) discussed the important role of intervention source on people's acceptability: there are interventions that are more positively perceived by the public if carried out by the state; others get approval if

carried out by the private sector. In other words, depending on the intervention, the state might be interested in disguising its design role: relying on firms might allow for this. This can also be a disadvantage, as the testing phase does not take into account possible reactance effects of knowing that the intervention comes from the state, effects that would take place in reality. However, this also depends on the regulatory strategy: for instance, if the regulator is interested in providing the nudge as a soft tool (e.g. an agreement with industry), then experimentation counting on firms' efforts may provide realistic results.

#### **4.4.5.1 The problems of relying on firms for experimentation**

There are a few problems when relying on firms for experimentation, most of which are not shared by designers of nudges other than regulatory ones. First, relying on a third party for implementation and experimentation can entail a loss of control over this process for regulators. Even if companies and regulators agree on close cooperation over the implementation process, regulators may become extremely dependent on firms' willingness to cooperate, provide data and implement a rigorous experimental protocol. Regulators' possible loss of control over actual implementation might create doubts about any conclusions on nudge effectiveness. These doubts may be further strengthened if the nudge tested is not truly aligned with business incentives. Furthermore, the mere fact that nudge testing and implementation is dependent on a third party means that it might be difficult for the nudge designer to employ additional nudge iterations. Reliance on a third party introduces friction to an otherwise ideal iterative process.

The fact that data collection and implementation costs are on the side of businesses, while providing a cost advantage for the regulator, may nonetheless impose additional burdens. If the regulator does not possess the skills, it might have to externally contract data collection and analysis services. Furthermore, the costs imposed upon businesses put pressure on policy justification. Put differently, the regulator might have to properly justify why experimenting with a particular nudge can advance certain policy goals. In addition, relying on the cooperation of a few

companies may pose data privacy concerns, given the personal nature of the underlying data on these companies' clients or employees.

Another disadvantage of this approach is that relying on the efforts of a few volunteering firms to conduct a field experiment poses an issue of self-selection. These firms may differ from non-volunteering ones in ways the regulator may not be able to anticipate. This may be particularly problematic if a solution is scaled up, since a nudge that worked for the consumers of some volunteering firms might not allow the regulator to anticipate all the possible ways in which other firms can undermine its effectiveness or engage in nudge re-framing. Firms are the ones ultimately implementing regulatory nudges, which makes this nudge category very different from the other two discussed in chapter 3 (private and public nudges), especially when it comes to testing: unlike regulatory nudges, private and public nudges are designed and implemented (and tested) by the same actors.

Another barrier may exist if regulators intend to test the best design of a tool already created by law, but which has not yet been detailed at subordinate levels of decision-making. Testing may imply a control group of individuals who are not exposed to the nudge, which means that it may require some firms to enter in a situation of non-compliance with the law in order to be able to experiment.

This concern on the lack of feasibility of a control group is a major one, but it can be overcome. As an illustration, a study by the Autoriteit Financiële Markten (AFM), the Dutch financial conduct regulator, experimenting with different versions of a mandatory credit warning in cooperation with a bank, managed to overcome the problem of having a control group not exposed to the nudge. In this group, consumers received an extra letter with the credit warning and the possibility to withdraw from the credit agreement: "In this way, we prevented that this group of consumers would have taken out a loan without having seen the obligatory credit warning" (AFM, 2016, p. 17).

Another constraint may have to do with difficulties in segmenting experimental subjects, a barrier that may also apply to the other experimental alternatives in the

real world presented below. Since tailoring nudges to different audiences may be an important consideration in nudge design, the difficulty in doing so in real experimentation can amount to a significant design challenge.<sup>183</sup>

#### **4.4.5.2 Is this option realistic?**

Testing nudge options in cooperation with firms is not some futuristic option; it has been done. For instance, the FCA has reported interventions of this kind. One is described in Hunt, Kelly, and Garavito (2015) on the impact of text alerts and mobile apps on overdraft charges in two banks. Also Adams, Hunt, Vale, and Zaliauskas (2015) and Adams, Hunt, Palmer, and Zaliauskas (2016) on the impact of letters and reminders on switching behaviour in savings accounts represent insightful examples of the cooperation between firms and regulators in carrying out experimental trials. These trials are part of a broader project by the FCA that invites firms to cooperate with this authority on “testing communications in order to make sure that our [FCA’s] rules are more effective” (Hunt et al., 2015, p. 29).

Also the AFM has resorted to this option, with a study done in cooperation with a bank, testing the impact on consumers of a warning on credit advertisements (AFM, 2016). Other examples, such as the intervention in Caflisch, Grubb, Kelly, Nieboer, and Osborne (2018), measuring the impact of consumers’ automatic enrolment in overdraft or unpaid item alerts, counted on datasets provided by banks.

Regulators may rely on firms’ cooperation to test regulatory solutions. They may encourage firms to help them in this endeavour and they may even be more lenient with those that provide such help. Relying on third parties for testing is not without challenges, some of which have been addressed here. Regulators might also go for other approaches.

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<sup>183</sup> See Jones and Whitehead (2018) on this and other challenges in RCTs.

#### 4.4.6 Experimental regulation

Regulators can also make use of field experimentation themselves, which in the regulatory domain might imply some sort of temporary regulation, such as experimental regulation or sunset clauses. The famous idea of the state as a “laboratory” coined by US Supreme Court Justice Brandeis, often interpreted as a call for social and economic experiments, reflects such a scientific aspiration in policy and law-making.<sup>184</sup> Temporary regulation of an experimental kind may allow the regulator to experiment with a nudge or behaviourally inspired tool for a certain period of time in a particular jurisdiction or selected areas of such jurisdiction.

It goes without saying that this cannot be achieved unless there is parliamentary authorisation that justifies the need for such experimentation and specifies how it should occur. The legality of experimental legislation, namely statutory authorisation for derogation from law and the justification for such an experiment, entail that the experiment and its assessment criteria are clearly defined (Ranchordás, 2013).

Included in this experimental alternative are all sorts of experimentation, as long as they occur in the field, that is, in natural decision-making environments. Several types of field experiments exist, some closer to ideal RCTs, others further away. This section is not so much concerned with these differences, but on engaging in

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<sup>184</sup> See Tarr (2001) on how the state viewed as a “laboratory” by Justice Brandeis is not related to federalism, but an interest in “scientifically based public policy” (p. 42). See Gardner (1996) for the view that taking Brandeis’s metaphor as experimentation is misleading.

experimentation with a rule, irrespective of the particularities of the experimental design.<sup>185</sup>

Experimental legislation can be defined as “legislation enacted for a limited period of time in order to examine if a particular legislative measure will effectively achieve certain goals” (Mader, 2001, p. 125).<sup>186</sup> Besides being enacted in one section of the territory or with a group of citizens, experimental regulation is limited in time and comes with a clear goal (Ranchordás, 2013). Also, and very importantly, it should “indicate the criteria used to evaluate if the provisions adopted on a temporary basis are appropriate; it should specify the data to be collected and define the responsibilities for collecting the data and for assessing the results” (Mader, 2001, p. 125). This definition is broad enough to include different types of experimental laws including RCTs or pilot projects (van Gestel & van Dijck, 2011). Irrespective of the specific experimental or quasi-experimental design chosen and related causal inference techniques, a final evaluation compares a treatment group exposed to experimental rules and a control group that falls under the current legislation.<sup>187</sup>

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<sup>185</sup> This section is not concerned with how these experiments may be designed and conceived. Experimental design may be closer to or further away from ideal randomisation, which may result in different types of analysis in terms of causal inference. On different types of experiments in the field, see the categorisation of Harrison and List (2004). They provide a categorisation of field experiments, which are distinguished from social experiments and natural experiments. Social experiments are conducted by governments and involve a particular policy; natural experiments take advantage of naturally occurring events. In natural experiments, for instance, since there is no experimental control, results may have to rely on the comparison of “outcomes before and after for the treated group with the before and after outcomes for the nontreated group”, also known as difference-in-difference estimation (Harrison & List, 2004, p. 1015). Other methods exist to identify treatment effects, such as propensity score matching or instrumental variables (Harrison & List, 2004, p. 1015). As they move away from perfect randomisation, these experiments may face many of the problems of observational evidence, for which econometrics has already developed some strategies, although for the purposes of this chapter, this distinction is not relevant. However, as explained in section 4.4.6.2.ii, perfect randomisation can be difficult to achieve in a regulatory context.

<sup>186</sup> See also Ranchordás (2013, pp. 419-420) on the definition of experimental regulation and its elements (temporary nature, derogation from law, evaluation and circumscribed application).

<sup>187</sup> See Abramowicz et al. (2011) on the advantages of randomisation over other designs to estimate the effects of laws. The authors call for randomised experiments in the law and identify the problems with the non-random evaluation of policies. See also Greenstone (2009) on the advantages of experimenting with regulation.



If experimentation results are positive, temporary may be converted into lasting legislation. This is one of the main differences between experimental legislation and sunset clauses, which also fall under the umbrella of “temporary legislation” (Ranchordás, 2015b). While experimental legislation aims at making a law permanent, sunset clauses are meant to expire (Ranchordás, 2015b; van Gestel & van Dijck, 2011). The prolongation of sunset clauses “should be exceptional” (van Gestel & van Dijck, 2011, p. 542), but they can be passed over and over again even when the initial reasons for their conception are no longer present (Ranchordás, 2018). Sunset clauses pursue “the sunset of ineffective laws”, while experimental legislation seeks “the sunrise of better and more effective legislation” (Ranchordás, 2015b, p. 34).<sup>188</sup> Sunset clauses need indeed to be explicitly passed again before re-enactment. Another difference could be the more universal territorial coverage of sunset clauses, while experimental legislation tends to be applied on a circumscribed part of the territory. Both experimental legislation and sunset clauses accompanied by evaluation requirements can be used to experiment with nudges.<sup>189</sup>

#### **4.4.6.1 Advantages of experimental regulation**

The advantages of such type of experimental approach are numerous. Experimental legislation might serve several purposes and come with important advantages: it provides information on the effectiveness and side effects of a rule; it can overcome uncertainty and address dynamic and innovative fields; it can enhance legislative quality and even promote consensus in controversial domains and stimulate decentralised modes of government (Ranchordás, 2013). Being an approach that generates knowledge, it can overcome information asymmetries and reduce bias in policy decision-making (van Gestel & van Dijck, 2011). It seems to be particularly suitable to test policies where effects are uncertain, but likely high (Gubler, 2014).

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<sup>188</sup> Sunset clauses have been used to achieve several aims such as legislative oversight on particular topics, addressing emergency scenarios and excessive regulatory burdens, among others. See Ranchordás (2015b) on their emergence and use.

<sup>189</sup> The use of sunset clauses for nudge provisions has been advocated by those fearful of abandoning the paradigm of revealed preference (Fabbri & Faure, 2018).

Another advantage of experimental regulation is that the costs of repealing legislation can be avoided (Gubler, 2014). In sum, experimental regulation fits well with “the perception of lawmaking as an iterative learning process, where the legislator dares to try new solutions, observes the results, and learns from them” (Ranchordás, 2015a, p. 220).

With regard to the performance of nudging, experimental regulation – if conducted according to the precepts of experimental methods – looks like the most suitable method, as the nudge is tested in the real world. Furthermore, individuals will be made aware of the state’s experimental rule, so they know that their behaviour and reaction is under scrutiny: “In randomized tests on laws and public information, it will be harder to keep subjects in the dark about how they are being treated or the fact that they are subjects in an experiment” (Abramowicz et al., 2011, p. 949).

While potential “Hawthorne effects” – according to which individuals may change their behaviour because they are aware that they are being observed – make the publicity principle highly undesirable in experimental practice, such public acknowledgement of state experimentation might actually increase the reliability of results coming from experimental regulation. After all, such publicity also exists in the real world with actual regulation, which is why the fact that information on whether one is in the treatment group becomes “part of the treatment” in policy experiments is not necessarily a downside, as the purpose of these experiments is precisely to find out the impact of a legal intervention (Abramowicz et al., 2011, p. 949).

Another advantage, particularly if the nudge is experimentally tested with other regulatory measures, is that the regulator can investigate in loco how the nudge fares and how it interacts with the broader regulatory package. In fact, unlike the other nudges discussed in the previous chapter, regulatory nudges tend not to be provided alone, but as part of a broader regulatory mix. Experimenting with a nudge allows capturing its interaction with accompanying regulatory provisions.

#### **4.4.6.2 Disadvantages of experimental regulation**

Experimental regulation is not nonetheless without several challenges. van Gestel and van Dijck (2011) divide these into three types of challenges: legal constraints, moral or political limitations and methodological concerns (p. 547). Many of these are not shared by other nudge categories that, not being provided by law or regulation, need not rely on this kind of experimentation.

##### **i. Political, moral, welfare and legal limitations**

On a political level, lawmakers themselves may constitute an important limitation. Not only are lawmakers often unaware of the advantages of experimental regulation, but they may be fearful of using it if the results contradict their supported policies (Ranchordás, 2013). The ability to learn from experience is an aspect lawmakers may not want.

Even if the state can identify objective criteria to experiment, having the state experimenting with individuals poses important concerns of a moral nature. One is “unfairness”, with one group being favoured by a certain intervention (Whitehead et al., 2018, p. 126), which is closely linked to an interference with the principle of equal treatment. Likewise, those in the treatment condition “should not become disadvantaged compared to their present situation” (van Gestel & van Dijck, 2011, p. 553). Furthermore, besides the absence of voluntary consent into participation – as people might not be aware that they are participating in an experiment – the intervention may be perceived by participants as coercive, which can contribute to accentuate the vulnerability of certain population groups (Whitehead et al., 2018). Another line of concern, which is related to one group being favoured over another, has to do with the focus on average treatment effects. From a policy and welfare perspective, “we might simply care about winners and losers” (Harrison, 2014, p. 755), and that is an aspect not captured by overall average treatment effects.

On legal issues, law’s path dependency may be an obstacle to experimentation (Gubler, 2014). Experimental regulation poses other legal concerns, namely the possible interference with the principle of legal certainty and equal treatment

(Ranchordás, 2013; van Gestel & van Dijck, 2011). On experimental regulation discriminating between citizens, Ranchordás (2013) uses a real court case to point out that there are criteria such as territorial or demographic variables that provide objectivity. As long as the distinction between control and treatment groups is “proportional” and “non-arbitrary”, equal treatment is being respected (Ranchordás, 2013, p. 438). As Zeisel (1973) additionally notes, random assignment is not only temporary in an experiment, but it may also be admissible when “the right involved is not sufficiently important to merit special protection” (p. 108).

Experimental regulation may also present a threat to the principle of legal certainty<sup>190</sup>, in particular to this principle’s stability and predictability dimensions (Ranchordás, 2015b). After all, several scenarios are possible after their adoption: they can be terminated, reintroduced or turned into law (Ranchordás, 2013). Laws are, however, expected to last. The principle of legal certainty, which refers to “the possibility of knowing in advance what legal consequences will follow from one’s conduct” in its positivist dimension (Bertea, 2008, p. 29)<sup>191</sup>, is an important principle of the law. It requires predictability and stability of the law. In fact, legal certainty is linked to the path dependency of the law: law resists change (e.g. Gubler, 2014).<sup>192</sup>

In Ranchordás’s (2013) view, legal certainty should be understood “dynamically” and experimental regulation can be seen as working towards this principle, since it allows legal frameworks to adapt without disruption.<sup>193</sup> It allows sufficient certainty if it is implemented for a temporary period, with a certain goal and it is subject to an evaluation. Rather than a mere synonym for immutable laws, legal certainty has multiple dimensions and the principle’s actual shape should reflect society’s evolution without allowing for arbitrary power (Ranchordás, 2015b, p. 38).

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<sup>190</sup> What legal certainty means is a highly debated issue. See, for instance, Barnes (2008) on three different views of legal certainty and Popelier (2008) on this principle and its “paradoxes”.

<sup>191</sup> See Bertea (2008) on the positivist theory, the traditional theory of legal certainty, and an alternative perspective of legal certainty.

<sup>192</sup> Different factors explain the persistence of legislation, among which are the status quo bias and inertia, path dependency and bureaucracy (Ranchordás, 2018).

<sup>193</sup> On how temporary legislation can be used to accommodate innovation and ultimately address the law’s path dependency and tendency to lag behind reality, see Ranchordás (2015a).

The author explains why sunset provisions and experimental regulation are a “blessing” for legal certainty. Sunset provisions can overcome the surprise element of sudden amendments to existing laws. They may also address uncertainty in that they can provide a framework and continuous oversight in new and controversial topics. In the view of Ranchordás (2015b), if sunset provisions are accompanied with a “clear framework” and assessment criteria, uncertainty can be avoided (p. 39).

Also experimental regulation may advance legal certainty. It allows the evaluation of rules and subsequent informed decisions and a soft adaptation between new and old legal frameworks (Ranchordás, 2015b). In a fast-changing world, experimental regulation “can be a better option to abrupt amendments, it can be a source of evidence and experience that can ground better legislation and avoid future and more detrimental legal revisions. [reference]” (Ranchordás, 2015b, p. 41). In comparison to the enactment of laws, it can reduce uncertainty by allowing the legislature to learn and correct problems “on a small scale first” and providing the necessary time to adapt to a new legal framework (van Gestel & van Dijck, 2011, p. 550).

While sunset clauses and experimental regulation may assist regulators in keeping up with the pace of reality using a trial-and-error approach and come with important advantages for the pursuit of the spirit of legal certainty, they can also be a challenge to this legal principle. Sunset clauses can have a detrimental effect on investment, as reminded by Ranchordás (2015b).<sup>194</sup> The associated future uncertainty may also be negatively perceived, as parties cannot predict future rights and obligations. Legal certainty may be threatened if various laws are subject to sunset provisions, as individuals and firms “are not always aware of the provisions which will in fact be terminated after a fixed period and those which may be renewed” (Ranchordás, 2015b, p. 43). Similarly, experimental regulation can reduce a rule’s effectiveness due to the uncertainty about its temporal continuity.

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<sup>194</sup> The author also explains that, when properly designed, sunset clauses can promote investment.

Whether sunset clauses and experimental regulation further legal certainty or not is highly dependent on the way in which they are provided and designed (van Gestel & van Dijck, 2011; Ranchordás, 2015b). In this respect, van Gestel and van Dijck (2011) draw attention to the relevance of not retroactively applying experimental rules. However, using iteration with experimental regulation can represent an important challenge to legal certainty. Renewing an experimental clause to test a new nudge or testing several nudges to start with may put this principle under strain, an aspect that makes these possibilities politically difficult to defend in this context.

## **ii. Methodological concerns**

Real experimentation as an approach to gather evidence on the performance of nudging comes with important methodological challenges (some of which shared by field experimentation that relies on companies' efforts, the alternative discussed earlier). First, it may not provide an accurate test to a tool's performance, as responses in an experimental scenario can be affected by the fact that people are uncertain about whether the rule will last: "responses to temporary laws may be different from responses to permanent laws" (Abramowicz et al., 2011, p. 956).<sup>195</sup> Related to this concern is the fact that people may react differently when they know that their behaviour is being observed and monitored, an effect known as the above-mentioned "Hawthorne effect".<sup>196</sup> Problems in generalisability may also arise if those participating in the experiment self-select – and are not representative of the real population of interest – or if there is "experimenter selection" (Abramowicz et al., 2011).<sup>197</sup>

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<sup>195</sup> Gubler (2014) also notes that private parties might behave differently in an experimental scenario and in a "single-stage rule" by over or under-responding to the experiment. The author nonetheless provides reasons why experiments will not be systematically biased in this way.

<sup>196</sup> Depending on what is being experimented, it might be possible that those exposed to the treatment do not consciously know that they are taking part in a legal experiment (see Abramowicz et al., 2011).

<sup>197</sup> See Abramowicz et al. (2011) on "self-selection" and "experimenter selection" (pp. 952-957). Apart from difficulties in generalising from an experimental context, the authors discuss other issues impacting legal experiments, namely the impossibility of double-blind design and imperfect randomisation.

Experimental regulation comes with other methodological problems. In particular, design becomes more complex than when counting on the efforts of some firms to arrive at the causal effects of nudging on behaviour. Under this experimental alternative, it is possible to evaluate how nudging fares in its interaction with the broader regulatory mix, but identification becomes problematic. Identification is difficult in field experimentation: “The more the researcher takes identification seriously, the more she is at the mercy of unanticipated natural variation” (Engel, 2014, p. 131). Moreover, how valid randomisation is depends on “the pool from which participants are drawn” (Engel, 2014, p. 136).

The regulatory context can be a challenging one when it comes to experimental protocol. Randomisation, while highly desirable from the perspective of assessing regulatory impacts, might be difficult to achieve. Imperfect randomisation, with problems such as dropout or spillovers, can become problematic (Abramowicz et al., 2011). Experimentation involves methods that “clearly have no equivalent in the actual political practices of the state or national governments” (Gardner, 1996, p. 480). Also Trautmann (2013) reveals a concern with the impossibility of running randomised experiments with the law:

“It will often be impossible to run experiments with legislation using randomized treatment and control groups. Legislation will then be introduced temporarily and evaluated on the basis of the observed effects during this test period. [reference] However, if treatment conditions are compared to “control conditions” in terms of pre- or post-trial baseline data, there is no clear basis for causal attribution of any effects to the legislation” (Trautmann, 2013, p. 539).

Harrison (2014) voices similar concerns about field experimentation for policy purposes, when referring to the possibility that a particular intervention may not allow randomisation due to the “logistical constraints of coordinating multiple sites and obtaining necessary approvals” (Harrison, 2014, p. 757). This translates into

practical difficulties when it comes to experimental design. The ideal randomised experiment with regulatory nudges may not be practically or operationally attainable.

### A. From working “there” to working “here”

External validity is not completely addressed with either experimental regulation or field experimentation that counts on the efforts of firms. An experiment is “an operation with specific limits in time, space and operating conditions” (Zeisel, 1973, p. 122). Very importantly, even if a field experiment is conducted in the intended environment, differences in time persist between the experiment and the policy’s actual implementation in the population (Grüne-Yanoff, 2016).

Field experimentation provides context, which may assist in ascertaining how realistic and generalisable the effects of a particular policy are in comparison to laboratory experiments. However, there is still a leap between experimental results and reality. Even RCTs’ perfect randomisation does not fully eliminate uncertainty: “It is a long road from “it works somewhere” to the conclusion you need – “it will work here”” (Cartwright & Hardie, 2012, p. 6).<sup>198</sup> In fact, in evidence-based policy the interest is in “*effectiveness*” rather than “*efficacy*” [emphasis in original] (Cartwright, 2009, p. 131). While efficacy is about whether a certain treatment produced a particular outcome in a selected population in a set of circumstances, effectiveness is about the introduction of the treatment in the population of interest: “Efficacy is no evidence whatsoever for effectiveness unless and until a huge body of additional evidence can be produced to show that efficacy can travel, both to the new

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<sup>198</sup> In their book on evidence-based policy, Cartwright and Hardie (2012) argue that RCTs do not eliminate uncertainty about whether a policy that worked somewhere will be effective in another context, as “they only secure the starting point on the long road from “it works there” to “it will work here”” (Cartwright & Hardie, 2012, p. 123). In particular, Cartwright and Hardie (2012) explain the “effectiveness argument”, according to which a certain intervention that worked elsewhere will play “*the same causal role*” [emphasis in original] in the new environment if: it “played a positive causal role there”, it can have the same “causal role here post-implementation as there” and the “support factors” for the intervention to contribute positively are in place for some individuals (p. 45). As the authors explain, the conditions for the effectiveness argument are difficult to achieve. In order to assess whether a policy that worked “there” will work “here”, one has to engage in “horizontal search”, that is, looking for “support factors” (or “the team of causes” required for the policy contribution), and “vertical search”, i.e. looking for “causal roles” (Cartwright & Hardie, 2012).



population and to the new methods of implementation” (Cartwright, 2009, p. 133). Since efficacy is “one small piece of one kind of evidence” (Cartwright, 2009, p. 133), the author calls for the construction of “causal scenarios” about what may happen once a particular policy is implemented to assess which factors are relevant for effectiveness.

One of the reasons that explain why moving from efficacy to effectiveness or achieving external validity is problematic lies on implementation (Cartwright, 2009). How exactly a particular treatment is implemented is likely to influence the outcome and it is also likely to change from “there” to “here”. Another reason has to do with how confounding factors are distributed, which may change from the experimental setting to the targeted environment (Cartwright, 2009). While RCTs tend to highlight the effect of a particular policy, causal factors “*work in teams*” [emphasis in original] (Cartwright & Hardie, 2012, p. 52): a particular policy requires other factors in place, with different “teams” of factors producing different policy effects. A third reason behind the difficulty in determining effectiveness put forward by Cartwright (2009) regards structural differences that the experimenter may ignore between the two settings. In sum, RCT experiments are good at establishing efficacy, not effectiveness.<sup>199</sup>

Also linked to this last reason is the fact that experiments in the field of social sciences are conducted in an environment of “high causal density” (Manzi, 2012), that is to say, one where many factors influence the outcome. This makes it difficult to identify the specific causal effect of a particular rule. Generalisation is then a major downside of randomised experiments, which replication – and the conflicting results it can be associated with – might not overcome.

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<sup>199</sup> See also Grüne-Yanoff (2016) on effectiveness assessments in the population of interest depending on the presence of “*necessary background conditions*” [emphasis in original] and the intervention being deployed “in the right way” (p. 472). For more on the problems of establishing policy effectiveness through RCTs, see Cartwright (2009), Cartwright (2010), Cartwright and Hardie (2012) and Deaton and Cartwright (2018). For an explanation on how to interpret average treatment effects and how this measure is far from being immediately reliable, see Deaton and Cartwright (2018).

External validity and extrapolation require “mechanistic evidence”, which “difference-making evidence” does not necessarily offer (Grüne-Yanoff, 2016, p. 473). Experimental RCT evidence only tells that an intervention worked in a specific context, population and time. Generalisation is not possible “unless we make additional assumptions about the causal mechanism underpinning the result” (Lunn & Choidealbha, 2018, p. 26). In this sense, laboratory experiments may have an advantage over field ones, since they allow “psychological mechanisms to be better isolated and tested” (Lunn & Choidealbha, 2018, p. 25), in ways that cannot be easily matched by field experimentation. Laboratory experiments can then be more appropriate than field experiments when psychological mechanisms are not well-understood.

Mechanistic evidence may be the kind of evidence that allows understanding why a policy works, rather than whether it works. Experimental evidence “avoids the requirement for a detailed understanding of the physical mechanism by which the treatment operates” (Manzi, 2012, pp. 72-73), but this is precisely the type of evidence needed in the social sciences about policies and how they work. In fact, Grüne-Yanoff (2016) argues that in the absence of “mechanistic evidence”, one cannot know whether a certain policy will perform well in its intended environment; again, “difference-making evidence” is not enough to have evidence-based policies. Grüne-Yanoff’s (2016) argument rests on the idea that crucial policy aspects are sensitive to underlying mechanisms; that is, different mechanistic assumptions change the evaluation of a policy’s effectiveness, robustness, persistence and welfare effects.

The OECD (2019) reiterates the role of mechanisms. The results of an experiment can only inform future decisions if the mechanisms through which an intervention had an effect are identified. In particular, “one also needs to determine through which mechanism a cause produces its effect (*mediator*), under what conditions (*boundary conditions*), what may moderate it (*moderators*) and what kind of relationship

between cause and effect is obtained (*relationship*)” [emphasis in original] (OECD, 2019, p. 129).

Even if experimentation and replication can never fully eliminate uncertainty, how reliable generalisation is can be improved if experiments are placed and combined within a larger body of evidence. This is why mechanistic and other evidence may assist in the process of generalisation and making sense of experimental results.

### **B. Implementation costs for businesses and administrative costs for regulators**

In addition to the fact that real experimentation cannot eliminate uncertainty about a policy’s real performance – even if the high standards of RCTs are met – another challenge of experimental regulation is the implementation cost for businesses. Experimental regulation circumscribed to a particular area may be too costly: it may be extremely burdensome for businesses to differentiate between customers or geographical locations in order to comply with experimental regulation. Even if a sunset type of rule with universal coverage in a jurisdiction is applied, the state may have ahead a high burden of justification on the need for such an experiment. The state also has to ensure that data collection mechanisms are properly in place to monitor performance and it may have to rely on data reported by firms, which may differ in the way they collect and register such data.

Costs are one of the main challenges of “randomizing law”; besides, there are different costs at each stage of the implementation of an experiment (Abramowicz et al., 2011). These include the costs of overcoming resistance to experimentation, the costs of informing individuals about whether they are in the treated or control legal setting, “data-gathering efforts” and the costs of legitimately minimising attrition (Abramowicz et al., 2011, pp. 961-963). Regulators may even have to find external contractors to conduct much of the research and implementation efforts or to analyse the data, an aspect that obviously adds to costs.

This cost dimension is a relevant one and very likely puts experimental approaches in the field at a disadvantage. Sunstein (2018), too, while being a proponent of

experimentation, underlines that “there are constraints – involving not merely law but also resources and feasibility (and perhaps equity as well) – on using randomized controlled trials in the regulatory context” (p. 97).

### **C. Added difficulty for iterative testing**

Experimental regulation comes with additional difficulties. Not only is testing with several nudges at once made much more difficult, but also the use of an iterative process may be an impossibility both in terms of added costs and political feasibility. This is, to a very large extent, a concern also applicable to the alternative of relying on the efforts of firms for experimentation. Iteration is easier when design and implementation are conducted by the same actor; different actors in each of these two stages adds friction to iteration. In fact, this is closely related to the previous challenge: having to rely on firms for testing makes iteration difficult, especially with different nudge variations and designs.

Furthermore, nudge rotation and renewal may face challenges, given the time frames of legislative and regulatory processes, an aspect discussed in greater detail in section 4.4.7 concerning experimentation through such decision-making processes.

#### **4.4.7 Legislative and regulatory processes as experimental platforms**

A fourth alternative relies on legislative and regulatory processes to experiment, depending on whether the nudge is provided or not through legislation.<sup>200</sup> This alternative makes the legislative or the regulatory process an iterative experimental platform, with nudge rules being enacted and later revised and fine-tuned. This alternative may even be combined with previous ones (e.g. laboratory experiments) in stages prior to actual enactment.

The idea of incorporating iteration in legislative or regulatory processes to engage in nudge design may appear extreme and unrealistic. However, policy-makers may

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<sup>200</sup> Throughout this thesis, the term “regulatory process” is generally used to also encompass the legislative process. In this section, the distinction is made not only because these two differ with regard to their time frames – with legislative processes taking longer than those taking place at subordinate levels of decision-making – but also to introduce the next section (section 4.5) on who is better suited – legislators or regulators – to design nudges.

decide to provide a nudge at a particular moment in time and re-evaluate it later (voluntarily or prompted by an evaluation clause). This alternative – whether intentional or not – is actually not that far from reality, where laws and regulations are enacted, evaluated and later refined if needed. That is, the decision-maker may provide a certain nudge (or set of nudges) with the intention to engage in re-evaluation at a later point in time or it may provide a nudge convinced it is the most effective one, only later encountering the need to review it. Intentionally or not, legislative and regulatory processes can be used as experimental platforms.

Regardless of the rule-maker's intentions, there are advantages and disadvantages in a design process that turns the legislative or the regulatory process into an iterative experimental platform. This alternative closely emulates the design method used by private parties and the state when experimenting to design private and public nudges respectively. However, when attempting at iterative experimentation in the real world through the legislative or the regulatory process, legislators and regulators as nudge designers face specific challenges (some of which shared by other experimental alternatives already discussed): legal certainty and challenges related to the features of legislative and regulatory processes. These are design challenges discussed in sections 4.4.7.2 that nudge designers of private nudges do not face (and designers of public nudges may not face in their entirety).

#### **4.4.7.1 Advantages of experimenting through the legislative or regulatory process**

The advantages of enacting a nudge rule to later assess its effectiveness are similar to some of the advantages of engaging in experimental regulation. In particular, the nudge's behavioural performance is assessed in the real world, in its interaction with other regulatory measures. This realism, coupled with the publicity principle, strengthens the reliability of results.

#### **4.4.7.2 Disadvantages of experimenting through the legislative or regulatory process**

There are several disadvantages and costs of using legislative or regulatory processes as platforms of iterative experimentation for nudge design. Some, shared by experimental regulation, were identified in section 4.4.6.2. As mentioned then, and first of all, if a nudge is evaluated for its effectiveness only after it has been enacted, methodological concerns may arise when it comes to determining the actual nudge effect and contribution to observed behavioural changes, that is, it may become technically difficult to disentangle the nudge effect from other factors. Secondly, testing and comparing more than one nudge at once, as per the first dimension of an iterative design process (section 4.4.1.1), may be difficult, if not impossible.

Iterative experimental testing poses other costs on regulatory nudge designers aspiring to design nudges through the legal or the regulatory process, that is, through the actual enactment of a nudge rule. Legal certainty and features of legal and regulatory processes make it difficult to incorporate the iteration premises of nudge design in regulatory processes. Furthermore, the costs of initiating a new legislative or regulatory process are not avoided with this experimental alternative. These represent barriers and costs that private nudges and most public nudges do not have at their design stages: these nudges are not provided through legal or regulatory means, they are designed and provided alone and they can be designed and tested in direct contact with final addressees. This is nonetheless not the case of regulatory nudges.

##### **i. Legal certainty**

In a world marked by uncertainty and rapidly changing realities, a blind allegiance to a rigid notion of legal certainty may not be appropriate. Total certainty is an unrealistic and unfeasible goal: regulators lack full information about the causes and solutions to problems when they design regulatory interventions and, at later stages, they have to constantly deal with legal obsolescence or errors in the process of rulemaking (Ranchordás, 2015b). Legal certainty is not attainable if the law lags

behind reality. Legislative entrenchment can be problematic: not only may the initial problem that the law intended to address have been solved, but also entrenchment can bind and constrain future legislatures against their will, as Ranchordás (2018) underlines.

Legal certainty is not a one-dimensional principle and certainly has to adapt to changing social realities. It has been mistakenly perceived as a “static concept” demanding absolute certainty (Popelier, 2008) and there are indeed several calls for more flexible and realistic interpretations of this legal principle that acknowledge the inevitability of uncertainty and the need to adapt to new realities.<sup>201</sup> However, for the purposes of nudge design, constant experimentation and iteration can be problematic and push this principle to an extreme.

To put it differently, rigid interpretations of legal certainty are not worth pursuing in an ever-changing modern world, but nudge iteration can seriously put a strain on the principle of legal certainty. It would not be desirable to have a policy that is constantly changing to be nationally or regionally tested in the real world, in a manner analogous to the iterative and fast way in which a company or a researcher pilots and tests ideas with individuals. Ranchordás (2013) acknowledges this point for legislation more generally: “legislators cannot revise legislation at the speed of technological change not only because, as previously mentioned, they do not possess enough information to do so but also because this would be detrimental to legal certainty” (Ranchordás, 2013, p. 428).

An up-to-date approach to legal certainty has become more widespread, but incorporating a fast iterative experimental nudge design method into the regulatory process – fully emulating the design process of other nudges (private and public nudges) – may push legal certainty to a limit that is not only undesirable, but also politically difficult to defend.

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<sup>201</sup> See Popelier (2008) on the compatibility between legal certainty and flexibility of the law.

## **ii. Features of regulation and legislative and regulatory processes**

Features of regulation and elements of legislative and regulatory processes may also hinder iterative experimentation in this context. Unlike the design process of private nudges and (presumably most) public nudges, there are elements in regulation and (regulatory and legal) decision-making processes that add further frictions to an ideal iterative experimental design process for regulatory nudging.

### **A. Provision of nudging with other measures, regulatory ex post assessment as a whole and relying on firms for actual implementation**

Regulatory nudges tend to be provided with other instruments as part of a broader regulatory mix. Ex post assessment is also usually tied to all the provisions in a particular package, not just the nudge. This differs substantially from the other nudges discussed previously, which can be implemented, revised and fine-tuned on their own. The fact that nudges may have to be evaluated ex post with other measures adds friction to an iterative experimental design testing process that involves the actual enactment of a nudge. Iteration is easier for nudges that can be provided and tested alone (private or public nudges).

Depending on firms for implementation to be able to experiment with different nudges is a feature that distinguishes regulatory nudges from other nudge categories. It adds friction and cost to an otherwise ideal iterative process, as mentioned earlier. This reliance on firms to nudge consumers can also be a “source of uncertainty” for regulators designing this tool (Abdulkaridov, 2016, p. 168). This uncertainty has to do with the delivery strategies that firms may develop in implementation stages that run against the original intention of the nudge (see section 3.6.4.3.ii).

### **B. Time frames of legislative and regulatory processes**

Incorporating iterative experimentation in the regulatory process requires a fast approach to regulation analogous to the approach that private actors adopt in their own quest for behaviour change. However, regulatory processes (legislative ones, in



particular) may not be amenable to the constant experimentation involved in the pursuit of the behavioural effectiveness of nudging. Nudge design requires a “flexible, iterative approach, which the regulatory process cannot accommodate” (Abdukaridov, 2016, p. 160).<sup>202</sup>

In fact, while regulatory processes may facilitate responsiveness and iteration (especially in policy formulation stages), they may not be fast in reaching feedback stages. In a design process strongly reliant on experimentation, reviewing stages assess whether a nudge works and if it should be maintained, dropped or reframed; however, regulatory processes are slow in reaching such reviewing stages.

As part of efforts to make regulatory processes a constant iterative learning endeavour, regulators can decide to revisit, review and, if needed, reformulate an existing rule. This can be the result of an *ex ante* commitment or triggered *ex post*. The regulatory process does not end when a rule is enacted, but is rather in constant motion. Reviewing stages are important, because initial regulatory intervention can turn out to be a mistake, given real-world complexity and uncertainty, or become obsolete. Furthermore, not only does improved knowledge develop with time, but also do public perceptions and political inclinations. However, once rules are enacted, the regulatory process takes long to reach the feedback stage and complete its full cycle. It can take years before stages of *ex post* evaluation are reached, even when this commitment exists from the outset. Also, without a prior commitment to evaluation, regulators may not have an incentive to pursue it. For instance, at EU level, the European Commission may not wish to evaluate legislation if this leads to undesirable repeal (Mastenbroek, Voorst, & Meuwese, 2016).

Policy-makers should be able to “learn in real time” and improve rules, in the same way that companies adapt (Sunstein, 2014c, p. 602). Retrospective analysis is crucial for flexible regulatory processes. However, the regulatory process usually takes long to reach this stage. At initial policy formulation stages, the regulatory process can

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<sup>202</sup> Companies are not constrained by “rigid procedural requirements”, having greater capacity than regulators to “experiment with different nudge designs” (Abdukaridov, 2016, p. 176). See footnote 96 and page 144.

easily accommodate new knowledge; however, once rules are enacted, it takes long to revisit them, let alone readjust them. The “measure-and-react strategy” that Sunstein (2018, p. 98) mentions for the corporate world, where intervention effects are measured in real time, remains an ideal and unrealistic aspiration for regulators. The feedback mechanism that allows policy-makers to learn may differ from the fast learning mechanisms that companies have, not only due to time lags, but also to the difficulty in measuring policy impacts:

“The analogy between firms and regulatory institutions extends only so far. The feedback mechanism that facilitates learning differs significantly between firms and regulators. Unlike the marketplace, which quickly gives firms feedback in the form of prices, profits, and output, the link between public policy decisions and outcomes is more attenuated. Accurate measurement of a policy’s welfare effects can be difficult and is somewhat rare. Even when effects are determined, the lag from a policy choice to policy execution can be long; cases and rule making can take several years from their initiation through final appeals in the courts. As the link between a decision and feedback weakens, the ability to learn diminishes” (Cooper & Kovacic, 2012, p. 50).

In sum, even if regulatory processes have traces of responsiveness in initial stages, the time frames in which rules are reviewed may be a barrier to implement the fast iterative design process envisioned for nudging. Delegating nudge design and revision to subordinate levels of policy design may be a solution to reduce the time frames between enactment and revision that take place at the legislative level, but even at such subordinate levels of decision-making a real-time retrospective review that fully emulates the fast iterative design process of private nudges may not be attainable.

#### 4.5 Legislators or regulators: who is in a better place to design nudges?

Four different iterative experimental alternatives have been presented so far. Two of them – laboratory/online experiments and experiments counting on firms' efforts – do not entail the actual enactment or provision of the nudge rule being tested. Nudge *design* happens at a stage different from the tool's actual *provision*. The other two – experimental regulation and experimenting through legislative or regulatory processes – require the actual enactment of a nudge rule to be later evaluated for its effectiveness. That is to say, in the first two alternatives design and provision remain distinct, but in the other two design and provision (partially or totally) overlap: design is coupled with provision to engage in nudge testing. An important remaining question regards the decision-making actor (legislator or regulator) better positioned to design nudges when iterative experimentation is used, in particular for each of the experimental alternatives presented in this chapter.

In all the experimental alternatives, actual design is better left to a regulator rather than a legislator. Iterative testing makes nudging a very detailed rule with strong efforts devoted to its design. The expertise required in terms of experimental methods and data collection mechanisms as well as the efforts needed to engage in nudge design and evaluation make regulators better equipped to embrace the endeavour. Delegation to a regulator might also make the design and iteration of these tools independent of the provision and review of a broader regulatory package. Even when alternatives such as laboratory experiments or companies' experimental efforts are used, delegation introduces flexibility and enables an iterative design process that can be separated from the provision and evaluation of other regulatory tools. Moreover, experimentation in the real world – whether counting on companies' efforts, experimental regulation or actual enactment – may require close contact with implementing actors, an aspect that places regulators in a better position. Finally, and importantly, delegating nudge design to subordinate levels of regulatory design may allow the pursuit of the *second dimension of iteration*:

nudge renewal and rotation; counting on the legislative process to provide this dimension of iteration may be unfeasible (see section 4.4.7). As a final note, it is also important to underline that these rationales may be stronger for information-based nudges than default nudges, making defaults – especially defaults of a binary nature – more amenable to legislative design.

#### **4.6 Nudge provision: the role of legislators**

The fact that *actual nudge design* based on iterative experimentation should be delegated to a regulator does not mean that legislators have no say in it. Nudge *provision* may well happen at the legislative level; that is, legislators may decide to delegate nudge design, but not its actual provision. Also, even if the nudge is not explicitly provided for in the law, the regulator may need to frame its nudge interventions in activities and duties authorised by the legislator.

Additionally, even if nudge design and provision are explicitly delegated to another authority by the legislator, the legislator can still provide important rules about nudge design and implementation, known as “framing” rules, which may impact design costs too. To put it differently, the legislator can still detail certain rules about nudge provision over which the regulator has no decision power. For instance, at the EU level, legislators can delegate the design and provision of certain rules to the European Commission, while still stipulating in the main act further rules about how the nudge should be framed, detailed and implemented, rules which impact the design process itself.

When laboratory experiments or experiments counting on firms’ cooperation are used, not only may the use of these alternatives be called for by legislature, but also the ultimate provision of nudging may happen at the legislative level. Regarding experimental regulation or experimentation through the actual enactment of a nudge rule, nudging’s design process and provision may be fully delegated to the regulator, but it is also possible that design and enactment are not perfectly overlapping, with provision happening at the legislative level and design occurring in a different stage

with the regulator. That is to say, even if design and provision overlap – and thus delegation of design would also be a delegation of provision – it is possible that such overlapping is not perfect and that provision at the legislative level is still accompanied by design efforts at subordinate levels of policy design.

In sum, the legislator ultimately decides not only on the allocation of design and provision of a regulatory nudge between legislator and regulator, but also on the particularities of design processes and provision mechanisms. When it comes to the allocation of decision-making power, this decision is far from trivial. How nudge design and provision is split between these two actors can also impact nudging's (potential and actual) design costs. Provision details have enormous impact as well; in chapter 5, a particular design and provision arrangement that greatly impacted the potential costs of these tools for the nudge designer will be addressed.

## **4.7 Conclusion**

Several technical issues may arise in practice with experimentation that hinder arriving at causality.<sup>203</sup> Assuming that these technical issues are overcome, the approaches discussed in this chapter for nudge design pose important challenges to the regulator's endeavour of knowing how a nudge will perform. In fact, these challenges suggest that iterative experimental approaches (used with nudges in other spheres) may not be appropriate for the design of regulatory nudges.

The fact that existing knowledge on nudge effectiveness in a particular context may not easily be transposed to the regulator's intended context may push towards experimentation. Experimentation is costly, with laboratory or online experiments being less expensive and more amenable to iteration, but unable to provide an advantage in terms of reduced uncertainty about a nudge's behavioural performance. They allow the testing of nudges on imperfect proxies of behaviour and come with particularly low external validity. Experimentation in the real world

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<sup>203</sup> It is beyond the scope of this chapter to discuss these and the econometric and causal inference techniques that have been developed to address them. Even laboratory experiments face data interpretation challenges.

may be better at tackling uncertainty than laboratory experiments, but it is far from able to fully eliminate it. However, real experimentation can represent an important cost and burden for both regulators and implementing parties.

Iteration with different nudge designs and variations to find the most effective nudge is also more difficult (if not impossible) in the field than in the laboratory, an aspect that adds to design costs. Furthermore, experimentation does not end once the perfect nudge has been found, it continues in the pursuit of nudge renewal. The implementation of both dimensions of an iterative process in a real-world context of experimentation may be unfeasible and put the principle of legal certainty under strain.

In sum, while all the experimental approaches presented in this chapter may be used – alone or combined – in the pursuit of the two dimensions of an iterative experimental design process, they come at a cost for the regulator. In fact, repeated experimentation is costly: “Cognitive-based tools can be more expensive (eg than command and control strategies) to design because they may require repeated experiments to be conducted” (Di Porto & Rangone, 2015, p. 50). Whether such burden and onerousness is justifiable in the design of nudges for regulation is an aspect that will be further discussed in chapter 6. Chapter 5 will analyse the implications of a nudge design process reliant on iterative experimentation through a case study.

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## 5. An Iterative Design Process Meets the Real World: The Case of EU Tobacco Warnings

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### 5.1 Introduction

Nudges other than regulatory ones tend to be subject to iterative experimental tests before implementation. Such a design process intends to allow different nudges to compete against each other, so as to choose the nudge maximising behavioural effectiveness. Distinct iterative experimental alternatives are available for regulatory nudge designers aspiring to incorporate such an iterative process, as explained in chapter 4.

Besides allowing different designs to compete in the quest for the “perfect nudge”, iteration in nudge design carries another important dimension. Even after an effective nudge has been found, experimentation with nudges should continue: as effectiveness may diminish over time, nudge *rotation* and *renewal* may be crucial to prevent wear-out. In fact, behind the idea that there is always potential for further refinement in nudge content is the implicit acceptance that over time effects may diminish and thus the nudge should be renewed. This is a dimension of iteration introduced in the previous chapter (section 4.4.1).

This chapter analyses the real burden of iterative experimentation and the two dimensions of iteration through a case study, the case of EU tobacco warnings. In fact, in the pursuit of the most effective nudges, laboratory and online experiments were used to design the most recent warnings. In addition, in the pursuit of continuous behavioural effectiveness, the EU legislators introduced strong *nudge rotation* and *renewal* requirements in the latest revision of tobacco warnings. This makes EU tobacco warnings a particularly interesting case study from a design process perspective, since it allows an analysis of both dimensions of iterative experimentation.

With Directive 2014/40/EU, also known as the 2014 Revised Tobacco Products Directive, the EU legislators have not only delegated warning design and future

warning revision to the European Commission, but they have also set a frequency – one year – for their rotation. Additionally, an annex of the Directive identifies the warnings designed by the European Commission to be used in three different years. The EU legislators have used innovative legal provision mechanisms to promote warning rotation and renewal. Accompanying delegation in warning design and revision, the EU legislators decided on the exact frequency of warning rotation. Warnings have to be rotated on an annual basis: pursuant to article 10(2) of the 2014 Directive, the tobacco warnings “shall be used in a given year and rotated on an annual basis”. With warnings being rotated yearly, the pressure put on the Commission to revise them more frequently increased. These renewal requirements, more than grounded on behavioural evidence, seem to reflect the (erroneous) borrowing of existing evidence in areas such as marketing and branding.

This chapter analyses how the provision, the design and the rotation of tobacco warnings evolved at EU level and the implications of the most recent provision arrangement, *strongly favouring iteration in nudging’s design process and renewal in nudge content*, for businesses, the European Commission and consumers. The ideas that nudging needs iterative experiments to be designed and rotation to remain effective are highly questioned in this chapter. On the one hand, design processes based on iterative experimentation and warning dynamism represent high costs for nudge designers; on the other hand, warnings’ potential to change individual behaviour is limited to start with, making such design and iteration approaches unwarranted. While the chapter does not present new empirical evidence on the behavioural effectiveness of EU warnings, it does review existing evidence on the impact of pictorial warnings and rotation. Analysing such effects on individuals is instrumental to assess whether the design burden imposed by an iterative and experimental design process is justifiable in the regulatory context. Experimenting iteratively to design regulatory nudges and providing nudge dynamism through regulation are both possible, but not necessarily desirable.



## 5.2 What makes EU tobacco warnings an interesting case study?

Regardless of whether a pictorial warning is an optimal solution or not for the social issue in question and irrespective of any future legislative changes in this domain, the case study of tobacco warnings at EU level presents itself as an interesting case study in nudge design and provision for several reasons.

The first reason concerns the fact that looking at how these tools have been designed and provided over time reveals how nudging's iterative design process and dynamism component have progressively been incorporated into regulation. As we will see, the initial design of these warnings has become reliant on laboratory and online experiments; requirements on their renewal have also intensified. These burdens of experimentation in nudge design and renewal in nudge content will be analysed.

The fact that the most recent nudge provision mechanism is *too extreme*, in that it strongly favours iteration and rotation in nudge content, makes this case particularly interesting from a nudge design process perspective. In practice, this process tends to stop at the first dimension of iteration presented in chapter 4, at least in initial design stages. However, the most recent design and provision mechanism of EU tobacco warnings incorporated both dimensions of iterative experimentation already in early design stages.

An additional advantage of the provision and design arrangements analysed is that they have actually been tried through EU legislation, thus representing important learning opportunities for the purposes of the process of nudge design and its provision. Thirdly, the most recent design and provision mechanism introduced makes use of a design solution that regulatory nudge designers can also adopt. In particular, the nudge designer can decide *ex ante* on the exact nudge that shall be used in each time period. As explained in chapter 4, when an iterative experimental approach is used, a nudge is first chosen in a first trial-and-error stage, after which a new experimental cycle is introduced in the pursuit of continuous effectiveness (renewal dimension). Different sequential cycles of experimentation mean that the

nudge rotates. In the tobacco case, different nudges were chosen for distinct time periods in one round of experimentation only. This approach considers from the outset the benefits of rotation, but avoids the costs of new future rounds of experimentation. New rounds of experimentation may nonetheless follow in the future, since the nudge designer – the EU legislators or the European Commission – can change the current nudges at any time. In addition, also the latest warnings can be seen as having been introduced as part of a new round of experimentation, since they were preceded by text-only warnings.

Additionally, rather than deciding on a single “perfect nudge”, a variety of nudges can be implemented simultaneously. Either because the regulator is unable to choose the “perfect nudge” or because it considers the provision of several nudges at the same time as the most effective approach, different nudges can be used in combination. The different approaches to design and provide tobacco warnings at EU level have embodied this possibility.

Fourthly, the case analysed is revealing of the intricate relationship between legislators (Parliament and Council) – as nudge providers – and regulator (European Commission) – as nudge designer (and provider). In particular, this case study reveals how decisions made by the legislators as nudge providers may impact the burden imposed upon the nudge designer. What makes the provision arrangements analysed further interesting at EU level is the fact that they result from a proposal made by the European Commission, the initiator of legislation. The EU legislators may decide on nudge provision arrangements, but these may come already in the Commission’s proposal, an institution that is both the initiator of legislation and the recipient of delegated power. Legal provision arrangements also accentuate the inconsistency that may arise between impact assessment and political stages, on the one hand, and nudge design stages, on the other hand. Stages of policy choice are highly shaped by several competing goals, while stages of nudge design intend to pursue behavioural effectiveness only.

Fifthly, the fact that other design and provision arrangements have preceded the most recent one allows a comparison in terms of the added costs that different approaches have progressively entailed for the European Commission. A final reason has to do with design and provision of nudging being introduced at EU level. This level may be a more suitable level of decision-making to introduce regulatory nudges, so as to avoid fragmentation in the internal market. Some of these reasons become more explicit later in the chapter.

### **5.3 Nudge design and provision: the EU legislators making choices**

As explained in the previous chapter, legislators can frame the design and provision of regulatory nudges. At EU level, in particular, at least two different possibilities arise for nudge design and provision:

- i) Design and provide nudges through EU law;
- ii) Delegate nudge design and provision to the European Commission. Legislators may delegate all aspects about nudge provision or not, that is, even when the EU legislators delegate design and provision to the European Commission, they may still decide to detail certain aspects about provision themselves.

It is nonetheless important to note that, even in case i), where legislators design the nudge by identifying its exact content in the legislative act, the European Commission is likely to be the actor most responsible for this design, not as a recipient of delegated power, but due to its legal initiative. Alternatively, the EU legislators can engage in the specifications of nudge design themselves, in which case the burden of this tool's design becomes part of their workload.

Additionally, in option ii, the delay between the approval of a legislative act until its transposition into national law may allow (total or partial) nudge design to be carried out by the Commission through delegated acts. This is an essential point in the discussion that follows on how tobacco warnings have been designed and provided at EU level.

The design and provision of tobacco warnings at EU level was initially done in 1989 by the EU legislator. However, subsequent revisions to the 1989 Directive not only introduced delegation of warning revision to the European Commission – to ensure an iterative design process, among other reasons – but also detailed other aspects about provision that greatly impacted design costs too. In particular, these legal provision mechanisms were used to introduce warning rotation and renewal.

Before examining the process of warning design and the mechanisms to introduce warning dynamism, section 5.4 briefly explains the EU’s legislative process and the rationales for delegation to the Commission. Understanding why the design of nudging may require delegated powers calls indeed for an analysis of the production of EU legislation.

#### **5.4 The EU’s legislative process and the rationales for delegating nudge design**

As explained in chapter 4, when iterative experimentation is used and irrespective of the experimental approach chosen, the process of nudge design should be delegated to a regulator. With a view to understanding why nudge design at EU level may be delegated to the European Commission, section 5.4.1 explains the EU’s legislative process and section 5.4.2 clarifies the rationales behind delegation. The legislative process makes it difficult to accommodate the design needs of nudges, such as detail and evidence-gathering efforts. Also, very importantly, the legislative process may not allow the quest for nudge renewal and rotation, one of the dimensions of an iterative experimental design process (section 4.4.1).

#### 5.4.1 The EU's legislative process

There are essentially three actors in the EU's ordinary legislative procedure<sup>204</sup> (formerly known as co-decision): Commission, Parliament and Council. It is well beyond the scope of this section to explain in detail the decision-making processes at EU level.<sup>205</sup> However, it is important to take a look at the ordinary legislative process, especially its time frames.

The Commission initiates the legislative process. Before making a proposal, it investigates the potential consequences of its initiatives through impact assessments. These *ex ante* assessments detail policy options and their different impacts. The Commission also initiates processes of public consultation to get the views of businesses, citizens and society. Although they increase “democratic legitimacy”, consultations may prolong the legislative process (Rasmussen & Toshkov, 2013). Consultation may represent more information, but this entails additional time and inefficiencies in the process of decision-making.

Impact assessments and consultations are all part of the Commission's Better Regulation agenda, which is committed to more efficient and effective regulation. These methods – detailed in the *Better Regulation Guidelines* and the *Better Regulation Toolbox* of the Commission (European Commission, 2017a, 2017b) – are in themselves attempts to make regulation responsive to social reality. As mentioned in section 2.2.5.3, the Commission has already acknowledged the importance of

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<sup>204</sup> This is the “normal method for making EU legislation” (Craig & de Búrca, 2011, p. 124) and it was the process adopted for introducing the 2014 Revised Tobacco Products Directive. This procedure entails “the joint adoption” by Parliament and Council of a proposal made by the European Commission, as per article 289(1) of the Treaty of the Functioning of the European Union (TFEU). The “special legislative procedure”, which applies to “specific cases provided for by the Treaties”, regards a legislative act (regulation, directive or decision) adopted by the Parliament “with the participation of the Council” or the other way around (article 289(2) of the TFEU). According to Craig and de Búrca (2011), this procedure usually means that the act is adopted by the Council in combination with the “consent” or “consultation” of the Parliament (p. 130).

<sup>205</sup> On this point, see chapter 5 of Craig and de Búrca (2011).

behavioural sciences at these stages, namely in the identification and assessment of problems and the impact of solutions.<sup>206</sup>

Before a proposal is passed on to the Parliament and the Council, a long time has passed already. A 2009 Commission document on impact assessment elaborates on the typical timeline between the conception of an initiative by the Commission and the time it is communicated to other institutions (table 5 below). Impact assessment alone can take around 52 weeks. It can also take longer, with authors suggesting that consultation can be strategically used to delay legal action: aiming to “democratise policymaking”, consultation ignores “the ability of powerful corporate actors to dominate this process” (Peeters, Costa, Stuckler, McKee, & Gilmore, 2016, p. 114).<sup>207</sup> The fact that consultation may face significant challenges such as the capture by powerful interest groups, the prolongation of regulatory decision-making or even the difficulty in reaching a wider and varied group of stakeholders does not diminish the importance of this tool for the purposes of policy design, as will be discussed later in the thesis.<sup>208</sup>

**Table 5. The European Commission’s preparatory stages of initiatives and their time frames**

Step	Time frames
1. Public consultation	Minimum 14 weeks
2. Impact assessment	Around 52 weeks
3. Preparation of supporting documents	6-18 weeks
4. Opinion of the Impact Assessment Board	8-12 weeks
5. Inter-Service Consultation	Minimum 4 weeks
6. Translation	Minimum 2 weeks
7. Adoption by the Commission (oral	Minimum 6-9 days
8. Transmission to the other institutions	

Own elaboration (source: European Commission, 2009a, pp. 6-9)

<sup>206</sup> See tool 14 on problem analysis and tool 18 on the choice of policy options of the *Better Regulation Toolbox* (European Commission, 2017b).

<sup>207</sup> Peeters, Costa, Stuckler, McKee, and Gilmore (2016) suggest that the consultation and impact assessment stages in the revision of the 2001 Tobacco Products Directive “allowed the industry to frame arguments, engage Commission staff, and delay the Directive’s progress” (p. 114).

<sup>208</sup> On the advantages and challenges of stakeholder engagement, see Alemanno (2015b). On the principles of the EU’s stakeholder consultation, see the *Better Regulation Guidelines* (European Commission, 2017a).

The European Parliament and the Council then review and decide on proposals by the European Commission. If a first reading is not enough for these two institutions to agree on amendments, a second reading takes place. At this stage, the Parliament can veto the proposed initiative if it does not reach an agreement with the Council. To be more precise, a first reading takes place in the Parliament, a stage that allows this institution to make amendments to the Commission's proposal, if it so wishes. A first reading follows at the Council, which may adopt the proposed amendments by the Parliament or make its own amendments and return it to the Parliament for a second reading. If this happens, at a second reading stage in the Parliament, Council's amendments in the first reading stage may be approved, rejected (with the subsequent termination of the whole procedure) or returned to the Council with new amendments. If this last option occurs, the proposal enters a second reading stage in the Council. The Council may approve all amendments, in which case the act is adopted, or not. If not, the process goes to a conciliatory committee, where the act may be rejected or an agreed text is approved for a third reading stage.<sup>209</sup>

From the moment a proposal is conceived by the Commission to the point in time a legal act is actually approved it can take years. In addition, approval is not the end. Depending on the nature of the act (regulation or directive), the next stage can be implementation into national jurisdictions. In fact, in its proposal to the EU legislators, the Commission already identifies whether the future act shall be a regulation or a directive. A regulation is "binding in its entirety" and is "directly applicable in all Member States"; a directive is binding with regard "to the result to be achieved", leaving to each Member State "the choice of form and methods" (article 288 of the Treaty of the Functioning of the European Union<sup>210</sup> or TFEU).<sup>211</sup>

The EU's legislative procedure is long. It starts with the Commission and its consultation and impact assessments stages. It continues with the Council and the

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<sup>209</sup> See article 294 of the TFEU and chapter 5 of Craig and de Búrca (2011) for more details.

<sup>210</sup> Consolidated version of the Treaty on the Functioning of the European Union, OJ C 326, 26.10.2012, pp. 47–390.

<sup>211</sup> Other legal instruments exist, in particular decisions, which are only binding to the parties that they address, and recommendations and opinions, which are not binding (article 288 of the TFEU).

Parliament and, if necessary, it is followed by national implementation at Member State level. Reasons other than the time frames stipulated in article 294 of the TFEU for the stages beyond first reading (and the lack of time frames for the first reading stage) add to the duration of the process. Literature suggests that aspects such as the divergence of positions between Member States can influence the duration of the process (König, 2007). Furthermore, the process does not end with national implementation. The regulatory cycle continues with ex post evaluation or retrospective review. Even if this review may expose critical flaws of legislation, the Commission is committed to evaluating legislation retrospectively, with most efforts still being prompted by the existence of evaluation clauses (Mastenbroek et al., 2016).

#### **5.4.2 Delegation**

In addition to measures introduced by legislation, the EU legislators allow certain aspects to be designed and detailed by the European Commission. In order to take advantage of the expertise of the Commission and to ensure that rules do not need to wait for legislative change to be updated, among other reasons, the EU legislators can delegate certain matters to the European Commission.<sup>212</sup>

According to article 290 of the TFEU, the EU legislators may delegate to the European Commission “the power to adopt non-legislative acts of general application to supplement or amend certain non-essential elements of the legislative act”. Legislators shall identify particular elements, namely “objectives, content, scope and duration” of this delegation of power (article 290 of the TFEU). In addition, article 291 allows the EU legislators to delegate matters of an implementing nature to the Commission when EU legislation needs to be implemented in a uniform manner.

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<sup>212</sup> The EU legislators may delegate certain matters to other actors, such as regulatory agencies and even Member States. Here, I focus on delegation to the European Commission, as this is the most important one for the purposes of the case study of this chapter.



Delegation has existed “since the inception of the EEC [*European Economic Community*]” (Craig & de Búrca, 2011, p. 134). However, prior to the Lisbon Treaty, the European Commission did not have the same scope of power. Before the changes introduced by the Lisbon Treaty, delegated power had “institutional constraints”, through committees of representatives of Member States (Craig & de Búrca, 2011, p. 134). This was known as “Comitology”.<sup>213</sup> Two reasons explained such constraints on the Commission’s delegated power: one had to do with possible disagreements among countries and the other reflected the Council’s fear of “the federalizing tendencies of the Commission” (Craig & de Búrca, 2011, p. 134). While these constraints are still present for implementing acts, delegated acts no longer face this constraint. Delegated acts face nonetheless ex post controls by the EU legislators, through the possibility of legislators to revoke the delegation or to object to the delegated act.

The Lisbon Treaty introduced this difference between delegated and implementing acts, as a distinction between matters of a legislative and of an executive nature (Craig & de Búrca, 2011, p. 119). This followed from the acknowledgment that it was “inappropriate to equate the executive amending the existing legal framework with that same executive simply implementing EU legislation” (Ponzano, 2016, p. 43). Delegated acts should allow the European Commission “to flesh out the detail or amend certain elements of a legislative act”; implementing acts, in turn, should regard the implementation of EU law, delegated and non-legislative acts (Bergström, 2016, p. 10).<sup>214</sup>

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<sup>213</sup> See Jacqué (2016) on the different procedures of comitology: the “advisory procedure”, the “management procedure” and the “regulatory procedure” (pp. 32-33). Also Craig and de Búrca (2011, pp. 134-135) briefly explain these procedures before the Lisbon Treaty and how these have changed after the Treaty. The authors also explain the different controls to delegated and implementing acts, with implementing acts still being subject to comitology procedures and thus subject to more scrutiny by Member States. See also Ponzano (2016) on the history of comitology since 1962.

<sup>214</sup> See Ponzano (2016, pp. 45-46) on the changes to implementing measures introduced in 2011, in terms of scrutiny and committee procedures. Also Christiansen and Dobbels (2013) discuss the reform of comitology and the tension between institutions concerning the specific procedures in delegated rulemaking. Schütze (2011) discusses the reform in delegated powers brought about by the Lisbon Treaty.

Delegated acts should be understood as measures delegated to the executive upon explicit delegation by the legislator, whereas implementing measures regard measures of execution or implementation, that is, measures “falling under the executive’s own responsibility” (Ponzano, 2016, p. 42). Using the concepts of vertical and horizontal separation of powers, Schütze (2011) clarifies this difference:

“The argument advanced is that Articles 290 and 291<sup>215</sup> follow different constitutional rationales. The former concerns the voluntary delegation of legislative power in the interest of efficiency – and thus deals with the horizontal separation of powers. The latter concerns the compulsory delegation of executive power, where the national implementation leads to an unacceptable degree of diversity, and thus deals with the vertical separation of powers” (Schütze, 2011, p. 690).

This distinction is often difficult in practice, with the EU legislators having to assess whether a particular provision requires a delegated or an implementing act (Bergström, 2016). It is beyond the scope of this chapter to elaborate on the reasons for the evolution of delegation at EU level and the differences between delegated and implementing acts.<sup>216</sup> However, it remains important to identify some of the rationales invoked for delegating matters to the European Commission. These rationales become relevant to understand why the EU legislators delegated *design* and *revision* to the European Commission in the 2014 Revised Tobacco Products Directive.

#### 5.4.2.1 Quickly update urgent rules

When describing the frequent ability to modify a legal act that the Commission has always had “under the guise of implementation”, Jacqu   (2016) writes the following:

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<sup>215</sup> Article 290 of the TFEU is the article on delegated acts and article 291 is the article on implementing acts.

<sup>216</sup> On this topic, see the book *Rulemaking by the European Commission* edited by Bergstr  m and Ritleng (2016). Issues such as the power struggles between the Commission, the Council and the Parliament are addressed as well as how these shaped the particular arrangements of delegation, from comitology to the changes introduced by the Lisbon Treaty.

“On a practical level, it was evident that the use of the legislative procedure for adding, for example, a product on a list of dangerous substances was disproportionate, because it was both administratively cumbersome and time-consuming, while the adoption was a matter of certain urgency” (Jacqué, 2016, pp. 27-28).

Efficiency concerns have indeed shaped the evolution of implementing measures at EU level. In fact, according to Ponzano (2016), the increased scope of implementing measures – to include those concerned with changing progress in economic, technological and scientific domains in the 1970s – was accompanied by delegation to the Commission:

“This scope included the Commission – still assisted by committees made up of national officials – updating European rules that required rapid adaptation to new scientific and technical data without having to go through the onerous procedure of amending the initial legislative act” (Ponzano, 2016, p. 38).

One of the rationales to delegate has to do with rapid updates or efficiency concerns. The idea that certain rules require a fast adaptation to reality, which is not compatible with the time frames and costs of the legislative process, is an important rationale to delegate such matters to the Commission. Also the European Parliament acknowledges this important rationale of article 290 on delegated acts, claiming that it aims “to avoid micro-management and a heavy and lengthy co-decision procedure” (European Parliament, 2014, p. 6).

This may be a particularly important rationale when it comes to an iterative nudge design process and nudge dynamism, an important dimension of an iterative experimental design process.

#### **5.4.2.2 Make reassessment independent of legislative change**

Revision of EU legislation is done as a whole, that is to say, a piece of legislation is evaluated in its entirety or even with other pieces of related legislation. If embedded

in a piece of legislation, a particular nudge measure is not reassessed on its own, but in the context of a more comprehensive legislative revision. Furthermore, revision tends to be triggered by reasons such as the existence of an evaluation clause (Mastenbroek et al., 2016) or public pressures and even international developments, as it seems to have happened with the 2014 Revised Tobacco Products Directive, the most recent revision to the 2001 Tobacco Products Directive [Directive 2001/37/EC<sup>217</sup>].

Allowing nudge design and provision to be delegated also makes sure that future revision of this instrument – which tends to be a very specific and detailed rule – can happen alone, in a way that is independent of legislative revisions. This may be of particular importance to enable not only a fast and iterative nudge design process, but also the pursuit of the second dimension of iteration identified in section 4.4.1.2: *nudge renewal*.

#### **5.4.2.3 Flesh out detail**

Another reason to delegate certain matters to the Commission regards the fleshing out of details. As the European Parliament acknowledges in a 2014 resolution on delegation of powers, delegated acts also intend to “to further define the exact content of the obligations spelt out in the legislative act” (European Parliament, 2014, p. 3).

Detail is important; nudging being a very detailed rule certainly also brings out this rationale for delegation.

#### **5.4.2.4 Take advantage of expertise**

Related to the previous delegation rationale is the idea that those that gather specialised knowledge are in a better position to specify certain matters. In fact, delegation is also prompted by the need to “overcome information asymmetries in

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<sup>217</sup> Directive 2001/37/EC of the European Parliament and of the Council of 5 June 2001 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco products, OJ L 194, 18.7.2001, pp. 26–35.

technical areas of governance” (Thatcher & Sweet, 2002, p. 4). These are areas in which certain actors may have more expertise than legislators: “Implementers [*the Commission and the administrations of Member States*] are better informed about the effects of European policies than are policy makers, particularly on policy issues that are highly complex or have a high ‘information intensity’” (Thomson & Torenvlied, 2011, p. 140).<sup>218</sup>

Furthermore, the Commission has not only gathered such expertise, but it also consults with Member State experts in its exercise of delegated powers. According to the Common Understanding between the European Parliament, the Council and the Commission on Delegated Acts<sup>219</sup> [Common Understanding on Delegated Acts], the Commission shall gather expertise prior to delegated acts through consultation with national experts. Consultation may also include other stakeholders. In fact, delegated acts may no longer be subject to the comitology procedures of implementing acts, but in their preparation the Commission is still assisted by Member State experts and even other stakeholders.

The access to specific expertise – including, but not limited to, the possibility to conduct experiments – also certainly explains why nudge measures can have their design delegated to the European Commission.

#### **5.4.2.5 Rationales for delegation: a summary**

Other rationales can be invoked for delegation to the Commission. For instance, when measures require harmonisation across the EU in the way that they are implemented, the Commission may be granted with implementing powers (article 291 of the TFEU). The rationales discussed so far fit “managerial” justifications for delegation in general (Aranson, Gellhorn, & Robinson, 1982). These justifications

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<sup>218</sup> See Thomson and Torenvlied (2011) on the transaction cost explanation for delegation to the European Commission, according to which there are information asymmetries between implementers and legislators, as well as the commitment and consensus-building rationales for delegation.

<sup>219</sup> Annex of the Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission of 13 April 2016 on Better Law-Making, OJ L 123, 12.5.2016, pp. 1–14.

underline efficiency concerns, namely the reduction of the legislature's workload and need for frequent legislative changes, the use of specialised knowledge and the provision of "relative permanence" of policy-makers (Aranson et al., 1982, p. 21).<sup>220</sup>

There are political rationales too, that is, motives that highlight a move from political to rational modes of decision-making (Aranson et al., 1982). In addition, delegation can also be triggered by other political reasons such as the need to solve "commitment problems" and the legislator's avoidance of blame in "unpopular" matters (Thatcher & Sweet, 2002, p. 4).

Delegation to the European Commission has not only allowed the *design* of tobacco warnings, but also their *revision* and *renewal*. For instance, in 2012 the Commission revised the warnings of the 2001 Tobacco Products Directive (through Commission Directive 2012/9/EU<sup>221</sup>). As the "novelty effect" of warnings had "worn off", their revision was required "to maintain and increase their impact, and to take into account the new scientific developments" (preamble of Commission Directive 2012/9/EU).

#### **5.4.3 Delegation of warning design and revision to the European Commission and other provision rules**

As section 4.5 suggested, when iterative experimentation is used and irrespective of the experimental alternatives chosen, regulators, not legislators, should be the ones engaged in the design of nudges. Delegation comes with important advantages: a nudge is a detailed rule, so efforts devoted to its design can be better integrated in a regulator; regulators are also more likely to have the expertise needed in terms of evidence-gathering and analysis to find which nudges are the *most effective*. Furthermore, delegation of nudge design avoids the long time frames of legislative processes, while making nudge design and revision independent of any ex post

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<sup>220</sup> The authors critically review (and dismiss) managerial explanations for the US reality.

<sup>221</sup> Commission Directive 2012/9/EU of 7 March 2012 amending Annex I to Directive 2001/37/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco products, OJ L 69, 8.3.2012, pp. 15–16.

review to the whole regulatory package. In this sense, delegation may also be a way to accommodate the nudge dynamism demands of iterative testing; that is, delegation is indeed what may allow the pursuit of the nudge *rotation and renewal dimension* of iteration. In sum, delegation may enable the implementation of *both dimensions of an iterative experimental design process* – the pursuit of an effective nudge and its renewal.

At EU level, these rationales are also applicable. The rationales presented in the previous section explain why nudge design, in this case tobacco warning design, may have been delegated to the European Commission. Not only is nudging a detailed rule whose design can benefit from the Commission's expertise, access to evidence and ability to detail rules, but also delegation allows for the pursuit of a faster iterative design process. Delegation may also be better suited to introduce nudge dynamism and rotation, a dimension of iteration.

Even if the regulator is the one carrying out nudge design, *provision* rules detailed by the legislator may impact design costs for the regulator. In fact, while delegating to the Commission the power to design the picture library and update warnings, the 2014 Revised Tobacco Directive required three sets of warnings to be used in different years and identified the frequency of their rotation (one year). This innovative approach by the EU legislators may have put warning revision pressures on the Commission.

Before analysing the evolution of the EU's approach to the design and rotation of tobacco warnings and the costs and benefits of the most recent approach, section 5.5 provides an overview of the rationale for EU intervention in public health and tobacco domains as well as a brief review of the regulation of tobacco at EU level.

## 5.5 Public health and tobacco intervention at EU level

### 5.5.1 Public health and harmonisation

EU intervention in public health finds justification in the Treaties. According to article 168(1) of the TFEU: “A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities”. Also article 9 stresses this goal: “In defining and implementing its policies and activities, the Union shall take into account requirements linked to (...) [*the*] protection of human health”.

The competence to harmonise in public health domains is nonetheless limited by article 168(5) of the TFEU. While the Lisbon Treaty has introduced “the first explicit reference to tobacco and alcohol ever made in the EU Treaties” (Alemanno & Garde, 2013, p. 1760), this reference provides the EU with legitimacy to introduce “measures which have as their direct objective the protection of public health regarding tobacco and the abuse of alcohol, excluding any harmonization of the laws and regulations of the Member States” (article 168(5) of the TFEU).

Notwithstanding the limitations on harmonisation imposed by article 168, the EU has engaged in harmonisation in public health areas such as tobacco, invoking the internal market rationale for intervention.<sup>222</sup> In fact, and paradoxically, the EU has used internal market arguments (that is, article 114 of the TFEU) and its good functioning to promote goals such as the reduction of tobacco consumption (Alemanno, 2012b).

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<sup>222</sup> See, for instance, Geber (2015) on the compatibility between article 114 on the internal market and article 168(5) on the exclusion of harmonisation in public health domains for the purposes of pursuing public health in EU legislation. Also Alemanno and Garde (2013) elaborate on the internal market rationale to intervene.



Tobacco is a domain in which the EU has taken a strong “command-and-control” stance (Alemanno & Garde, 2015, p. 12).<sup>223</sup> Section 5.5.2 identifies the main directives in this field.

### **5.5.2 Tobacco intervention**

Tobacco is regulated at EU level through measures that concern the presentation of products (under which aspects related to labelling fall), advertising, manufacturing, among others. While they all contribute to “de-normalise”<sup>224</sup> tobacco, measures regarding labelling and packaging operate when the package is already in front of the consumer. Measures concerning advertising and manufacturing act *ex ante*, before the consumer even lays eyes on the product.

The 2014 Revised Tobacco Products Directive and Directive 2003/33/EC [2003 Tobacco Advertising Directive<sup>225</sup>] together comprise the core EU legislation on tobacco.

#### **5.5.2.1 Information, warnings and other labelling provisions**

The 2014 Revised Tobacco Products Directive strengthened information disclosure duties and labelling requirements of previous directives. Misleading descriptions that can lead consumers to think that these products are less harmful to their health such as “low tar” or “light” are not allowed. In fact, according to article 13(1)(b) of Directive 2014/40/EU:

“The labelling of unit packets and any outside packaging and the tobacco product itself shall not include any element or feature that:  
(...)

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<sup>223</sup> See also Alemanno and Garde (2013) on how the EU’s action in lifestyle areas is compatible with principles such as subsidiarity, proportionality and fundamental rights, in particular the right to property, the freedom to conduct a business and the freedom of expression.

<sup>224</sup> See Alemanno (2012a) and Howells (2011, p. 4) on the concept of de-normalisation.

<sup>225</sup> Directive 2003/33/EC of the European Parliament and of the Council of 26 May 2003 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the advertising and sponsorship of tobacco products, OJ L 152, 20.6.2003, pp. 16–19.

(b) suggests that a particular tobacco product is less harmful than others or aims to reduce the effect of some harmful components of smoke or has vitalising, energetic, healing, rejuvenating, natural, organic properties or has other health or lifestyle benefits”.

This element was already present in the 2001 Directive on Tobacco Products (article 7). Also information on tar, nicotine and carbon monoxide (known as TNCO) is no longer indicated since 2014 (article 13(1)(a) of Directive 2014/40/EU). This intends to promote the idea among consumers that all cigarettes present equal dangers to health. The provision of information on TNCO (previously mandatory under EU law<sup>226</sup>) has been replaced with a message that tells consumers that “Tobacco smoke contains over 70 substances known to cause cancer” (article 9(2) of Directive 2014/40/EU).

Given the usual perception that more information is better for the consumer, the decision to remove TNCO information strikes as a compelling example of how less information can be more desirable from a policy perspective. According to a European Commission’s press release: “Research has shown that TNCO labelling is misleading to consumers as it makes them believe that some products are less risky to their health. The new information message will more accurately reflect the true health consequences of smoking” (European Commission, 2016b).<sup>227</sup>

In addition, cigarette packages have to carry a combined picture and text warning covering 65% of the front and back of the package (article 10(1) of Directive 2014/40/EU). A library of the pictures to be used for three years has been developed by the European Commission in the Commission Delegated Directive 2014/109/EU<sup>228</sup>. The warnings are also accompanied by smoking cessation details

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<sup>226</sup> Article 5(1) of Directive 2001/37/EC.

<sup>227</sup> As Alemanno (2012a) notes, nonetheless: “Yet interestingly enough, the factor that triggered the idea that ‘safer’ cigarettes may exist was a reaction to regulatory action aimed at disciplining tobacco ingredients by, for instance, establishing maximum levels of TNCO” (p. 37). See Alemanno (2012a) for a brief overview on the evolution of tobacco regulation.

<sup>228</sup> Commission Delegated Directive 2014/109/EU of 10 October 2014 amending Annex II to Directive 2014/40/EU of the European Parliament and of the Council by establishing the library of picture warnings to be used on tobacco products, OJ L 360, 17.12.2014, pp. 22–27.

such as telephone numbers or websites that intend to support individuals who want to quit (article 10(1)(b) of Directive 2014/40/EU). Plain packaging remains an option for Member States. In fact, according to article 24(2) of Directive 2014/40/EU:

“This Directive shall not affect the right of a Member State to maintain or introduce further requirements, applicable to all products placed on its market, in relation to the standardisation of the packaging of tobacco products, where it is justified on grounds of public health, taking into account the high level of protection of human health achieved through this Directive”.

#### **5.5.2.2 Advertising and marketing restrictions**

A 1989 Directive was the first to introduce marketing restrictions on tobacco [Council Directive 89/552/EEC<sup>229</sup>]. It banned advertising of tobacco products on television: “All forms of television advertising for cigarettes and other tobacco products shall be prohibited” (article 13 of Council Directive 89/552/EEC).

The 2003 Tobacco Advertising Directive extended the ban to all forms of advertising beyond television affecting the internal market, covering print media, radio and even the sponsoring of events with cross-border impacts. In 2010, a directive replacing the 1989 Directive on advertising restrictions on television – Directive 2010/13/EU<sup>230</sup> – extended the advertising ban on tobacco to all audiovisual commercial communication, including indirect forms of communication as well as product placement.

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<sup>229</sup> Council Directive 89/552/EEC of 3 October 1989 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the pursuit of television broadcasting activities, OJ L 298, 17.10.1989, pp. 23–30.

<sup>230</sup> Directive 2010/13/EU of the European Parliament and of the Council of 10 March 2010 on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive), OJ L 95, 15.4.2010, pp. 1–24.

Local advertising was left out of the 2003 Tobacco Advertising Directive.<sup>231</sup> In fact, tobacco advertising in cinemas or billboards is outside the scope of this Directive. The same goes for the sponsoring of local events with no international media coverage. However, Member States have generally gone beyond European rules and put in place laws that also cover advertising at the local level (European Commission, 2008, p. 4).<sup>232</sup>

### 5.5.2.3 Other measures

There are other EU measures on business conduct regarding tobacco. At initial stages of the supply chain, for instance, the 2014 Revised Tobacco Products Directive sets limits on maximum emission levels of TNCO that cigarettes should contain (article 3). The Directive also sets rules on the shape of the package, the minimum number of cigarettes it can have and a prohibition on characterising flavours, among others.

Other measures are still under the scope of Member States. For instance, with regard to smoke-free environments, there is a 2009 Council Recommendation<sup>233</sup>, but this remains a competence of Member States. There is also a 2002 Council Recommendation<sup>234</sup> on initiatives of tobacco control. Finally, a 2011 Directive on excise duties<sup>235</sup> has specified minimum rates to be adopted by Member States.

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<sup>231</sup> The scope comes from the understanding of the European Court of Justice that a ban on advertising could only cover advertising with a cross-border dimension (European Commission, 2008). See more in Garde and Friant-Perrot (2015, pp. 80-83) about the EU court cases on tobacco advertising restrictions.

<sup>232</sup> The fact that advertising without a cross-border dimension might still take place at Member State level means that EU-designed measures might not achieve maximum effectiveness. For instance, outdoor tobacco advertising is still allowed in Germany. The coexistence of local tobacco advertising with EU measures such as pictorial warnings not only opens the door to potentially inconsistent public intervention, but may also diminish the effectiveness of other regulatory strategies.

<sup>233</sup> Council Recommendation of 30 November 2009 on smoke-free environments, OJ C 296, 5.12.2009, pp. 4–14.

<sup>234</sup> Council Recommendation 2003/54/EC of 2 December 2002 on the prevention of smoking and on initiatives to improve tobacco control, OJ L 22, 25.1.2003, pp. 31-34.

<sup>235</sup> Council Directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco, OJ L 176, 5.7.2011, pp. 24–36.

## **5.6 The process of nudge design and nudge dynamism: from static diversity to yearly rotation**

Tobacco warnings were first introduced at EU level in a 1989 Directive. At that time, they were quite different from now. These warnings have changed quite substantially over time, with the most recent pictorial warnings introduced in the 2014 Revised Tobacco Products Directive. In fact, “graphic warnings on unhealthy products”, which find their roots in tobacco policy, represent one of the clearest examples of attempts to integrate behavioural insights (Alemanno, 2015a, p. 319).

This section analyses the warning changes observed since 1989 and how the different approaches to warning provision (in terms of design, rotation and revision) have evolved over time. The section is focused on the provision and design of warnings for cigarette packages. However, it is important to underline that the warnings introduced in the three main Directives discussed were part of broader legislative packages.

As this section will reveal, the design of tobacco warnings has become reliant on laboratory and online experiments, while their content has become increasingly dynamic. The burden and implications of the most recent approach to warning design and rotation will be further investigated in section 5.9.

### **5.6.1 From the 1989 static diversity to delegated revision**

The first rules on tobacco labelling at EU level were introduced in a 1989 Directive [Council Directive 89/622/EEC<sup>236</sup>]. Besides rules on the indication of tar and nicotine in cigarette packages, the 1989 Directive introduced warnings.<sup>237</sup> According to article 4(1) of Council Directive 89/622/EEC, every packet of a tobacco product should carry on its “most visible surface” the general warning “Tobacco seriously damages health”. For cigarette packages, the “other large surface” had to carry

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<sup>236</sup> Council Directive 89/622/EEC of 13 November 1989 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the labelling of tobacco products, OJ L 359, 8.12.1989, pp. 1–4.

<sup>237</sup> For simplification purposes, this chapter focuses on cigarette packages and not other tobacco packages.

“specific warnings alternating” as follows: “each Member State shall draw up a list of warnings taken exclusively from those listed in the Annex” and “the specific warnings selected shall be printed on the unit packets so as to guarantee the appearance of each warning on an equal quantity of unit packets, with a tolerance of around 5%” (article 4(2) of Council Directive 89/622/EC).

Among the warnings provided in the annex to the Directive, there were two warnings that had to be on the warning list prepared by Member States (see table 6 in pages 241-242 below). These were “Smoking causes cancer” and “Smoking causes heart disease”. Countries could then choose among 14 others, such as “Smoking causes fatal diseases”, “Smoking when pregnant harms your baby” and “Save money: stop smoking” (see table 6).

Each warning had to be printed on an equal quantity of packages “with a tolerance of around 5%”. At any particular point in time, different packages carried different messages and each message was equally represented. It was implicit that different warnings at the same time were more effective in getting consumers’ attention than a single message. Council Directive 89/622/EC also stipulated the size of the warnings: both the general warning and the specific one had to cover “at least 4% of each large surface of the unit packet” (article 4(4) of Council Directive 89/622/EC).<sup>238</sup> Article 4(4) defined other rules, such as printing the warnings so that they could not be damaged if the pack was opened.

Not so long after, in 1992, Council Directive 92/41/EEC<sup>239</sup> amended this 1989 Directive. The 1992 Directive, among other aspects, extended the specific health warnings to tobacco products other than cigarettes (article 1(3)(b) of Council Directive 92/41/EEC). In fact, while the general message of article 4(1) of Council Directive 89/622/EC applied to “unit packets of tobacco products”, the specific warnings of article 4(2) regarded only “cigarette packets”. The 1992 Directive

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<sup>238</sup> Different percentages applied to countries with two or three official languages.

<sup>239</sup> Council Directive 92/41/EEC of 15 May 1992 amending Directive 89/622/EEC on the approximation of the laws, regulations and administrative provisions of the Member States concerning the labelling of tobacco products, OJ L 158, 11.6.1992, pp. 30–33.

extended these specific warnings to other tobacco products. It also added a specific warning to the annex: “Smoking causes addiction”. According to the preamble of Council Directive 92/41/EEC, “scientific experts are of the opinion that the addiction caused by tobacco consumption constitutes a danger meriting a specific warning on every tobacco product”.

At this time, the 1989 Directive did not allow for the possibility of future warning revision. The 1988 Commission’s proposal<sup>240</sup> provided for the adaptation of health warnings to technical progress, but this element was dropped in the final legislative act. The idea that the regulation of tobacco labelling would need to be adapted to future experience and acquired knowledge was not acknowledged then. The possibility to adapt provisions of the Directive to technical progress was restricted to the “measurement and verification methods” of tar and nicotine (article 5 of Council Directive 89/622/EC<sup>241</sup>). Furthermore, not much is known about how the warnings were exactly designed, that is, how the legislator arrived at the exact list of warnings: some of them were already in the 1988 Commission’s proposal, that is, the Commission as the initiator of legislation had designed some, but the legislator added (and slightly rephrased) others.

In sum, packages carried small text warnings, one generic and one specific and, at any particular point in time, consumers would be exposed to a variety of messages (*static variety*, as opposed to the *dynamic variety* explained later in the chapter). Warning rotation as such did not exist; it only existed through the diversity of messages consumers were exposed to. While not much is known about how the warnings were actually designed, the 1989 design and iteration approach resembles the fourth experimental alternative discussed in chapter 4, with nudges being experimented with through the legislative process.

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<sup>240</sup> Proposal for a Council Directive on the approximation of the laws, regulations and administrative provisions of the Member States concerning the labelling of tobacco products (COM(87) 719 final), OJ C 48, 20.2.1988, pp. 8–10.

<sup>241</sup> Council Directive 92/41/EEC only added the possibility to adapt to technical progress the definitions of tar and nicotine.

It is important to note that Member States at this time had the choice not to incorporate all the warnings from the annex list of warnings into their national lists. In Portugal, for instance, in addition to the two mandatory warnings, only four of the specific warnings were brought into national lists.<sup>242</sup> Also Italy<sup>243</sup> and Spain<sup>244</sup> implemented only four of the 14 warnings listed in the annex of the 1989 Directive. While there was some overlap in the warnings chosen, countries chose different warnings from the list of additional specific warnings. This explains why the preamble of Directive 2001/37/EC, which revised and repealed the 1989 Directive, acknowledged in point 19 that different warnings across countries contributed to discrepancies between consumers from different Member States on information regarding tobacco risks, while creating trade barriers.

### **5.6.2 Delegation and the 2001 Tobacco Products Directive**

In spite of these initial efforts, the 1989 measures were still not ideal. The warnings' small size made them hard to read and easily go unnoticed. The colours chosen by the industry also deliberately diminished their visibility (Joossens, 2004), even if the warnings had to be printed "on a contrasting background" (article 4(4)(c) of Council Directive 89/622/EC).

However, and since the Directive did not consider the possibility to revise and update the warnings, warning revision (and rotation) had to wait for a new legislative process that culminated with the introduction of the 2001 Tobacco Products Directive. In fact, warning rotation happened with the introduction of a

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<sup>242</sup> From the warnings among which Member States could choose, Portugal chose warnings (1), (3), (5) and (12) of the Directive's annex. See Portaria 821/91, de 12 de Agosto, Diário da República n.º 184/1991, Série I-B de 1991-08-12.

<sup>243</sup> On top of the two mandatory warnings, Italy implemented (4), (5), (6) and (11). See Decreto ministeriale 31/07/1990, Specifiche disposizioni tecniche per il condizionamento e l'etichettatura dei prodotti di tabacco conformemente alle prescrizioni della direttiva del Consiglio delle Comunità europee n. 89/622/CEE, Gazzetta Ufficiale 25 agosto 1990, n. 198.

<sup>244</sup> Spain implemented the following messages from the list of specific warnings: (4), (5), (6) and (8). See Real Decreto número 510/92 de 14/05/1992, por el que se regula el etiquetado de los productos del tabaco y se establecen determinadas limitaciones en aeronaves comerciales. Official publication: Boletín Oficial del Estado (B.O.E); Number: 133; Publication date: 1992-06-03; Page: 18815.



new directive – which meant the initiation of a new legislative process – 12 years after the 1989 Directive.<sup>245</sup> In this sense, as already mentioned, the way in which the warnings were designed and provided in the 1989 Directive has resemblance to the fourth experimental alternative introduced in the previous chapter, with experimentation being done through the legislative process.

The criticism that plagued the previous labels was addressed in this 2001 Directive, not only with an increase in the package space dedicated to the warnings, but also with more detailed rules on how they should be printed. For instance, regarding the colours the warnings should have, their text had to be “printed in black Helvetica bold type on a white background” (article 5(6)(a) of the 2001 Tobacco Products Directive).

The Directive required two warnings to be printed on cigarette packages. Packages had to carry a general message (“Smoking kills/Smoking can kill” or “Smoking seriously harms you and others around you”) and an additional warning from a list of 14 set forth in annex I of the Directive (see table 6 in pages 241-242 below). The general warning had to occupy at least 30% of the “most visible surface” of the package and the additional warning at least 40% of “the other most visible surface” (articles 5(2) and 5(5) of the 2001 Tobacco Products Directive).<sup>246</sup>

As with the 1989 Directive, exposure to a variety of messages at any point in time was a reality for the final consumer. In addition, at this point the 2001 Directive also mandated the disclosure of TNCO levels, similar to the disclosure of tar and nicotine of the 1989 Directive, an element that would be dropped in the 2014 Directive.

The 2001 Directive also required rotation, both for the general and additional warning. They “shall be rotated in such a way as to guarantee their regular

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<sup>245</sup> Regarding warnings for cigarette packages, the only aspect that the 1992 amendment led to was the introduction of an additional warning to the list of 14 in the annex (“15. Smoking causes addiction.”).

<sup>246</sup> These percentages changed for countries with two or more official languages.

appearance” (articles 5(2)(a) and 5(2)(b) of the 2001 Directive).<sup>247</sup> This “rotation” does not seem different from the *static variety* of 1989: at a particular moment of time, consumers would be exposed to different messages. This time, however, the provision of warning rotation came with two additions, namely an option to *revise* the warnings and a possibility to set a *frequency to their rotation* were introduced; and they were left for the Commission to decide upon. According to article 9(b) of Directive 2001/37/EC, the Commission had the possibility to adapt health warnings as well as the frequency of their rotation to scientific developments:

“The Commission shall, in accordance with the procedure laid down in Article 10(2), adapt to scientific and technical progress:

(...)

b) the health warnings to be shown on unit packets of tobacco products as set out in Annex I and the frequency of rotation of the health warnings”.

This was still pre-Lisbon Treaty, which means that delegation still had to follow the comitology procedure mentioned in section 5.4.2. As already discussed, delegated acts to specify rules have long been used to accommodate for fast developments, overcome long regulatory processes and avoid rule obsolescence.

Again, not so much is known about how the 2001 text warnings were designed. Some of the warnings in the final Directive were already in the Commission’s 2000 proposal<sup>248</sup>, but others were added or rephrased by the EU legislators. In terms of actual design, the 2001 warnings also resemble the fourth experimental alternative of chapter 4, with experimentation done through actual legal provision. It is also possible that other experimental evidence-gathering efforts took place. In fact, the

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<sup>247</sup> It is also important to note that 8 of the warnings introduced in 2001 (totally or partially) overlap with those of the 1989/1992 list (the two general warnings and warnings 1, 3, 4 5, 7 and 8 of annex I on the additional health warnings of Directive 2001/37/EC). See table 6 in pages 241-242.

<sup>248</sup> Proposal for a Directive of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products (COM(1999) 594 final), OJ C 150E, 30.5.2000, pp. 43-51

explanatory memorandum accompanying the Commission’s proposal mentioned the need to design warnings taking into account the Community’s experience with these provisions, “relevant scientific data” and the “smoking population”, so as to enhance warnings’ “presentation, impact, visibility, comprehension and content” (European Commission, 2000).

With regard to warning rotation, in addition to the static variety that existed since the 1989 Directive, the 2001 Directive introduced a new possibility that enabled the Commission to revise such warnings and decide on the frequency of their rotation. While the Commission did not pronounce itself on the latter, it did revise (and therefore also rotated) the warnings in 2012.

**Table 6. Tobacco warnings: the 1989/1992 Directives and the 2001 Directive**

<b>1989 and 1992 Directives text warnings</b>	<b>2001 Directive text warnings</b>
<b>General warning</b>	<b>General warnings</b>
Tobacco seriously damages health.	1. Smoking kills/Smoking can kill. or 2. Smoking seriously harms you and others around you.
<b>Warnings which must be included on the national lists (Annex)</b>	<b>Additional health warnings (Annex I)</b>
1.Smoking causes cancer.	
2. Smoking causes heart disease	
<b>Warnings from amongst which Member States may choose (Annex)</b>	
1. Smoking causes fatal diseases.	1. Smokers die younger.
2. Smoking kills.	2. Smoking clogs the arteries and causes heart attacks and strokes.
3. Smoking can kill.	3. Smoking causes fatal lung cancer.
4. Smoking when pregnant harms your baby.	4. Smoking when pregnant harms your baby.
5. Protect children: don’t make them breathe your smoke.	5. Protect children: don’t make them breathe your smoke.
6. Smoking damages the health of those around you.	6. Your doctor or your pharmacist can help you stop smoking.
7. Stopping smoking reduces the risk of serious disease.	7. Smoking is highly addictive, don’t start.
8. Smoking causes cancer, chronic bronchitis and other chest diseases.	8. Stopping smoking reduces the risk of fatal heart and lung diseases.

9. More than (...) people die each year in (name of the country) from lung cancer.	9. Smoking can cause a slow and painful death.
10. Every year, ... people are killed in road accidents in (name of the country) — ... times more die from their addiction to smoking.	10. Get help to stop smoking: (telephone/postal address/internet address/consult your doctor/pharmacist).
11. Every year, addiction to smoking claims more victims than road accidents.	11. Smoking may reduce the blood flow and causes impotence.
12. Smokers die younger.	12. Smoking causes ageing of the skin.
13. Don't smoke if you want to stay healthy.	13. Smoking can damage the sperm and decreases fertility.
14. Save money: stop smoking.	14. Smoke contains benzene, nitrosamines, formaldehyde and hydrogen cyanide.
15. Smoking causes addiction. <i>[introduced by Council Directive 92/41/EEC]</i>	

Own elaboration (Sources: Council Directive 89/622/EC, Council Directive 92/41/EEC and Directive 2001/37/EC)

#### 5.6.2.1 Commission Directive 2012/9/EU

Given the legislative authorisation provided to the Commission on the adaptation of text warnings in annex I to “scientific and technical progress”, the Commission *revised* (and therefore also *rotated*) the warnings in 2012 with the introduction of Commission Directive 2012/9/EU. The Commission essentially exercised its discretion over iterative nudge design; in fact, delegation of warning revision introduced the possibility to revise the content of warnings in the pursuit of constant effectiveness.

The 2012 new warning messages were introduced on the grounds that the “novelty effect” of the previous ones had “worn off” (point 3 of the preamble of Commission Directive 2012/9/EU). The Commission also referred to the recommendations of the labelling guidelines of the Framework Convention on

Tobacco Control (FCTC)<sup>249</sup> on the need to review and update labelling rules “periodically” as effects “wear out” (point 5 of the preamble of Commission Directive 2012/9/EU).

Fourteen new messages were introduced, some of which now referred to consequences such as mouth cancer or visual impairment, reflecting “new scientific evidence on the health effects of tobacco use” and “the principles of effective tobacco labelling” (point 4 of the preamble of Commission Directive 2012/9/EU). Delegating the design of new warnings to the Commission resulted in the revision/rotation of text warnings 11 years after the 2001 Directive. More than behavioural evidence on their impact, the new warnings introduced by the Commission seemed to reflect medical developments on the causal link between tobacco and health outcomes.

Before going into the possibility given to Member States to introduce pictorial warnings, it is important to note that commissioned evidence inspired some of the warnings chosen. This was also acknowledged in point 7 of the preamble of the 2012 Commission Directive: “This revision should be based on the results of the review of existing knowledge on tobacco labelling and the health effects of tobacco use and of testing of the warnings made in all Member States”.

In this regard, it is worth to take a look at the warnings introduced by the European Commission in 2012 and to compare them with those of a 2009 study prepared for the Commission<sup>250</sup> and the 14 warnings recommended by a Eurobarometer study of the same month as the Commission Directive.<sup>251</sup> In fact, according to the Commission’s website, the new 2012 warnings were introduced “following the results of a qualitative Eurobarometer and discussions with Member States”

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<sup>249</sup> Being “the first treaty negotiated under the auspices of the World Health Organization” (World Health Organization, 2003) and seen as “By far the largest achievement in the fight against tobacco” (Alemanno, 2012a, p. 36), this convention outlines measures that signatory states shall incorporate into their national laws on the reduction of demand and supply of tobacco.

<sup>250</sup> See Sambrook Research International (2009).

<sup>251</sup> See the Eurobarometer study in TNS Qual+ (2012).

(European Commission, n.d.-a).<sup>252</sup> In other words, the 2012 new text warnings involved the production of new (qualitative) evidence (see TNS Qual+, 2012). As table 7 below illustrates, the 2012 Directive adopted only five of the Eurobarometer recommended messages in their exact wording, with seven others being similar in wording to those proposed by the study.<sup>253</sup>

The 2009 study already recommended two sets of warnings to be rotated ideally on a yearly basis, with warning revision occurring after four years (Sambrook Research International, 2009, p. 109); however, the European Commission did not follow this recommendation in its 2012 Directive.

**Table 7. The warnings of Commission Directive 2012/2/EU and recommended warnings**

<b>Commission Directive 2012/9/EU</b>	<b>2012 Eurobarometer recommended warnings</b>	<b>2009 commissioned study proposed warnings<sup>254</sup></b>
(1) Smoking causes 9 out of 10 lung cancers	(1) Smoking causes 9 out of 10 lung cancers	(1) Smoking causes 9 out of 10 lung cancers
(2) Smoking causes mouth and throat cancer	(2) Smoking causes mouth and throat cancer	(2) Smoking causes mouth and throat cancer
(3) Smoking damages your lungs	(5) Smoking destroys your lungs	(5) Smoking destroys your lungs
(4) Smoking causes heart attacks	(7) Smoking causes heart attacks	(7) Smoking causes heart attacks
(5) Smoking causes strokes and disability	(8) Smoking causes strokes and severe disability	(8) Smoking causes strokes and severe disability
(6) Smoking clogs your arteries		
(7) Smoking increases the risk of blindness	(10) Smoking causes blindness	(10) Smoking causes blindness
(8) Smoking damages your teeth and gums		(11) Smoking causes rotten teeth and gums
(9) Smoking can kill your unborn child	(12) Smoking can kill your unborn child	(12) Smoking can kill your unborn child
(10) Your smoke harms your children, family and friends	(13) Your smoke harms your children, family and friends	(13) Your smoke harms your children, family and friends

<sup>252</sup> See the European Commission's web page on health warnings (European Commission, n.d.-a).

<sup>253</sup> Warnings 1, 2, 4, 9 and 10 have the same wording as those in the list of the 2012 Eurobarometer study; warnings 3, 5, 7, 11, 12, 13 and 14 have a similar wording or meaning.

<sup>254</sup> See page 81 of Sambrook Research International (2009).

(11) Smokers' children are more likely to start smoking	(14) If you smoke, your children will smoke	(14) If you smoke, your children will smoke
(12) Quit smoking – stay alive for those close to you	(15) Quit now – stay alive for your children	(15) Quit now – stay alive for your children
(13) Smoking reduces fertility	(18) Smoking makes it harder to have children	(18) Smoking makes it harder to have children
(14) Smoking increases the risk of impotence	(19) Smoking reduces your sexual performance	(19) Smoking reduces your sexual performance
	(3) Smoking doubles the risk of cervical cancer	(3) Smoking doubles the risk of cervical cancer
	(9) Smoking causes leg amputations	(4) Smoking causes leukaemia
	(9)/(10) OR (4) Smoking causes leukaemia/(22) Smokers die younger <sup>255</sup>	(6) Smoking causes suffocating breathlessness for life
		(9) Smoking causes leg amputations
		(16) Stop smoking now - your health benefits immediately
		(17) Get professional help – it makes it easier to quit
		(20-24) See Sambrook Research International (2009)

Own elaboration (Sources: Commission Directive 2012/9/EU, TNS Qual, 2012 and Sambrook Research International, 2009)

### 5.6.2.2 A note on voluntary pictorial warnings

In order to strengthen the written messages, Member States could decide to combine them with graphic warnings. However, and probably already anticipating future harmonisation on this matter, while their adoption at Member State level was voluntary, countries pursuing this possibility had to guide themselves by documents to be prepared by the Commission.

<sup>255</sup> According to the 2012 Eurobarometer study, warnings 9, 10 and 14 on the impact of tobacco on leg amputations, blindness and children tend to be negatively perceived by consumers, which is why the study recommended that they are complemented by awareness campaigns. Since these might be costly, the study suggested that in the absence of such campaigns, warning 14 was kept, but warnings 9 and 10 were replaced by warnings 4 and 22 (see TNS Qual+, 2012).

Pursuant to article 5(3) of the 2001 Tobacco Products Directive, countries had to introduce pictorial warnings in accordance to rules to be detailed by the European Commission. The European Commission would need to “adopt rules for the use of colour photographs or other illustrations to depict and explain the health consequences of smoking” before 31 December 2002 (article 5(3) of Directive 2001/37/EC). In fact, “Evidence from countries where pictorial warnings have already been introduced shows that images have a greater impact than text warnings alone” (European Commission, n.d.-a).

The Commission adopted rules on pictorial warnings in 2003, with Commission Decision 2003/641/EC<sup>256</sup>. This Decision regarded aspects such as the visual integrity of pictorial warnings as well as the design and establishment of the future picture library, stipulating 2004 as the year for this (article 3(1) of Commission Decision 2003/641/EC). Moreover, pursuant to article 3(3), this library should be constructed with the assistance of “scientific and technical experts”.

Commission Decision 2003/641/EC created more detailed rules on warning location in the package and printing requirements. It also reiterated the idea of rotation that the 2001 Directive introduced for text-only warnings, since it stipulated that “The combined health warnings shall: (a) be rotated in such a way as to guarantee the regular appearance of all of the additional warnings” (article 4(2)(a) of Commission Decision 2003/641/EC). Warnings should occupy at least 40% of “the other most visible surface” of the package (article 4(3) of Commission Decision 2003/641/EC). This Decision also committed the Commission to report every two years on the implementation of the Decision and to identify “features which should be reviewed or developed in the light of past experience and new scientific evidence” (articles 7(1) and 7(2) of Commission Decision 2003/641/EC).

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<sup>256</sup> Commission Decision 2003/641/EC of 5 September 2003 on the use of colour photographs or other illustrations as health warnings on tobacco packages, OJ L 226, 10.9.2003, pp. 24–26.



The exact pictures came with the adoption of a library of 42 pictures in 2005<sup>257</sup>, later amended in 2006<sup>258</sup> with no implications on the pictures to be used in cigarette packages.<sup>259</sup> The arrival of pictorial warnings only in 2005 is not a product of chance. In fact, when referring to the labelling rules introduced in 2001, the 2003 Commission Decision puts forward that “In order to take maximum advantage of the visual impact achieved with this new design [*the one introduced with the 2001 Directive*], it should remain unchanged for a certain length of time before colour photographs or other illustrations are introduced” (point 4 of the preamble).

After expert consultations and pre-testing in all Member States (according to point 3 of the preamble of Commission Decision C(2005) 1452 final of 26 May 2005), the Commission selected three images for each of the 14 additional text warnings of the 2001 Tobacco Products Directive. These images were chosen for being the “most effective” (point 4 of the preamble of the 2005 Commission Decision). While some seemed to be more general, others targeted specific population groups such as pregnant women or young males, as acknowledged by the Commission in a press release (European Commission, 2009b).

Unlike what would happen in 2014, nothing was mentioned on the frequency of rotation except for what had already been stipulated in 2001 Directive for text-only warnings, that is, rotation to ensure warnings’ regular appearance (article 4(2)(a) of Commission Decision 2003/641/EC). Even if there were three different images for each of the text warnings, they were not for rotation, but to allow Member States the possibility to choose. Both the 2003 and the 2005 Commission Decisions highlighted that Member States could choose the pictures from the library, which

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<sup>257</sup> Commission Decision C(2005) 1452 final of 26 May 2005 on the library of selected source documents containing colour photographs or other illustrations for each of the additional warnings listed in Annex 1 to Directive 2001/37/EC.

<sup>258</sup> Commission Decision C(2006) 1502 final of 12 April 2006 amending Commission Decision C(2005) 1452 final of 26 May 2005 on the library of selected source documents containing colour photographs or other illustrations for each of the additional warnings listed in annex 1 to Directive 2001/37/EC of the European Parliament and of the Council.

<sup>259</sup> The 2005 Commission Decision was the only one to introduce pictures, which means that when new additional text warnings were introduced in 2012, with Commission Directive 2012/9/EU, the Commission did not issue new pictures for the new text warnings introduced. The pictures introduced in 2005 matched each of the text warnings of the 2001 Tobacco Products Directive.

suggests not all of them would be circulating. For instance, in point 4 of the preamble of the 2005 Commission Decision, it is stated that: “From this library [*three images for each of the 14 additional warnings*], Member States may choose the warning illustrations best adapted to consumers in their countries taking into account cultural practices, sensibilities and context”. The above-mentioned 2009 Commission press release also makes this point: “In May 2005, the Commission adopted a library of 42 pictures, three images for each of the 14 additional health warnings. This provides Member States with the choice of which image would best suit their population” (European Commission, 2009b, p. 1).

A study on the selection of pictures analogous to the 2012 and 2009 studies for the 2012 text warnings has not been disclosed on the European Commission’s website. The details behind the Commission’s choice of images are not explained. Apart from what is written in the 2005 Decision, the only information provided on this – to the best of my knowledge – comes from the same 2009 press release, according to which “The pictures were developed by a communications company and then pre-tested in Member States by a market research company” (European Commission, 2009b, p. 2).

### **5.6.3 A new approach to warning design and revision**

The 2001 Directive was revised in 2014, with Directive 2014/40/EU. Mainly prompted by international commitments, namely the Framework Convention on Tobacco Control<sup>260</sup>, the revision process took long. The process on the Commission’s side started in 2009, with the proposed Directive being communicated by the Commission at the end of 2012. The Directive was approved

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<sup>260</sup> Among others, the FCTC called upon parties to adopt large rotating warnings, occupying at least 50% and no less than 30% of main display areas (article 11 of FCTC, World Health Organisation, 2003).

at first reading stage and published in the Official Journal in 2014, with rules entering into force in 2016.<sup>261</sup>

The revised 2014 Directive introduced a combination of warnings and pictures. One of the general warnings “Smoking kills – quit now” or “Smoking kills” is to be accompanied by the information message “Tobacco smoke contains over 70 substances known to cause cancer” (articles 9(1) and 9(2) of Directive 2014/40/EU). As mentioned before, this last message intends to replace the disclosure of TNCO levels, mandatory in previous Directives.

Packages carry an additional pictorial/text health warning from a list of 14 possibilities set out in the annexes. Warning size has increased with respect to the previous directive: the combined pictorial warnings shall occupy 65% of both the front and back of the package, while the general warning and the information message shall occupy 50% of each lateral side (articles 10(1)(c) and 9(3) of Directive 2014/40/EU).

Not only does the Directive detail how these warnings have to be presented (size, location in the package, etc.), it also demands their rotation. The way rotation is introduced in this Directive differs from previous approaches. At a particular point in time, consumers see a variety of text warnings and images (what has been called before *static variety*). However, unlike the 2001 Directive, which delegated the frequency of rotation to the Commission (an aspect upon which the Commission did not pronounce itself), the 2014 Directive sets this frequency: warnings shall be rotated on a *yearly* basis. According to article 10(2) of Directive 2014/40/EU:

“The combined health warnings are grouped into three sets as set out in Annex II and each set shall be used in a given year and rotated on an annual basis. Member States shall ensure that each combined health warning available for use in a given year is displayed to the

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<sup>261</sup> See Costa, Gilmore, Peeters, McKee, and Stuckler (2014) on the timeline (p. 474). See also the timeline on the website of the European Parliament (Legislative Observatory of the European Parliament, n.d.).

extent possible in equal numbers on each brand of tobacco products”.

The Directive comes with two annexes, one of them already incorporated in the Directive, with the text warnings (annex I). The other (annex II), a delegated act prepared by the Commission that is an integral part of the Directive [Commission Delegated Directive 2014/109/EU<sup>262</sup>], establishes three different sets of 14 pictures for each of the text warnings in annex I to be used in three consecutive years.<sup>263</sup> In fact, the 2014 Revised Tobacco Products Directive delegated to the Commission the design (or establishment, as per the terminology of the Directive) of the picture library (article 10(3)(b) of Directive 2014/40/EC). This was accompanied by the possibility granted to the Commission to adapt the text and pictures in the future, an aspect that had been introduced in 2001 for text-only warnings. According to article 10(3)(a) and (b) of the 2014 Revised Tobacco Products Directive:

“The Commission shall be empowered to adopt delegated acts in accordance with Article 27 to:

- (a) adapt the text warnings listed in Annex I taking into account scientific and market developments;
- (b) establish and adapt the picture library referred to in point (a) of paragraph 1 of this Article taking into account scientific and market developments”.

This delegated power conferred to the Commission was for a period of 5 years from May 19<sup>th</sup> 2014, to be “tacitly extended for periods of an identical duration” (article 27(2) of Directive 2014/40/EU), unless Parliament and Council revoked such delegation.

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<sup>262</sup> Commission Delegated Directive 2014/109/EU of 10 October 2014 amending Annex II to Directive 2014/40/EU of the European Parliament and of the Council by establishing the library of picture warnings to be used on tobacco products, OJ L 360, 17.12.2014, pp. 22–27.

<sup>263</sup> While the Directive of April 3<sup>rd</sup> (and published on April 29<sup>th</sup> 2014 in the Official Journal of the European Union) already contained in annex I the list of 14 text warnings, the Commission Delegated Directive on annex II arrived later. Commission Delegated Directive 2014/109/EU of October 10<sup>th</sup> was published in the Official Journal on December 17<sup>th</sup> 2014.

Below are the text warnings adopted (table 8 in page 253), which did not differ from those introduced in 2012 by the Commission (Commission Directive 2012/9/EU). In fact, given that new text warnings had been introduced in 2012, the introduction of pictures alone was perceived as being enough to generate novelty. The pictures introduced are indeed different from the ones developed by the Commission in 2005 for countries using pictorial warnings. This is far from surprising, since the pictures chosen in 2005 referred to the text warnings introduced in the 2001 Directive and not the ones that would be later introduced by the Commission in 2012.

Also important to note with regard to the 2014 Revised Tobacco Products Directive is that the written messages remain the same each year, while the picture associated with each text warning is what is changed annually. This reflects an implicit understanding that rotating pictures is superior to rotating text for the purposes of maintaining warning effectiveness. As the Commission explains, “The purpose of rotating the pictures is to minimise the wear-out effect of the warnings, where pictures become less effective the more you are exposed to them” (European Commission, n.d.-b). However, this ideal picture rotation ended up being like the static variety of previous approaches: in reality, the packages with the initial set of warnings are still being sold along with those with the more recent set. Each additional yearly set of pictures only added to the diversity of warnings consumers get exposed to, as the packages with the old warning sets wait to be sold.

As with the 2005 pictorial warnings, the studies on which the Commission based itself to choose the pictures are not provided on the institution’s website.<sup>264</sup> A “Q&A” document by the European Commission mentions nonetheless that the Commission was assisted in its decision by external contractors who developed the

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<sup>264</sup> The fact that these reports are not available for consultation leaves room for speculation on the reasons why the Commission did not publish the reports on the design and testing of pictorial warnings. However, the report on which the Commission seems to have based itself to further outline the technical specifications on the “layout, design and shape” of the health warnings (Commission Implementing Decision (EU) 2015/1842) is available (see Burson-Marsteller, Smoke Free Partnership, Butcher & Gundersen, University of Stirling, & VVA Europe, 2016).

pictures: “The external contracts had a combined budget of nearly 600.000€” (European Commission, n.d.-b). This document also mentions that the warnings were chosen based on online and laboratory experiments (European Commission, n.d.-b).<sup>265</sup>

The 2014 Tobacco Products Directive and the 2014 Commission Delegated Directive that established the library of pictures were accompanied by another act – this time an implementing act – regarding the warnings: a 2015 Commission Implementing Decision.<sup>266</sup> Article 10(4) of the 2014 Revised Tobacco Products Directive delegated to the European Commission the definition of the “layout, design and shape of the combined health warnings”, considering the different package shapes. Through this 2015 Implementing Decision, the Commission detailed such framing rules.

In sum, the 2014 initial design approach to choose the most effective warnings was based on a laboratory and an online experiment. This was possible by delegating warning design to the European Commission. The Directive also required the Commission to design warnings for three different years. In addition to this, the Directive set warnings’ annual rotation and the possibility to have warnings revised by the European Commission. This innovative approach intended to allow for the pursuit of both dimensions of an iterative experimental design process: finding the most effective nudges and nudge renewal.

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<sup>265</sup> Even if the Commission has not published any reports on how the tobacco warnings were designed, a paper published in 2019 relies on this data (Woelbert & D’Hombres, 2019). Also Bogliacino et al. (2015) based themselves on these experiments funded by the Commission.

<sup>266</sup> Commission Implementing Decision (EU) 2015/1842 of 9 October 2015 on the technical specifications for the layout, design and shape of the combined health warnings for tobacco products for smoking, OJ L 267, 14.10.2015, pp. 5–10.

**Table 8. Text warnings: Commission Directive 2012/8/EU and the 2014 Revised Tobacco Products Directive**

(1) Smoking causes 9 out of 10 lung cancers
(2) Smoking causes mouth and throat cancer
(3) Smoking damages your lungs
(4) Smoking causes heart attacks
(5) Smoking causes strokes and disability
(6) Smoking clogs your arteries
(7) Smoking increases the risk of blindness
(8) Smoking damages your teeth and gums
(9) Smoking can kill your unborn child
(10) Your smoke harms your children, family and friends
(11) Smokers' children are more likely to start smoking
(12) Quit smoking – stay alive for those close to you
(13) Smoking reduces fertility
(14) Smoking increases the risk of impotence

Own elaboration (Sources: Commission Directive 2012/9/EU and Directive 2014/40/EU)

#### **5.6.4 Design, rotation and revision approaches: evolution and summary**

When it comes to the actual *initial design* to choose the most effective warnings, not so much is known about how exactly the 1989 or 2001 were initially designed – making their design resemble the fourth experimental approach discussed in chapter 4, with nudge experimentation happening through their legal provision. Also the 2014 approach can be seen as an illustration of the fourth experimental design approach, with warnings being tested through their actual provision through the legislative process.

However, and additionally, the 2014 warnings – in particular, the pictures associated with each text warning – explicitly involved (online and laboratory) experimentation to arrive at the “perfect ones”, which was made possible by delegating their design to the Commission. Accompanying such experimental approaches, warning design also involved consultation with specialists from various scientific areas including medicine, behavioural economics and communication (European Commission, n.d.-b).<sup>267</sup> The 2014 text warnings, designed by the Commission in 2012, also explicitly

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<sup>267</sup> Also the pictures introduced by the Commission in 2005, when pictorial warnings were optional for Member States, were subject to testing, as mentioned above.

resorted to specific qualitative evidence, as explained before. This design was only possible because in 2001 the EU legislators had delegated the revision of text warnings to the Commission.

This use of experimental approaches followed the guidelines on labelling of the FCTC. These guidelines recommend the “pre-marketing testing” of tobacco warnings, but nonetheless remind countries that testing “need not be long, complex or expensive” and that “focus groups” or “Internet-based consultation” are less expensive alternatives (points 39/40 of the labelling guidelines of the World Health Organization Framework Convention on Tobacco Control, 2008). These guidelines also remind the Parties to the Convention that packaging measures should take into account the experience of other jurisdictions.

The following table summarises the different initial warning design approaches in pursuit of the most effective ones – the first dimension of iterative experimentation – using the experimental categories introduced in chapter 4:

**Table 9. Initial warning design approaches: from 1989 to 2014**

	1989 Directive	2001 Directive	2014 Directive
Nudge design	The legislative process as an experimental platform	The legislative and regulatory processes <sup>268</sup> as experimental platforms	Laboratory and online experiments;  The legislative and regulatory processes as experimental platforms

Besides these different design approaches, also the approach to *nudge rotation* – the second dimension of an iterative experimental design process – changed from 1989 to 2014. In 1989, there was no possibility for nudge renewal as such; these warnings would only be rotated or renewed with the introduction of a new Directive, which happened in 2001. In 2001, nudge rotation was also possible through warning revision, this time not only through a new legislative act, but also a delegated act by the European Commission. In fact, this time the EU legislators introduced the

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<sup>268</sup> The regulatory process is also mentioned, since also the Commission could revise the warnings.



possibility of having warnings revised (or rotated) by the Commission; this materialised in 2012 with the Commission's introduction of new text warnings. The idea of rotation and renewal was further strengthened in 2014, with the introduction of a one-year rotation frequency. This requirement not only rotates the warnings for three different years, but also creates a mechanism to exert pressure on the Commission to revise them. These renewal requirements – as later explained – seem to be grounded in the borrowing of evidence from areas outside regulation.

An important aspect to note is that, with the 1989 and 2001 approaches, it was warning *revision* (through a new legislative or delegated act, with this last one possible only for the 2001 warnings) that allowed for warning *rotation*; with the 2014 Directive, rotation was explicitly introduced and made independent of warning revision. In fact, as it will be further explained in the next section, this has been one of the innovative aspects of the 2014 Directive: rotation and revision became different and separate concepts.

Finally, it is important to note that all three Directives stipulated that different warnings would circulate at any particular point in time (*static variety*). This diversity of messages informed individuals of the different risks of tobacco consumption. With the requirement of annual warning rotation introduced in the 2014 Directive, a dynamism dimension was added to this static variety (*dynamic variety*).

The following table summarises the approaches to rotation and revision – the second dimension of iteration – of the three different Directives analysed in this chapter. As it becomes clearer from the table, rotation and revision overlapped in the 1989 and 2001 approaches, becoming only two separate ideas with the 2014 Directive.

**Table 10. Rotation and revision approaches: from 1989 to 2014**

	1989 Directive	2001 Directive	2014 Directive
Warning rotation	<p><b>No rotation</b></p> <p><i>Rotation dependent on warning revision</i></p> <p><b>Static variety</b></p> <p><i>Different warnings circulating at any particular point in time</i></p> <p><u>Article 4(2)</u>: “(...) the specific warnings selected shall be printed on the unit packets so as to guarantee the appearance of each warning on an equal quantity of unit packets, with a tolerance of around 5%”</p>	<p><b>No rotation</b></p> <p><i>Frequency of rotation to be set by the Commission (an aspect that did not materialise)</i></p> <p><i>Rotation dependent on warning revision</i></p> <p><b>Static variety</b></p> <p><i>Different warnings circulating at any particular point in time</i></p> <p><u>Article 5(2)(a)</u>: “(...) The general warnings indicated above shall be rotated in such a way as to guarantee their regular appearance.”</p> <p><u>Article 5(2)(b)</u>: “(...) The additional warnings referred to above shall be rotated in such a way as to guarantee their regular appearance.”</p> <p><u>Article 9(b)</u>: “The Commission shall (...) adapt to scientific and technical progress:</p> <p>(...)</p> <p>(b) ...the frequency of rotation of the health warnings”</p>	<p><b>Rotation on annual basis</b></p> <p><i>Three sets of warnings, each rotating yearly</i></p> <p><b>Static variety</b></p> <p><i>Different warnings circulating at any particular point in time</i></p> <p><u>Article 10(2)</u>: “The combined health warnings are grouped into three sets as set out in Annex II and each set shall be used in a given year and rotated on an annual basis. Member States shall ensure that each combined health warning available for use in a given year is displayed to the extent possible in equal numbers on each brand of tobacco products.”</p>

Warning revision	<p><i>Revision to be done by a new legislative act</i></p>	<p><i>Revision to be done by the Commission or a new legislative act</i></p> <p><u>Article 9(b)</u>: “The Commission shall (...) adapt to scientific and technical progress: (...) (b) the health warnings to be shown on unit packets of tobacco products as set out in Annex I...”</p>	<p><i>Revision to be done by the Commission or a new legislative act</i></p> <p><u>Article 9(5)</u>: “The Commission shall be empowered to adopt delegated acts (...) to adapt the wording of the information message [“<i>Tobacco smoke contains over 70 substances known to cause cancer.</i>”] (...) to scientific and market developments.”</p> <p><u>Article 10(3)</u>: “The Commission shall be empowered to adopt delegated acts (...) to: (a) adapt the text warnings listed in Annex I taking into account scientific and market developments; (b) establish and adapt the picture library referred to in point (a) of paragraph 1 of this Article taking into account scientific and market developments.”</p>
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Own elaboration (Sources: Council Directive 89/622/EEC, Directive 2001/37/EC and Directive 2014/40/EU)

## 5.7 What are the novel provision aspects introduced in 2014?

Different approaches have been used to provide tobacco warnings (in terms of design, rotation and revision) at EU level. Regarding the initial design and pursuit of the most effective ones, the 2014 warnings became reliant on laboratory and online experiments. As far as their renewal is concerned, an important dimension of an iterative design process, the 2014 approach represented a move from static to dynamic variety.

The dynamic variety of 2014 entails a strong commitment to warning rotation that did not exist in the two previous directives. It clearly stipulates that rotation of warnings shall happen on a yearly basis and defines *ex ante* three different sets of pictorial warnings, each to be used in a given year. This commitment to renewal or rotation is definitely new. Both the use of experiments and this commitment to iteration have increased design costs in comparison to previous approaches.

The commitment to rotation also amounts to legal innovation. After all, yearly warning rotation with the exact warnings for each year can also be seen as a rule composed by three sunset clauses. However, in practice, what happened was that each additional set introduced every year only added to the amount of warnings consumers get exposed to.

The fact that warning rotation frequency was determined in the 2014 Directive also introduced a clear distinction between warning *rotation* and warning *revision* that did not exist before. In the 1989 Directive, nothing was said about rotation or revision; the two concepts overlapped: warning rotation would only occur with legislative revision, as indeed happened in 2001. In 2001, the Directive made a distinction between the two concepts when delegating powers to the Commission: article 9 delegated to the Commission not just future warning revision (or adaptation, as per the Directive's terminology), but also the possibility to set "the frequency of rotation of the health warnings" (article 9(b) of the 2001 Tobacco Products Directive). The Commission eventually revised the warnings in 2012, year when they *de facto* rotated, but this institution never set an exact frequency of rotation. The

separation between both concepts may have been introduced in 2001, but did not materialise: warnings were only rotated once revised by the Commission in 2012.

Until the 2014 Directive, revision and rotation of warnings were synonyms. Either by waiting for a new legislative proposal or a Commission delegated act, *revising* the list of warnings meant their *rotation*. The 2001 Directive seemed to have introduced a distinction between revision and rotation, but since the Commission did not pronounce itself on the frequency of rotation, the concepts remained the same.

However, revision and rotation became clearly distinct concepts in 2014. The rotation of warnings happens on a yearly basis, while their revision occurs whenever the Commission deems their adaptation necessary. Warning rotation became independent of their revision: rotation happens yearly, regardless of whether the Commission engages in the substantive revision of warnings. This was also made possible by providing ex ante a set of warnings for different years.

Besides a strong commitment to rotation and associated separation of revision from rotation, the 2014 Tobacco Products Directive brought the concepts of nudge and social marketing closer together. As mentioned in section 3.6.3.1, nudging and social marketing may overlap in the issues that they address<sup>269</sup>, but social marketing was never regarded as a concept susceptible of inspiring regulatory change. If the potential to be incorporated in legislation could distinguish nudging from concepts such as social marketing as explained in chapter 3, this Directive aligned both concepts: it essentially legalised a rotating social marketing campaign, with “ads” (i.e. warnings) defined ex ante (for three different years). Packets became “portable advertisements” (Hammond, 2011, p. 327).

Finally, in comparison to the approaches set in previous Directives, the 2014 Revised Tobacco Products Directive may have also brought uncertainty to the legal landscape. In particular, the fact that the Directive does not clearly address what happens after three years raises some doubts. It is unclear whether the Commission

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<sup>269</sup> See also Dessart and van Bavel (2017) on the similarities and differences between social marketing and the use of behavioural sciences in policy.

is supposed to amend annex II and introduce three new sets of warnings or if the warnings go back to set 1 in the fourth year. By incorporating in the Directive's main text an annex with three sets of warnings, each to be used in a given year, while simultaneously empowering the Commission to adapt the text warnings and picture library, it seems that the EU legislators are essentially “nudging” the Commission to bring in a new annex with new sets of pictures and messages in 2019, three years after national implementation. The European Commission has nonetheless clarified that, even if the Directive allows the pictorial warnings to be revised based on future developments, it does not plan to do so: “There are no plans to update the picture library in the very near future” (European Commission, n.d.-b).<sup>270</sup> This indicates that, for at least a certain period of time, the same pictures will be rotated; and, in practice, that warnings from the three sets will be circulating after the end of the third year (2019). The pressures on the Commission to revise the warnings have nonetheless increased in comparison to the 2001 approach.

In sum, the novel aspects introduced in 2014, with delegation of warning design and revision combined with yearly rotation are: i) a reliance on laboratory and online experiments; ii) a strong commitment to rotation, iii) legal novelty, iv) separation between revision and rotation; v) an approximation of nudging to social marketing and vi) increased uncertainty.

## **5.8 A note on the incorporation of nudging into regulation: questioning ideas**

Before delving into the implications of the most recent change in warning provision for the European Commission, businesses and consumers, it is important to note that the practical exercise of reviewing the approaches to warning provision at EU level may answer some of the questions posed by the scarce literature on the

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<sup>270</sup> In a 2018 report on the delegated power conferred upon the Commission by Directive 2014/40/EU, the Commission clarifies that it may revise the pictures in the future, but when it comes to the possibility of revising the information message or the text warnings, the Commission notes that it is “premature” to adapt them “as it considers the current messages appropriate and effective” (European Commission, 2018, p. 5).

incorporation of nudges into regulation. Quigley and Stokes (2015), for instance, bring up the tension between policy visibility at EU level and the surreptitious nature of nudge: “There is also a tension between the shaping of an effective and visible EU government on the one hand, and the ‘behind the scenes’ engineering of choice that is entailed in nudging on the other” (Quigley & Stokes, 2015, p. 77). In this regard, Quigley and Stokes (2015) also question whether nudges, if incorporated at EU level, would go through the impact assessment requirements imposed to other rules (p. 77).

The example of tobacco warnings reveals that nudges do go through impact assessment, at least when used as regulatory tools. They are indeed subject to evaluation. Besides, on concerns about the covert nature of nudge, warnings are no more surreptitious than traditional market conduct regulation (e.g. advertising restrictions). They received the same publicity and comment and are substantially more visible to the consumer than regulation on product content or marketing restrictions.

Quigley and Stokes (2015) also recognise the scrutiny of nudges embedded in pieces of legislation. As the authors write, “those embedded in traditional legislation will be subject to an impact assessment (although it is unclear that the ‘operational detail’ of the nudge will be scrutinised)” (Quigley & Stokes, 2015, p. 78). The authors seem indeed to be more concerned with nudges “outside the remit of formal legislation” (Quigley & Stokes, 2015, p. 78). In fact, Quigley and Stokes (2015) also mention that nudges introduced as “single” and “discrete” actions might escape such assessments: “the persistent framing of nudges as ‘*alternatives*’ to regulation will take EU policy on some behaviourally-informed initiatives beyond the scope of formal impact assessment” [emphasis in original] (Quigley & Stokes, 2015, p. 78). This concern is followed by a reference to the UK, where nudging has been encouraged as an alternative tool to regulation. However, the EU’s opportunity to engage in public nudging or nudging outside the radar of formal regulation is scarce. After all,

“the EU – in contrast to any other jurisdiction – has virtually no direct contact with its citizens” (Alemanno, 2016a, p. 282).

While the tension between policy visibility at EU level and the hidden nature of nudging might fall under what the authors consider “not necessarily EU-specific problems for nudge” (Quigley & Stokes, 2015, p. 77), it becomes clear that nudging at EU level does not necessarily exacerbate this issue. The same goes for the tension between the EU’s formal competences and the actual expansion of its reach or the tension between maintaining diversity while ensuring harmonised legal frameworks across Member States (Quigley & Stokes, 2015, pp. 77-79). A nudge does not exacerbate these tensions more than any other measure.

Regulators might also have difficulties in predicting how firms will ultimately implement a nudge rule (e.g. Abdugaridov, 2016), which may result in unintended consequences. However, in the case of tobacco, implementation challenges and the ability of tobacco producers to circumvent warning rules are limited. Precisely to avoid unwanted consequences, these nudges have been accompanied by further restrictions that limit firms’ ability to interfere with these measures. The EU regulates warning size, border dimensions and how the warnings are to be printed and positioned in the packet. For instance, warnings shall be “irremovably printed”, cannot be “hidden” or “interrupted” by items such as price or tax stamps and they have to remain visible once opened (article 8(3) of Directive 2014/40/EU) and so on. The Commission even detailed in an implementing decision of 2015 the exact rules on “layout, design and shape” that warnings shall observe, taking into account the different package shapes. This is also an area in which the EU has already acquired some experience, as the first warnings were introduced in 1989. These framing conditions not only limit companies’ ability to use the package to undermine these labelling rules<sup>271</sup>, but also support the idea – as other authors have

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<sup>271</sup> Framing rules may limit firms’ ability to use the means through which the nudge is provided to undermine its effect, but that does not mean that they do not use other strategies and means to engage in this endeavour. In the case of tobacco, this is greatly limited by the fact tobacco is a heavily regulated industry, with means such as marketing and advertising being highly restricted, at least at EU level.



suggested (e.g. Willis, 2013) – that nudging as a regulatory tool is not necessarily as light as often advertised.

Finally, the possibility to delegate nudge design addresses concerns on the duration of the policy cycle. In fact, Quigley and Stokes (2015) argue that one of the most challenging aspects for the incorporation of behavioural evidence at EU level regards the “lack of coordination between the ex ante and ex post evaluation of EU initiatives” (p. 79). According to Quigley and Stokes (2015), the “deep division” that separates both of these stages “suggests that behavioural data may be of only limited use unless (and until) a holistic approach to ex post/ex ante assessment is adopted” (p. 79).

The regulator might nonetheless be able to address this fragmentation by delegating the design of behaviourally-informed tools like nudges to the Commission, solving the “lack of policy feedback loop” identified by Quigley and Stokes (2015, p. 79). Delegation may also respond to the lack of flexibility seen in regulatory processes identified by Abdugaridov (2016).<sup>272</sup> Furthermore, as this chapter discusses, legislators may have mechanisms to introduce nudge renewal in addition to delegation, such as the possibility to define ex ante the exact nudges for each time period.

## **5.9 Implications of the 2014 warning design, rotation and revision approach on EU businesses, regulator and consumers**

This section analyses the implications of the warning provision approach introduced in 2014 – in particular with regard to *rotation* and *revision* – for firms, the regulator (i.e. the European Commission, in this case) and consumers. While the most recent approach to warning provision reveals that dynamic nudges can be incorporated into legislation, this solution has come with its own burden for the EU nudge designer, without clear and unambiguous behavioural benefits for consumers.

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<sup>272</sup> See footnote 96 and section 3.6.4.1.iii.

Furthermore, the implications of a warning initial *design process* reliant on laboratory and online experiments are also analysed. While imposing costs on the European Commission, the behavioural effects of these warnings are doubtful to start with, which makes their design through costly iterative experiments unwarranted.

### **5.9.1 What does the new rotation and revision approach mean for the tobacco producer?**

It is beyond the scope of this chapter to assess how the industry perceives labelling measures such as pictorial warnings. However, even if they essentially stamp the product as being a bad product, warnings can nonetheless be positively regarded by industry. After all, warnings can promote the industry's "good image" and potentially prevent legal action or the development of further (and more intrusive) regulation on their conduct and market practices (Howells & Watson, 2015, p. 35). The consumer has been informed of the risks, so consumption remains the individual's choice.

The Commission's impact assessment regarded tobacco warnings as a means to promote convergence and the internal market (European Commission, 2012b). After an estimation of the "one-off" cost for manufacturers in providing them – between 14500 and 50000 euros per stock keeping unit for cigarette packages – the Commission argued that were such changes introduced in "one go across the EU", they would reduce the burden of adaptation to different national legal frameworks (European Commission, 2012b, p. 86). However, the "running costs" of pictorial warnings, which include printing costs, would be higher than those of text-only warnings (European Commission, 2012b, pp. 86-87).

According to this ex ante assessment, large pictorial warnings would have a "neutral or even positive direct effect" on manufacturers, since "possible minor increases in variable costs would be counterbalanced by savings in familiarisation costs due to implementation in one go" (European Commission, 2012b, p. 87). The Commission conceded nonetheless that firms could suffer from an "indirect impact" through decreased demand.

Regarding the costs arising from legal fragmentation across the EU, it is important to note that the most recent approach adopted has not really eliminated these costs. Since there are countries across the EU already contemplating and introducing plain packaging laws, manufacturers still need to incur additional costs to adapt to national jurisdictions.

While the Commission was optimistic about the impacts on business, nothing was said in the impact assessment about the impact of warning *rotation* or *revision* on manufacturers. In fact, regarding the most recent approach to rotation, the impact on business is ambivalent. On the one hand, it seems to have introduced more certainty. In the past, rotation could come at any time the Commission decided to revise warnings. This source of uncertainty seems to have been eliminated with the introduction of yearly rotation. However, while businesses may no longer be caught by surprise on the frequency of rotation, they still do not know when the Commission will decide to revise the content of current warnings (pictures or text). Furthermore, yearly rotation may represent higher printing costs for manufacturers in comparison to previous approaches.

## **5.9.2 What does the new design, rotation and revision approach mean for the European Commission?**

### **5.9.2.1 Initial nudge design: the use of laboratory and online experiments**

In 2014, the EU legislators delegated the design of pictorial warnings to the European Commission. This delegation allowed the Commission to engage in experimentation. In fact, while not much is known about how the 2014 pictures were chosen, the Commission based itself on the input it got from external contractors, who had “a combined budget of nearly 600.000€” to develop the pictures (European Commission, n.d.-b). The pictures were subject to testing in 10 Member States, with 800 respondents per country, and the methods involved an experiment conducted online and a small laboratory one. The online experiment measured “various cognitive, emotional and behavioural measures”, while the

laboratory experiment examined “physiological responses” (European Commission, n.d.-b). This research was also assisted by different experts.

In addition to these design costs, the Commission also incurred costs in a study to inform the technical specifications of the warnings (Burson-Marsteller, Smoke Free Partnership, Butcher & Gundersen, University of Stirling, & VVA Europe, 2016). The framing rules of nudges impose costs too.

These costs were already foreseen by the Commission in its 2012 proposal to the EU legislators. In fact, when identifying the budgetary effects of the Directive in the explanatory memorandum of its proposal, the European Commission already anticipated the costs “to keep the health warnings up to date, including testing of new warnings” (European Commission, 2012c, p.12).

It is also important to note that the different nature of the warnings introduced in 2014 has brought additional costs and challenges that did not exist when these warnings were text-only. Choosing pictures of real people meant the Commission had to get consent from the photographed individuals (European Commission, n.d.-b). However, the Commission has not been spared from claims that depicted individuals did not provide such consent. This dimension certainly adds to the costs of pictorial warnings.

#### **5.9.2.2 A new approach to rotation and revision: dynamism requirements**

With the 2001 Tobacco Products Directive, the European Commission was granted the power to update tobacco warnings taking into consideration “scientific and technical progress” (article 9 of the 2001 Tobacco Products Directive). In the pursuit of an iterative and flexible approach, delegation of warning revision was indeed a novelty introduced in 2001.

One advantage of delegation is that it avoids the need to wait for more comprehensive legal updates in order to revise certain rules. This is important not only because legislative revision takes long and assesses all other measures (not just the nudges provided), but also due to the fact that revision tends to be prompted by

reasons that have little to do with nudge obsolescence. Regulatory nudges are not provided alone, they rather tend to be part of broader legislative packages. Delegating their revision not only makes nudges immune to legislative change that occurs for reasons other than their obsolescence, but also their revision can happen when necessary. Additionally, as explained in section 5.4.2, delegation capitalises on regulators' expertise and it is better suited for rules requiring the specification of detail. Very importantly, delegating warning updates to the Commission is also a way to introduce rotation in warning content, an important dimension of iteration (as discussed in section 4.4.1.2).

The 2014 Revised Tobacco Products Directive kept this novelty, allowing the Commission to update the warnings. It also extended this delegated power to the design of part of the warnings: the pictures accompanying each text warning. Besides, on top of this delegation, the 2014 Revised Tobacco Products Directive introduced two innovations. One was the definition of the exact pictures to be used in three consecutive years; and yet another one was the frequency of their rotation: one year. This certainly increased the potential design costs of these tools for the Commission in comparison to the 2001 approach when the possibility of warning revision was not accompanied by a request to design warnings for different time frames and such stringent frequency requirements of rotation.

While it may have come with several advantages – in particular the possibility of adopting a fast and iterative design process – the delegation of frequency of rotation and warning revision in 2001 represented an increase in the design costs of these labelling measures for the European Commission in comparison to the 1989 provision approach. The 1989 approach simply stipulated the warnings into law without accommodating any future possibility of iteration and revision. The 2001 delegation to the Commission allowed the time between warning enactment and revision to be shortened. The Commission could decide not to revise the warnings; however, this possibility was there and the Commission could simply use its discretion and power on this matter, which it did in 2012. Potential and real costs of

these measures increased for the Commission. Delegation of revision introduced the possibility of warning iteration, but iteration is costly.

The 2014 stance on rotation further increased the potential costs of warning labels. It not only allows the Commission to revise warnings, but it also demanded the Commission to design them for three different years, a request that increased design costs for the Commission. This delegation of warning design allowed the use of experimental methodologies, as explained above in section 5.9.2.1. In addition, accompanying this delegation of initial design, the EU legislators stipulated one year for the frequency of warning rotation. With this innovation, warnings are prone to becoming obsolete sooner. Combining delegation of warning design and revision with a frequency of warning rotation (one year) and an annex with three different warning sets means a higher potential for more frequent warning revisions than in the absence of a defined rotation period and specific warnings for different years.

Under the previous approach, where both rotation frequency and revision were left to the Commission, warning revision happened only once (in 2012, i.e. 11 years after the 2001 Tobacco Products Directive). With the 2014 Directive, even if the Commission does not use its delegated power, the potential for revision to happen more often was introduced. Yearly warning rotation and three sets of warnings are essentially nudging the Commission to revise the warnings more frequently than in the past.

While the potential increase in costs may not materialise, the EU legislators have left this choice to the European Commission. The Commission may decide not to exercise its power to revise the warnings, especially if it truly takes into account behavioural insights and efficiency concerns. However, considering that regulators may disregard efficiency (section 2.2.5.4) and behavioural concerns, this is a risk that legislators may not want to run.

Behind the choices of the EU legislators and their commitment to warning dynamism is an implicit understanding that iteration is an instrumental feature not only of the initial design process of this type of measures, but also their content.

Iteration allows the pursuit of the most effective nudges and the maintenance of their effectiveness, as section 4.4.1 explained. However, such a strong commitment to rotation and renewal by the legislator certainly adds to the design costs of nudging.

In light of what has been discussed in this section, the important question becomes one where increased costs and benefits are compared. Are the increased costs for the regulator of carrying out laboratory and online experiments worth it? Are the increased costs for the nudge designer of legal provision mechanisms favouring nudge renewal matched by increased effectiveness (e.g. decreased number of cigarette packages sold)? Is dynamism worth it after all? Are the effectiveness gains enough to compensate the increased costs on the European Commission's side? These questions will be answered in the next section with an analysis on the impact of pictorial warnings and their rotation on individual behaviour.

### **5.9.3 What does the new design, rotation and revision approach mean for the consumer?**

As explained in section 4.4.1, an iterative experimental testing design approach has two dimensions. At first, experimentation should be used to find out the “perfect nudge”, the one maximising behavioural effectiveness. Section 5.9.3.1 discusses the impact of pictorial warnings and the experimental evidence behind such effects. This discussion is important to assess whether costly iterative experiments to find out the “perfect nudge” at initial nudge design stages are worth conducting.

Iterative experimental testing not only means that the nudge ultimately implemented should result from an iterative design process (and therefore the winner of competing designs), but also that the search for continuous effectiveness should persist, even after the “perfect nudge” has been discovered. Behind iteration in nudge design is also the idea that renewal is instrumental to sustain effectiveness. Section 5.9.3.2 analyses whether this dimension of rotation is truly necessary in nudge design.

The EU legislators were able to implement these two dimensions of an iterative and experimental design process through delegation to the Commission and other provision rules. However, while these two dimensions have certainly increased real and potential costs for the Commission, there are good reasons why we should keep our expectations low on the performance of these warnings and doubt the added value of their iteration.

### **5.9.3.1 Strengthening persuasive intent: the impact of pictorial warnings, the use of experiments and the expectations of behavioural effectiveness**

#### **i. The impact of pictorial warnings on (imperfect) proxies of behaviour and the use of experiments**

Harmonisation was not the only goal of the EU legislators with the 2014 Revised Tobacco Products Directive. Behavioural effectiveness was a fundamental concern too. Underlying the introduction of rotating pictorial warnings is the pursuit of effectiveness in changing behaviour. As factual information may not be enough, warning labels can be designed to increasingly steer people away from tobacco (e.g. Howells & Watson, 2015).

In the spectrum between factual to persuasive, warning labels have been gradually moving towards the latter. Regulating packaging to pursue persuasion has indeed become widely acknowledged, even beyond the realm of tobacco packaging. As Alemanno and Garde (2013) explain, “the focus of the regulatory interventions on packaging practices is now shifting to another policy goal: that of limiting the consumption of those products which – due to their constituents – are increasingly perceived as unhealthy” (p. 1755).

This persuasive intent finds traces in Directive 2014/40/EU. According to point 25 of its preamble: “Evidence also suggests that large combined health warnings comprised of a text warning and a corresponding colour photograph are more effective than warnings consisting only of text”. This reveals the legislators’ awareness that pictorial warnings go beyond information provision and have a



persuasive intent; they are not just factual, but rather intend to *impact the behaviour of current smokers and discourage potential new ones*.

Pictorial warnings intend to pursue behavioural effectiveness, while bringing harmonisation to a legally fragmented scenario and fulfilling commitments at the international level under the FCTC. According to the impact assessment's executive summary, "bigger and mandatory pictorial warnings would increase awareness about the negative health consequences of tobacco consumption in all EU Member States (...), motivate behavioural change, and prevent smoking initiation, in particular among young people" (European Commission, 2012a, pp. 5-6).

Evidence has revealed that the impact of tobacco warnings depends on their size, location and how they are designed. In particular, research suggests that pictorial warnings are more effective than text-only warnings (Hammond et al., 2007; Borland et al., 2009; Gallopel-Morvan, Gabriel, Le Gall-Ely, Rieunier, & Urien, 2011). These warnings are better when it comes to grabbing attention, eliciting strong emotional reactions and increasing intentions to quit and not take up smoking (Noar et al., 2016). The larger they are, the more effective in communicating risks (Hammond, Fong, McNeill, Borland, & Cummings, 2006). Larger warnings are also more likely to be noticed by smokers (Hammond et al., 2007).

Research has also revealed that the odds of buying tobacco can be greatly reduced "if the negative affect elicited" is increased (Bogliacino et al., 2015, p. 21). According to Bogliacino et al. (2015), triggering emotions such as shame or anger is also more effective in reducing the odds of buying tobacco than eliciting fear or disgust. Gallopel-Morvan et al. (2011) also concluded that "fear appeals" produce defensive reactions. Strong emotional messages are particularly salient for people (Hammond, Fong, McDonald, Brown, & Cameron, 2004). As Borland et al. (2009) also underline, "the mechanism of effect for the superiority of graphic warnings is that they elicit greater emotional engagement with the information, and that it is this emotional engagement that drives much of the subsequent quitting-related activity"

(p. 362). Research also suggests that different groups react differently to distinct messages (e.g. Sambrook Research International, 2009).

This section does not intend to be an exhaustive review on the impact of health warnings, in particular pictorial ones, a line of research that abounds. Research indeed suggests that pictorial warnings are more effective than text-only ones in a range of variables such as intention to quit. However, as the study prepared for the Commission on the assessment of impacts regarding the revision of the 2001 Tobacco Products Directive acknowledges, most studies in this field do not rely on actual behavioural outcomes:

“Given that the majority of the studies carried out to assess the impacts of labels on consumers are based on surveys (on-line, paper-based and face-to-face) and focus groups, the bulk of the evidence in this area relies heavily on perception data (i.e. consumers’ *intention* to change their behaviour or their *perception* of the impacts of such labels). Thus, one of the main limitations of these studies and the conclusions they come to is that there is little evidence of *observed* change as a result of the use of labels on tobacco products (e.g. some studies are able to quantify the proportion of respondents who say they are willing to quit as a result of labels, but not the proportion of respondents who have actually quit as a result). In addition, very few studies have been able to produce quantitative estimates of the impact of labels on consumers’ smoking behaviour” [emphasis in original] (Tiessen et al., 2010, pp. 135-136).

This reflects a concern already expressed in chapter 4 when incorporating iterative experimental testing in laboratory settings. In artificial settings such as laboratory or online experiments, nudge designers may have to test impacts not on real behaviour, but (imperfect) proxies of behaviour. The same study also recognises the difficulty in attributing impacts to specific measures, not only because labelling has been

accompanied by other rules, but also due to the influence of different factors on behaviour (Tiessen et al., 2010).

Paradoxically, research informing the design of warnings relies on dimensions such as attitudes, intentions or self-reported behaviour, while behavioural science evidence calling for such measures in the first place reveals how behaviour falls short on intentions. This is an aspect also underlined in the 2009 study prepared for the Commission: “Most of the outcomes are self reported behaviour, rather than observed behaviour. It cannot be automatically assumed that the intention to quit and self-reported behaviour correspond to actual behaviour” (Sambrook Research International, 2009, p. 13). The study also mentions the variables that emerge in the literature, namely “attention”, “reading”, “comprehension”, “recall”, “judgment” and “behaviour compliance” (Sambrook Research International, 2009, p. 8).

On packaging and labelling studies, the Commission’s impact assessment acknowledges, too, that they have revealed the impact of warnings on awareness, rather than behaviour: “Practically all reached the conclusion that such measures impact on the awareness of consumers, which over time changes also smoking behaviour but there was some divergence as to the exact level” (European Commission, 2012b, p. 113). In other words, the Commission’s impact assessment recognises that these tools have primarily an impact on “awareness”, which may ultimately and “over time” impact actual behaviour.

Regarding the role of warnings in changing perceptions and awareness, it is important to note that these warnings may have a more important role in deterring new smokers than discouraging the behaviour of current smokers. Research indeed suggests that the long-term impact of tobacco pictorial warnings might be more important through a deterrence effect among young non-smokers than the discouragement of smokers (e.g. Moodie, Mackintosh, & Hastings, 2015). A strong focus on designing warnings for smokers’ behavioural change becomes difficult to justify in these circumstances. In fact, preventing the initiation of non-smokers or diminishing the tobacco consumption of occasional smokers is more manageable to

accomplish than quitting for regular smokers. The behaviour change challenge for smokers is even further intensified by the addiction component of smoking. Against this backdrop, designing warnings to address certain population segments (non-smokers and occasional ones)<sup>273</sup> may be more relevant than designing them with the sole intent to change the behaviour of regular smokers. However, designing warnings for these groups likely calls for a lighter design process: after all, non-smokers or occasional smokers are clearly not subject to such intense warning exposure as smokers.

Finally, another important point to note is that there is one fundamental difference between a warning tested in a laboratory experiment, interview or survey – methodologies of many of the studies on tobacco warnings – and a warning provided in a Directive. The fundamental difference is *who* is nudging. The source of the nudge in the former is a researcher; in the latter the state tells the individual what not to do. This is an aspect that collected evidence cannot capture. The fact that the normative claim of the warning comes from the state may negatively impact effectiveness. Similar to this concern is the fact that evidence on the impact of tobacco warnings is collected in an artificial context, different from the one the individual encounters when making a real purchasing decision.

## **ii. Expectations of behavioural effectiveness: considerations of nature and timing**

In spite of these issues with experimentation, including the reliance on proxies of actual behaviour, engaging in iterative experiments to design nudges would be justified if the expectations regarding the ultimate impact of these warnings on individual behaviour were high. However, it is important to underline that these warnings' *nature* and proximity to individuals can limit their potential for behavioural change. In fact, a warning label alone is presumably the measure with the least controlling power over individual behaviour: by the time a consumer sees it, the

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<sup>273</sup> For instance, plain packaging increases the visual attention to pictorial warnings in non-smokers or weekly smokers, but not regular ones (Munafò, Roberts, Bauld, & Leonards, 2011).

tobacco package is already there, unlike more fundamental measures that restrict and frame exposure to the product. Furthermore, not only smokers anchor themselves in findings that support their behaviour and discount information on risks, it is also difficult for consumers to evaluate long-term risks; optimism can play a role too (Howells & Watson, 2015, p. 35).

In the regulatory spectrum aimed at changing individual behaviour and outcomes, nudging remains a light intervention close to information provision. Yet, the problems it intends to address go well beyond the lack of information, involving issues such as self-control (and even addiction, in the case of tobacco). Also the lack of time or skills may be at the root of behavioural phenomena. In an observation that can be extended beyond the domain of sustainable behaviours, Stoker (2014) notes that:

“The key constraints in promoting sustainable consumption may rest in the lack of capacity or opportunity for change among consumers. Consumers may lack the time and skills to shift their consumption patterns. (...) Nudge in that sense it [*sic*] not always going to be enough on its own” (Stoker, 2014, “Implementation Problem One: To Nudge Alone or First?” section, para. 4).

Regulatory nudges – such as warning labels – are unlikely to be effective on their own, contrary to more fundamental background aspects of choice architecture, which do not rely on active individual behavioural change to be effective. Nudges are then left to be mere reinforcements of existing market regulation conceived as part of broader multi-levelled strategies: “There is an emerging consensus that although nudging people along cannot be a self-sufficient strategy, it should necessarily become part of a broader and multifaceted strategy” (Alemanno, 2012a, p. 42).

The effectiveness potential of these warnings is already limited by the very *nature* of these tools – an aspect detailed in the concluding chapter – which means that the use of iterative experimentation for their design with behavioural effectiveness

concerns in mind may not be warranted. In these circumstances, warning rotation or renewal cannot be more than a naive aspiration to continuous effectiveness.

Besides the evidence on their impacts and their nature, it is important to analyse how the *timing* of these measures can further curb their potential for behavioural change. Large warnings arrived with the 2001 Tobacco Products Directive, a time when much had been done already – both at EU and Member State level – to reduce smoking prevalence (e.g. advertising bans, public health campaigns). The fight against tobacco started well before 2001. It seems prominent warnings arrived at a time when harder work had been done already and smoking prevalence had declined substantially. This is an aspect that the impact assessment on the proposal of the 2014 Directive acknowledged, when referring to the decline in consumption as a result of “a concerted and comprehensive tobacco control policy consisting of a broad range of measures used in a complementary manner and where new elements have been constantly introduced” (European Commission, 2012b, p. 42).

Data suggests that smoking prevalence has been declining. In the EU, data from the World Bank database registers a decline in smoking prevalence for males in the EU, from around 42% in 2000 to 31,7% in 2016 (The World Bank, n.d.-b) and a decline for females from 31% in 2000 to 24,9% in 2016 (The World Bank, n.d.-a). When significant improvements have been achieved already, the scope for rotating warnings to produce additional behaviour change is diminished. In particular, the recent yearly warning rotation introduced in 2014 arrived when more fundamental measures had already been implemented. The fact that, in their current timing and design, these warnings embody the last generation of rules limits their potential for behavioural effectiveness. Rotating tobacco warnings represent a vivid example of the observation that “‘nudge’ is only the latest addition to the portfolio of interventionist approaches rather than an alternative to it” (Burgess, 2012, p. 16).

Pictorial warnings represent the last generation of measures – a consideration that may well extend to nudges more generally. However, it is important to note that this chapter is not arguing that tobacco warnings should not be used as a regulatory

instrument. Measures such as warnings do have their role in the regulatory mix: this type of nudging “favours the de-normalisation of smoking without dramatizing its effects on society” (Alemanno, 2012a, p. 39). They have a role in contributing to changing norms and de-normalising tobacco and associated behaviours, especially among younger people. Furthermore, the fact that much has been achieved already when it comes to regulatory intervention in this domain does not mean that this social issue does not require constant monitoring and enhanced regulation. The intention so far has been to highlight that the higher costs around the design and rotation of warnings may not have been matched by the corresponding behavioural benefits.

Even if expectations on nudging’s behavioural effectiveness should be kept low, iterative experimental approaches in nudge design remain highly endorsed. Regarding the design of tobacco warnings, in particular, these approaches are strongly encouraged. For instance, in an article regarding principles that should inform the design of tobacco warnings, experimental approaches are highlighted for their ability to assist policy-makers in the testing of warnings’ effectiveness (Strahan et al., 2002). Experimental research on aspects such as message novelty remains encouraged, even if it encounters “pragmatic considerations” (Strahan et al., 2002, pp. 187-188).

Despite the difficulty in assessing the behavioural impact of warnings and the low expectations for such impact, the Commission’s impact assessment provided an estimate of such an effect. In a breakdown of estimates of contributions of different policy areas to decreased cigarette and roll-your-own tobacco consumption, the impact assessment estimated that labelling and packaging measures could contribute to such decrease by 1-1,5% within a five-year period after the national implementation of the Directive (European Commission, 2012b, p. 114). The impact of pictures, and their rotation, shall naturally be a subset of this range.

### 5.9.3.2 Yearly warning rotation

#### i. The impact of warning dynamism

Combining delegation of warning design and revision to the European Commission with warnings' yearly rotation was a solution to address wear-out effects, a quest for continuous effectiveness. Therefore, more important than the impact of pictorial warnings on their own is whether their *rotation* brings added value in terms of increased *behavioural effectiveness*. After all, increased potential costs for the Commission have resulted from the increased dynamism of these measures. Tobacco warnings may have become more dynamic, but what are the *incremental advantages of rotation in terms of behavioural effectiveness*?

Research has highlighted the role of rotation. In fact, two “key design parameters” of “effective” warnings are “rotation” and “renewal” (Sambrook Research International, 2009, pp. 46-48). Warnings should not only rotate, but also be renewed “every few years” (Sambrook Research International, 2009, p. 47). Also, “To be effective, warnings must be developed, tested, and revised over time” (Krugman, Fox, & Fischer, 1999, p. 103).

Rotation comes from the idea that warnings are prone to wear-out and desensitisation. Both pictorial and text-only warnings seem to experience “partial wear-out” effects, with pictorial warnings having more prolonged effects than text-only ones: “While there is partial wear-out in the initial impact associated with all warnings, stronger warnings tend to sustain their effects for longer” (Borland et al., 2009, p. 358). Also the results of Hammond et al. (2007) underline “the “novelty” effect of health communications and the importance of periodically revising the warnings on cigarette packages [*references*]” (p. 207). Rotating and revising warnings has been the proposal to address wear-out.

Even if rotation is one of the recommendations of the FCTC, one of the few studies on the impact of rotation – to the best of my knowledge – is that of Li et al. (2015), according to which “rotating two sets of warnings” does not provide an advantage over a “single set”: “The most surprising result was the failure to find any



evidence that rotating two sets of warnings annually (as was done in Australia) reduces the speed of wear-out” (Li et al., 2015, p. 77). This suggests that rotating pictures may not be the ultimate and only implication of wear-out.

The authors put forward possible explanations for the failure of rotation in addressing wear-out. One has to do with aspects such as size or position being more important in attracting attention than “changes in content within the same basic frame” (Li et al., 2015, p. 77). The authors note that warnings are not the object of close attention, suggesting that stronger changes may be needed to generate novelty: “most of the time, smokers do not look at or think about the warnings; therefore, marked changes in elements of the warnings may be required to reactivate their orienting reactions to the novelty in the warnings” (Li et al., 2015, p. 77). This might explain why Woelbert and d’Hombres (2019) propose that future research should analyse changing aspects such as the “layout and size of warnings” (p. e75). Another reason put forward by Li et al. (2015) highlights that smokers were not completely familiar with the first set of warnings to be able to notice the introduction of a new one. If so, Li et al. (2015) suggest that “rotating on a longer schedule might lead to some recovery” (p. 77). A rotation of one year might have been a premature choice.

A “general wear-out effect”, that is, a wear-out effect due to the exposure of pictures in general can also explain why rotation did not work in Australia (Woelbert & d’Hombres, 2019, p. e75). While there are “specific” wear-out effects that might be counteracted by rotating warnings, wear-out effects can only be “partially, but not fully, reversed” by such periodic picture rotation (Woelbert & d’Hombres, 2019, p. e75).

**ii. The dynamism dimension of an iterative design process:  
an erroneous borrowing of ideas from marketing?**

Another unexplored and potential reason for the failure of rotation is related to a mistaken borrowing of ideas of rotation and iteration from marketing and advertising contexts to the domain of regulatory nudges. The iterative testing requirement for nudge design discussed in chapter 4 not only means that the nudge

ultimately implemented should result from an iterative design process (and thus the winner of competing nudges), but also that the search for continuous effectiveness should persist, even after the “perfect nudge” has been found.

Behind iteration in nudge design is the idea that nudge renewal is critical for sustaining effectiveness. Rotating nudges have certainly found inspiration in areas of marketing and advertising, where rotating ads intend to ensure the maintenance of brand recall or prompt purchases. Advertising frequency and repetition is indeed an important area of research in marketing (e.g. Tellis, 1997; Campbell & Keller, 2003). While there is no consensus in this research area, effective frequency seems to be dependent on “brand familiarity”, “message complexity” and “novelty” (Tellis, 1997, p. 75). Novelty tends to be introduced when an advertisement has worn out, which is explained by the “habituation-tedium theory of ad response” (Tellis, 1997, p. 78). According to this theory, a new stimulus is initially received with uncertainty, but subsequently replaced with familiarity, due to recurrent exposure. However, such “habituation” process is also accompanied by “tedium” (see Tellis, 1997).

Novelty is a crucial determinant of traditional advertising to address “tedium” stages of advertisement exposure. But can novelty achieve the same persuasive effect towards opposite behaviours such as quitting smoking or saving for retirement? The fact that techniques such as rotation work in advertising domains may not necessarily mean that they work when used to *prompt behaviour that runs counter our natural inclinations*. The direction of the behaviour targeted may be critical to determine the effectiveness of nudging and iteration techniques:

“Empirical evidence suggests that ready availability of tobacco, processed foods and alcoholic beverages that are packaged, marketed and engineered to stimulate our automatic, affective system has led us to increase our consumption of those products. [reference] This alone seems to suggest that ‘nudging’ works, but seems to have been proven only when its consequence is to worsen people’s health. But

what about using the same techniques in order to promote healthier behaviours?” (Alemanno, 2015a, p. 326).

Alemanno (2015a) points out that the impact of this type of interventions in promoting healthy behaviours and sustained change has not been evaluated. This raises doubts about whether the same techniques – including rotation – can be used to promote behavioural change in domains marked by self-control problems or complex decision-making under risk.

The fact that market players rely on dynamism to retain consumers’ attention and interest does not necessarily imply that the same method will be fruitful when legislators and regulators are designing nudges to change individual behaviour in opposite directions. Rather, the regulatory implications of firms’ dynamic and iterative exploitation of the behavioural vulnerabilities of consumers may involve, for instance, more intense market monitoring efforts or stronger regulation. Furthermore, in addition to the borrowing of iteration ideas from marketing domains, the emphasis placed on the impact of nudges such as warnings on individual behaviour rather than awareness, knowledge and perceptions may have also played a role in legitimising dynamic rotation.

Delegation of nudge design and revision, setting a rotation frequency and stipulating *ex ante* different nudges for distinct time frames are all mechanisms that a legislator can use to introduce nudge renewal through regulation. It cannot be ruled out, however, that this idea of nudge rotation comes from a flawed borrowing of existing evidence from marketing and related areas to the realm of regulation.

### **5.10 The inconsistency between the pursuit of effectiveness and policy choices**

The European Commission has implicitly acknowledged the role of warning labels in de-normalising smoking behaviour. As already mentioned, the impact assessment referred to the impact of these labels on “awareness”, which brings about changes in behaviour “over time” (European Commission, 2012b). In light of the

Commission's acknowledgement of warnings' primary role on awareness, the obsession with their behavioural effectiveness (through experimentation, rotation and revision) becomes difficult to understand. These may have been options of the EU legislators, but they were in the Commission's proposal.

In fact, despite the role of warnings in de-normalising smoking behaviour, the current obsession with their behavioural effectiveness – at the additional costs of experimentation and iteration requirements – might nonetheless be unwarranted given what we know these regulatory tools are able to achieve on their own. Less costly approaches to rotation could have been considered in the most recent revision of the Tobacco Products Directive, such as a larger set of initial warnings and/or warning rotation over a longer time span. Yet there is no sign that these lower cost options were contemplated. Yearly warning rotation – and increased pressures for warning revision – were introduced without considerations regarding their added value, implications and even alternative arrangements. While the sets of warnings rotating annually and the delegation of warning design (and adaptation) were in the Commission's proposal (European Commission, 2012c), the impact assessment document only mentions that rotation is meant to address “wear-out” (European Commission, 2012b, p. 89). The choice of yearly rotation to address wear-out remains unaccounted for; its impacts were not analysed.

It is also important to restate that yearly rotation has introduced a situation not so different from the 1989 and 2001 static variety. In 2019, three years after national implementation of the Directive, one found packages for sale with warnings from all sets. On a practical level, more than rotation per se, the new sets of warnings introduced every year have just added more warnings to the ones consumers get exposed to at a particular point in time.

The contradiction has become obvious by now. By delegating warning design and revision to the Commission and choosing yearly rotation, the EU legislators have chosen to be obsessed with the behavioural effectiveness of what is presumably one of the least effective measures – at least on its own. The contradiction observed in

the obsession with the effectiveness of tobacco labels is exacerbated by the measures that did not make it to the Commission's proposal and those measures that did not make it in the legislative decision-making stage. This contradiction is also possible because policy choices and nudge design happened at different stages of the policy process. Nudge design, informed by behavioural effectiveness, happened when the policy mix had been chosen already, while stages of policy choice were determined by the impact assessment at the Commission level and political concerns at the legislative level (Council and Parliament).

On the Commission's side, more intrusive measures on business such as product display bans were deliberately abandoned. These measures – considered severe by the industry as explained in Peeters et al. (2016)<sup>274</sup> – likely have more predictable impacts on individual behaviour. Regulation on vending machines and point-of-sale display was considered in impact assessment and public consultation stages, but discarded mainly due to subsidiarity concerns.<sup>275</sup>

Plain packaging<sup>276</sup> was also one of the options under consideration in the Commission's impact assessment. It was seen as the option with the lowest administrative burden and cost for firms, while it removed national differences on packaging. In fact, with plain packaging the EU legislators could overcome “regulatory divergence” and diminish the possibility to use packaging as an advertising platform (Alemanno, 2012b, p. 205). However, even if the Commission

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<sup>274</sup> According to Peeters et al. (2016), the 2012 proposal was significantly delayed, having spent three years longer than the previous one on the Commission's side. This was mainly due to intense lobbying and strategic efforts by the tobacco industry, which included, among others, clogging the Commission with responses to the public consultation. According to the European Commission, with over 85000 responses, “no previous public consultation launched by the European Commission had ever registered such significant participation” (European Commission Directorate-General Health and Consumers, 2011, p. 5).

<sup>275</sup> See the section “Discarded Policy Areas” in European Commission (2012b).

<sup>276</sup> Plain packaging regards the removal of “trademarks, graphics and logos” except the brand name, “which is displayed in a standard font” (Alemanno & Bonadio, 2010, p. 268). It further reduces manufacturers' ability to use the package to market the product. Evidence suggests that plain packaging enhances the effectiveness of pictorial warnings in terms of recall and attention (see Stead et al., 2013). See Alemanno (2012b) on the compatibility of plain packaging and display bans with EU law, in particular with the principles of subsidiarity and proportionality, the trademark regime and fundamental rights.

acknowledged that it would be the most effective alternative in reducing national discrepancies – and a less costly solution for stakeholders than pictorial warnings alone – plain packaging was not the Commission’s most preferred option, as it reduced “the possibilities for brand differentiation, in particular affecting high margin/premium brands and impact more negatively on revenues/profits due to the drop in consumption” (European Commission, 2012b, p. 95). Pictorial warnings without plain packaging addressed “the concerns of the tobacco industry” by leaving package space “to display their trademark” (European Commission, 2012b, p. 96).

Further contributing to this tension between technocratic obsessions with behavioural effectiveness, warnings’ ability to achieve behaviour change and the political and plural demands of legislative processes are the measures that were dropped by the EU legislators. From the proposal until the final act, the text shifted in favour of industry: warning size decreased, a ban on slim cigarettes was dropped and the initial comprehensive flavour ban became a ban with a four-year derogation for menthol (Peeters et al., 2016).<sup>277</sup>

The Commission’s reasoning in the impact assessment exercise reveals that competing goals play a role at a stage of consideration of different options for the regulatory mix. The same goes for the contemplation of different alternatives for each particular type of rules (e.g. packaging and labelling). Competing goals mean that behavioural effectiveness may be overridden by other policy goals (e.g. eliminating national disparities, reducing burdens, etc). However, once the particular nudge option was chosen, the pictures to be included in the annex were selected based on effectiveness criteria: “The pictures chosen were those that were shown to be effective through testing” (European Commission, n.d.-b). In fact, while the impact assessment document largely focuses on improving the internal market – taking into account a high level of health protection – as the main objective of the future Directive, some of the indicators presented to monitor such objective were

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<sup>277</sup> See table in Peeters et al. (2016, p. 109) with the differences between the proposal and the final text.

“smoking consumption and prevalence” and “awareness of the harmful effects of tobacco” (European Commission, 2012b, p. 124), which evoke the behaviour change goal.

The 2014 Revised Tobacco Products Directive and its evolution from impact assessment stages to the final legal act reveal something fundamental about the relationship between policy choices and evidence. They show that the choice of policy instruments is not only a rational exercise, but also a political one. Regulatory power is a political endeavour that can ignore, if it so wishes, recommendations from the world of evidence. In fact, what evidence recommends may differ substantially from the actual feasibility of certain options at the political level, a level at which competing demands, forces and goals play an important role in the regulatory mix ultimately chosen. Competing demands and policy goals may override behavioural effectiveness in a stage of policy choices; but this is not the case in stages of nudge design, which seem to have one purpose in mind: behavioural effectiveness.

The efforts involved in iteratively experimenting with nudges cloud the reality that more substantive regulatory change may not have been politically viable. In fact, devoting intense resources and efforts to the design of tools that do not significantly interfere with choice architecture may be strategically done to conceal regulatory defeat at the stage of policy choices.

## **5.11 Conclusion**

The initial design of tobacco warnings has become increasingly reliant on laboratory and online experiments. This has been possible by delegating their design to the Commission. However, these tools have limited potential to change behaviour, so costly experimental efforts devoted to their initial design may not be warranted.

An iterative nudge design process not only demands iteration in the pursuit of the most effective nudge, but also entails iteration in nudge content. In fact, delegating nudge design to a regulator may allow both dimensions of iteration to be realised: it

becomes easier to conduct experiments (so as to identify the most effective nudge) and nudge renewal can be introduced in a rather convenient way.

Besides delegation, legal provision mechanisms may further promote dynamism. Providing warnings for different years and stipulating a yearly rotation frequency were mechanisms introduced by the EU legislators to promote renewal in the case analysed. Such requirements pressure the Commission to engage in nudge revision more often, greatly encouraging an iterative design process that results in nudge renewal. Far from being innocuous, accompanying delegation of nudge design (and revision) with rules such as yearly rotation increases potential design costs through increased pressures for nudge renewal.

While the actual and potential costs of tobacco warnings have certainly increased, the corresponding behavioural benefits of warning rotation are doubtful. In the case analysed, the rotation benefits do not seem to compensate the potential rise in costs. More generally, as later explained in section 6.2.2, most nudges have their potential for behavioural change circumscribed, so attempts at furthering effectiveness with renewal may be inadequate. In fact, the idea of nudge renewal may have been erroneously borrowed from marketing domains.

It is important to note that delegation per se is not a problem. Nudges may need to be detailed at subordinate levels of decision-making, mainly for efficiency and expertise reasons. However, accompanying delegation with pressures for nudge effectiveness and renewal makes delegation arrangements potentially costly. The benefits of renewal are, however, doubtful. In fact, this chapter has revealed that simply because dynamic nudges can be incorporated into legislation does not mean that they should.

In light of what has been discussed so far, the concluding chapter analyses how the burden of nudge design and fine-tuning can be lowered in the regulatory domain.



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## 6. Adapting the Process of Nudge Design to the Regulatory Space

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### 6.1 Introduction

The two previous chapters identified and discussed the burden imposed upon regulators of incorporating iterative experimental testing into their own design practices and processes. In particular, chapter 4 identified the burden of iterative experimentation for regulators and chapter 5 investigated the burden of the two dimensions of an iterative and experimental design process using a real case study. Chapter 5 has paved the way to assess whether the design burden of nudging identified is justifiable, given this tool's performance in the regulatory space. This concluding chapter investigates this question and provides guidance on how to lower the burden of nudging's design process for regulators or, in other words, how the design process of nudging can be adapted to the particularities and constraints of regulatory reality.

Not only nudging's translation from academia to regulation (**chapters 2 and 3**) and the burdens imposed by iterative experimental testing aspirations and practices (**chapters 4 and 5**), but also the opportunity costs of iterative testing can make this design approach an unfeasible paradigm for nudge design. In fact, intensive nudge design efforts crowd out regulatory efforts needed in other domains; that is, nudge design reliant on iterative experimentation comes with opportunity costs.

An iterative and experimental design process may be worth incurring all these costs if we can expect nudging to change individual behaviour. However, it is not only in the domain of tobacco that we can expect nudging to perform poorly as a regulatory tool. Several reasons explain why such expectations permeate nudging more generally in the regulatory world, with the exception of default rules. Given what nudging can achieve in the regulatory domain, the costs above may not be justifiable. Again, this analysis on the expected behavioural effects of nudging is only relevant to assess whether the burden of iterative experimentation is warranted

in a regulatory context. The chapter does not review behavioural evidence on the effects of regulatory nudges; it rather explains why expectations about behavioural performance should be kept low when nudging embodies a regulatory tool.

At a stage of the regulatory process where the regulatory mix has been decided upon in a previous phase, requiring nudge iterative testing to arrive at the “perfect nudge” is a design alternative that does not provide any added value other than leveraging experimental evidence for the purpose of portraying a positive public image. This aspect – along with other reasons – also explains the persistence of iterative experimentation ideas for nudging in the regulatory world.

The burden of iterative experimentation identified in previous chapters – to which the opportunity costs of intense design efforts add to – and the limited behavioural impact of nudging explain why iterative testing may not be appropriate for nudge design in the regulatory sphere and thus justify the need to lower this burden. Besides further clarifying why iterative experimental testing may not be appropriate for nudging in the regulatory sphere, this chapter proposes a design process that might alleviate regulators. That is to say, this chapter provides some direction and guidance on how to lower the design burden of nudging for regulators as nudge designers.

In order to shed light on how ideas other than experimentation and iteration should inform regulatory nudge design, this chapter discusses the role that evidence plays in regulatory processes, as the basis for the discussion on how regulators should structure their own process of nudge design. This chapter also provides an answer to the main question on how legislators and regulators can truly bring nudges into practice, in particular how their design should be tailored to the constraints of the regulatory world.

Since nudging has been transferred or translated into the regulatory sphere, this thesis attempts to identify how can this tool be more efficiently provided, so that this transfer can happen successfully. Nudging may have been advertised as a low-cost instrument, but this ignores the implications of incorporating iterative

experimental ideas into design practices and regulatory processes. Given the transfer of nudging from academia into a new context, the burden and opportunity costs of iterative testing and the performance of nudging as a regulatory tool, the design process of nudging may need to be tailored to the particularities of regulatory reality. This is what this concluding chapter addresses.

## **6.2 Why lower the design burden of nudging? Additional reasons: the opportunity costs of iterative experimentation and nudging's expected behavioural effects**

As **chapter 2** explained, nudging left academia to enter other domains, in particular that of regulation. This process of translation and entrenchment into a new space substantiated the need to understand the implications for regulators of adopting the design premises of nudges in other spheres, namely iterative experimental testing. The burden of such an approach, analysed in **chapters 4 and 5**, provided additional justification for adapting the design process of nudging to regulation.

In addition to processes of translation into new contexts and the burden of iterative experimental testing, other reasons account for the need to adapt nudging's design process. One has to do with the opportunity costs of nudge design, which add to the design costs previously identified. Another reason is related to what nudging can reasonably achieve as a regulatory tool, which makes it a complementary or auxiliary tool rather than an alternative. The analysis of the potential behavioural effects of nudging is only relevant to the extent that it can be juxtaposed to the costs of iterative experimentation identified so far (the design burden and the opportunity costs).

Design costs (and associated opportunity costs) and limited behavioural benefits explain why regulators should be wary of devoting intense design efforts to nudging and thus represent important justifications to search for an alternative nudge design process. The opportunity costs of nudging's design process and the expected behavioural impacts of this tool are addressed in sections 6.2.1, 6.2.2 and 6.2.3.

## 6.2.1 Additional costs of iterative experimentation: opportunity costs

### 6.2.1.1 The danger of dismissing other solutions

Another reason, apart from the ones already outlined in this thesis (emergence of nudging into regulation and nudging's design burden), adds to the danger of conditioning nudge design to costly iterative experiments – and therefore to the relevance of this thesis. Such a heavy requirement may result in unduly dismissing other solutions for which gathering experimental evidence is more complex. Nudging tends to isolate individual behaviour so as to act upon it; behaviour is nonetheless embedded in broader environments. Experimental approaches make it difficult to identify those environments and structures “that exceed experimental space, but are still crucial combinatorial factors in shaping the social actions under scrutiny” (Jones & Whitehead, 2018, p. 322).

Finding causality for regulatory measures that more fundamentally target choice environments is not an easy task, which may lead to a neglect of alternative causes of social problems and alternative solutions:

“The danger here is that policymakers are potentially failing to tackle the real bases for problematic behaviour – perhaps rooted in industry, trade or social welfare [*references*] – because these changes cannot be tested in randomised controlled trials, viewed as the pinnacle of hierarchies of evidence [*reference*]” (Spotswood & Marsh, 2016, p. 290).

Solutions for which it is more difficult to adopt experimental approaches and arrive at causality are important to contemplate. Nudging may divert us precisely from considering a wide range of tools that more fundamentally interfere with choice architecture, and which may be more effective from a behavioural perspective.<sup>278</sup> Regulation may intend to frame the context in which individuals decide – also in the pursuit of a balanced distribution of the burden of responsibility for behavioural outcomes – but nudging may preclude this effort. Using the terminology of Willis

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<sup>278</sup> In this regard, I also draw attention to Esposito (2017) on behavioural insights widening the theory of consumer harm and justifying more intrusive consumer protection.

(2008) on “regulatory opportunity costs”<sup>279</sup>, also nudging – and associated iterative design efforts – come with such opportunity costs.

Several authors acknowledge this potential for diversion. John (2018), for instance, writes that “Stressing light-touch, non-regulatory, and fiscally cheap policies, diverts public attention from the tools and measures that are more effective” (p. 99). Oliver (2013) also notes that “behavioural economics has been to some extent captured by the nudge agenda” (p. 691). Loewenstein and Chater (2017), too, underline that focusing on nudging for the purpose of policy might result in unintended consequences:

“The power of ‘nudges’ may have had the unintended effect of encouraging policy makers to channel behavioural economics into a narrower range of policy problems than it has the potential to address, and focus on a narrower range of policy solutions than it has the potential to provide” (Loewenstein & Chater, 2017, p. 28).

Other academics have voiced this very concern for the neglect of other tools, among them Michie and West (2013), Bubb and Pildes (2014), Cassese (2016) and McCrudden and King (2016). Nudging comes indeed with the “danger” of being a pretext not to protect individuals (Gigerenzer, 2015, p. 364).<sup>280</sup> Responsibility is shifted from policy-makers and firms to individuals. In other words, as the burden of the decision is assigned to the individual decision-maker, nudge initiatives may provide governments and regulators with the excuse to avoid harder and stricter forms of regulation. However, only the state “has the resources and legitimacy to direct – or push back against – other powerful corporate behaviour change seekers” (Leggett, 2014, p. 16).

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<sup>279</sup> Willis (2008) uses the term “regulatory opportunity costs” when referring to how financial literacy has diverted attention from more effective solutions.

<sup>280</sup> Nudging is likely to be unsuccessful when entire industries are devoting much more resources to nudging people in other directions. While stressing this point, Gigerenzer (2015) defends that education and “investing in making people risk savvy” are the most sustainable and effective solutions (p. 379).

The opportunity and novelty of nudging resides not so much in the concept itself, but rather in the focus it places on choice architecture. However, taking choice architecture as a focus of regulation in order to affect behavioural outcomes calls for the consideration of a broad range of tools to regulate the market. Nudging should indeed not prevent us from fully comparing costs and benefits of different solutions (Bubb & Pildes, 2014). The burden of its design should not drain away attention and resources from the exercise of considering all options the state can use to shape individual choice architecture.

By identifying several instances where individual behaviour falls prey to predictable biases and heuristics, behavioural sciences made us believe that behaviourally inspired regulatory measures should correct “defective” individuals. Putting individual behaviour on the spot may have nonetheless diverted us from more fundamental drivers of behavioural failures. These may not necessarily be on the side of individuals in need of correction. They may reside on the supply side: the player capable of devising most choice architecture that individuals ultimately face can exploit (and exacerbate) human innate traits. Consumer vulnerability results from the interaction between human psychology and market practices, as explained in section 2.3.2. The fact that market practices may be nudging us in detrimental directions and shaping choice architecture in abusive ways does not necessarily mean that the state should be using the same marketing inspired methods as the private sector, but rather use the tools it controls (and over which it has a monopoly) to influence individual choice architecture, which extend well beyond the range of information-based nudges and defaults.

This becomes all the more important, given that, as already explained, most regulatory nudges are not particularly effective. As a matter of fact, concerns on the possible ineffectiveness of regulatory nudges are precisely one of the reasons that make the broader contemplation of regulatory alternatives an important endeavour. Another one is the complex nature of issues on which regulatory action is being considered, complexity that is itself dismissed by individualistic nudge solutions. In

fact, while behavioural sciences have taught us how important the broader decision context is, solutions like nudging place the burden and responsibility for decision-making entirely on individuals and their capacity to overcome choice architecture on their own.

In sum, behavioural sciences provide a new lens through which to look at the implications and ramifications of different regulatory strategies. While regulatory strategies such as nudging place the burden of decision-making on individuals, there is a trade-off that regulators should consider between “the aspiration to reflective decision-making and the reality that ‘mental bandwidth’ is a scarce resource” (Alemanno & Sibony, 2015, p. 345). There are decisions that, as individuals or consumers, we may not want to make and other decisions in which we would like to engage our deliberative capacities. A blind deference to freedom of choice clouds the reality that often, “*More* choice comes at the expense of *meaningful* choice” [emphasis in original] (Bar-Gill, 2012, p. 20). This amounts to another dimension that the process of comparing different regulatory alternatives from a behavioural perspective should take into account.

#### **6.2.1.2 The danger of failing to embrace behavioural science**

Another opportunity cost of an iterative design process is failing to embrace behavioural sciences in a more fundamental way throughout the complete regulatory cycle. Behavioural insights can indeed assist policy-makers in different stages of the policy process (e.g. Lourenço et al., 2016). According to Lourenço et al. (2016), “BIs [*behavioural insights*] complement more traditional policy approaches and provide a powerful way for delivering more targeted and efficient solutions at all stages of the policy cycle” (p. 37), from the identification of policy problems to evaluation and implementation.<sup>281</sup>

It has been argued that cognitive sciences have a role in the regulatory process (Di Porto & Rangone, 2015). When defining a problem, behavioural and cognitive

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<sup>281</sup> See also Renda (2015) on the importance of behavioural sciences throughout the regulatory cycle.

insights can assist policy-makers in analysing a baseline scenario, specifically in determining whether an existing regulation has failed to produce a desired result due to behavioural phenomena; in unregulated domains, knowing whether certain behavioural limitations play a role in a given social problem can assist policy-makers on whether to intervene (Di Porto & Rangone, 2015).

At the problem definition stage, the *Better Regulation Toolbox* already recognises behavioural bias as a problem driver, alongside equity, market failures and regulatory failures (European Commission, 2017b, p. 85). In Lourenço et al.'s (2016) view, this recognition is important: “this explicit recognition about the limits of consumer rationality and their relevance to policy sends a strong signal and is particularly noteworthy as it makes the relevance of behavioural sciences for EU policy-making even clearer” (Lourenço et al., 2016, p. 38).

At the policy option stage, behavioural considerations can be useful not only to assess traditional tools, but also to offer new ones. The *Better Regulation Toolbox* also calls for the consideration of behavioural economics when identifying policy options: “Consider the widest range of instruments, from the less intrusive to the more interventionist and from the more classical tools to those suggested by the more recent developments in relevant academic fields, like behavioural economics and social psychology” (European Commission, 2017b, p. 103).

Behavioural considerations can also be valuable in the evaluation of impacts and ex post stages of evaluation, which assess whether a particular rule was justified. In fact, “BIs [*behavioural insights*] can support ongoing attempts to improve impact assessment and evaluation of policies” (Lourenço et al., 2016, p. 38). Behavioural insights may even play a more important role in ex post exercises of evaluation (Quigley & Stokes, 2015).

The opportunity cost of nudge design regards not only the consideration of other tools, as already mentioned, but also the full engagement with other important endeavours where behavioural sciences can play a major role. As businesses' enhanced understanding of behavioural sciences results in ever more creative



practices that produce choice architecture arrangements that may not advance the consumer's interest, regulators need to catch up. Such catching up effort means regulators should not limit their increased understanding of behavioural science to the design and fine-tuning of nudges, but rather to the monitoring of harmful practices going on in the market, so as to be better equipped to design informed policy strategies. These efforts are also costly in themselves, but they are in essence part of the regulator's core activity to gather all possible insights before making a regulatory and policy decision.

In spite of claims that behavioural insights fail to provide regulators with a framework for their incorporation into regulation (e.g. Alemanno & Spina, 2014), they can nonetheless be integrated if the focus is shifted from the tool (e.g. nudging) to the problems that the most widely discussed behaviourally inspired instrument was designed to address. Behavioural sciences provide a new lens through which to study and investigate market misconduct. Their role is to better assist regulators in monitoring, detecting and diagnosing potential (market) problems detrimental to individuals, while helping them anticipate possible implications of different regulatory solutions. These are aspects already recognised by institutions such as the FCA or the European Commission.

An enhanced and refined understanding of behavioural sciences *can* indeed be used to inspire better regulation. *Whether* and *how* such knowledge shall be translated into behaviourally savvy regulation is far from uncontroversial, remaining a matter of political taste outside the scope of this thesis. A strong focus on nudging's iterative design process may nonetheless prevent the full flourishing of the potential of behavioural insights for regulatory and policy purposes.

### **6.2.2 Nudging in regulation: (expected) behavioural effects**

The challenges and costs of iterative experimentation (including opportunity costs) previously identified may be worth incurring if experimentation reduces uncertainty about how the nudge will perform. In addition, experiments may be worthwhile when effects are uncertain, but there are expectations that the intervention will have

a meaningful impact. In the words of Gubler (2014) about experimental rules more generally: “In most cases, as long as the policy’s payoffs are uncertain but potentially high, the optimal approach will be an experimental one” (Gubler, 2014, p. 137).

The pursuit of behavioural effectiveness is a goal that has highly influenced the design process of nudging, in particular the dissemination of iterative testing practices. While uncertainty and high expectations drive experimentation, there are good reasons why expectations should be kept low for the performance of regulatory nudges. This poor performance of nudging as a regulatory tool poses a problem for the policy justification of the use of experiments at design stages. In fact, experiments for policy purposes differ substantively from experiments for scientific purposes. While scientific experiments can be implemented with the purpose of producing knowledge, this alone is not enough for the purposes of experimenting with regulation:

“unlike scientific experiments, policy experiments are not undertaken for the purpose of obtaining knowledge about the efficacy of the implemented policy. Rather, policymakers implement one policy over another because they wish to accomplish a particular social good, and they hope, in the face of uncertainty, that the chosen policy will achieve their end” (Gardner, 1996, pp. 480-481).

Experimenting with regulatory nudges is an endeavour aimed at achieving behaviourally effective tools. However, nudges are highly constrained in their ability to change behaviour. Being a tool proximal to individuals, and requiring active or negative action to attain their effect, the potential of nudges to achieve behaviour change is rather limited. As Tor (n.d.) explains: “Choice-preserving policies, on the other hand, may be less efficacious, since by design they allow individuals to act contrary to those true preferences that we assume the means-paternalist policymakers to have identified” (Tor, n.d., p. 6). Tools allowing freedom of choice are “unlikely to be sufficiently effective — ironically, for reasons BLE itself identifies”

(Bubb and Pildes, 2014, p. 1598). Weak effects represent a major criticism addressed to nudge policies:

“Although a lot of attention is given to nudge policies, when they are examined they tend to have effect sizes that are small percentage point differences, which can appear large when presented in attractive bar charts compared to a control arm, but in fact do not deliver as much uplift as many common interventions already do. The criticism is that this is precisely because they are nudges, that they do not have much power to change behaviour and are really gentle interventions” (John, 2018, p. 91).<sup>282</sup>

The provision of regulatory nudges has been made contingent on strong iterative experimental ideas. Nudges should be experimentally tested and fine-tuned before rollout in an iterative way. However, regulatory nudges based on framing or disclosure have their effectiveness potential reduced in the first place, because they represent little interference with individuals’ contexts of choice, being thus incapable of overriding the biases they were designed to mitigate. Information alone – no matter how tailored and refined – cannot realistically aim at changing behaviours rooted in self-control issues or misperceptions of risk.

Nudges are only likely to be effective when they resonate with people, that is, when people already have an intention to change their behaviour. Nudges may only succeed “if the actions of the targeted individuals are meaningful to them in relation to the objective” (Oliver, 2013, p. 688). Sunstein (2017), too, notes that “Information, warnings, and reminders will not work if people are determined to engage in the underlying behavior (e.g. smoking, drinking, texting while driving, eating unhealthy foods)” (p. 20). However, that determination is precisely one of the reasons behind regulatory intervention in the first place, which is why counting on

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<sup>282</sup> John (2018) argues that these small changes may be worth it given nudges’ low cost, among other reasons (e.g. cumulative effect over time). However, as we have seen before, experimental requirements have made nudging far from being a low-cost tool to design, especially in the regulatory sphere.

motivation to achieve the success of a regulatory nudge is not realistic. The types of behaviours regulatory nudges tend to target are very difficult to change (e.g. lifestyle behaviours).

As far as effectiveness limitations are concerned, it is also important to note that rules are “general”, but psychology is about “context-dependence” (Alemanno & Sibony, 2015, p. 340). Tailoring a nudge to individual circumstances and contexts is often not possible when it embodies a one-size-fits-all regulatory solution, which further limits its ability to change behaviour.<sup>283</sup> Besides, regulatory nudges represent a one-size-fits all solution for the general public where the designer will hardly have any control over nudge delivery or the real context the individual will face, aspects that may attenuate and counteract any effects. As Willis (2019) notes about the US reality, nudges based on disclosure may have involved intensive design efforts, but they also seem to play a limited role in actual decisions due to the context that individuals face:

“The U.S. Consumer Financial Protection Bureau spent three years in the lab perfecting new mandated home mortgage disclosures, but when academics added idle salesperson banter to a simulated mortgage sales process, consumer comprehension of the disclosures used in the sales process plummeted. The detailed nutrition facts label on the side of U.S. food packages likewise took years to develop, but consumers hurrying through the grocery store rely on the industry sponsored “healthy choices” checkmark, that on the heels of the new nutrition labels graced the fronts of packaging for even Fudgesicles and Fruitloops, sugary treats hardly known for their healthy properties” (Willis, 2019).

Even if a particular nudge has revealed its effectiveness in a particular context, population and time, not only does its “causal role” need to hold, but also a series of

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<sup>283</sup> See also Abdugaridov (2016) on companies’ ability to customise nudges and target their delivery, a feature that the regulatory process cannot accomodate.

“support factors” need to be present in the context of interest, as per the terminology of Cartwright and Hardie (2012). One should nonetheless note that regulatory nudges are provided in contexts where implementers (i.e. businesses) design choice architecture arrangements that may not work in the policy-maker’s desired direction.

Nudging’s ability to change behaviour is also likely to be particularly constrained in the regulatory sphere, where the range of nudges will be limited. In the regulatory domain, more effective (and presumably stronger) nudges in the nudge spectrum may simply not lend themselves to be considered viable regulatory solutions for reasons of proportionality, implementation costs, respect for individual and business rights, potential of intrusiveness on individual behaviour, competing goals and demands beyond behavioural effectiveness and many others, as already discussed.<sup>284</sup> In fact, the design of regulatory nudges is integrated in the design of broader regulatory packages shaped by several competing goals and objectives, which may also constitute a design limitation. These are limitations that other nudges (private nudges and many public nudges) do not face.<sup>285</sup> Regulatory nudges are often defaults or information provision tools, with this last category being one of the least effective tools (both in the nudge spectrum and the regulatory spectrum).<sup>286</sup> Regulatory nudges – with the exception of default rules – can be placed at the lowest end of effectiveness of the *nudge spectrum* and the *regulatory spectrum* of possible tools to influence behavioural outcomes, which leaves them a limited role for behavioural change.

As a final note, it is important to underline that the fact that nudging – in particular information-based nudging – is likely to perform poorly in the regulatory realm does not mean that this tool should not be used or that we should not spend any effort

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<sup>284</sup> See sections 3.6.4.1.iii and 3.6.4.3 on legal and institutional constraints that may limit nudge content in regulation.

<sup>285</sup> Apart from the fact that private nudges do not face these design limitations, some of them have the advantage of already addressing motivated individuals (those with existing intentions to change behaviour). This positive selection bias is an aspect that may greatly favour the effectiveness potential of nudging in this context, especially given that many of them target lifestyle behaviours.

<sup>286</sup> See footnote 128.

designing it. Information is important and designing information in a simpler way for consumers is far from a minor endeavour. The way information is presented to consumers certainly needs to be revised and improved (e.g. Howells, 2005; Loewenstein, Sunstein, & Golman, 2014). Nudges like these do have a role in the regulatory mix, as auxiliary measures to other tools, and their performance should be assessed in accordance with the role that they play.

Regulatory nudges tend to be about new and simpler ways to inform people. This role in informing, raising awareness and empowering people in their choices – even if exploiting emotional responses (e.g. tobacco warnings) – should be accompanied by more realistic metrics to assess the performance of these tools (e.g. clarity, comprehension, knowledge), away from behavioural effectiveness. In this regard, it is also important to note that it may be difficult in certain domains to ascertain in which direction should behaviour change in order to measure a nudge’s behavioural effectiveness. For instance, a nudge such as a credit warning (e.g. AFM, 2016) may increase the salience of the risks of contracting credit, but this should lead to a more informed decision rather than necessarily behaviour change. In fact, it is not straightforward that, for every consumer requesting credit, the “better” decision when seeing the warning is necessarily lowering the amount of credit requested (the metric used in the study to measure this nudge’s influence on choices) or forgo a credit request. This reason also justifies why the performance of nudging should be attached to other metrics and goals.

Nudges “cannot play a leading role in the overall regulatory context” (Cassese, 2016, p. 243), but they have a role in the broader regulatory strategy. The argument so far has been that the process of nudge design using iterative testing is too burdensome for what these tools can reasonably achieve on their own, which further contributes to the reasons why the design process of nudging for regulatory purposes needs to be reconsidered.

In sum, the reasons why nudging is expected to perform poorly on its own as a regulatory instrument are the following:

- Nudging represents a minimal interference with choice architecture;
- Its effectiveness depends on active and voluntary change on the side of individuals, the lack of which may be precisely the reason why measures like nudging are called for in the first place;
- Tailoring regulatory nudges for individual circumstances is often not possible, so nudging tends to embody a one-size-fits all solution;
- Regulators as nudge designers tend not to have control over the specific context in which the nudge will be delivered, where other factors may work for or against the nudge;
- The pursuit of nudge effectiveness in the regulatory domain is constrained by different factors, factors that have to do with the fact that nudging is provided by legal or regulatory means (e.g. proportionality, respect for individual and business rights, several competing regulatory goals beyond behavioural effectiveness).

Nudging's low behavioural performance, its role in informing and raising awareness and the difficulty in identifying a metric to measure its behavioural effectiveness all justify why more realistic metrics to assess its performance should be chosen. This section on the behavioural effects of nudging in the regulatory space is instrumental to assess whether the design burden and costs identified so far are justifiable. As this section intends to illustrate, those costs may not be warranted given what nudging can achieve as a instrument in the regulatory domain.

### **6.2.3 Behavioural effects in the regulatory domain: a note on defaults**

Distinguishing between defaults and information-based nudges is important. Nudges other than defaults target the individual directly, that is, they intend to directly change behaviour – through a new action or inaction. Their effectiveness depends on an active individual decision. However, defaults target choice contexts more fundamentally. Their effectiveness does not depend on any new course of action from the individual. They impact *behavioural outcomes* directly rather than

*behaviour*. This means that, even in the presence of freedom of choice that allows the individual to actively express a preference against the default, these tools are set to have more effectiveness potential in changing behavioural outcomes than other nudges relying on active and voluntary behavioural change.<sup>287</sup>

Several mechanisms explain why defaults stick. One has to do with inertia: people have to make an active choice to change the default. An active choice requires time and effort. This effort might comprise the effort of contemplating the problem and deciding on whether it is worth changing the default as well as the effort of establishing a preference (Sunstein, 2013a). Another reason behind the effectiveness of defaults regards the fact that they work as an endorsement or recommendation (Sunstein, 2013a). A third mechanism highlights the power of loss aversion: a default determines a reference point, which might be used to measure a “loss” or a “gain” against (Sunstein, 2013a, p. 22).<sup>288</sup>

The strong power of defaults does not mean their design is easy. In fact, if set too far away from “strong antecedent preferences” or when implemented by actors who engage in efforts to counteract the default effect, defaults can be ineffective (Sunstein, 2017, p. 20). This last concern is particularly important for regulatory defaults; these tools may see their effectiveness undermined, not because the behavioural mechanism on which they are based is weak, but because firms – the nudge implementers – devise strategies to weaken their effect. This represents an important difference between regulatory defaults and other information-based strategies: the ultimate impact of well-designed defaults on behavioural outcomes – set not far away from preferences – depends largely on business compliance (given the strong psychological mechanisms on which they operate); but the effectiveness of information-based nudge tools on behavioural outcomes depends mostly on individual behaviour change. A regulator presumably has more control over business compliance than voluntary individual change.

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<sup>287</sup> This is in line with a quantitative review of different nudges: “especially defaults have larger median and average effect sizes than other categories” (Hummel & Maedche, 2019, p. 54).

<sup>288</sup> See Sunstein (2013a) on these reasons and others. Also Smith, Goldstein, and Johnson (2013) discuss these mechanisms.



Even if defaults are more effective nudges, designing the exact default when the default option is not of a binary nature is a difficult process, especially with preference heterogeneity. For instance, determining a default rate for retirement savings contributions is likely to be more difficult than in the case the policy default is a decline in transactions exceeding a credit limit. In other words, defaults that are not binary may require more investigative efforts beforehand on individual reactions, circumstances and preferences. This means that the design challenges discussed so far may be more applicable to this type of defaults. In fact, the existence of defaults that may call for strong ex ante design efforts also explains why they were kept under the understanding of regulatory nudges considered in this thesis. However, given their likely high effects and presumably non-existent need for renewal, defaults may be worth the strong evidence-gathering efforts on the side of regulators.

### **6.3 Why have iterative experimental testing aspirations persisted in the regulatory domain?**

This section puts forward a few tentative reasons why the premise of iterative experimental testing persisted for nudging in the regulatory world. In an earlier section (section 4.3), the reasons behind the dissemination of iterative testing into regulatory nudge design were identified. However, even after the limited potential of nudging was recognised, iterative experimental testing has remained highly endorsed and embraced. Notwithstanding the fact that nudging was being considered as an instrument outside of the sphere where it was initially conceived and developed – and in spite of its limitations and low performance as a regulatory instrument – ideas of iteration and experimental testing invariably persisted in the regulatory domain.

One reason for the persistence of experimental ideas in the regulatory sphere has to do with the fact that evidence on nudge effectiveness in domains other than regulation may have led us to overestimate this tool's potential to achieve change as

a regulatory tool. As seen in chapter 3, nudging has occupied different spaces; failing to properly consider the differences between such spaces may have contributed to an erroneous extrapolation of behavioural effectiveness from success cases in specific domains to substantively different spaces. The initial enthusiasm with nudging may not have been tempered and mediated by these differences. Overestimating the impact of this tool in the regulatory domain may have contributed to the enthusiasm created around the experimental approaches usually associated with the design of this tool. In addition, the ideas of rotation and renewal that integrate experimentation may have been erroneously borrowed from other domains, such as branding and marketing, where communication and commercial practices are arranged and tailored to draw our behaviour in directions that – unlike regulatory nudges – do not go against the grain of our nature.

A second reason has to do with the fact that nudging has been brought to the policy and regulatory landscape by well-known academics and researchers. Under the authority of science, experimental methodologies with an important tradition in behavioural economics were brought into regulatory narrative without contestation from regulators and policy-makers. In fact, the involvement of behavioural experts has also legitimised an aspiration to regulatory nudges that result from iterative experimentation.<sup>289</sup>

A third reason has to do with the utilisation of knowledge. Regulatory evaluation is an inherently political exercise (Bohne, 2009; Mader, 2001). In fact,

“in some cases, legislation may be seen more realistically as the expression of political constraints rather than as an attempt to solve a problem by changing the behaviour of those to whom it is addressed.

It may sometimes be seen, also, as a more or less fortuitous result of

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<sup>289</sup> Regarding the politics of expertise, a widely discussed topic in the social sciences, see, for instance, Kennedy (2005) on the increasing role of experts in policy design and the relevance and meaning of their involvement in the political and economic world. See also the special issue dedicated to the politics of expertise of the *Journal Innovation: The European Journal of Social Science Research* (e.g. Pfister & Horvath, 2014). Also Boswell and Smith (2017) summarise four different approaches regarding the relationship between knowledge, expertise and politics.

political debate and compromise rather than as a rational effort to bring about social change” (Mader, 2001, p. 122).

Evaluation may aspire to be objective and rational, but it is also part of a political process. Even an authority commissioning an ex ante evaluation “has certain ideas and expectations about the need for specific legislative actions and their practicability, and will convey them to the evaluator” (Bohne, 2009, p. 65). Evidence can be used to substantiate something that has already been politically decided upon. In fact, when a political decision has been made, “research can still be used. It becomes ammunition for the side that finds its conclusions congenial and supportive” (Weiss, 1979, p. 429). This corresponds to the political model of research utilisation provided by Weiss (1979).

Not only may iterative experimental research be used to substantiate pre-existing positions, it may also be a way to compensate for the fact that the state did not manage to pursue more fundamental and politically difficult solutions. Experimenting with nudges diverts attention from the fact that more substantive regulatory change may not have been politically viable. With a preference for “positivist methodologies” such as RCTs, “Policymakers may be seeking unanimity where there is none to be found and to cut through any uncertainty by constructing persuasive narratives, and, in the process, they ‘silently silence’ some perspectives while promoting others [*reference*]” (Spotswood & Marsh, 2016, p. 290). Devoting resources to continuous experimentation with a politically viable (but doubtfully effective solution) may silence the options left behind, but it does create an illusion that the state is committed to addressing the social matters under consideration. A burdensome nudge design process may advance a positive public perception.

These reasons on the persistence of experimentation ideas in the regulatory domain further strengthen the importance of the main research question of this thesis and the proposal of an alternative nudge design process. Before proceeding to a design alternative that lowers the burden of nudging imposed by iterative experimental testing, section 6.4 explains how evidence is used in the regulatory process. In fact,

how nudging is designed in the regulatory space should take into account the way in which regulation is generally designed and underpinned.

#### **6.4 The use of evidence in the regulatory process: underpinning policy**

Recent efforts have been made to counteract a reliance on intuition for the purposes of policy design. As explained in section 4.4.2, ex ante evaluation intends to bring rationality into the regulatory process and evidence plays a role in each of its stages (from problem identification to the comparison of alternatives and reviewing stages).

Evidence is extremely important in policy. In ex ante evaluation exercises, different options and scenarios are considered; in particular, how different policy options and combinations relate to policy objectives is of special importance. Ex ante evaluation may be a political process, but it is also “an instrument to remedy the information deficiencies of lawmakers” (Bohne, 2009, p. 67). Evaluation intends to fix these deficiencies, by producing information on causal relationships:

“evaluations are a pragmatic attempt to produce more relevant and more accurate information about the potential or actual causal relationships between legislative action and observable social attitude, behaviour or circumstance” (Mader, 2001, p. 123).

Bohne (2009) identifies two types of information deficiencies on the side of regulators: “regulatory information asymmetries” and “information deficits”, with the latter regarding information that does not exist yet (p. 69). To tackle “regulatory information asymmetries”, the lawmaker needs evidence about “behavioural” and “technical” information to identify the effects of new regulation. “Behavioural” information deals with behavioural changes prompted by legislative change; while “technical” information regards “changes of physical, chemical or biological properties of man, environment and man-made objects (such as industrial installations) which result from the human behaviour affected by the legislation concerned” (Bohne, 2009, p. 67). “Information deficits”, in turn, are generally

addressed with “technical” data and may require the commissioning of new evidence, but Bohne (2009) identifies one exception:

“*Ex ante* evaluation for the reduction of information deficits are largely concerned with technical information (such as environmental effects of speed limits on freeways). With one exception, behavioural information is only involved if it refers to the behaviour of actors who are not regulatory agents (such as the impact of labelling requirements on consumer behaviour)” [emphasis in original] (Bohne, 2009, p. 77).<sup>290</sup>

This framework is important to understand that *ex ante* evaluation is conducted to fill in different types of information deficiencies. Different information deficiencies may call for distinct data collection mechanisms. Furthermore, as per the above-mentioned framework, data on nudge effects regards “behavioural” data on “information deficits”, that is, information on individual compliance with a nudge that does not yet exist. In fact, existing evidence may suggest how individual behaviour is likely to respond to a nudge, but how it will *actually* respond is not yet known. As we have seen though, we can reasonably expect that this regulatory tool will not produce impressive behavioural results. Information on other effects of nudging that resides with implementers (e.g. business compliance) rather addresses regulatory information asymmetries.

There are other distinctions in the literature. van Aaken (2009) also distinguishes between two information categories needed by legislators. This distinction has some resemblance to that of Bohne (2009). van Aaken (2009) differentiates between an “information transfer or exchange between the lawmaker and the stakeholders” and “technical analysis”, with the former regarding “consultation” or “stakeholder engagement” and the latter “computation” (p. 113). Different methodologies and techniques are associated with each category. Consultations rely, for instance, on

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<sup>290</sup> According to Bohne (2009), *ex ante* assessments should only be mandatory when addressing information deficits; evaluations dealing with regulatory information asymmetries are largely political.

“group interviews”, “internet consultations”, “expert panels” and “focus groups”; “computation”, in turn, includes “simulation”, “modeling”, “time series analysis”, “existing reports”, “experiments and quasi-experiments” and others (van Aaken, 2009, pp. 114-116). Furthermore, “computation” does not necessarily imply “numerical methods” and it may involve both qualitative and quantitative evidence depending on the context (van Aaken, 2009, p. 115).

Mader (2001), too, underlines that different methods may be called for, depending on the timing of the evaluation, the particular circumstances, evaluation criteria, among others. It is nonetheless relevant to note that while such methods can certainly improve regulators’ awareness of causal roles and, in principle, the quality of regulation, they are unable to offer total certainty. As Mader (2001) notes, “they [*these sophisticated tools*] can rarely provide absolute certainty about causal connections, but they undoubtedly sharpen the legists’ and the law makers’ sensibility of this crucial aspect of legislative activity” (p. 128).

Once the impacts and effects have been identified<sup>291</sup>, different analytical methods can be used in evaluation to facilitate the comparison of options. These methods can be variants of “benefit-cost analysis”, “cost-effectiveness analysis” (which is about comparing options on their costs), “partial analyses” on specific groups to take into account distributional concerns and “risk assessment and uncertainty analysis” (Jacobs, 2007, pp. 27-34).

It is important to highlight that, while tools that compare costs and benefits such as RIA are increasingly used and endorsed for the design of regulation (e.g. OECD, 2018), they are the object of much contestation.<sup>292</sup> It is beyond the scope of this thesis to assess whether RIA or variants of this tool are appropriate for regulatory design. Regardless of the sophistication of RIA practices and their integration in policy design, this section aims at emphasising the important role that evidence-

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<sup>291</sup> Mader (2001) identifies different examples of effects: “intentional and non-intentional effects, expected and unexpected effects, beneficial and adverse effects, direct and indirect effects, immediate and delayed effects” (p. 129).

<sup>292</sup> On this, see for instance, Carroll (2010). For a criticism of the cost-benefit analysis approach of RIA in the US, see Shapiro and Schroeder (2008).

gathering stages play in filling in information deficiencies at preparatory phases of regulatory design. What the next section intends to illustrate is that stages of nudge design should be integrated into the existing evidence-gathering stages foreseen in the regulatory process. In other words, the design process of regulatory nudges can be an integral part of the regulatory design and preparatory stages of regulatory processes.

## **6.5 Adapting the design process of nudging to regulation**

Due to i) nudging's translation into a new space (**chapter 2 and 3**), ii) its design burden and the challenges posed by iterative testing (**chapters 4 and 5**), iii) the opportunity costs of iterative testing and iv) nudging's performance in the regulatory space (**chapter 6**), regulators should lower the weight placed on costly and specific iterative experimental evidence collection in order to engage in the precise design of regulatory nudges. Failing to resort to costly iterative testing does not amount to a bizarre exception for nudges; after all, other regulatory measures are not generally subject to the same iterative experimental requirements currently imposed upon nudges at their design stage. Imposing specific experimental gathering requirements on all the regulatory solutions contained in the mix attempted in a regulatory approach would indeed be unthinkable.

Nudging seems to attach greater importance to ex ante iterative experimental evidence requirements at its design stage than other regulatory instruments. For a resource-constrained regulator, meeting the strong requirement of commissioning experimental evidence may not be viable, especially for a tool whose impact is limited or a tool with an auxiliary role in the regulatory mix. This endeavour of nudging's efficient design fits well with the goals of better regulation, which aim at minimising the cost and burden of regulatory solutions.

Relying on iterative experimentation to design nudges may not be desirable, but intuition is far from being a useful benchmark too. Then what design process should regulatory nudge designers rely on? What evidence should regulators pursue

when engaging in nudge design? Answering these questions demands taking into account the way in which regulation is generally designed, an aspect that nudges other than regulatory ones can ignore.

### **6.5.1 Consultation and technical methods in nudge design**

Different methods – both qualitative and quantitative – can be used in technical analysis, but consultation involves mostly qualitative methods (van Aaken, 2009). When it comes to assessing nudging’s behavioural effectiveness *ex ante*, the nudge designer may require both “consultation” and “technical” methods.

Consultation and stakeholder engagement can provide the nudge designer with important information not just about the feasibility of nudge implementation and provision, but also the willingness of firms to implement the nudge. It allows the regulator as a nudge designer to assess whether firms are resistant or not to the nudge and whether they might devise strategies to undermine its effect. Even if this is not explicitly revealed, consultation may hint at possible reactions of corporate actors to a regulatory nudge. Not only is this key information in nudging’s design process that differentiates regulatory nudges from other nudge categories, but it is also information that only a real experiment – of the types explained in chapter 4 (sections 4.4.6 and 4.4.7) – would provide. An experiment simply focused on individual behaviour fails to capture the business reactions to the introduction of a nudge, critical responses for the ultimate implementation of this tool.

Stakeholder consultation and engagement with both industry and individuals about a potential nudge – even in its early design stages – is surely an aspect that can be integrated into existing consultation arrangements of a broader regulatory package. In other words, if nudging is an instrument that the regulator is contemplating, consulting stakeholders about it is certainly an element that can easily be integrated into the existing consultation and stakeholder engagement phases foreseen by the regulatory process for a broader and more comprehensive regulatory initiative. This exercise may reveal crucial insights for nudge design. Consultation and stakeholder engagement may face challenges such as the potential capture by powerful interest



groups, but it remains an important tool to fill in information deficiencies of policy-makers. Consultation and stakeholder engagement in this context should also be broadly interpreted. In fact, there are different types of consultation and stakeholder involvement at both the legislative and subordinate levels of policy design.<sup>293</sup>

At preparatory stages of regulatory design, combining stakeholder consultation and engagement with existing evidence on similar nudges or the behavioural problem at stake can be informative for nudge design. In fact, besides information on how corporate actors will carry out the implementation of a nudge or the opinion of consumer representatives or general public opinion, the regulator is also interested in whether the content of the nudge resonates with individuals (the “technical” knowledge, as per van Aaken’s distinction). In other words, assuming that there are no problems with compliance and firms properly provide the nudge, the regulator is interested in the actual impact of the tool on individuals in dimensions of interest and in gathering all evidence available on this.

When the time comes to actually design the nudge, knowing the reactions that the nudge produces in its addressees becomes an important piece of information the regulator is interested in. As already explained, an explicit preference for iterative experimental testing has emerged among policy-makers, but given the minimal interference of nudging with individual choice architecture and subsequent limited behavioural performance as a tool – together with all the challenges discussed so far – such a methodology might not be appropriate. What alternatives are there, then, for nudge designers?

There are alternatives to the commissioning of experiments. Cartwright and Hardie (2012, pp. 36-40), for instance, identify alternatives to RCTs. Among them they list meta-analyses, systematic reviews, econometrics and process tracking. Meta-analyses use statistics to join populations from different studies and “create an imaginary super population in which inference from differences in frequencies of outcomes to

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<sup>293</sup> See, for instance, Skelcher and Torfing (2010, pp. 80-81) on different forms of participation in the policy process.

differences in probabilities is more secure” (Cartwright & Hardie, 2012, p. 37). Systematic reviews summarise results coming from various studies (not necessarily RCTs) that fulfil certain quality criteria. Econometrics uses techniques to address observational data. Process tracking is a method by which a causal connection is checked from beginning to end through “a series of smaller causal steps in between” (Cartwright & Hardie, 2012, p. 39). As the authors note, RCTs do not need “a lot of background causal information”, but we may have “enough information available to support reasonable confidence that assumptions from other methods are met” (Cartwright & Hardie, 2012, p. 40).

Different sources, methods and disciplines to gather behavioural and attitudinal evidence are important to take into account. Policy organisations acknowledge this diversity of methodologies. The OECD (2017b), for instance, in a paper about consumer policy entitled *Use of Behavioural Insights in Consumer Policy*, identifies distinct types of evidence for the incorporation of behavioural insights in policy such as behavioural experiments and consumer surveys. Other methods can be used, as the same paper acknowledges, in particular, qualitative methods such as interviews and focus groups or even existing evidence (OECD, 2017b, p. 12). In fact, a 2018 report by the Joint Research Centre of the European Commission entitled *The case for qualitative methods in behavioural studies for EU policy-making* makes a similar point on qualitative evidence (van Bavel & Dessart, 2018). The report calls for a stronger role of qualitative methods in behavioural studies conducted for EU policy-making and concedes that such methods can “complement a quantitative study by providing insights that lead to a better design” (van Bavel & Dessart, 2018, p. 7).<sup>294</sup>

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<sup>294</sup> However, even if they recognise the value of qualitative methods in guiding “the design of a quantitative empirical part of a project”, the authors downplay the role of such evidence-gathering methods to test policy options: “In these cases, quantitative methods such as RCTs or experiments are more adequate” (van Bavel & Dessart, 2018, p. 14).

### 6.5.2 An alternative nudge design process

There are alternatives to iterative experimentation and a lighter method for nudge design that regulators can implement is here proposed. This method implies the following steps:

- i) Gathering *evidence* (both qualitative and quantitative) on the problem of interest, its behavioural component and the envisioned nudge. This step may also involve collecting the experience of other jurisdictions. This is not a new step, but rather part of the ex ante assessment, consultation and stakeholder engagement exercises for the broader regulatory initiative of which nudging is a part of;
- ii) Collecting and summarising research on possible nudges and using all evidence collected to draw some *principles* which inform the actual precise design of the nudge;
- iii) Using the previous step to actually *design* the nudge;
- iv) If needed, *fine-tuning* the nudge with the results of qualitative methodologies that allow proximity with final addressees (e.g. a survey or a focus group with different individuals representative of the population).

Before further detailing each step, it is important to note that these steps apply whether nudging is designed at the legislative level or at subordinate levels of regulatory design. In fact, it is also possible that nudging is designed – partially or fully – at the legislative level, in which case these steps (or part of them) become part of the legislator’s workload. For instance, the first step can be conducted at the legislative level and the following ones at subordinate levels of regulatory design. The legal production of rules also tends to involve stakeholder engagement and preparatory stages that take into consideration different types of evidence and in which nudge design stages can be integrated. The reasons that made nudging preferably designed at subordinate levels of policy design were closely related to the use of iterative experimentation to design nudges (sections 4.5 and 4.6); however, if iterative experimentation is not warranted for regulatory nudge design, the rationale

for delegation becomes less significant: delegation of nudge design to subordinate levels of policy design may occur on the grounds of the detail that nudging requires, but reasons such as flexibility or the pursuit of nudge renewal (the second dimension of iteration) lose their relevance. The detail involved in information-based nudges may also lend these nudges more suitable to subordinate levels of policy design than defaults.

Each step is now explained. The first step involves collecting and summarising existing evidence and research not only on the behavioural drivers of a problem, but also the market practices that may have exacerbated those behavioural patterns. Since this is a step taken at stages of regulatory design, namely consultation and stakeholder engagement stages of the broader regulatory strategy, this means that at the actual nudge design stage (step iii), this step has been conducted already. It also means that, by stage iii, the regulator has already assessed the views of stakeholders on different tools of the regulatory package, including the potential nudge or nudges.

This is crucial for the regulator to know the impact of the nudge on business behaviour as well as its potential acceptability among individuals – even if the actual precise design has not yet occurred. In fact, while experiments on the behavioural effects of nudges tend to be regarded as the main and unique methodology of nudge design, more comprehensive evidence gathered through consultation regarding consumers' views and business sentiment – which allow the identification of potential implementation problems – is instrumental for the design of this tool. If the regulator is concerned about enhancing the design of an existing nudge, then this type of evidence becomes all the more crucial to understand what aspects need improvement. This step also means that considerations regarding nudge design should start already at preparatory stages of regulatory processes (and are not left for after this stage).

The second step involves gathering evidence on particular nudges and their exact design tested in the policy area of interest, neighbouring policy areas or contexts

analogous to the one in question. Some of this evidence can already be collected at the ex ante assessment and stakeholder engagement stages. In fact, these two steps can be done in combination, rather than in a sequential approach.

These two steps described above call for different types of evidence. In fact, “positivist methodologies” such as RCTs are “dangerously misleading” when complex social issues are at stake, which is why there should be “an expansion in the nature of evidence that is commissioned, considered, accepted and acted on at a policy level” (Spotswood & Marsh, 2016, p. 290). In circumstances featuring “complexity”, “a much broader set of qualitative and quantitative methods are required” (Jones & Whitehead, 2018, p. 325).<sup>295</sup> RCTs are a “powerful tool” to inform policy design, but the incorporation of behavioural insights may require “several methodologies (such as qualitative research, surveys and quasi-experiments)” (Lourenço et al., 2016, p. 13).

The evaluation of legislation requires the development of assumptions, which are then tested by using all the available knowledge and experience:

“Evaluating the effects of legislation means, in the first instance, developing sensible assumptions about the – potential or real – causal connections between legal norms and observable attitudes, behaviours and circumstances. Secondly, it requires that the validity of these assumptions is tested by using all the relevant experience, information and knowledge that is available or can be made available in a reasonable time and with a reasonable effort” (Mader, 2001, pp. 127-128).

The first two steps proposed here adopt a similar stance, to the extent that the regulator uses all relevant available evidence to develop *reasonable assumptions or principles* about how to actually design the nudge. Such an investigation towards certain principles should improve regulators’ sensibility on the particularities of nudge design. This means that the regulator – in step ii in particular – may have to

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<sup>295</sup> See Jones and Whitehead (2018) for an epistemological and ethical critique of state experiments.

navigate through different streams of literature, sometimes even studies with contradicting results. However, even with contradictory evidence, these two steps allow the regulator to draw some *principles* about how the nudge under scrutiny should be designed, which can then be applied to engage in its specification in stage iii.

In fact, systematic literature reviews on individual behaviour and behavioural regularities and biases, possible nudges, the context of individual decision-making and the main factors playing a role in decision-making allow extracting and distilling principles, which can then inform the details of nudge design. Combining studies with distinct methodologies is important, since they all suffer from generalisation problems: different methods improve our knowledge in the social sciences and “the issue of generalizability of results is universal to all of them” (Falk & Heckman, 2009, p. 537). Reviews of existing evidence provide a clearer idea about the strength of different findings, while enhancing the confidence of the nudge designer.

As an illustration, Loewenstein et al. (2014) review the literature on disclosure and identify principles behind the design of better disclosure, namely simplification, standardisation, social comparison, personalisation and vividness. Without a unique cognitive or behavioural theory, engaging in such a summarising exercise of behavioural regularities and principles may be the best that a resource-constrained regulator can do to engage in nudge design. These principles can also be used if what is at stake is improving the design of an existing nudge. These stages of gathering evidence on individual behaviour and nudge interventions are not so different from evidence-reviewing stages that take place prior to experimentation identified in section 4.4.3.1.

It is important to note that the efforts of evidence collection of the first two stages are very diverse, as they include, for instance, businesses’ perspectives on the nudge and the social problem analysed (and its relationship with individual behaviour), distinctive evidence elements of the design process of regulatory nudging. Private and public nudges do not need these pieces of evidence: as already mentioned, they

are provided alone and do not need to rely on third parties for actual implementation, unlike regulatory nudges that tend to be a part of broader regulatory packages and are operationally implemented by actors who did not design them.

Evaluation is not a scientific endeavour, nor is nudge design. In fact, legislative evaluation is an exercise between the extreme of scientific research and the other extreme of political analysis:

“evaluations are, on the one hand, clearly much more than purely impressionistic, intuitive political appraisals; on the other hand, they do not necessarily comply with the most severe criteria of a truly scientific analysis. They take into account intuitive assessments of the effects of legislation made by the relevant political actors or target groups, build on practical experiences and especially on the specific knowledge held by the authorities implementing legislation and try to complete this knowledge by methodical analysis including often, but not invariably, the use of various science methods” (Mader, 2001, p. 123).

By the same token, nudge design is also an exercise between intuition and scientific aspirations. Behind the principles informing the design of nudges are a myriad of results that employ multiple methodologies. Knowing how to borrow and use such evidence into the context and nudge of interest is the endeavour that lies at the heart of the third step. In this third step, the regulator is mostly interested in designing the nudge with the individual in mind, taking into account all that was gathered before about businesses and individuals.

Depending on how much evidence the regulator gathered beforehand, a fourth step may follow, if needed. In particular, a survey, a focus group or a series of interviews with different individuals might assist in determining whether the nudge still needs adjustment and fine-tuning. These qualitative methodologies provide more nuanced insights about how a nudge is perceived by final addressees (i.e. individuals) and

how it performs in dimensions like clarity, readability, comprehensibility, attention or knowledge retention. These are not only cheaper than experimentation, but also better suited to what nudge designers are looking for.

Since different methods suit distinct settings, “then generating evidence for policy should be about selecting the right tool for the job at hand” (Lunn & Choidealbha, 2018, p. 24). The fourth step in the proposed design process of nudging relies mostly on qualitative methodologies that allow designers to co-produce nudges with final addressees. Not only do they address the cost issue previously mentioned and other challenges posed by an iterative nudge design process, but also qualitative methods may be more suitable to design a tool with a complementary role in the regulatory package. Most importantly, since nudging is a tool to address individuals, methodologies that build on the experiences and perceptions of final addressees may be a better choice than a costly iterative experimental process that fails to capture such rich insights.

Qualitative research is committed “to viewing (and sometimes explaining) phenomena from the perspective of those being studied” (Veltri, Lim, & Miller, 2014, p. 2) or, put differently, “qualitative research allows researchers to get at the inner experience of participants” (Corbin & Strauss, 2008, “Introduction – Why do Qualitative Research” section, para. 1). Methods such as focus groups or interviews are part of a qualitative approach that is “fluid, evolving, and dynamic” (Corbin & Strauss, 2008), a crucial aspect that may allow designers to fine-tune a nudge on the spot, with the immediate feedback of potential final addressees. In this sense, iteration is possible and should be endorsed.

The idea so far has been to integrate nudging’s design process within stages of regulatory design. However, this lighter proposed process – more in line with the regulatory world and the way in which legislation and regulation are generally designed – is not a magic formula. Each regulator has to ultimately assess this process on a case-by-case basis and adapt it to its own needs and resources. Even if some of the particularities of the design process of nudging may be chosen by the



legislator, the regulator may not only influence this tool's legislative provision, but also its materialisation. The decision on how much effort to dedicate to nudge design remains with the legislator or regulator and the demands of the particular nudge in question. For instance, if the regulator is perfecting an already existing nudge, it may use only step i and iv of the above-mentioned process. Likewise, if the nudge already exists in another jurisdiction, the regulator may skip all the steps and simply work on its successful borrowing. Depending on the nudge, an experiment might still be insightful, especially if stark differences between the treatments can produce differentiated impacts in a variable of interest. In fact, if regulators can reproduce in a simulated environment the core variables that evidence suggests play the most important role in decision-making, the experiment might provide the regulator with the essential insights that should inform nudge design. It is important to underline, however, that in this alternative process experiments play a complementary role, rather than being central to nudging's design process.

As suggested earlier in the thesis (section 2.2.5.4), it is possible that, even in the presence of cheaper (and more informative) design alternatives, the regulator still chooses to pursue a design approach that involves strong iterative experimental evidence-gathering efforts. This may result from the need to justify its relevance or retain power. Efficiency should nonetheless be retained as a normative benchmark for the purposes of the process of nudge design.

### **6.5.3 Iteration: final considerations**

Besides the importance of stakeholder engagement and the openness to different evidence-gathering alternatives (qualitative methods, in particular), another important aspect of this lighter design process is that iteration ideals are downplayed.

Iteration is only foreseen in step iv and it is implemented through methodologies that offer direct contact with the final addressees of nudging. Iteration is here seen as a way to ensure that the nudge designed resonates with individuals in dimensions of interest. Furthermore, as already discussed, the renewal dimension of an iterative

design process may not be appropriate for nudges in the regulatory sphere: not only does nudging represent a minimal interference in choice environments – making renewal superfluous – but also rotation ideas inspired in marketing and advertising domains may not be suitable when nudging is addressing behaviours that run counter our natural inclinations. Legal and regulatory provision mechanisms should then carefully ponder whether it is worthwhile to introduce nudge iteration and renewal requirements. Furthermore, while delegation may be desirable to take advantage of regulators’ expertise to design detailed rules, attaching delegation to renewal requirements may inappropriately and disproportionately increase nudging’s design costs.

#### **6.5.4 Experiments: for what?**

This is by no means a thesis against nudges. Nudges do have their role in the regulatory mix. However, for a myriad of reasons – design costs and burdens, in particular – iterative experimental testing may not be the most appropriate method for nudge design in the regulatory space. This thesis is also not against experiments. These can be useful sources of evidence when policy effects are uncertain, but presumably high, which is not the case for most regulatory nudges. In fact, acquiring knowledge may be the driver of experiments for scientific purposes, but it is not enough to justify a policy experiment, which should rather be based on an aspiration to achieve a certain social outcome.

As explained in section 4.4.6.2.ii.A, experiments, in particular laboratory ones, allow the isolation of mechanisms behind a particular policy, essential elements to understand why a policy works (Grüne-Yanoff, 2016). Effectiveness demands “necessary background conditions” and assessing which conditions should be in place depends on the mechanism at play (Grüne-Yanoff, 2016, p. 472). When these mechanisms are well understood, field experiments may be more suitable (Lunn & Choideabha, 2018).

Whether to have a better insight on the drivers of behaviour or to test a solution, the role of experiments in evidence gathering is undeniable. In the design process

proposed, however, they lose centrality to have a more auxiliary and complementary role.

## 6.6 Concluding remarks

This thesis focused on the design process of regulatory nudges. The process of nudging's transfer into regulation (**chapters 2 and 3**), the burden of iterative experimentation for regulators (**chapters 4 and 5**), the opportunity costs of its design and nudging's low behavioural performance as a regulatory tool (**chapter 6**) justified investigating ways to lower the burden of nudging's design process.

The contribution of this thesis has been on how to bring nudges into regulatory practice or how to make their design operational. The issue of “practicability” has been identified as an important question regarding the incorporation of behavioural sciences in policy-making (Alemanno & Sibony, 2015, p. 337). While other concerns also fall under “practicability”, this thesis has addressed an important issue on the actual integration of nudges into regulation, namely their *design process*.

Nudges were advertised as being respectful of freedom and low-cost; by going in detail into the design process of nudging considering the iterative experimental design premises constantly imposed upon this tool, this thesis has exposed the weakness of the low-cost argument for nudging as a regulatory tool. A nudge design process rooted in iterative experimentation is costly and needs to be readjusted, given the burden and opportunity costs of its design, nudging's performance in the regulatory space and the specificities of the regulatory world, in particular the way in which regulation is generally designed. In fact, nudging's emergence in regulation constituted an arrival in a substantially different space from others that nudging has seized: in the regulatory domain it is difficult and costly to embed iterative experimentation, nudging has limited behavioural effectiveness and regulatory design follows a particular process.

Questioning an established nudge design practice and its arrival into regulatory discourse and aspiration – iterative experimental testing – has allowed this thesis to

contribute to a more successful transfer of nudging into regulatory domains, while calling for a more fundamental discussion on the role that the behavioural sciences can and should play in legal and regulatory design.

## **6.7 Future research**

This thesis is about nudging as a regulatory instrument. Many rationales can be invoked to justify regulatory intervention, one of them being behavioural evidence on biased decision-making. However, the lack of robustness behind this evidence remains a concern, calling for caution in its use for justifying intervention (e.g. Arlen, 1998). Future research should address this concern, especially in cooperation with policy-makers. In fact, one of the main difficulties of regulators is the design of solutions that not only respect consumer diversity, but also change the status quo in welfare-enhancing directions. Identifying those directions and the domains involving more consensus than heterogeneity remain challenges for policy-makers. In addition, future research should also assess how nudging fares in comparison to other behaviourally-informed tools with regard to the challenges of regulation. Nudging has dominated the discussion about behaviourally-informed regulation; however, other tools may be superior, not only from a behavioural point of view, but also once one takes the challenges of regulation into account. Future research should address this question.

The input of behavioural sciences to regulation extends well beyond nudge design. How this improved knowledge should be combined with areas such as marketing, psychology and organisational behaviour to enhance market monitoring of harmful practices as well as to improve existing legal and regulatory frameworks and enforcement practices on matters such as unfair commercial practices, misleading advertising and other sectoral regulation (in areas of consumer and worker protection, for instance) should be further investigated. Future research should bridge this gap and develop practical guidelines for policy-makers. In addition, how behavioural sciences can be used to address internal governance issues and

compliance cultures inside organisations is also an important avenue of future research.

The low potential of nudging as a regulatory tool and the high burden of experimentation it entails take into account the current technological state. However, in the future, technology might allow regulators to cheaply use iterative experiments to directly test nudges with final addressees. The implications of technological developments on the design of regulatory nudges are, therefore, left for future research.



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## Summary

Alongside the developments in behavioural economics, the concept of *nudge* appeared. Introduced as an intervention able to guide individual behaviour towards better choices, without using coercion or incentives, nudging soon entered the policy sphere through a process of “policy translation” (Jones, Pykett, & Whitehead, 2014). While behavioural teams were created inside governmental units and regulatory authorities, nudging emerged in regulatory discourse, being increasingly regarded as a new regulatory instrument that could overcome the disadvantages of other tools.

This thesis analyses the viability of incorporating nudges into regulation. In particular, it investigates the implications for regulators of bringing iterative experimental testing – a widespread nudge design methodology outside regulation – into their own design practices. Nudges outside regulation are routinely designed using experiments of all kinds. This thesis intends to answer whether design premises rooted in iterative experimentation are still valid in the regulatory space, an arena that nudging entered into and that is distinct from the one where it originally emerged. The design and provision of nudges using the premises of iterative experimental testing is possible, but at a cost and burden for regulatory nudge designers. Therefore, the thesis evaluates how this burden can be reduced, in particular how nudges can be feasibly designed and provided through regulation or, put differently, how to more efficiently design and provide nudging as a regulatory tool.

**Chapter 2** introduces the concept of nudge and the actors most involved in its use and development, followed by the emergence of nudging in policy and regulatory domains. The chapter then discusses the rationales for intervention in the presence of behavioural biases, while introducing the concerns that behavioural economics poses to welfare analysis. After identifying the rationales for behaviourally informed intervention, this chapter examines the reasons that may justify the use of nudging

and the normative debate the concept has triggered. This contextual and background chapter intends to present *core debates* around nudging.

**Chapter 3** starts by categorising different nudge interventions, based on who is *designing* and who is *implementing* them. Private nudges, public nudges and regulatory nudges emerge as fundamentally distinct categories that should inform normative discussions about the concept. This conceptual chapter also identifies operational challenges that each category faces and potential solutions. A special emphasis is placed on regulatory nudges, the main interest of this thesis. This chapter seeks to distinguish the different spaces and arenas that nudging has occupied and to set the regulatory arena apart from the others.

**Chapter 4** is dedicated to *the design process of regulatory nudges*. It defines iterative experimental testing and identifies the two dimensions of iterative experimentation (trial-and-error and renewal), while presenting the experimental alternatives that regulators can use to design nudging and the costs and challenges of these approaches. In other words, this chapter identifies the burden and implications for regulators of bringing iterative experimental testing into their nudge design practices for each of the experimental alternatives available: laboratory experiments, experiments reliant on the cooperation of firms, experimental regulation and legislative and regulatory processes as experimental platforms.

**Chapter 5** investigates the burden of an iterative experimental design process and the two dimensions of iteration imposed upon regulators through the *case study of EU tobacco warnings*. This chapter examines the provision, design and rotation of tobacco warnings in EU law since 1989. Not only has their design become reliant on laboratory and online experiments, but also these nudges have become increasingly dynamic. The latest approach to warning design, rotation and revision has resulted in increased actual and potential costs for the institution upon which the EU legislators have delegated warning design and revision, the European Commission. The benefits of the most recent iterative experimental design approach (including its rotation dimension) are nonetheless called into question.

Once the design challenges and costs of nudging as a regulatory instrument have been identified and discussed, **chapter 6** proposes an alternative design process to lower the burden posed by iterative experimentation. In addition to nudging's arrival in the regulatory space and the burden of iterative experimentation, the opportunity costs of nudging's design process and this tool's performance in the regulatory context also explain why a costly and iterative experimental design method may not be appropriate for nudging as a regulatory tool. This concluding chapter provides *guidance towards an alternative nudge design process* more in tune with the world of regulation and regulatory design that resource-constrained regulators interested in this tool should contemplate.



## Samenvatting (Dutch Summary)

Parallel aan de ontwikkelingen in gedragseconomie, verscheen het concept van de *nudge*. Geïntroduceerd als een interventie waarmee individueel gedrag kan worden gestuurd naar betere keuzes, zonder gebruik te maken van dwang of prikkels, werd nudging al snel opgenomen in de beleidssfeer via een proces van “policy translation” (Jones, Pykett, & Whitehead, 2014). Terwijl binnen overheidseenheden en regelgevingsinstanties ‘behavioural teams’ werden ingesteld, deed nudging zijn intrede in de regelgevingsdiscussie en werd steeds meer gezien als een nieuw regelgevingsinstrument, waarmee de nadelen van andere instrumenten ondervangen konden worden.

Deze thesis analyseert de uitvoerbaarheid van het inpassen van nudges in de regelgeving. Met name wordt onderzoek gedaan naar de gevolgen voor regelgevers bij het invoeren van zogenaamde ‘iterative experimental testing’ – een wijdverbreide nudge-ontwerpmethodologie buiten regelgeving – in hun eigen ontwerppraktijken. Nudges buiten regelgeving worden doorgaans ontworpen met behulp van uiteenlopende experimenten. Deze thesis wil een antwoord geven op de vraag of ontwerpvooronderstellingen die hun oorsprong hebben in ‘iterative experimental testing’ ook geldig zijn op regelgevingsgebied, een gebied waar nudging een rol is gaan spelen en dat verschilt van het gebied waar het oorspronkelijk is ontstaan. Het ontwerpen en bepalen van nudges met behulp van de vooronderstellingen van ‘iterative experimental testing’ is mogelijk, maar met kosten en lasten voor nudge-regelgevingsontwerpers. Daarom evalueert de thesis hoe deze lasten verminderd kunnen worden, in het bijzonder hoe nudges via regelgeving haalbaar kunnen worden ontworpen en bepaald of, anders gezegd, hoe nudging efficiënter kan worden ontworpen en bepaald als regelgevingsinstrument.

**Hoofdstuk 2** introduceert het concept van nudge en de meest betrokken actoren bij het gebruik en de ontwikkeling daarvan en vervolgens het opkomen van nudging in beleids- en regelgevingsgebieden. Het hoofdstuk bespreekt vervolgens de redenen

voor interventie bij het bestaan van gedragsbiases, terwijl het belang wordt geïntroduceerd dat gedragseconomie heeft voor de welzijnsanalyse. Na het bepalen van de redenen voor op gedrag geënte interventie, onderzoekt dit hoofdstuk de redenen die het gebruik van nudging kunnen rechtvaardigen en het normatieve debat dat het concept heeft teweeggebracht. Dit context en achtergrond biedend hoofdstuk beoogt *kerndebatten* omtrent nudging te presenteren.

**Hoofdstuk 3** begint met het categoriseren van verschillende nudge-interventies, gebaseerd op wie deze *ontwerpt* en wie ze *invoert*. ‘Private nudges’, ‘public nudges’ en ‘regulatory nudges’ ontstaan als fundamenteel verschillende categorieën die normatieve discussies over het concept zouden moeten informeren. Dit conceptuele hoofdstuk stelt ook operationele uitdagingen vast waarmee elke categorie wordt geconfronteerd en mogelijke oplossingen. Bijzondere nadruk wordt gelegd op ‘regulatory nudges’, het belangrijkste onderwerp van deze thesis. Dit hoofdstuk probeert de verschillende ruimtes en gebieden te karakteriseren waarop nudging zich begeeft en om het regelgevingsgebied van andere gebieden te scheiden.

**Hoofdstuk 4** is gewijd aan *het ontwerpproces van ‘regulatory nudges’*. Het beschrijft ‘iterative experimental testing’ en beschrijft de twee dimensies van ‘iterative experimentation’ (proefondervindelijk en vernieuwing) en presenteert de experimentele alternatieven die regelgevers kunnen gebruiken voor het ontwerpen van nudging en de kosten en uitdagingen van deze methodes. Met andere woorden, dit hoofdstuk beschrijft de lasten en consequenties voor regelgevers bij het invoeren van ‘iterative experimental testing’ in hun nudge-ontwerppraktijken voor elk van de beschikbare experimentele alternatieven: laboratoriumexperimenten, experimenten afhankelijk van de samenwerking met bedrijven, experimentele regelgeving en wetgevings- en regelgevingsprocessen als experimentele platforms.

**Hoofdstuk 5** onderzoekt de lasten van een ‘iterative experimental’ ontwerpproces en de twee dimensies van herhaling opgelegd aan regelgevers via de *casestudie van EU-tabakswaarschuwingen*. Dit hoofdstuk onderzoekt bepaling, ontwerp en afwisseling van tabakswaarschuwingen in de EU-wetgeving sinds 1989. Niet alleen hun ontwerp



is gaan vertrouwen op laboratorium- en online-experimenten, maar deze nudges zijn ook steeds dynamischer geworden. De meest recente methode voor waarschuwingsontwerp, -afwisseling en -herziening heeft geresulteerd in gestegen feitelijke en potentiële kosten voor de instelling aan wie de EU-wetgever waarschuwingsontwerp en -herziening heeft gedelegeerd, de Europese Commissie. De voordelen van de meest recente ‘iterative experimentation’ ontwerpmethode (waaronder de afwisselingsdimensie daarvan) worden evenwel ter discussie gesteld.

Als de ontwerpuitdagingen en kosten van nudging als regelgevingsinstrument zijn vastgesteld en besproken, stelt **hoofdstuk 6** een alternatief ontwerpproces voor ter vermindering van de lasten veroorzaakt door ‘iterative experimentation’. Naast de intrede van nudging in de regelgevingsruimte en de lasten van ‘iterative experimentation’, verklaren de alternatieve kosten van het ontwerpproces van nudging en de prestaties van dit instrument in de regelgevingscontext ook waarom een kostbare en herhaalde experimentele ontwerpmethode mogelijk niet geschikt is voor nudging als regelgevingsinstrument. Dit concluderende hoofdstuk *stuurt naar een alternatief nudge-ontwerpproces* meer in overeenstemming met de wereld van regelgeving en regelgevingsontwerp, waar budgettair beperkte regelgevers die geïnteresseerd zijn in dit instrument zich in zouden moeten verdiepen.