

# Nudges and Other Behavioural Public Policy Instruments to Encourage Environmentally Friendly Behaviour

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## 1. Introduction

Policymakers all over the world have started using behavioural public policy instruments to encourage behavioural change in various areas such as health, finance, and the environment (UN Behavioural Science Group 2021). These instruments rely on insights from behavioural economics and psychology on how people behave and how they interact with their decision environments. The behaviourally informed approach contrasts with policies that are guided by theoretical models on how people should behave in given situations such as the rational actor model from economics (Thaler 2015). Behavioural insights allow policymakers to better anticipate how people actually react to policies and to design behaviourally informed interventions that can help citizens to make better choices for themselves and for society (Hansen 2019).

The key behavioural insight used in behavioural policymaking is that the context in which people make decisions matters (Dolan et al. 2012). The focus on contextual features as important determinants of decision-making distinguishes behavioural policymaking from other policy approaches inspired by economics (which focuses on market-based instruments), law (with a focus on command-and-control mechanisms), and education (with a focus on information provision). Once one acknowledges that human decision-making is influenced by context factors, often in predictable ways, new forms of behavioural policies can be designed.

Behavioural public policies are usually informed by insights from the behavioural sciences on heuristics and decision-making biases which can lead to detrimental outcomes for peoples' own wellbeing or for public welfare. For example, "present bias" describes the tendency to disproportionately overvalue immediate outcomes over distant ones (Ericson and Laibson 2019). Designing contexts to avoid problematic options that are immediately available (e.g., not having unhealthy snacks in one's fridge) can help people to avoid these problematic behaviours (Reijula and Hertwig 2022). Another example is the "status quo bias" which describes the tendency to not undertake any action to change a situation (Samuelson and Zeckhauser 1988). Changing default settings can exert a strong influence on behaviour when people's decisions are influenced by status quo bias (e.g., when people do not switch to grey energy when green energy is the default; Kaiser et al. 2020).

The most popular behavioural public policy instrument is "*nudging*" (Thaler and Sunstein 2021). However, nudging people to change their behaviour is only one out of many ways how insights about biases, heuristics, and context-dependencies can be used to change behaviour.

Other behavioural public policy measures include “*nudge plus*”, “*self-nudging*”, “*boosting*”, policies related to “*sludge*”, “*budge*”, and “*shove*”.

This paper provides a brief overview of these behavioural policy instruments. Given that climate change, biodiversity loss, and related environmental issues are arguably today’s most pressing problems, we illustrate the behavioural policy instruments with examples of interventions that aim to change environmentally relevant behaviour. We conclude by reflecting on the importance of appreciating the diversity of behavioural policy instruments and highlighting that the effectiveness and ethical implications can differ across behavioural interventions.

## 2. Behavioural Public Policy Instruments

### 2.1 Nudges

The behavioural public policy instrument that has received most attention is *nudging*. *Nudges* are behaviourally informed interventions that change behaviour by modifying the contexts in which decisions are made without reducing people’s freedom of choice (Thaler and Sunstein 2021). As every behavioural public policy, *nudges* rely on behavioural and psychological insights on how people interact with their environments when making decisions. As *nudges* do not reduce people’s freedom of choice, they are easy to avoid. They do not mandate or (dis-)incentivise behaviours, nor do they provide new information. They have been introduced as a policy instrument that is both libertarian (people are free to do whatever they wish) and paternalistic (*nudges* aim to help people making better decisions “as judged by themselves”) (Sunstein 2018). However, *nudges* can also be used to reduce negative externalities, for example when they are used to encourage behavioural changes that benefit the environment (Carlsson et al. 2021; Schubert 2017).

#### **Example 1. Nudging sustainable food choices with a default**

Vegetarian defaults are an effective tool to reduce meat consumption as shown in a recent review of the literature (Meier et al. 2022). A default determines what people receive if they do not make an active decision to opt out of the default option. Default nudges are effective in reducing meat consumption mainly because they are perceived as the recommended or socially accepted choice, and because people prefer sticking with the default as this is the easiest choice that does not require any effort (Meier et al. 2022). At catered events, for example, plant-based dishes could be set as the default, and if attendees wanted other options, they could pre-order them. The reverse is currently true for many events where the meat option is the default and people are required to pre-order plant-based meals (Behavioural Insights Team 2020).

### 2.2 Nudge plus

“*Nudge plus*” is an intervention that incorporates an element of reflection – the *plus* – into the design of a nudge, either when the intervention is taking place (i.e., when people are about to

choose their meal) or before or after it has been delivered (e.g., letting people know that they will be nudged towards more sustainable food choices before entering the cafeteria). Incorporating some reflection and deliberation into the decision-making process might make *nudges* more effective by generating behaviour changes that last longer (Banerjee and John 2021). Moreover, sometimes *nudges* are criticised for being manipulative and an added layer of reflection reduces this concern. *Nudge plus* respects the ability of individuals to decide for themselves and makes the design of the policy instrument transparent.

### **Example 2. Nudging sustainable food choices with a default and encouraging deliberation**

When defaults are used to encourage sustainable food choices (the *nudge*), people can additionally be asked to commit to a healthier and more sustainable diet and be told about the use of the default (the *plus*) (Banerjee and John 2021). In addition to changing behaviour with the default, this *nudge plus* prompts people to think about their own dietary preferences and how they want them to be. The extra question encourages people to reflect on their goals and preferences, and the nudge makes it easier for them to stick to these goals if they wish to. The food choice is thus governed by self-reflection, with less room for manipulation.

## **2.3 Self-nudges**

Another way of applying the behaviour principles of nudging is through *self-nudges* (Lades 2014; Reijula and Hertwig 2022; Torma, Aschemann-Witzel, and Thøgersen 2018). *Self-nudges* enable people to design and structure their own decision environments to make better everyday choices. *Self-nudges* require a high level of self-reflection and awareness of the links between one's behaviour and the context factors that shape it. By facilitating the use of *self-nudges*, policymakers can enable citizens to become the architects of their own decision environments, designing their lives in ways that nudge them in directions they themselves deem desirable. To do so, policymakers first need to identify a choice environment involving a behavioural problem (often related to a lack of self-control) that could be mitigated or avoided by redesigning the decision-making context. Secondly, it is necessary to design and communicate an effective strategy that enables individuals to make the necessary changes in their decision environments (Reijula and Hertwig 2022).

### Example 3. Encouraging pre-ordering groceries

A study of an organic food box subscription service offers a good example of an opportunity for self-nudging through planning and reorganising decision environments (Torma et al. 2018). Such a service allows customers to sign up to have organic groceries delivered to their doorstep. Moving from supermarket shopping to pre-ordering food can help people avoid commercial forces that push them into unsustainable impulse purchases in the supermarket. Instead, pre-ordering groceries might help people to align their behaviour with their pro-environmental intentions.

## 2.4 Boosts

“*Boosts*” aim to improve decision-making competencies by targeting people’s skills and knowledge thus helping them to reach their objectives (Grüne-Yanoff and Hertwig 2016). The *boost* approach assumes that people’s competencies can be improved by enriching their repertoire of skills and decision tools or by restructuring the environment in a way that the existing skills and tools can be applied more effectively. *Boost* policies identify and correct deficits in skills and knowledge with far-reaching consequences for domains in which people make decisions.

### Example 4. Providing elementary knowledge and behavioural guidance

*Boosts* can be used to help people reduce their energy consumption in the residential sphere. Caballero and Ploner (2022) suggest that people can learn to use fast-and-frugal decision trees to make better decisions. These decision trees are typically used in medical decision-making (Hafenbrädl et al. 2016) where medical professionals are asked to answer a list of yes/no questions to make important decisions with limited time available to them. To reduce energy consumption, fast and frugal decision trees can provide ‘energy management tips’ for households on how to solve problems related with energy consumption and to promote energy conservation.

## 2.5 Sludge reduction

*Sludge* has been defined as excessive or unjustified friction that makes life difficult to navigate in (Sunstein 2021b; Thaler 2018). Examples of sludge include complex paperwork requirements, difficult procedures to cancel memberships, and long waiting times. *Sludge* can cost time or money. It can also lead to frustration, stigma, and humiliation. *Sludge* can make it difficult for people to find relevant information, to evaluate this information once found to come up with a decision, and to implement a decision (Shahab and Lades 2021). As a result of sludge, people may fail to obtain access to important goods and services. *Sludge* can be seen as the dark cousin of *nudge*. Neither behavioural policy instrument forces people to act a certain

way. Instead, *nudges* and *sludge* change how easy or difficult it is to do navigate one's life (Mills 2020). To identify *sludge*, public and private institutions can conduct *sludge audits* in which sludge is catalogued, and decisions can be made about whether and how to reduce it. Periodic 'lookbacks' at existing sludge could be organised to test whether the current 'stock' of sludge can be justified or should be reduced (Sunstein 2020).

#### **Example 5. Reducing paperwork requirements for receiving retrofit grants**

Governments worldwide are proving grants to encourage investments in energy-efficiency technologies. Over time, these new green technologies would save money and reduce environmental harm. However, due to complicated paperwork requirements, motivation to apply for these grants is often limited (Lades, Clinch, and Kelly 2021). People might procrastinate over completing the administrative tasks and, in the extreme, never apply for the grants. Even a small amount of sludge can thus have a strong influence on the uptake of energy-efficient technologies. Governments could make it easier to apply for these grants by, for example, offering one-stop-shops (Bertoldi et al. 2021) as the [SEAI has started in 2022](#).

## **2.6 Budes**

“*Budes*” describe government regulations against behaviourally informed activities performed by the private sector that harm other individuals or organisations (Oliver 2013). *Budes* aim to counter the profit maximising behaviour of private organisations who use behavioural insights to manipulate and deceive to increase their market shares or their profits. By directly regulating manipulative or deceptive activities, *budes* can reduce this harm on others. Harmful practices can be disallowed or behaviourally informed interventions that are expected to be beneficial can be mandated. The design of *budes* would not necessarily be informed by behavioural science. But behavioural insights are required to detect when the private sector is using behavioural insights in a way that harms others. *Budes* reduce the freedom of organisations that would otherwise use behavioural insights to manipulate and deceive, thus aiming to increase the freedom of those who would otherwise be exploited.

### **Example 6. Banning the behaviourally informed advertising of “fast fashion”**

The fast fashion industry uses large amounts of water and chemicals during the production of the textiles and high amounts of CO<sub>2</sub> are emitted when clothes are manufactured and distributed (Niinimäki et al. 2020). The low price of fast fashion does not reflect these environmental harms. Additionally, we can argue that the fast fashion industry exploits people’s behavioural tendency to discount the future “hyperbolically”. Hyperbolically discounting consumers overvalue the benefits of purchasing new items of clothing in the present and undervalue the potential benefits of still possessing these items in the future as well. By positioning products and stores in prominent places, the fashion industry might aim to exploit people’s tendency to buy on impulse (Lades 2014). Evidence for such behavioural influence would provide an additional justification for regulating against fast fashion.

## **2.7 Shoves**

Finally, *shoves* are paternalistic interventions that use hard regulation (such as bans and mandates) to enforce certain behaviours. *Shoves* are suggested in situations where people benefit from such hard regulations, because people’s decision-making biases would lead to harmful outcomes for them in the absence of regulation (Conly 2012). Rather than regulating market failures such as negative externalities, *shoves* aim to regulate “behavioural market failures” that lead to “internalities” (Allcott and Sunstein 2015). According to this approach, the legislator should intervene when people are likely to make detrimental decisions that would interfere with people’s abilities to reach their goals. The argument is that legislation is the least costly approach that can reliably prevent them from making these bad decisions. Behavioural science insights are not used to design these interventions, but rather to warrant their use.

### Example 7. Fuel economy standards

Fuel economy standards are set by governments with the goal of pushing automakers to produce vehicles that travel further on the same amount of fuel. Such mandates can be motivated by the negative externality on the environment of burning fossil fuels. However, fuel economy standards can also save billions in annual consumer savings on petrol. As such, the mandates can also be motivated on the basis of helping people to save money to overcome an “internality”. The concept of internalities has been introduced in the behavioural literature to describe decisions that reduce the welfare of the person that makes the decision (Allcott and Sunstein 2015). Without the mandates, people would lose money because they would not choose fuel-efficient vehicles. Taking both reduced environmental harm and increased consumer savings into account, fuel economy standards might have higher net benefits than economic incentives such as taxes which focus on internalising the externalities (Sunstein 2021a).

### 3. Discussion

We argue here that it is important to distinguish between different types of (behavioural) policy instruments. Policymakers interested in applying behavioural insights should not consider *nudging* to be the only behavioural tool available to them. At times, there are better options than to *nudge* and these options can include behavioural and traditional, non-behavioural instruments.

Recent discussions about the effectiveness of *nudging* do not necessarily apply to other behavioural policy instruments. In fact, many discussions of *nudging* and the other behavioural policy instruments would benefit from an even more nuanced perspective. To illustrate, some studies suggest that *nudges* are very cost-effective (Benartzi et al. 2017) or have medium average effects sizes (Mertens et al. 2022). Others show that *nudging* leads to at best small changes in behaviour (DellaVigna and Linos 2022; Maier et al. 2022; Szaszi et al. 2022). However, these studies estimate average effect sizes from very different types of interventions (all called *nudges*) which is not very meaningful. When evaluating behavioural policy instruments in the future, it will be important to recall that there are many different interventions even within each behavioural policy category described above (e.g., there are many different types of *nudges*, *boosts*, *sludges*, etc.). Also, comparisons between the general categories of behavioural policies (e.g., comparing *nudges* and *boosts*) is of limited value.

Calling all behavioural policy instruments *nudges* can also lead to misunderstandings and mistaken arguments about the ethical legitimacy of behavioural policy making. For example, a common (but not always valid) criticism of *nudging* is that it is manipulative and paternalistic (Grüne-Yanoff 2012; Rebonato 2012; Schmidt and Engelen 2020; White 2013). These criticisms do not hold for other instruments summarised above and some are designed with the idea of increasing transparency in mind. Moreover, the instruments described above differ in the extent to which they suggest interfering with people’s lives and different policymakers and societies will have different preferences as to whether they deem such interference ethical.

While a *shove*, such as a ban to eat meat or use plastic bags, interferes with people's lives, the encouragement to *self-nudge* to avoid eating meat by pre-ordering groceries and having a cotton bag in one's car is a much weaker interference. Whether a behavioural policy intervention is ethical or not should be determined on a case-by-case basis (Lades and Delaney 2022; Schmidt and Engelen 2020). For example, the FORGOOD framework facilitates such an ethical evaluation of behavioural interventions (Lades and Delaney 2022).

#### 4. Conclusion

We make two points in this paper. First, when considering the use of behavioural policy instruments, policymakers should not limit themselves to *nudging*. There are more behaviourally informed policy instruments that might be more suitable for a given context and we have summarised some of them above. Second, when evaluating behavioural policy instruments in terms of their efficiency and ethical legitimacy, general statements should be avoided, and each instrument should be evaluated on a case-by-case basis in the relevant context.

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