LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Department of Psychological and Behavioural Science

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Instructions for completion:

Pros and cons of nudge in the larger perspective of change policies

Nudge is a popular approach amongst governments, and has become a business in itself. The department of Research of a European government, wishes to launch a research programme on guided change, and the successes of nudging in other countries seem t be a good argument to get the funding. Building on advantages of nudging, and its limitations, argument for such a programme and its contents.

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When Nudge is Not Enough: A Framework for European Policy-makers to Conceptualise, Implement and Communicate a Behavioural Change Programme

Department of Psychological and Behavioural Science

The London School of Economics and Political Science (LSE)

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1. Introduction

"*Because all societies attempt to manage the behavior of their citizens at some level, the question now is not whether to manage public health and social issue behavior but rather how to do so appropriately*." (Rothschild, 1999, p. 34)

Traditionally, governmental organisations can draw from three mechanisms to exert influence over individuals, namely, authority of the government, exchange and markets as well as persuasion (Lindblom, 1977, p. 4). Building on this foundation, Rothschild (1999) named three building blocks of control over citizens' actions available to policy-makers: laws and regulations, economic incentives and education. These *conventional policy tools* are typically based on the assumption of rational decision-making (or homo oeconomicus). However, these measures can sometimes fail to achieve expected outcomes (Madrian, 2014). According to Oullier (2013), this is partly due to insufficient testing of the effectiveness and acceptance of new policies, thereby leading to inefficient spending and misuse of resources. With mounting debts in the Euro zone (Eurostat, 2017) and high cost of new legislations (e.g., McCann, 2013; Cooper, Kowalski, Powell & Wu, 2017), this can no longer be afforded socially nor financially. In response, the international community is starting to recognise the key-role of human behaviour and is looking for new solutions to tackle issues in public health, economic welfare or the environment (United Nations, 2016; World Health Organization, 2017). Meanwhile, policy-makers began to complement the conventional policy tools with *Behavioural Insights* (BI) that are informed by evidence from empirical social and psychological sciences (Sunstein, 2016).

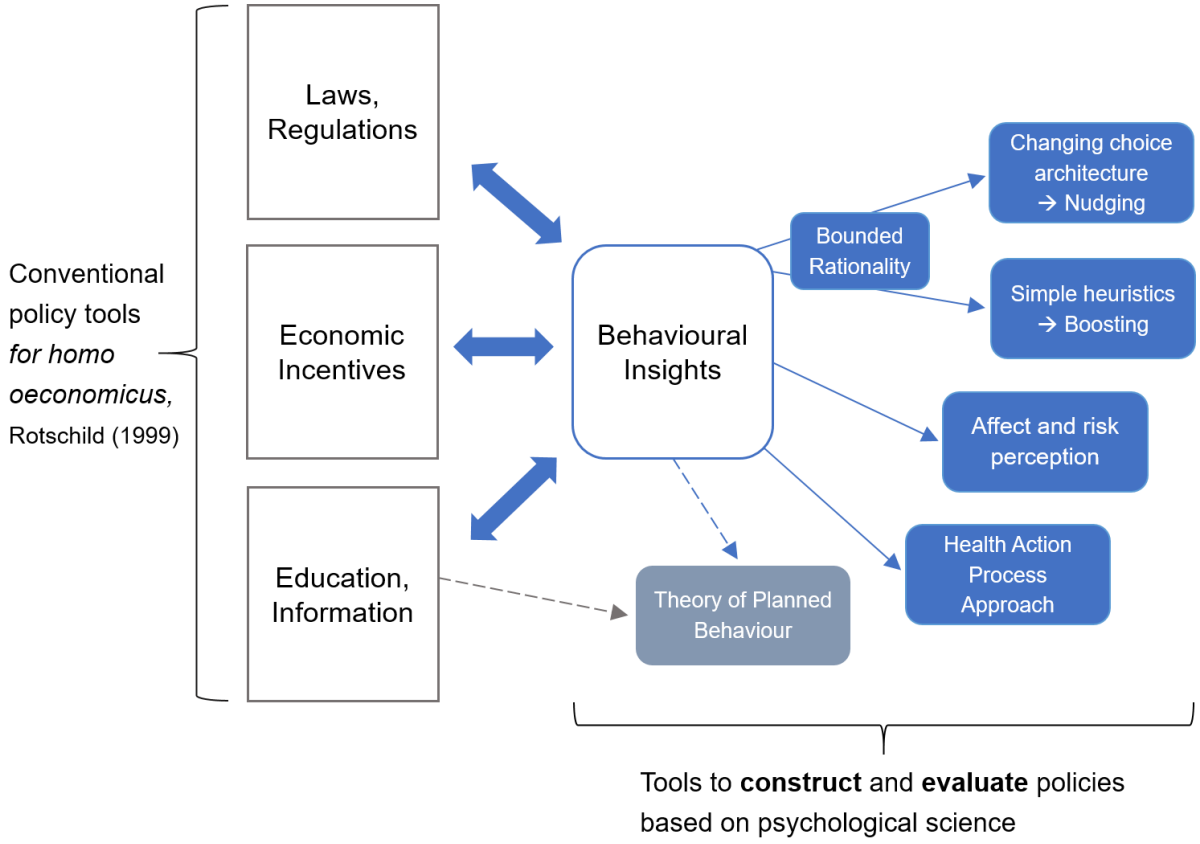

Figure 1. Selected approaches of behavioural insights in public policy

Figure 1 illustrates this emerging process and presents some of the most useful approaches for policy-makers (for a complete review see Darnton, 2008). Among the approaches, the Theory of Planned Behaviour (Azjen, 1985) is a popular tool to manage health-related behaviours by attempting to affect individuals' intentions. However, this approach views people as very rational and neglects the discrepancy between intentions and behaviours (Sniehotta, Presseau & Araújo-Soares, 2014), whereas other models such as the Health Action Process Approach (HAPA) incorporate self-efficacy and action plans to overcome these limitations (Schwarzer, 2008). Other techniques aim to increase risk perception of harmful behaviours through an affective appeal of negative emotions (Slovic & Peters, 2006). Several public actors have initiated interventions based on this approach (e.g., shocking pictures on cigarette packages).

Another tradition of approaches stems from the notion of bounded rationality in human choice (Simon, 1955) and subsequent research in cognitive psychology. Tversky and Kahneman (1974) showed how frequently used heuristics (simple rules of thumb to make choices) can be systematically biased. This is attributed to errors in the *automatic cognitive system 1* uncorrected by the *effortful thinking system 2* (Kahneman, 2011, p. 21). Informed by this line of research, Thaler and Sunstein (2008, p. 6) coined the idea of nudges as "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives." A famous example is the strategic placing of images of flies in men's urinals as targets which reduced spraying by 80% (Oullier, Cialdini, Thaler & Mullainathan, 2010). In contrast, Gigerenzer (2008) considers heuristics as useful tools for decision-making. This inspired the approach of *boosting* (Grüne-Yanoff & Hertwig, 2016), which uses simple heuristics and visual aids to improve people's competence in decision-making. Appendix A gives a detailed summary of the approaches hitherto described.

Notably, although these approaches build on different perspectives on human psychology, they can overlap and inspire similar interventions. For example, using graphical illustrations on cigarette packaging could be derived from both *nudging* (impact on the choice architecture of smoking) and *affect and risk perception* (arousal of negative emotions). This example also illustrates the role of behavioural insights in complementing conventional policy tools (i.e., legislation is needed to change tobacco packaging which is combined with general education about the harm of smoking in schools and public campaigns). Overall, if wisely integrated, behavioural insights could help redistribute resources, collect government revenue and improve market efficiency (Madrian, 2014).

Furthermore, behavioural insights aim to make policy-outcomes measurable and can often be pre-tested by using small scale experiments (Galizzi, 2017). It is therefore not surprising that there is a substantial increase in the application of behavioural insights in policy-design. A report by the European Commission (Lourenço, Ciriolo, Almeida & Troussard, 2016) covered over 200 European behavioural policy initiatives. This phenomenon started in the United Kingdom (UK) in 2010 with the Behavioural Insight Team (BIT) aiming to increase cost-effectiveness and efficaciousness of public services through policy-designs informed by behavioural insights (Behavioural Insights Team, 2017). In doing so, it managed to save around 20 times of its running costs (The Economist, 2017).

Given the potential of behavioural insights to effectively complement the conventional policy tools, it appears very promising for governments to introduce them into policy-design. Using a comprehensive approach from social psychology and behavioural science, we will provide a framework for European public policy-makers to conceptualise, implement and convey a programme on guided change. Thus, we will mainly draw from examples in the European region - however, we hope to give general guidance beyond geographical boundaries.

2. The Success of Nudge

The popularity of behavioural insights can largely be attributed to Thaler and Sunstein's "Nudge - Improving Decisions About Health, Wealth, and Happiness" in 2008 (The Economist, 2017). The term nudge became the shorthand for behavioural insights (Lourenço et al., 2016). Nudging is linked to the concept of libertarian paternalism: Paternalism is the justification of altering the choice architecture with the aim of improving individual's personal welfare, while libertarian emphasizes people's preserved freedom of choice (Thaler & Sunstein, 2008, p. 5). As illustrated above, the nudge-approach is based on the notion of the automatic cognitive system and can shift

behaviour by avoiding errors in decision-making (Hansen & Jespersen, 2013). Nudges have several advantages compared with conventional policy tools. First, they do not intervene with the available choices and are therefore less intrusive (Galizzi, 2017). Second, derived from experimental psychological science, nudging particularly represents the "experimental, iterative and data-driven" nature of behavioural insight interventions (The Economist, 2017). For instance, an experiment in the US revealed that setting the default to "presumed-consent" doubled the organ donation rate to 82% (Johnson & Goldstein, 2003). European countries adopted this insight and significantly increased organ donation: Austria, with an "opt-out" system has a donation rate of 99.98% while only 12% of the German population explicitly expressed their consent (Ahmad & Iftikhar, 2016). In addition, Marteau, Ogilvie, Roland, Suhrcke and Kelly (2011) described nudge as simple, cost-effective and widely applicable without the requirement of legislation. A classic example is the pension scheme 401k, where enrolment rate increased from 65% to 82% after automatic enrolment was set as default (Smith, 2014).

3. Analysis

Based on the discussions above, it may seem straightforward for policy-makers to adopt a behavioural insight programme that is as close to principles of nudging as possible. Yet - despite its advantages - there are several issues related to this approach that could seriously jeopardise the programme's success and public reception. The following five considerations will highlight these issues and provide corresponding solutions.

3.1 Content: The Limitations of nudging

First, we will discuss three conceptual limitations of nudge-interventions that policy-makers will need to address.

3.1.1 Consideration 1: The overlooked heterogeneity in personal preferences

The first opposition against nudge-interventions is that they do not properly address the heterogeneity of individual preferences in the market (Sunstein, 2014, p. 97), which could lead to unexpected side effects or even boomerang effects on the intended results (Dholakia, 2016). For example, although the change in default of the 401(k)-pension scheme significantly increased enrolment, for most participants, the default 3% saving rate was too low compared with the recommended 10-15% (Smith, 2014). Additionally, a Home Energy Report with peer comparison on electricity usage was sent out to Californian households to nudge individuals towards conserving energy. While liberal households reacted positively and reduced energy consumption, their conservative neighbours were more likely to opt-out of the treatment or even increase usage (Costa & Kahn, 2013). In fact, government officials, however knowledgeable and public-spirited, are always inferior compared to the ability of the free market in gathering information and catering for the diversity in individual preferences (Hayek, 1945). Thus, nudges prescribed to steer everyone into a single direction would inevitably deviate some from their best options.

Proposed Solution

How can policy-makers address individual differences in applying behavioural insights? First, it is important to point out that some nudge interventions target behaviours that are most likely to be preferable for virtually all members of society. For example, not littering, drinking enough water or avoiding traffic accidents are, arguably, goals that derive from a social representation (e.g., Moscovici, 1984) shared by the whole population. Interventions regarding these behaviours might therefore not require specific considerations of individual goals and preferences (Sunstein, 2014, p. 97). Following this distinction, governments should first examine whether there is a large diversity of preferences within the population (e.g., through methods such as interviews or

surveys). If the conclusion is affirmative, behavioural interventions could be tailored to specific individuals or groups. For example, instead of enrolling all employees at a universal 3%, a formula could be employed to calculate a recommended level based on individual information (under consent) such as age, family size and income. Similarly, in the case of energy consumption, selective usage of visual feedbacks (smiley faces) has shown to mitigate the rebound effect exhibited among specific groups of customers (Schultz, Nolan, Cialdini, Goldstein & Griskevicius, 2007).

3.1.2 Consideration 2: Infantilisation of citizens

Secondly, nudge policies help avoid "biases and blunders" (Thaler & Sunstein, 2008, p. 17) by allowing people to skip contemplation and guide them towards adequate choices. This is particularly the case for manipulations of the choice architecture that are not perceived as such. However, these interventions expose citizens to the threat of infantilisation (Bovens, 2012) by avoiding the process of learning-by-doing that could arise from errors and mistakes (Sunstein, 2014, p. 94). In fact, the very concept of libertarian paternalism underlying nudge is under attack: Although it was proclaimed to be choice preserving and easily avoidable (Thaler & Sunstein, 2003, p. 1201), since nudge interventions are most effective when "kept under dark" (Bovens, 2009) and there is a general lack of awareness of their existence (Mols, Haslam, Jetten & Steffens, 2015), the liberal credential proclaimed by Thaler & Sunstein (2003) is regarded as exaggerated (Selinger & Whyte, 2011). Moreover, nudging is criticised as patronising and condescending as it prescribes an inferior status of target group's ability (Oliver & Brown, 2010), thus undermining their motivation to ponder the choices themselves (Rainford & Tinkler, 2011).

Proposed Solution

In face of these accusations, Sunstein (2014, p. 95) proposed that rather than setting defaults, nudge policies could steer people into *active choosing*: Instead of automatic sign-ups, the government could insist that citizens choose their own preferred savings plan.

Furthermore, to avoid infantilisation, policy-makers should use transparency to meet this expectation. We suggest a two-fold approach.

Ideally, a deliberate modification of choice architecture should be recognisable by those affected (Bovens, 2009). This could reduce the paternalistic character of interventions as they could be more actively avoided. Despite the potential concerns about reduced effectiveness when behavioural interventions are openly revealed, studies on defaults showed that being informed of neither the presence of intervention (Loewenstein, Byce, Hagmann & Rajpalr, 2015), nor of its aim (Bruns, Kantorowicz-Reznichenko, Klement, Luistro Jonsson, & Rahali, 2016) reduced the level of impact.

However, there are other cases when recognition might seriously undermine the effectiveness of interventions (Hansen & Jespersen, 2013; e.g., smaller plates to reduce calorie-intake). In these cases, we suggest following the second criterion of transparency. That is, citizens should be able to discern the intention of the intervention when made aware of it (Hansen & Jespersen, 2013) and consequently agree with its usefulness. Otherwise, the intervention may cause reactance and feelings of being deceived. For example, an intervention of giving UK job-seekers equally good results in a "psychometric test" to improve their self-esteem caused reactance and backfired when it was revealed to the public (Mols et al., 2015).

On the other hand, the "look right" intervention as a warning on London's crosswalks (Hansen & Jespersen, 2013) fulfils both criteria of transparency. It is an obviously deliberate

change in the physical environment (criterion 1) with the recognisable aim to avoid traffic accidents (criterion 2). An evaluation of the level of transparency could be done during pilot-studies using representative surveys (details in consideration 5).

3.1.3 Consideration 3: The lack of lasting changes

The third limitation of conventional nudge interventions is their lack of "transformative" changes: The mere manipulation of the choice architecture may not influence people on any deeper level, such as beliefs, motivations and attitudes (Rowson, 2011). Thus, the influence of nudges on issues that require more fundamental changes was shown to be relatively limited. For instance, their effectiveness on health promotion was regarded weak (Marteau et al., 2011). Moreover, default nudges such as automatic enrolment into saving for pensions may not work on the most policy-relevant population - low-income taxpayers - as their current need for spending is strong enough to overcome the default and suspend saving (Bronchetti, Dee, Huffman & Magenheim, 2011).

However, as nudge is an umbrella-term for many different interventions, a more profound analysis is needed to investigate, for which concrete instances this critique is valid. To conduct such analysis, Installation Theory (Lahlou, 2017) provides a useful framework as it describes the determinants of behaviours in the moment of action. The theory explains that behaviour is mainly channelled through three layers: First, the physical layer consists of the environment in which actions take place. Related to nudge-interventions, we define this as analogous to the physical aspect of choice architecture. Second, the social layer describes perceived rules and norms that arise from the social environment. Third, the embodied layer consists of the individual's competences and mental capacities to meet the situational demands. In support of the criticism above, Lahlou (2017, p. 85) argued that most nudges hardly "take into account more than one or two of the layers highlighted in installation theory" and thus lack potential long-lasting effects. To

classify the nudge interventions and validate this statement, we first evaluated the nudges listed by Sunstein (2016) according to whether or not they significantly impact each of the three layers of Installation Theory. Based on this, we categorised the 41 nudge-interventions presented in the European Commission report (Lourenço et al., 2016) into Sunstein's list and determined which layers are affected. The results of this analysis are displayed in Figure 2 and highlight that - as expected - most nudge-interventions (31 out of 41) affected *only* the physical layer of the choice architecture and largely disregarded the social and embodied layer. The methodology, its limitations as well as data are presented in Appendix C.

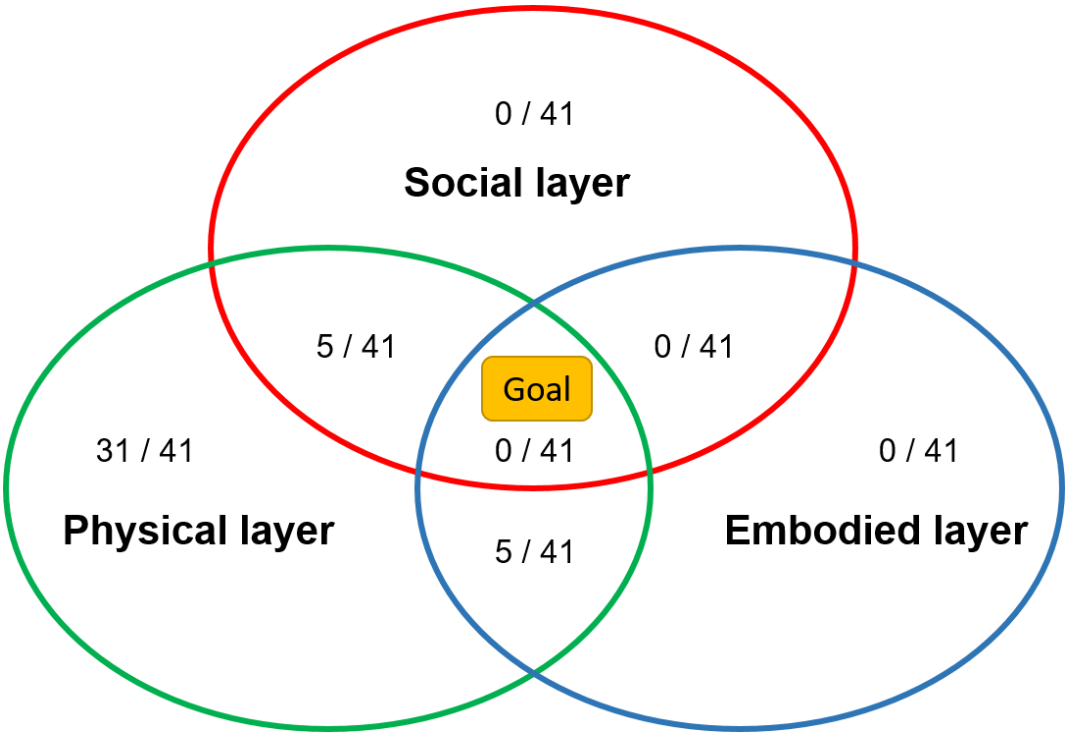

Figure 2. European Nudge-interventions categorised into Installation Theory.
To elicit the most sustainable and strongest effects, all three layers should be engaged (goal).

Proposed Solution

To make changes more long-lasting, we propose that behavioural insight interventions should address at least one more layer besides the physical one, which is - by definition - affected when changing the choice architecture. Ideally, if all layers are engaged, behaviour change will be the most sustainable (Lahlou, 2017, p. 33).

To engage the embodied layer, we recommend policy-makers to elicit active thinking and learning experiences. In this regard, the concept of *boosting* can be implemented in providing people with understandable information and smart guidance in the situations of choice (Grüne-Yanoff & Hertwig, 2016). For example, information can be graphically displayed to patients in a way that increases their understanding of medical concepts and corresponding choices (Gigerenzer, 2011). Furthermore, prompting people to set their own goals (Locke & Latham, 1990) could guide them towards their desired actions in a self-determined manner (see activity theory in Lahlou, 2017, p. 62). In accordance with the Health Action Process Approach (Schwarzer, 2008), goal-setting could be accompanied by building up the embodied capacity of self-efficacy and thus produce lasting behaviour change.

Regarding the social layer, interventions emphasising social norms have been very successful (Schultz et al., 2007). For example, communicating the corrected social norm that other students in fact drink less alcohol than commonly perceived reduced heavy drinking behaviours among college students (Perkins, 2002). Furthermore, an even more durable way to change behaviour could be based on social identity by emphasising a common goal of a group or community (Mols et al., 2015). Following this approach, an intervention in Queensland (Australia) reduced water-consumption for more than three years (Walton & Hume, 2011) and the state of

Texas used their infamous campaign “don’t mess with Texas” to successfully reduce littering (Grasmick, Brusik & Kinsey, 1991).

Overall, policy-makers should consider enriching the psychological approaches underlying behavioural interventions to produce long-lasting changes. A concrete example based on the considerations above will be given in section 4.1.

3.2 Consideration 4: Capacity Building - how to develop institutional competence

Besides the scientific underpinnings, it is crucial for policy-makers to introduce the behavioural insight programme in the political structure.

To do so, we will first identify the five most important groups of stakeholders (see Figure 3). The national policy-makers take the central position in the establishment of behavioural intervention programmes. They also have the responsibility to adequately convey their concept to the population (Koralewska, 2016). The public may be the target of the intervention and participate in the preliminary testing of interventions, whereby they also exert impact on the legitimacy of such a programme (Dean, 2013). Their opinion is expressed through and influenced by social media and popular press (see section 3.3). Moreover, the government could cooperate with organisations (Bonell, McKee, Fletcher, Haines & Wilkinson, 2011) in the implementation of interventions but at the same time should consider industries that might endure harms caused by the programme (e.g. tobacco industries might oppose smoking-cessation interventions). The scientific expertise to support behavioural interventions could come from either internal employees or external institutions such as universities, consultancies and networks (Lourenço et al., 2016). The following paragraphs will present a detailed analysis of various forms to organise such expertise in the institutional structure.

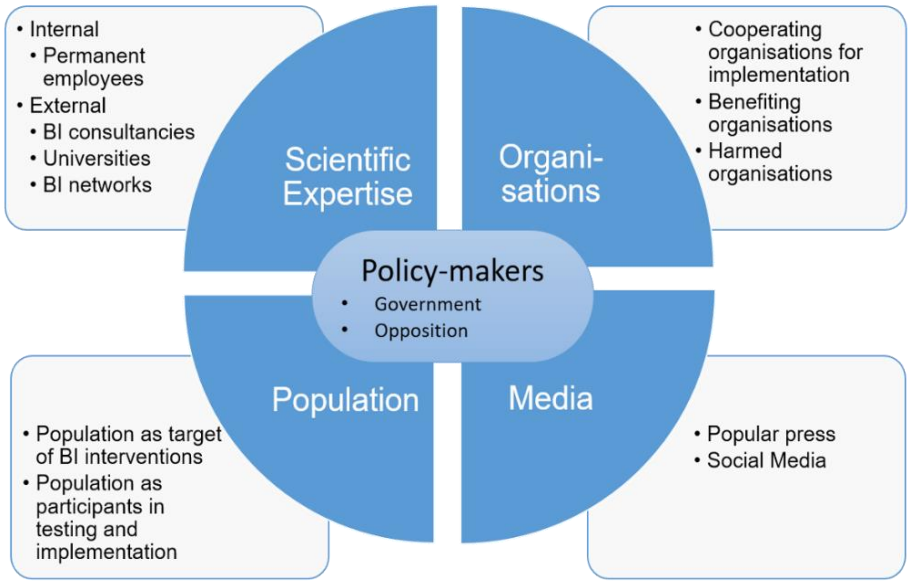

Figure 3. Stakeholder Identification

A close examination of the practices of different countries revealed that there are three types currently adopted by various governments (see Appendix B).

a. Ad-hoc teams are formed on a short-term basis by governments in the process of setting up a fixed unit (Lourenço et al., 2016). Such network could consist of academics from universities or independent consultants (see "scientific expertise", Figure 3). At this stage, governments may collaborate with different industries and businesses (see "organisations", Figure 3) to implement interventions. For example, the Danish Business Authority set up an ad-hoc behavioural insight unit to aid the development of start-ups (Lourenço et al., 2016).

b. Specialised unit is the most common type (4 out of 7 in Table 3), whose members are employed by governments. In Germany, the governmental unit "wirksam regieren"

("effective governance") consists of three fixed employees that collaborate with several partners from different governmental departments and regional institutions (Herzog, 2017).

c. The behavioural intervention team could become partially independent from the government as to enjoy a higher level of flexibility and to sell their expertise internationally (Wintour, 2014). As a unique example, the BIT became semi-independent in 2014 and is now a social purpose company partly owned by the Cabinet Office (Behavioural Insights Team, 2015).

Proposed Solution

As illustrated above, a large team of staff is not necessarily required: with appropriate partners identified (see Figure 3), the government could set up a team with a handful of individuals and collaborate with appropriate organisations. In this case, an ad-hoc team can function as a pilot to test potentials for introducing a specialised unit. However, due to the temporary nature of the cooperation, the team may not be able to accumulate the knowledge and skills developed through projects like the specialised ones (Sydow, Lindkvist, & DeFillippi, 2004).

On the other hand, specialised units fully affiliated with the government might be vulnerable in case of changed leadership. For example, in the USA, the Social and Behavioral Sciences Team, established by President Obama (Exec. Order No. 13707, 2015), was frozen in January 2017 with the presidential transition to President Trump (SBST, 2017). And in Germany, with the 2017 election and potential governmental changes, the unit's future is yet to be determined (Herzog, 2017). Therefore, if the long-term stability is uncertain due to the political structure or opposition, it may be a valid alternative to aim for partial independence like the UK's BIT. However, decreased attachment to the government could reduce the team's dedication to the

national welfare of the country, as the BIT now also works for "other policy bodies and foreign governments" (Wintour, 2014).

While each type of set-up has its own merits and drawbacks, policy-makers are advised to actively choose the format based on their heterogeneity in composition of stakeholders.

3.3 Consideration 5: Communication and public perception

While we have drawn conclusions from the ongoing scientific debate on nudging and libertarian paternalism, the public opinion deserves particular attention. After all, the aim of behavioural interventions is to improve the decision of the citizens, and their vote in future elections may impact the durability of the programme. As pointed out in the previous section, public opinion is - for example - expressed through and simultaneously affected by popular press and social media (see Figure 3). Thus, we conducted a small-scale investigation of online-media coverage of the UK's BIT and Germany's unit "wirksam regieren". The detailed method and data are presented in Appendix D.

The analysis reveals that - while the BIT was largely portrayed in a neutral or positive way - the German press was generally sceptical and highlighted the patronising characteristics of their national programme. While the validity of such snapshot is naturally limited, it shows that there is a substantial risk of negative coverage. In Germany, this objection to the programme was targeted particularly at the manipulative and paternalistic connotation of nudge in general rather than at specific interventions. This is in line with previous research: A survey across 24 countries found that the public acceptability of governmental measures was higher when participants were asked about specific interventions (such as combating smoking or promoting healthier diet) than when asked about governmental influence on behaviours in general (Branson, Duffy, Perry & Wellings, 2011). Furthermore, as the German unit was introduced more recently, whereas the BIT is already

more well-known, the investigation points out that the stage of initial development might be particularly susceptible to harsh criticism. And in general, qualitative research revealed that the concept of nudge simply remains unfamiliar to most individuals (Junghans, 2016).

Proposed Solution

To address the risk of a negative reputation, policy-makers should ensure a participatory process in design and evaluation of the programme. First, to ensure public participation during *policy-design*, we suggest involving the stakeholders using qualitative methods. That is, we suggest to invite representatives of the population, scientific expertise and organisations (see stakeholders, Figure 3) to conduct interviews and focus-group discussions (within each group of stakeholders) regarding the aim of interventions. Involving the stakeholders will help mitigate resistance (e.g. the representatives of organisations that might be disadvantaged; Hussain et al., 2016), increase acceptance and generate motivation in the long term (Lahlou, 2017, p. 304). The schedule and topics of such participation opportunities could be displayed online so that everyone could request to join a certain discussion of their interest and represent their group of stakeholders. Secondly, based on this, the concrete interventions should be conceived and pre-tested on a small scale. In this phase of *policy-evaluation*, we will obtain feedback from pre-test participants (e.g., in a certain region) as well as conduct national representative surveys. For the latter, existing panels can be used. Only if a certain level of acceptance is obtained from both types of samples, will the intervention be scaled up. Thirdly, media-representatives will be openly invited to discuss the programme (e.g., during press-conferences). To convey the benefits of the programme, the behavioural policy-makers should aim to publish and discuss the effects of specific interventions as well as emphasise the enriched and more transparent content (see consideration 1-3) as opposed to the “conventional nudge-approach”.

Overall, properly conveyed benefits and the suggested process of participation could lead to a higher level of congruency between the value of individuals in the public (person) and behavioural intervention team (organisation) - hence a better "person-organisation fit" (Chatman, 1989). This may result in stronger long-term support for the programme (O'Reilly, Chatman & Caldwell, 1991) and help overcome a potential first phase of negative coverage and scepticism.

4. Recommendations and Conclusion

This report provides a framework consisting of five crucial considerations for a prospective behavioural-change programme from the perspectives of content, capacity-building and communication. To conclude and give concise recommendations, we will present two tools: a checklist for conceptualisation (Table 1) and a model to guide through the political implementation (Figure 5).

4.1 Content

As highlighted in considerations 1 to 3, interventions derived from our framework should employ the advantages of nudging (e.g., cost-effective and testable) with a more comprehensive view of psychological insights. With the example below, we will illustrate how such interventions could tackle different issues in public policy, followed by a checklist to evaluate future interventions in accordance to our solutions (Table 1). Policy-makers are advised to use this tool to assess prospective interventions and attempt to meet as many criteria as possible. However, it is presented as general guidance rather than a rigid requirement: we do not intend to object simple and effective nudge-interventions such as "look right" in British crossroads as long as they are transparent and do not replace other interventions that more closely follow the solutions presented.

Example: Promotion of flu vaccinations

Elderly people are the most vulnerable group and the main target of influenza vaccine policies (World Health Organization, 2012). However, 30 percent of English population over 65 did not get vaccinated last winter (Public Health England, 2017).

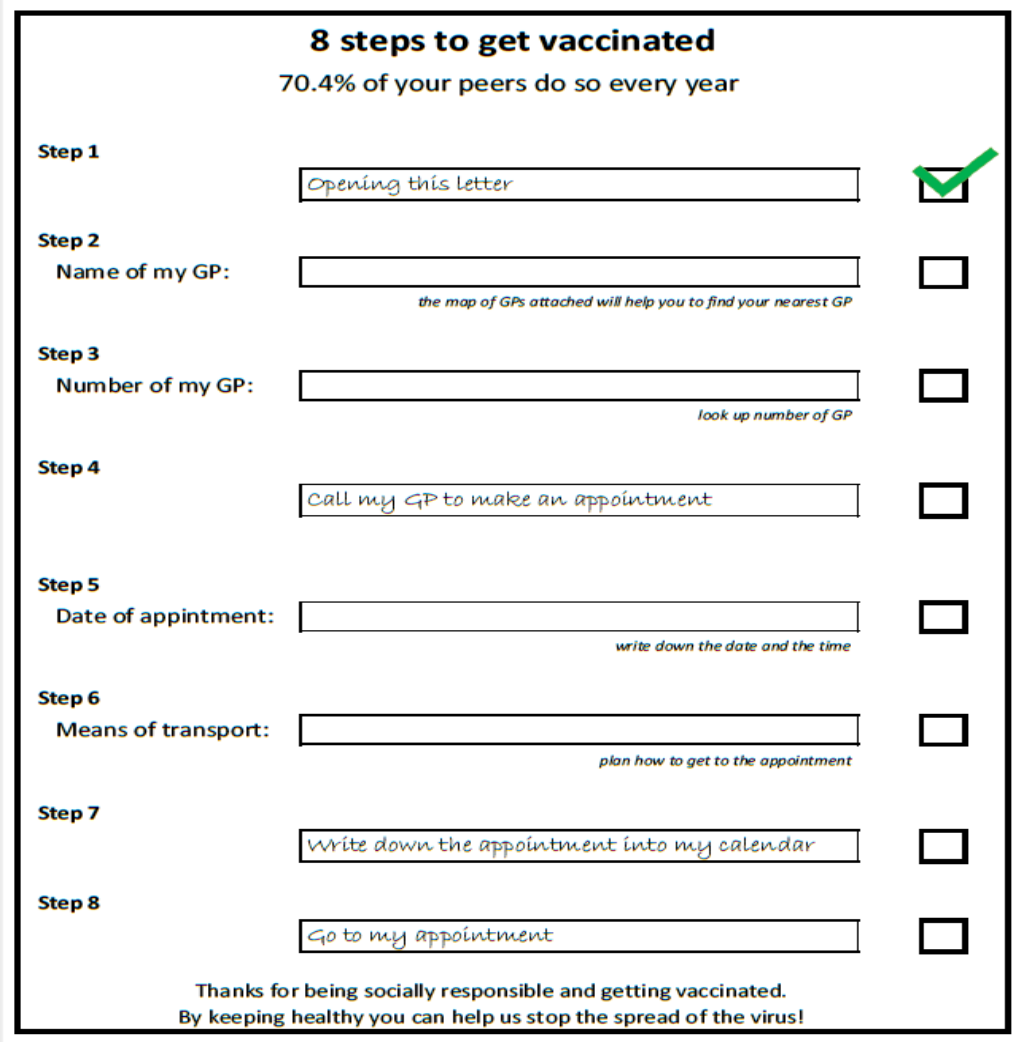

Figure 4. A goal-setting approach to increase vaccination rates

To solve this problem using our behavioural insights approach, we suggest sending senior citizens a reminder via post (see Figure 4). The letter encloses a map and contact details of the nearest GPs. In accordance with goal-setting (Locke & Latham, 1990) as well as activity theory (Leontiev, 1978), the letter also entails a template with eight steps (sub-goals) to be filled out by citizens to promote vaccination. While previous interventions nudged college students by providing a map (Leventhal, Robert & Susan, 1965), we aim to influence participants on the embodied layer by prompting them to plan and think actively. At the same time, we promote goal-setting as a useful technique in the future (in accordance with *HAPA* and *boosting*). In line with findings on embodied cognition, the template also assists people by loading-off cognitive work to the environment (Wilson, 2002). Besides the embodied competences, we address the social layer by communicating the social norm of vaccination rate among the age group over 65 (Schultz et al., 2007). This intervention can also be tailored to target younger age groups, for example by using text messages or through other digital formats instead of letters.

Table 1

A Checklist for successful implementation of behavioural insight interventions:

Question	**Details**	**Example** (Flu vaccine)
Does the intervention complement present policies based on conventional policy tools?	Introduction (p. 3-6)	✓
Is the intervention relatively cost-effective?	The success of nudging (p. 6-7)	✓ *
Can it be pre-tested on a smaller scale?		✓
Can the effects be scientifically measured?		✓
Are there relevant differences in individual preferences?	Consideration 1 (p. 8-9)	✓
If yes, have we tailored the intervention to address these differences?		✓
Are citizens encouraged to actively choose?	Consideration 2 (p. 9-11)	✓
Is the intervention transparent according to criterion 1?		✓
Is the intervention transparent according to criterion 2?		✓
Does the intervention address at least two layers of Installation Theory?	Consideration 3 (p. 11-14)	✓
Is there an element of building competence or learning?		✓
Have you considered a variety of psychological approaches (as presented in 3.1.3)?		✓

Note. *partially fulfilled as sending letters entails some additional costs

4.2 Capacity Building and Communication

In consideration 4 and 5, we discussed the importance of addressing different stakeholders and indicated how a behavioural insights programme can be established and properly conveyed. While no universally applicable solution can be prescribed, we synthesise the initiation of political implementation using Lewin's model of change (Lewin, 1952; see Figure 5). As the implementation of the programme will entail a change process to the political structure, this model can help guide policy-makers through the introductory process. Policy-makers are advised to set priorities in phases of *unfreeze, change and refreeze* and thus shape their programmes according to their national context.

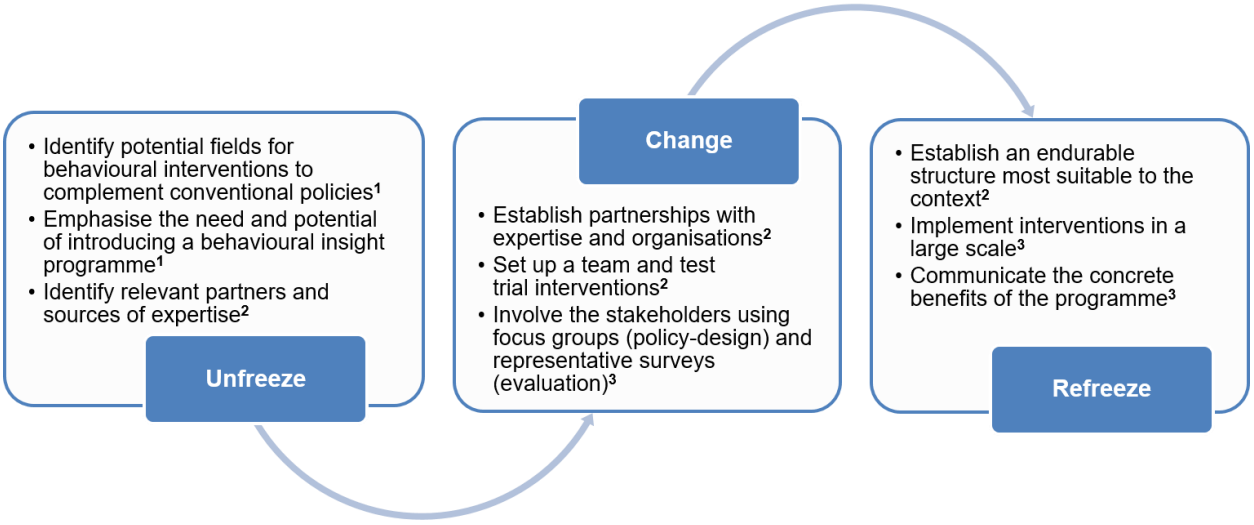

Figure 5. Change-model of political implementation.
[1]For details see introduction (p. 3-6)
[2]See consideration 4 (p. 14-17)
[3]See consideration 5 (p. 17-19)

4.3 Limitations and Conclusion

Figure 6 provides a final overview of our framework in relation to the conventional policy tools. Notably, there have been previous attempts to provide frameworks of incorporating behavioural insights into policy-design. Most prominently, the "Mindspace" approach (Dolan, et. al., 2012) explains different methods for creating effective interventions. By contrast, we present a more global scope of guidance on the programme's implementation and focus on improving the longevity of changes. Hence, "Mindspace" could complement our approach as an additional method to generate ideas for interventions which are then evaluated using the checklist.

Finally, some of the aspects suggested in our solutions are likely to require more resources than a simpler nudge technique. The participatory process of stakeholder involvement would require more efforts and the interventions themselves could incur more costs in attempt to be more comprehensive. Furthermore, the design of online recruitment to include stakeholders in interviews and focus-group discussions could have the risk of too many or too few sign-ups. Also, it could be susceptible to selection bias and attract only those who are already deeply involved in the topics to be discussed.

However, we are convinced that our approach offers a more democratic way of applying behavioural insights into public policies that will result in effective and long-lasting changes. Therefore, it will prove to be a worthwhile investment.

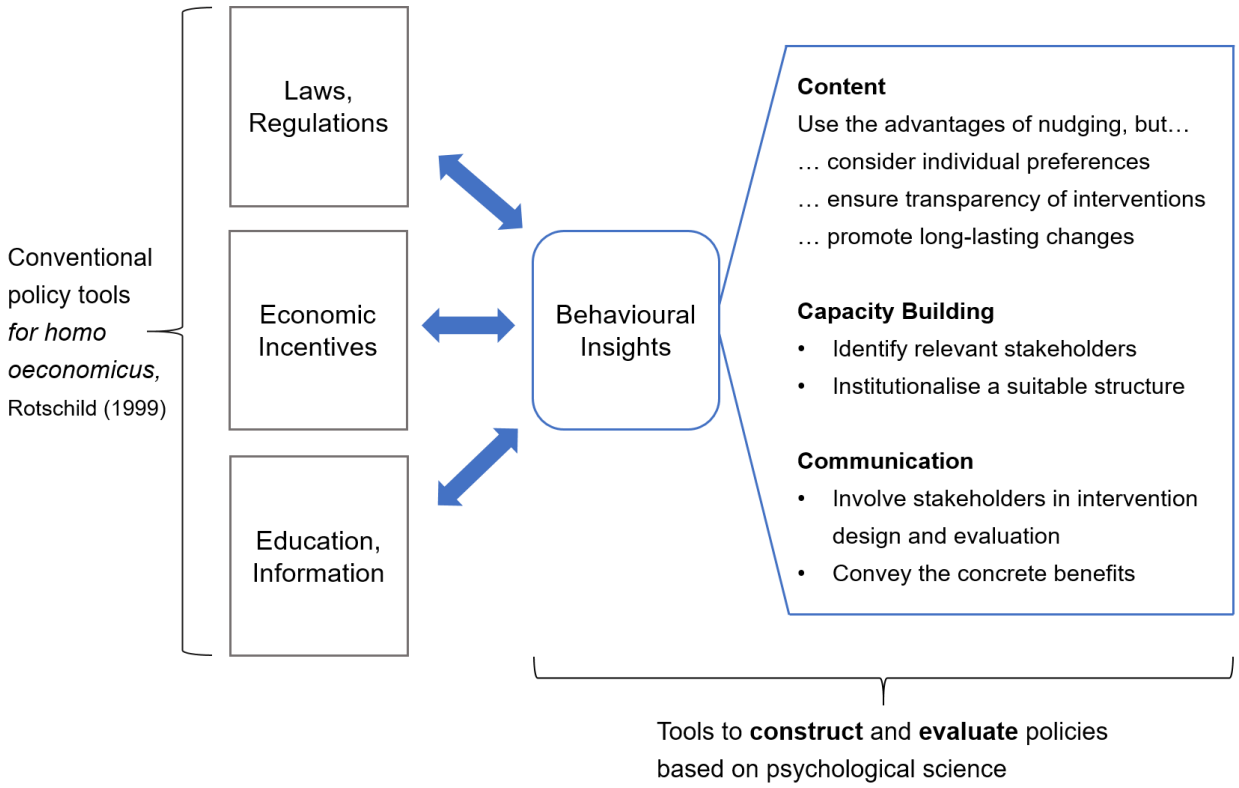

Figure 6. Framework summary

References

Ahmad, G., & Iftikhar, S. (2016). An Analysis of Organ Donation Policy in the United States. *Rhode Island medical journal* (2013), 99(5), 25-27.

Ajzen, I. (1985). *From intentions to actions: A theory of planned behavior. In Action control* (pp. 11-39). Springer Berlin Heidelberg.

Behavioural Insights Team. (2015). *The Behavioural Insights Team - Update Report 2013-15*. Retrieved November 2, 2017, from http://www.behaviouralinsights.co.uk/publications/the-behavioural-insights-team-update-report-2013-2015/17/

Behavioural Insights Team. (2017). *The Behavioural Insights Team - Update Report 2016-17*. Retrieved November 4, 2017, from http://www.behaviouralinsights.co.uk/publications/the-behavioural-insights-team-update-report-2016-17/

Bonell, C., Mckee, M., Fletcher, A., Haines, A. & Wilkinson, P. (2011). Nudge smudge: UK Government misrepresents "nudge". *The Lancet*, 377(9784), 2158-2159.

Bovens, L. (2009). The ethics of nudge. In *Preference change* (pp. 207-219). Springer Netherlands.

Bovens, L. (2012). Real nudge. *European Journal of Risk Regulation*, 3(1), 43-46.

Branson, C. Duffy, B. Perry, C. & Wellings, D. (2011) Acceptable behaviour? Public opinion on behaviour change policy. Ipsos Social Research Institute.

Bronchetti, E. T., Dee, T. S., Huffman, D. B., & Magenheim, E. (2011). *When a Nudge isn't enough: defaults and saving among low-income tax filers* (No. w16887). National Bureau of Economic Research.

Bruns, H., Kantorowicz-Reznichenko, E., Klement, K., Luistro Jonsson, M., & Rahali, B. (2016). Can Nudges Be Transparent and Yet Effective?

Chatman, J. A. (1989). Matching people and organizations: Selection and socialization in public accounting firms. *In Academy of Management proceedings* (Vol. 1989, No. 1, pp. 199-203). Academy of Management.

Cooper, Z., Kowalski, A. E., Powell, E. N., & Wu, J. (2017). *Politics, Hospital Behavior, and Health Care Spending* (No. w23748). National Bureau of Economic Research.

Costa, D. L., & Kahn, M. E. (2013). Energy conservation "nudges" and environmentalist ideology: Evidence from a randomized residential electricity field experiment. *Journal of the European Economic Association*, 11(3), 680-702.

Darnton, A. (2008). Reference report: An overview of behaviour change models and their uses. UK: *Government Social Research Behaviour Change Knowledge Review*.

Dean, R. (2013). There should be greater public involvement in deciding what is a legitimate 'nudge'. British Politics and Policy at LSE. Retrieved November 30, 2017, from http://blogs.lse.ac.uk/politicsandpolicy/helping-hand-or-shove-in-the-back-why-there-should-be-greater-public-involvement-in-deciding-what-is-a-legitimate-nudge-2/

Dholakia, U. (2016). Why Nudging Your Customers Can Backfire: *Harvard Business Review*. Retrieved November 8, 2017, from https://hbr.org/2016/04/why-nudging-your-customers-can-backfire

Dolan, P., Hallsworth, M., Halpern, D., King, D., Metcalfe, R., & Vlaev, I. (2012). Influencing behaviour: The mindspace way. *Journal of Economic Psychology*, *33*(1), 264–277. Retrieved November 9, 2017, from https://doi.org/10.1016/j.joep.2011.10.009

Eurostat. (2017). Government debt up to 89.5 % of GDP in euro area, 118(July), 4–7.

Exec. Order No. 13707, 3 C.F.R. 56365–56367 (2015). Retrieved December 9, 2017, from https://www.gpo.gov/fdsys/pkg/FR-2015-09-18/pdf/2015-23630.pdf

Galizzi, M. M. (2017). Behavioral aspects of policy formulation: experiments, behavioral insights, nudges. *Handbook of Policy Formulation*, 410.

Gigerenzer, G. (2007). *Gut feelings: The intelligence of the unconscious*. Penguin.

Gigerenzer, G. (2008). Why Heuristics Work. *Perspectives on Psychological Science*, *3*(1), 20–29. Retrieved November 14, 2017, from https://doi.org/10.1111/j.1745-6916.2008.00058.x

Gigerenzer, G. (2011). What are natural frequencies? *Bmj*, 1–2. Retrieved November 18, 2017, from https://doi.org/10.1136/bmj.d6386

Grasmick, H. G., Bursik, Jr., R. J., & Kinsey, K. A. (1991). Shame and embarrassment as deterrents to noncompliance with the law: The case of an anti littering campaign. *Environment and Behavior*, *23*(2), 233–251. Retrieved November 11, 2017, from https://doi.org/0803973233

Grüne-Yanoff, T., & Hertwig, R. (2016). Nudge Versus Boost: How Coherent are Policy and Theory? *Minds and Machines*, *26*(1–2), 149–183. Retrieved November 22, 2017, from https://doi.org/10.1007/s11023-015-9367-9

Hansen, P. G., & Jespersen, A. M. (2013). Nudge and the manipulation of choice: A framework for the responsible use of the nudge approach to behaviour change in public policy. *European Journal of Risk Regulation*, *4*(1), 3-28.

Hayek, F. A. (1945). The use of knowledge in society. *The American economic review*, 519-530.

Hertwig, R., & Grüne-Yanoff, T. (2017). Nudging and Boosting: Steering or Empowering Good Decisions. *Perspectives on Psychological Science*, 174569161770249. Retrieved November 30, 2017, from https://doi.org/10.1177/1745691617702496

Herzog, M. (2017). Das Modell „Wirksam Regieren“. *SVZ*. Retrieved December 4, 2017, from https://www.svz.de/deutschland-welt/politik/das-modell-wirksam-regieren-id18306381.html

Hussain, S. T., Lei, S., Akram, T., Haider, M. J., Hussain, S. H., & Ali, M. (2016). Kurt Lewin's change model: A critical review of the role of leadership and employee involvement in organizational change. *Journal of Innovation & Knowledge*, Journal of Innovation & Knowledge.

Johnson, E. J., & Goldstein, D. G. (2004). Defaults and donation decisions. *Transplantation*, 78(12), 1713-1716.

Junghans, A. F. (2016). Seeing is for Doing: An Embodied Cognition Approach to Nudging (Doctoral dissertation, Utrecht University).

Kahneman, D. (2011). *Thinking, fast and slow.* London: Allen Lane; Penguin.

Koralewska, W. (2016). *Nudge Approach and the Perception of Human Nature, Social Problems, and the Role of the State* (Doctoral dissertation, European Central University).

Lahlou, S. (2017). *Installation Theory. The societal construction and regulation of behaviour*. Cambridge: Cambridge University Press.

Leontiev, A. N. (1978). *Activity, Consciousness, and Personality*. Englewood Cliffs, NJ: Prentice-Hall.

Leventhal, H., Robert S., & Susan J. (1965) Effects of Fear and Specificity of Recommendation upon Attitudes and Behavior. *Journal of Personality and Social Psychology* 2: 20–29.

Lewin, K. (1952). *Field theory in social science: Selected theoretical papers*. London: Tavistock Publications.

Lindblom, C. (1977). *Politics and markets: The world's political and economic systems*. New York: Basic Books.

Locke, E. A., & Latham, G. P. (1990). Work motivation and satisfaction: Light at the end of the tunnel. *Psychological Science*, 1(4), 240–246.

Loewenstein, G., Byce, C., Hagmann, D., & Rajpalr, S. (2015). Warning: You are about to be nudged. *Behavioral Science & Policy*, 1(1), 35-42.

Lourenço, J. S., Ciriolo, E., Almeida, S. R., & Troussard, X. (2016). Behavioural insights applied to policy: European report 2016. Retrieved October 30, 2017, from https://doi.org/10.2760/903938

Madrian, B. C. (2014). Applying Insights from Behavioral Economics to Policy Design. *Annual Review of Economics*, 6(1), 663–688. Retrieved November 1, 2017, from https://doi.org/10.1146/annurev-economics-080213-041033

Marteau, T. M., Ogilvie, D., Roland, M., Suhrcke, M., & Kelly, M. P. (2011). Judging nudging: can nudging improve population health? *Bmj*, 342(jan25 3), d228–d228. Retrieved November 5, 2017, from https://doi.org/10.1136/bmj.d228

McCann, L. (2013). Transaction costs and environmental policy design. *Ecological Economics*, 88, 253–262. Retrieved November 3, 2017, from https://doi.org/10.1016/j.ecolecon.2012.12.012

Mols, F., Haslam, S. A., Jetten, J., & Steffens, N. K. (2015). Why a nudge is not enough: A social identity critique of governance by stealth. *European Journal of Political Research*, 54(1), 81-98.

Moscovici, S. (1984). The phenomenon of social representations. Dans RM Farr, & S. Moscovici (Éds), Social representations (pp. 3-69).

OECD (2017), *Government at a Glance 2017*, OECD Publishing, Paris. Retrieved November 21, 2017, from http://dx.doi.org/10.1787/gov_glance-2017-en

Oliver, A. & Brown, L.D. (2010) On the Use of Personal Financial Incentives to Address Health Inequalities. LSE working paper.

O'Reilly, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of management journal*, 34(3), 487-516.

Oullier, O. (2013). Behavioural insights are vital to policy-making. Nature, 501(7468), 463–463. Retrieved November 23, 2017, from https://doi.org/10.1038/501463a

Oullier, O., Cialdini, R., Thaler, R. H., & Mullainathan, S. (2010). Improving public health prevention with a nudge. *Economic Perspectives*, 6(2), 117–136. Retrieved November 20, 2017, from http://oullier.free.fr/files/2010_Oullier-Cialdini-Thaler-Mullainathan_Neuroscience-Prevention-Public-Health_Nudge-Behavioral-Economics.pdf

Perkins, H. W. (2002). Social norms and the prevention of alcohol misuse in collegiate contexts. *Journal of Studies on Alcohol. Supplement*, (14), 164–72. Retrieved November 15, 2017, from https://doi.org/http://dx.doi.org/10.15288/jsas.2002.s14.164

Public Health England. (2017). *Seasonal influenza vaccine uptake in GP patients: winter season 2016 to 2017*. Retrieved December 1, 2017, from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/613452/Seasonal_influenza_vaccine_uptake_in_GP_patients_winter_season_2016_to_2017.pdf

Rainford, P. & Tinkler, J. (2011) Designing for nudge effects: how behaviour management can ease public sector problems. Originally presented at Designing for nudge effects: how behaviour management can ease public sector problems, Innovating through design in public sector services seminar series, 23 February 2011, LSE Public Policy Group

Rothschild, M. (1999). Carrots, Sticks, and Promises: A Conceptual Framework for the Management of Public Health and Social Issue Behaviors. *Journal of Marketing*, 63(4), 24–37.

Rowson, J. (2011). Transforming Behaviour Change : Beyond Nudge and Neuromania 1. *Brain*, (November), 1–31. Retrieved November 12, 2017, from http://www.thersa.org/__data/assets/pdf_file/0006/553542/RSA-Transforming-Behaviour-Change.pdf

SBST. (2017) Retrieved November 25, 2017, from http://sbst.gov

Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms: Research article. *Psychological Science*, *18*(5), 429–434. Retrieved November 17, 2017, from https://doi.org/10.1111/j.1467-9280.2007.01917.x

Schwarzer, R. (2008). Modeling health behavior change: How to predict and modify the adoption and maintenance of health behaviors. *Applied Psychology*, 57(1), 1–29. Retrieved November 19, 2017, from https://doi.org/10.1111/j.1464-0597.2007.00325.x

Selinger, E., & Whyte, K. (2011). Is there a right way to nudge? The practice and ethics of choice architecture. *Sociology Compass*, 5(10), 923-935.

Simon, H. A. (1955). A Behavioral Model of Rational Choice. *Oxford University Press*, 69(1), 99–118. Retrieved October 29, 2017, from http://www.jstor.org/stable/1884852

Slovic, P., & Peters, E. (2006). Risk perception and affect. *Current Directions in Psychological Science*. Retrieved November 5, 2017, from https://doi.org/10.1111/j.1467-8721.2006.00461.x

Smith, A. K. (2014). When Inertia Pays Off. *Kiplinger's Personal Finance*, 68(8), 22.

Sniehotta, F. F., Presseau, J., & Araújo-Soares, V. (2014). Time to retire the theory of planned behaviour. *Health Psychology Review*, 8(1), 1–7. Retrieved November 7, 2017, from https://doi.org/10.1080/17437199.2013.869710

Sunstein, C. R. (2014). *Why nudge?: The politics of libertarian paternalism*. Yale University Press.

Sunstein, C. R. (2016). The Council of Psychological Advisers. *Annual Review of Psychology*, 67(1), 713–737. Retrieved November 9, 2017, from https://doi.org/10.1146/annurev-psych-081914-124745

Sydow, J., Lindkvist, L., & DeFillippi, R. (2004). Project-Based Organizations, Embeddedness and Repositories of Knowledge: Editorial. *Organization Studies,25*(9), 1475-1489.

Thaler, R. H., & Sunstein, C. R. (2003). Libertarian Paternalism. *American Economic Review, 93*(2), 175-179.

Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions About Health, Wealth, and Happiness.* New Haven: Yale University Press.

The Economist. (2017). Policymakers around the world are embracing behavioural science. Retrieved November 14, 2017, from https://www.economist.com/news/international/21722163-experimental-iterative-data-driven-approach-gaining-ground-policymakers-around

Tversky, A., & Kahneman, D. (1974). Judgment under Uncertainty: Heuristics and Biases. *Science*, *185*(4157), 1124–1131. Retrieved November 17, 2017, from https://doi.org/10.1126/science.185.4157.1124

United Nations (2016) Behavioural Insights at the United Nations - Achieving Agenda 2030. UN, New York.

Walton, A., & Hume, M. (2011). Creating positive habits in water conservation: the case of the Queensland Water Commission and the Target 140 campaign. *International Journal of Nonprofit and Voluntary Sector Marketing*, *16*(3), 215–224. Retrieved November 19, 2017, from https://doi.org/10.1002/nvsm.421

Wilson, M. (2002). Six views of embodied cognition. *Psychonomic Bulletin & Review*, 9(4), 636, 625.

Wintour, P. (2014, February 5) Government's behaviour insight team to become a mutual and sell services. *The Guardian*. Retrieved November 29, 2017, from https://www.theguardian.com/politics/2014/feb/05/government-behaviour-insight-nudge-mutual-nesta-funding

World Health Organization. (2012). *WHO: Weekly epidemiological record Relevé épidémiologique hebdomadaire*. *World Health organization Geneva* (Vol. 47). Retrieved November 19, 2017, from https://doi.org/10.1186/1750-9378-2-15.Voir.

World Health Organization. (2017). *Noncommunicable Diseases - Progress monitor 2017*. Retrieved November 18, 2017, from https://doi.org/10.2766/120051.

Appendix A

Table A1

Summary of the behavioural programmes

Approach to behaviour change	**Related concept**	**Underlying Rationale**	**Evaluation and use**
Induce change in intentions and the behaviour will follow	Theory of planned behaviour (Ajzen, 1985)	- Attitudes, norms and behavioural control determine intention - intention translates into behaviour	- Useful general framework but lacks important insights of bounded rationality (Sniehotta et al., 2014) - Interventions based on whole model may be effortful and costly
Promote self-efficacy and concrete planning for desired actions	HAPA: Health Action Process Approach (Schwarzer, 2008)	- Intention does not directly translate into behaviour - Action-plans and self-efficacy are often to overcome the intention-behaviour gap	- Applications mainly in public health - May be limited for large-scale policies on a national level
Elicit negative emotional responses to risk-behaviours	Affect & Risk perception (Slovic & Peters, 2006)	- *Risk as feelings*: Affective components of perceived risks have a strong impact on behaviour	- Applications against detrimental risk-behaviours such as smoking or speeding
Change the environment in which people make decisions (*choice architecture*)	Nudging (Thaler & Sunstein, 2008)	- Libertarian Paternalism - A collection of methods largely based on the automatic cognitive system (see Kahneman, 2011)	- Widely used in many domains - Fast and measurable outcomes, cost-effective

Provide adequate decision-tools for different environments	Boosting (Hertwig & Grüne-Yanoff, 2017)	- Simple and adequate information builds up competence to make smart decisions - Notion of smart heuristics (Gigerenzer, 2007)	- Used in health communication and financial literacy (e.g., icon-arrays and fast-and frugal heuristics) - Implementation similar to nudge, but does not directly steer behaviour in a certain way

Note. These are only few of the approaches available. For an overview see Darnton, 2008.

Appendix B

Table B1

Overview of state-supported teams that apply behavioural insights

Country	Government		Ownership by	Name	Link
	Independent	Specialized Unit			
The United Kingdom	Yes	N/A	Cabinet Office, employees and Nesta	Behavioural Insight Team	http://www.behaviouralinsights.co.uk/
The Netherlands	No	Yes	Ministry of Economic Affairs	Behavioural Insights Network Netherlands	https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-biap2016-netherlands_en.pdf
Germany	No	Yes	Staff of Policy Planning Unit (the Federal Chancellery)	Wirksam Regieren	https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-biap2016-germany_en.pdf
France	No	Yes	Secretariat-General for Government Modernisation (the Prime Minister's Office)	Nudge France	https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-biap2016-france_en.pdf
Denmark	No	No	Ad-hoc in Danish Business Authority	The MindLab (as collaboration network)	https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-biap2016-denmark_en.pdf
Austria	No	No	Pilot projects by different Austrian ministries	Motivierender Staat	https://ec.europa.eu/jrc/sites/jrcsh/files/jrc-biap2016-austria_en.pdf
The United States of America	No	Yes	National Science and Technology Council	Social and Behavioural Science Team (“frozen” on January 20, 2017)	https://sbst.gov/

Appendix C

Methods of Analysing Nudge interventions using Installation Theory

In order to obtain a more comprehensive understanding of the nudge interventions on the market and discern in which instance does our criticism stand, we first made a list of 31 different types of nudge based on Sunstein's review (2016) and extended it with 3 examples from the European Commission Report (Lourenço et. al, 2016). Then we categorised them based on whether it affected each of the three layers (physical, social and embodied) classified in Installation Theory (Lahlou, 2017). In particular, as we defined that any change in the choice architecture constitutes an impact on the physical layer, we regarded that all 34 different types of interventions engaged the physical layer. For the social layer, we classified only those interventions that elicit social norms, either directly (Number 12: Using social norms) or indirectly, such as appealing to moral persuasion (Number 25: Using moral suasion, increasing fun, or triggering a sense of responsibility) as exerting significant impact on the social layer. With regard to the interventions that activate the embodied layer, we filtered out those that either actively induce individual thinking (e.g., Number 3: Requiring active choosing - requiring people to make an explicit choice) or facilitate thinking through reducing hindrance to decision-making (e.g., Number 5: Simplifying active choosing). Overall, out of the 34 nudges, 2 of them were categorised as significantly engaged the social layer and 8 the embodied layer (see Table C1). Then, we classified each of the 41 behavioural intervention programmes presented in the European Commission report (Lourenço et. al, 2016) according to which type of 34 nudges it employed. For programmes that entailed more than one type of nudge techniques, multiple entries were undertaken in the table. However, in the final analysis, the programmes were only listed once according to the nudge-technique that engaged the most layers. For example, if an intervention programme included the type number 12

"social norms" (physical layer and social layer) as well as the type number 16 "framing" (only physical layer), it was counted as engaging both "physical and social layer" in the analysis. The final results are displayed in Figure 2 (p. 12).

Notably this is a rough classification of interventions into the three layers of Installation Theory based on our understanding of definitions.

Table C1

Overview of nudge interventions using Installation Theory

Type of Nudge Interventions	Layer	Case Description	Sample Country	Page
1. Establishing default rules (e.g., automatic enrolment in programs including education, health, savings)	Physical	Changed default electricity mix to a greener tariff	Switzerland	
		Redesign of hospital charts to reduce prescribing errors	UK	23
		Organ donation, presumed consent	Austria, France, Spain, Italy, Belgium, Croatia, Czech Republic, Finland, Greece, Hungary, Luxembourg, Norway, Poland, Portugal, Slovenia, Sweden	25
2. Simplifying and easing of current requirements (in part to promote take-up)	Physical	Midata programme, enabling consumers to make more informed choices without too much additional effort.	UK	18
		Online comparison tool that ranks supermarkets according to the price of a number of products	Portuguese	18
		Consumer Testing project to investigate the perception of financial information	Italy	20
		Simplified information on energy consumption	Estonia	22
		Simplified medical intervention information	Germany	23
		Simplified nutritional information	Estonia	23
		Simplified tax return process	Austria, France, Hungary, Italy, Spain	26
		Simplified platform for tax payment	Denmark	28
		Developed a guidance system to provide logistic information to encourage carbon neutrality and reduce waste	Finland	30
		Mailing letters to encourage payment of debts linked with road offences	Portugal	31
3. Requiring active choosing (requiring people to make an explicit choice)	Physical Embodied			

4. Prompting choice (people are asked a question without having to answer)	Physical Embodied			
5. Simplifying active choosing (asking people whether they want to choose or instead to rely on a default rule)	Physical Embodied			
6. Enhancing or influencing active choosing (e.g., asking people to choose but using order effects or loss aversion to influence choices; alternatively, enlisting authority toinfluence people)	Physical Embodied			
7. Making contexts or policies easily navigable, with pointers and guides	Physical	Simplified tax return process	Austria, France, Hungary, Italy, Spain	26
8. Providing reminders or accessible counts and accounts (e.g., by email or text message, as for overdue bills; reminder apps; health-related wristbands, watches, or apps)	Physical			
9. Priming (perhaps by emphasizing a relevant feature of the situation, such as its effect on an individual's future self, or an aspect of people's identity, such as their inclination to be honest)	Physical			
10. Eliciting implementation intentions or commitments (e.g., "Do you plan to vote?")	Physical Embodied	Redesign of hospital charts to reduce prescribing errors	UK	23
		Specific commitments made to encourage job-seeking	UK	21
11. Anchoring (starting with certain figures, e.g., "Do you want to give $200 to this charity?")	Physical	An e-commerce business fined for misleading consumers with inaccurate advertisement	Lithuania	20
12. Using social norms (emphasizing what most people do, e.g., "Most people plan to vote," "Most people pay their taxes on time," or "Most people are eating healthy these days")	Physical Social	Minority social norm message to enhance tax compliance	UK	19

		Comparing energy consumption between colleagues	Finland	23
		Imposing plain packaging for tobacco products	Ireland, UK, France	26
		Call us at our toll-free number and report the taxpayer who doesn't respect the rules, in contrast to a large majority of others to combat tax evasion	Croatia	29
		Mailing letters to encourage payment of debts linked with road offences	Portugal	31
13. Ordering effects (e.g., what people see first on a website or in a room; asking people to sign forms on the first page)	Physical			
14. Enlisting loss aversion (e.g., "You will lose X dollars if you do not use energy conservation techniques," or alternatively, and a bit beyond a nudge, a small tax (e.g., a five-cent tax for plastic grocery bags)	Physical Embodied	Point penalty for traffic violation down from a given endowment	Bulgaria, Croatia,France, Italy,Latvia, Luxemburg,Lithuania, Poland,Spain	
15. Increasing ease/convenience (e.g., making low-cost options or healthy foods visible)	Physical	Labelling healthy food with a "Green keyhole" to encourage healthy eating	Iceland	25
		Creating a recipe database to reduce household food waste	Hungary	24
16. Framing (e.g., "90% fat-free" versus "10% fat"; loss frame versus gain frame)	Physical	An e-commerce business fined for misleading consumers with inaccurate advertisement	Lithuania	20
		A national information campaign against illegal cigarette trade.	Bulgaria	20
		Replacing the word "from" by "until" to nudge companies to communicate to customers	Lithuania	21
		More positive wording "Job Seekers' Benefit"	Hungary	21
		Framed the question as a rejection to contribute to reduction of CO2 emission mitigation	Spain	22
		Framed waste prevention in economic terms	Ireland	22
		Slogan "Portugal cannot give itself to waste"	Portugal	24
		Presenting the savings from cigarettes in relation to attractive goods	Latvia	25
		Using images of infants to communicate the negative effect of tobacco on non-smokers	Portugal	25
		Imposing plain packaging for tobacco products	Ireland, UK, France	26

		A label was given to retailers that converted prices in a fair and transparent manner into euros	Latvia	27
		1 in every 5 people in insolvency is only 30 years or younger to educate young people on tax/customs	Austria	28
		Shift tax payment from a burden to social contribution	Estonia	28
		Every receipt you take is an assurance of a more organised society and a more secure future to combat tax evasion	Croatia	29
		Our goal: save lives to promote road safety	Luxembourg	31
17. Providing disclosures (as in calorie counts or traffic light systems for food)	Physical			
18. Issuing warnings, graphic or otherwise (as for cigarettes—might counteract optimistic bias)	Physical			
19. Providing literal or figurative speed bumps or cooling-off periods (as for waiving rights)	Physical			
20. Using formal precommitment strategies (as in Save More Tomorrow)	Physical			
21. Offering automatic enrolment with precommitment (e.g., automatic enrolment in Save More Tomorrow)	Physical			
22. Using visual effects, colours, picture, signs, noises, fonts (e.g., to promote highway safety or attention to one's future self, as in virtual aging through online programs)	Physical			
23. Decreasing vagueness and ambiguity through the use of plain language (e.g., MyPlate, not Food Pyramid)	Physical			
24. Attracting or reducing attention, including through drawing attention to certain product attributes or through product placement (e.g., through cafeteria design)	Physical	Testing of the effectiveness of different reminder letters	UK	20

25. Using moral suasion, increasing fun, or triggering a sense of responsibility	Physical Social			
26. Using checklists (as for doctors or administrators)	Physical			
27. Reducing paperwork (including prepopulation or elimination of forms)	Physical			
28. Giving comparative information (to overcome comparison friction)	Physical	Online comparison tool that ranks supermarkets according to the price of a number of products	Portuguese	18
29. Informing people of the nature and consequences of their own past choices (“midata”)	Physical Embodied			
30. Jointly rather than separately evaluating goods/people (to help reduce discrimination)	Physical			
31. Structuring choices (as through pointers or eliminating rarely chosen options)	Physical			
32. Affect	Physical	A national information campaign against illegal cigarette trade.	Bulgaria	20
		Using images of infants to communicate the negative effect of tobacco on non-smokers	Portugal	25
		Every year nearly 3000 children suffer a road accident to reduce drunk driving	Austria	31
33. Personalization	Physical Embodied	Specific commitments made to encourage job-seeking	UK	21
		Online tool for simplified nutritional information to encourage understanding of health information	Estonia	23
34. Salience	Physical	Framed waste prevention in economic terms	Ireland	22
		Redesign of hospital charts to reduce prescribing errors	UK	23
		Simplified nutritional information	Estonia	23
		Making the healthier options more prominent	Norway	24
		Zero waste label given to participants to reduce food waste	Portugal	24

Labelling healthy food with a "Green keyhole" to encourage healthy eating	Iceland	25
Presenting the savings from cigarettes in relation to attractive goods	Latvia	25
Tobacco products can only be shown upon customer request	Iceland	25
A label was given to retailers that converted prices in a fair and transparent manner into euros	Latvia	27
Mailing letters to encourage payment of debts linked with road offences	Portugal	31
48% of deadly car accidents are due to excessive speed to promote road safety	Luxembourg	31

Appendix D

Method of Media Analysis

To obtain an understanding of the media coverage of behavioural insight teams, we analysed the communication in the press in Germany and the United Kingdom. These countries were chosen because they both have behavioural insight teams, but they are at different stages of development. We used the "news" category of Google search to gather the press articles. By searching for "wirksam regieren" and "Behavioural Insight Team", the first ten relevant results were used as samples. These samples were then analysed on whether the view on behavioural insights was positive, neutral or negative, by looking at the coverage of advantages as well as disadvantages. The results for both countries can be found in table D1 and table D2 below. The analysis of Germany was conducted in the national language and is reported in the original format. As the sample size of the analysis was relatively small, these results do not aim to be representative. Furthermore, we did not consider cultural differences and pre-existing attitudes of the press and the public towards governmental interventions (e.g., indicator "trust in government", see OECD, 2017, p. 215). We, therefore, recommend policy-makers to conduct their own analysis of media-coverage on a larger scale in their respective countries.

Table D1

Communication Analysis of the United Kingdom

No.	Media	Headline	Perception	Description	Link
1	Daily Sabah	Behavioral economics to be used in policymaking	positive	About the launch of a BIT in Turkey following the example of the BIT UK	https://www.dailysabah.com/economy/2017/11/21/behavioral-economics-to-be-used-in-policymaking
2	Daily News	Turkey to use 'behavioral economics' in policymaking	positive	About the launch of a BIT in Turkey following the example of the BIT UK	http://www.hurriyetdailynews.com/turkey-to-use-behavioral-economics-in-policymaking-122737
3	Standard	Political algorithms instead of persuasion	negative	Describes how artificial intelligence can be used to influence people, links BIT UK with exposures in the Snowden affair of how specialised units in governments systematically harm the reputation of others	http://derstandard.at/2000067004767/Politik-Algorithmen-statt-Ueberzeugungsarbeit
4	CFO Innovation	Behavioral Insights: How to "nudge" your way to a mentor network	positive	About how the nudge approach can be applied to set up a professional network of advisors	https://www.cfoinnovation.com/story/13874/behavioral-insights-how-%E2%80%98nudge%E2%80%99-your-way-mentor-network
5	Standford Social Innovation Review	How a Nobel Prize in Economics Could Help Solve the Climate Crisis	neutral	Describes how nudge can be used to tackle environmental issues, first lots of examples of success of nudges are highlighted and in the end it is stated that nudge can be used, but only as a complementary tool	https://ssir.org/articles/entry/how_a_nobel_prize_in_economics_could_help_solve_the_climate_crisis

6	Gov Tech	Nudging Citizen Behavior Can Drive Positive Community Change	positive	The United Kingdom's Behavioural Insights Team is helping U.S. municipalities improve outcomes by fostering initiatives centred around real human behaviours rather than long-held presumptions.	http://www.govtech.com/civic/Nudging-Citizen-Behavior-Can-Drive-Positive-Community-Change.html
7	Economical and Political Weekly	Behavioural Economics and Richard Thaler's Contributions	neutral	Describes how the approach of Thaler can give insights in behaviour and enrich the traditional field of economics by introducing theories that consider human behaviour; highlights the BIT UK as an example of using nudge to design and execute public policy	http://www.epw.in/journal/2017/46/commentary/behavioural-economics-and-richard-thalers-contributions.html?0=ip_login_no_cache%3Ddc7fb4ce2461624caadf4364c6f7fa84
8	New China	Armenia launches National Innovation Center	positive	Announcement, that Armenia will launch a behavioural insight unit called national innovation centre, which will cooperate with the BIT UK	http://news.xinhuanet.com/english/2017-11/15/c_136752583.htm
9	The Economist	Policymakers around the world are embracing behavioural science	neutral	Describes how nudge and BI emerges in governments; also describes in particular that people were quite sceptical at the time of the introduction of the BIT UK but the doubts are now allayed	https://www.economist.com/news/international/21722163-experimental-iterative-data-driven-approach-gaining-ground-policymakers-around
10	The guardian	'Behavioural economics' may sound dry – but it can change your life	positive	honours the winning of the Nobel prize of Thaler; gives lots of examples of successful nudges, also explains how nudge could be implemented for individuals	https://www.theguardian.com/commentisfree/2017/oct/10/behavioural-economics-richard-thaler-nudge-nobel-prize-winner

Table D2

Communication Analysis of Germany

Nr.	Medium	Schlagzeile	Perspektive	Kurzbeschreibung	Link
1	SVZ	Das Modell „Wirksam Regieren“	Skepsis	Kanzleramt lässt den Bürger erforschen. Inspiration eines Nobelpreisträgers. Kritiker warnen vor Manipulationsgefahren	https://www.svz.de/deutschland-welt/politik/das-modell-wirksam-regieren-id18306381.html
2	Welt	Der Nobelpreis veraendert unser aller Leben	Skepsis	US-Ökonom Richard H. Thaler hat den Wirtschafts-Nobelpreis erhalten. Seine Ideen werden bereits im Alltag genutzt: In der Bundesregierung etwa kümmert sich eine Arbeitsgruppe darum, die Bürger „anzustupsen“.	https://www.welt.de/wirtschaft/article169446770/Dieser-Nobelpreis-veraendert-unser-aller-Leben.html
3	Aerzte-zeitung	Erste Erfolge bei der Suche nach Strategien gegen Krankenhausinfektionen	objektiv bis positiv	Lange hat es gedauert, bis Klinikinfektionen als Politikfeld auch im Bundeskanzleramt angekommen sind. Ein zusammen mit der Charité und Verhaltensforschern initiiertes Präventionsprogramm gibt Anlass zu vorsichtigem Optimismus.	https://www.aerztezeitung.de/politik_gesellschaft/praevention/article/941891/krankenhausinfektionen-erste-erfolge.html
4	Focus	Sagen Sie uns Ihre Meinung -Gemeinsam für optimalen Bürgerservice in den Kfz-Zulassungsstellen	positiv	Landratsamt Landsberg nimmt an Projekt des Bundeskanzleramtes teil – Umfrage zur Kundenzufriedenheit angelaufen.	http://www.focus.de/regional/bayern/landkreis-landsberg-am-lech-sagen-sie-uns-ihre-meinung-gemeinsam-fuer-optimalen-buergerservice-in-den-kfz-zulassungsstellen_id_7208459.html
5	Epoch Times	Wahlkampf und Manipulation - Ein Albtraum: Wie unsere Daten verwendet werden	sehr skeptisch	Warum will man bei Psychotests im Internet auch immer unsere Mailadresse haben? Schlimmer als bei einem Offenbarungseid - im Netz sind unsere vermeintlich privaten Bekenntnisse öffentlich und werden schamlos benutzt. Lesen Sie hier, wie das	http://www.epochtimes.de/wissen/wahlkampf-werbung-und-manipulation-ein-alptraum-wie-unsere-daten-verwendet-werden-video-a1991029.html

				geschieht - es wird Sie zu einigen unschönen Erkenntnissen bringen.	
6	Welt	Schupser vom Staat	sehr skeptisch	Der Mensch ist willensschwach und kurzsichtig, sagt der Amerikaner Richard Thaler, der den diesjährigen Ökonomienobelpreis bekommt. Der Mensch verstehe das eine – und tue das andere. Das Beste für ihn sei, wenn er Schubser („Nudges“) bekomme, die ihn in die richtige Richtung lenken	https://www.welt.de/print/welt_kompakt/debatte/article169476553/Schubser-vom-Staat.html
7	T-Online	Angela Merkel bastelt an einer neuen Strategie: "Wirksam regieren"	skeptisch	Ungewöhnliche Stellenausschreibung: Das Kanzleramt sucht Psychologen und Soziologen zur Entwicklung einer neuen Strategie. Die Regierung soll wirksamer regieren. Beschleichen Angela Merkel Zweifel? Braucht sie einen Psychologen? Ein neues Sofa soll es aber nicht geben.	http://www.t-online.de/nachrichten/deutschland/parteien/id_70761758/angela-merkel-bastelt-an-einer-neuen-strategie-wirksam-regieren-.html
8	Welt	Merkel will die Deutschen durch Nudging erziehen	leicht skeptisch	Mit Strategien aus der Verhaltensforschung will Kanzlerin Merkel die Deutschen zu Musterbürgern machen. Kritiker halten das sogenannte Nudging für eine hinterhältige Form der Gängelei.	https://www.welt.de/wirtschaft/article138326984/Merkel-will-die-Deutschen-durch-Nudging-erziehen.html
9	Sued-deutsche Zeitung	Der Trick mit dem Spiegel	skeptisch	Hängt man Spiegel in Kantinen auf, greifen die Gäste seltener zu fetten Bagels und Doughnuts - sie sehen nämlich ihre überzähligen Pfunde. Der Spiegel gibt den Nudge.	http://www.sueddeutsche.de/wirtschaft/verhaltensforschung-am-buerger-politik-per-psychotrick-1.2386755-2
10	Politik & Kommu-nikation	Nudging: Schöne neue Regierungswelt?	objektiv - skeptisch	Verhaltensforscher im Kanzleramt: Seit der Aufregung um eine ungewöhnliche Stellenausschreibung vor einigen Monaten diskutiert die Community über Nudging. Wie funktioniert die Methode? Wo wird sie eingesetzt? Und was ist rechtlich vom Anstupsen in die vermeintlich richtige Richtung zu halten?	https://www.politik-kommunikation.de/ressorts/artikel/nudging-schoene-neue-regierungswelt-16269

LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

Department of Psychological and Behavioural Science

COURSEWORK SUBMISSION FORM AND

PLAGIARISM/ACADEMIC HONESTY DECLARATION

ACADEMIC SESSION 2017/18

Instructions for completion:

Give advice to a consultant who considers using Installation Theory to design interventions for behavioural change

Candidate Number: 90411

MSc Programme: Psychology of Economic Life

Course for which work submitted: PS465

Word-count: 998

Date: December 11, 2017

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Using Installation Theory to implement behaviour change:

Some guiding steps for organisational consultants

Introduction

According to Installation Theory (IT), installations are societal systems consisting of a physical, social and embodied layer that interdependently channel behaviour (Lahlou, 2017). For example, the installation "university lecture" consists of its physical affordances such as chairs and a projector. Secondly, the social layer elicits control through institutional rules (e.g., the roles of teachers and students) and social norms. Thirdly, individuals meet the demands of installations using their embodied competences (e.g., competence to take notes). Due to their power, omnipresence and changeability, installations provide a useful framework for those wishing to introduce (behavioural) change in organisations. This essay gives some concrete steps for consultants to implement an intervention based on IT.

I will extent the example of improving intra-department communication presented by Lahlou (2017, pp. 307 - 308) to the issue of communication across teams and departments in larger companies. A lack of interaction can be a major concern for workplace-designers and have harmful effects on innovations and corporate culture (Conway, 1995; Peponis et al., 2007).

Identify areas for action

Consultants first need to analyse the installations within the office building. One suggested method is Subjective Evidence-Based Ethnography (Lahlou, 2017, pp. 40 – 50), by which a small camera records participants' routine activities (e.g., a working day in the office), followed by a replay interview. In addition, the consultant could conduct interviews, focus groups and surveys with different employees.

Using these methods, the state of the three layers can be analysed to investigate why the problematic behaviour (e.g., lack of inter-team communication) is produced. Figure 1 highlights

some exemplary research questions a consultant could investigate. Details on the operationalisation of layers are presented by Lahlou (2017, pp. 88 - 147).

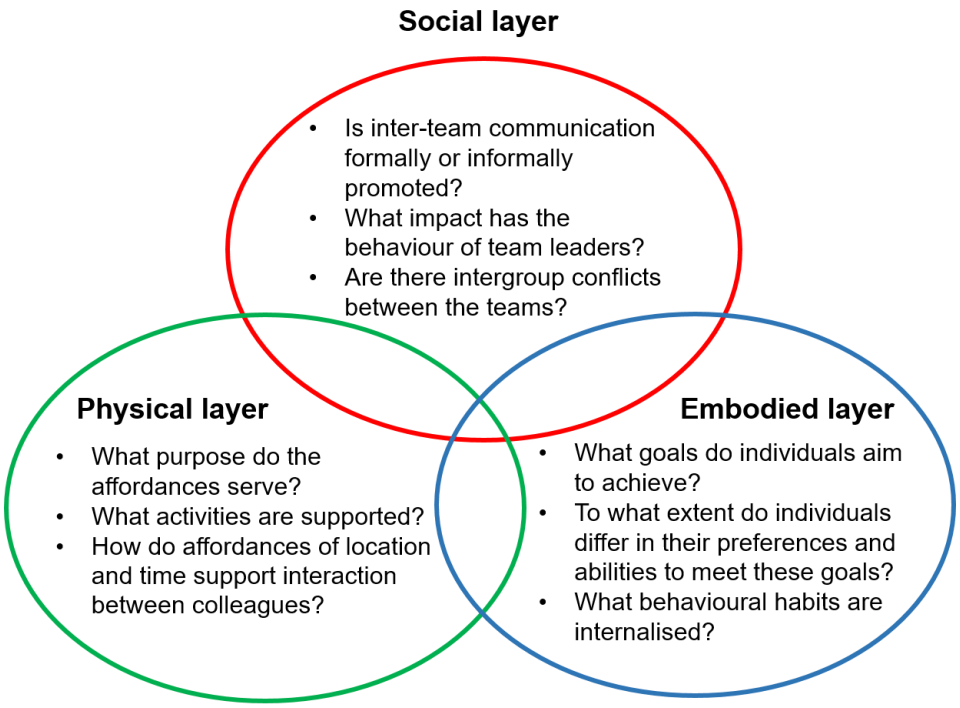

Figure 1. Investigating inter-team communication in office buildings

Based on this, ideas for interventions can be developed. On the physical layer, the consultant could install affordances where people naturally meet such as a coffee kitchen (Lahlou, 2017, p. 307). On the social layer, common coffee breaks could be arranged every other week. Additionally, the team leaders could be advised to use their role in setting social norms (Cialdini & Trost, 1998) by approaching other teams more frequently (e.g., for having lunch). On the embodied layer, this could create habits of interaction which make the behaviour less effortful and more long-lasting (Aarts & Dijksterhuis, 2000).

Implement changes

Moving to the stage of implementation, some general guidelines can be given.

Tackle the right composition of layers. There might be a layer that seems the easiest to approach. However, addressing only one layer might not be sufficient to move the system, while tackling all layers at the same time could be the most effective (Lahlou, 2017, p. 149). The consultant should mentally simulate the different options beforehand (Lahlou, 2017, p. 272) and decide for a reasonable first intervention. In the example, the consultant could start by implementing the interventions on the physical and social layer.

Leave personal freedom. While installations channel behaviour, individuals have some leeway to decide within the installations' limits and choose which installations to enter or leave (Lahlou, 2017, p. 330). According to Mischel (1977), situations vary in the degree to which they determine behaviour and hence, too drastic guidelines (e.g., lunchbreaks *must* be spent with different colleagues every day) may compromise personal freedom. This could lead to the feeling of being controlled (Lahlou, 2017, p. 37) and cause resistance.

Make it reversible. Installations on the organisational level are usually complex systems that have persisted over time (Lahlou, 2017, p. 313). Following a popular distinction (Mousavi & Gigerenzer, 2014), changing these installations is in the domain of uncertainty (probabilities of outcomes cannot be calculated) as opposed to risk (calculations are possible). Hence, regardless of prior analyses, the effects of changing an installation cannot be precisely predicted and side-

effects may occur. In response, the interventions should aim to be reversible and should be tested on a smaller scale first (Lahlou, 2017, p. 326).

Involve stakeholders. Stakeholders should be involved in the process to ensure their support and avoid resistance (Lahlou, 2017 p. 304). Notably, groups of stakeholders may differ in their "worth and value" systems activated by the changes (Boltanski & Thévenot, 2006; Lahlou, 2017, pp. 282 - 284). Employees might perceive new arrangements as a burden if they need to spend *time* that is not allocated towards their major goal (completing one's tasks). Supervisors might oppose changes in the physical environment due to the *economic costs*. Thus, consultants should address these perceived costs and emphasise the *currencies of gain* for those involved. For example, there is a gain in *social influence* on other members in the organisation as well as new potential *collaborations* and *innovations.*

Test and adjust

After the implementation, a consultant should assess if the installation has successfully been brought on a path of betterment (Lahlou, 2017, p. 259).

If the intervention has improved the outcome measures, the intervention could be scaled up geographically (e.g., different sections of the building) and aim for durability of changes by involving another layer (e.g., through the embodiment of habits). Additionally, future changes can be anticipated (Lahlou, 2017, p. 273) as installations slowly *drift* over time and are influenced by outside developments (*crossed impacts*). For example, installations within workplaces will likely change drastically as technology advances (PwC, 2017) which might form the basis for future adjustments.

If the outcome is not as expected or negative side effects occur, analyses and discussions with stakeholders may lead to adjustments or entirely new interventions. As changing installations is complex and entails uncertainty, the adjustment might take several trials (Lahlou, 2017, p. 313).

Conclusion

While installations offer a framework to identify potential interventions, consultants could embed IT in process-theories of change such as the *unfreeze-change-refreeze* model (Lewin, 1951). Alternatively, as changing installations involves a process to test, change and adjust interventions to produce a betterment loop, the TOTE-approach (Miller, Galanter & Pribram, 1960; Test Operate Test Exit) provides an adequate model to guide consultants through the steps described above. To conclude, this model is used to summarise the steps in Figure 2.

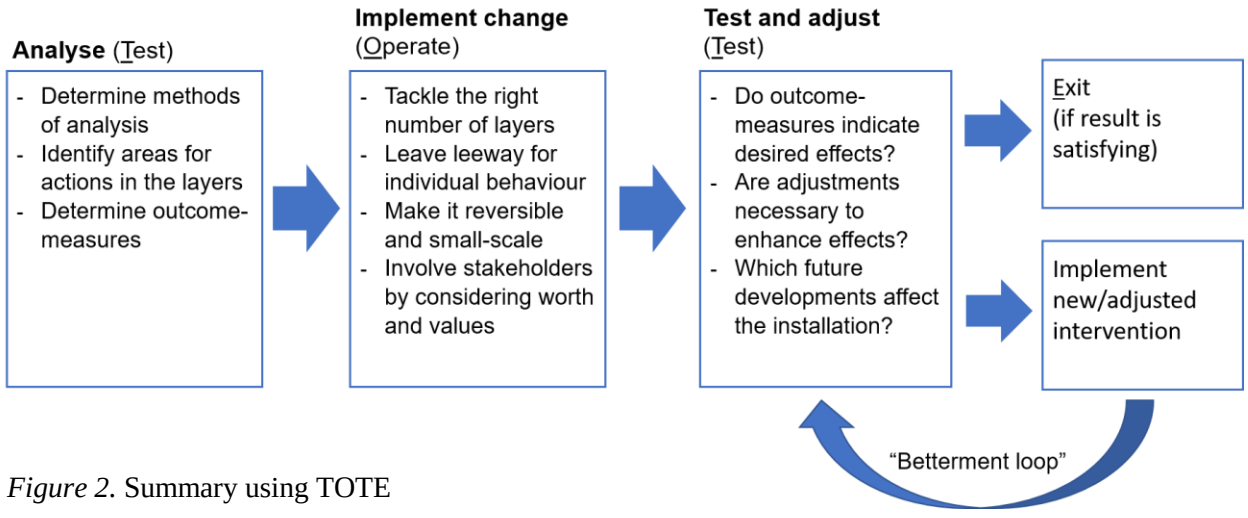

Figure 2. Summary using TOTE

References

Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology, 78*(1), 53–63. https://doi.org/10.1037/0022-3514.78.1.53

Boltanski, L., & Thévenot, L. (2006). *On justification: Economies of worth*. Princeton University Press.

Cialdini, R., & Trost, M. (1998). Social influence: Social norms, conformity and compliance. *The Handbook of Social Psychology, Vol. 2*. https://doi.org/10.2307/2654253

Conway, S. (1995). Informal Boundary-spanning Communication in the Innovation Process: An Empirical Study. *Technology Analysis & Strategic Management*, *7*(3), 327–342. https://doi.org/10.1080/09537329508524216

Lahlou, S. (2017). *Installation theory: the societal construction and regulation of behaviour*. Cambridge University Press.

Lewin, K. (1951). Field theory in social science. In *Resolving Social Conflicts and Field Theory in Social Science*.

Miller, G., Galanter, E., & Pribram, K. (1960). *Plans and the structure of behaviour.* Holt, Rinehart and Winston. Inc., New York. https://doi.org/10.1037/10039-000

Mischel, W. (1977). The interaction of person and situation. *Personality at the Cross-Roads: Current Issues in Interactional Psychology*. https://doi.org/10.2307/2090910

Mousavi, S., & Gigerenzer, G. (2014). Risk, uncertainty, and heuristics. *Journal of Business Research*, *67*(8), 1671–1678. https://doi.org/10.1016/j.jbusres.2014.02.013

Peponis, J., Bafna, S., Bajaj, R., Bromberg, J., Congdon, C., Rashid, M., … Zimring, C. (2007). Designing Space to Support Knowledge Work. *Environment and Behavior*, *39*(6), 815–840. https://doi.org/10.1177/0013916506297216

PwC (2017). Workforce of the future. The competing forces shaping 2030. Retrieved December 09 2017, from https://www.pwc.com/gx/en/services/people-organisation/publications/workforce-of-the-future.html