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**Nudge fudge or crystal clear?**  
**Investigating nudges and how they work**

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## Abstract

Recently there has been growing interest in the use of “nudges” as a policy tool and their potential to solve some of society’s biggest problems, such as obesity or climate change. Thaler and Sunstein in their influential book *Nudge* provide a broad but specific definition of “nudge”, with the essence of nudging being changing the “choice architecture” or environment of people to influence behavior in ways that promote human welfare and protect freedom of choice. Nudges have a focus on how to influence behavior through engaging the “automatic system” of the human mind, and in ways that people are not always consciously aware.

A major aim of the thesis is to examine what nudges are and how they work. Our approach is to examine the “mechanisms of change” that underlie the process from nudge to changed behavior. We categorise nudges as working through “core” mechanisms of change if they directly enters the “automatic system”, harness social influence or appeal to our emotions. We categorise nudges that work through “peripheral” mechanisms of change as those that appeal more to the “reflective system” to influence behaviour change. We show how these mechanisms vary between nudges.

In order to find out if nudges actually work and are cost effective, we selected a nudge for special investigation, namely prompted stair use interventions. We referred to systematic reviews and carried out our own small scale secondary evaluation of these interventions. We argued that it is not possible to make categorical statements as to whether this nudge works due to methodological weaknesses in these studies, particularly the lack of control group designs and lack of cost efficiency analyses.

We argue the effective implementation of nudges may rely on traditional governance interventions, such as legal restrictions and information provision.

*Nudge* has led to political initiatives in the form of the establishment of departments or committees in the UK, US and Norway to bring the “nudge” concept into policy making. We gathered empirical material, mainly through qualitative interviews, from members of a committee set up to advise and/or implement nudges in Lillehammer, Norway in order to compare to what extent we find similar issues related to what nudges are and how they work in this committee and in the academic

literature. Similarities include awareness of nudge as a broad concept, an emphasis on nudges working at a ‘semi-conscious’ level as well as the importance of cost-effectiveness, generalizability and the value of control groups when evaluating nudges. A key difference was the limited reference to the ethical debate about nudges among committee members, in contrast to academic authors, perhaps because the former view nudges as small-scale interventions that aim to help people make better choices and do not raise serious ethical considerations.

In conclusion we question whether “nudges” can in fact be defined as “libertarian” and “paternalistic”, we call for public debates about the use of nudges and involvement in overcoming some of the ethical dilemmas nudges raise (particularly for those that work mainly through the automatic system) and enhance legitimacy. Finally we argue for more robust evaluation studies to build evidence base for this relatively new intervention.

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# 1 Introduction.

## 1.1 Nudges – a new policy instrument?

The idea of “nudging” or influencing people’s behaviour by changing the environment in which people make decisions has gained attention in policy and academic circles in recent years as a means of solving some of society’s biggest problems, such as obesity or climate change. Since the publication of Richard Thaler and Cass Sunstein’s influential book *Nudge* in 2008, “nudge” approaches have emerged as an additional governance tool aimed at changing people’s behaviour, alongside ‘older’ types of policy interventions, such as information provision, legal restrictions and financial incentives.

It is not often a book by academics achieves such a large impact in both political and academic arenas but *Nudge* has achieved this feat. It has led to a lively academic debate, with some scholars lauding nudge policies as offering “informed and unintrusive” ways to help people make better decisions (Kahneman 2011, 415), and others criticizing nudges for taking advantage of flaws in human decision-making rather than teaching us how we might improve the choices we make (Waldron 2014). *Nudge* has attracted significant media in many countries including the US, UK and Norway. *Nudge* was previously a New York Times bestseller and The Economist and Financial Times ‘Best Book of the Year.’ This media interest may have been a factor in the book becoming an international best seller, with sales on Amazon exceeding 750,000 copies<sup>1</sup>. Not only has the book *Nudge* had an academic impact and been a hit with the public, it has also spurred governments in the UK, US and even in places like Lillehammer, Norway to set up separate committees or units on “nudging”.

But how do you define a nudge? Popular concepts do sometimes take on separate meanings when various stakeholders, including politicians, policy makers, academics and journalists, want to refer to them. How clearly delineated is the concept as such? How are nudges supposed to influence behavior? To which extent does it share similarities with other government interventions? Also, is there a difference between how the concept is understood and applied by academics, and by

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<sup>1</sup> <http://www.amazon.com/Nudge-Improving-Decisions-Health-Happiness/dp/014311526X>  
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politicians or policy advisers? Why are they an important tool in the health and social policy field? Furthermore, is there agreement on how nudges “work”? And how much empirical knowledge do we have about whether “nudges” (however defined and operationalized) works? Finally, can we say anything about the way this currently very popular concept are being brought into actual policy-making, through the various units or committees that have been established at the national as well as local level of governments? This thesis aims to explore these questions.

## **1.2 Nudges - a tool for tackling important health and environmental problems?**

Obesity and climate change are examples of major policy challenges that require substantial changes to human behaviour if they are to be successfully tackled. The global prevalence of obesity has doubled between 1980 and 2014, and today over 13% of adults are obese (WHO 2014). Obesity is associated with increased risk of serious diseases, including cardiovascular diseases and diabetes, lower life expectancies and lower productivity levels (Lindstrand et al 2006, 177). The implementation of preventative health policies by governments and other stakeholders, in particular by increasing physical activity levels and promoting healthier dietary choices, can reduce the risk of obesity (ibid). In relation to climate change, without major action to reduce greenhouse gas emissions, the potentially catastrophic risks from rising global temperatures include a loss in food production, a rise in infectious diseases and an increase in adverse weather conditions such as floods and droughts (Goldin & Reinert 2012, 42). Thaler and Sunstein (2009) have put forward nudging as an instrument that can steer people towards healthier and environmentally friendly choices. In light of the increasing global prevalence of obesity and the potentially catastrophic effects of climate change it would be important and welcome if nudges represent a new approach to help us deal with these and other immense challenges that our societies face.

## **1.3 Political attention**

Nudging has captured the attention of politicians and policy makers across the world, at both a national, regional and local government level. In the UK, Prime-Minister David Cameron set up the Behavioural Insights Team in 2010, often referred to as the “Nudge Unit”, to implement a range of behavioural approaches across different policy areas. In the USA, President Obama (2015 ) has signed an executive order setting out the case for government programmes to be informed by evidence from behavioural sciences, and has set up a “Social and Behavioral Sciences Team” to

take this agenda forward. Some states in the USA have used nudge strategies, for example to increase human organ donations or to inform public health campaigns (Le Grand and New 2015, 133-134; Thaler and Sunstein 2009, 74). In Norway Lillehammer local authority has set up a nudge committee to consider how nudges might make it easier for people to make more climate friendly and healthier choices.

## **1.4 Academic debate**

Nudges have provoked considerable discussion in academic circles, with strong proponents and opponents of nudges. The liberal philosopher JS Mill's rejection of paternalism and argument that nation States should only intervene in people's lives to "prevent harm to others" is often used as the starting points for debates about the legitimacy of nudges (e.g. Le Grand and New 2015, 7). Nudge advocates argue that most nudges have less impact on individual autonomy than other governance interventions and have the potential to enhance well-being to similar if not higher levels (ibid, 146). On the other hand are those commentators that view some nudges as raising major ethical concerns by intruding on individual autonomy to an unacceptable degree (e.g. Baldwin 2014, 831-2). Some scholars have pointed out that there currently exists a lack of evidence that nudges work, can be sustained or how insights of behavioural economics can be translated into viable policy options (Moseley and Stoker 2013; House of Lords Science and Technology Sub-Committee 2011; Kusters and Van der Heijden 2015). While the debate on "nudge" is wide-ranging, raising both theoretical and ethical questions, an emphasis in this thesis is on increasing clarity about the concept of nudge and exploring the methodological challenges of finding out if they really work or not.

## **1.5 Research questions**

The research questions addressed in this thesis are:

1. What are nudges?
2. How do they work?
3. How can effects be measured, and how can it be decided if nudges are cost-efficient interventions?
4. How can nudges be implemented?

5. Are nudges perceived the same way in an academic setting and a policymaking setting?

## 1.6 Outline of Thesis

This “Introduction” has set out how Thaler and Sunstein in *Nudge* has made bold claims that nudges represent a new policy instrument that can improve people’s decisions and lives. The response has been intense debate, research and experimentation on whether or not it does in fact represent an additional valuable tool in the policy-makers tool box. A stated purpose of this thesis is to dig deeper into clarifications as to what nudges are and how they work and, drawing on the academic literature, we explore these issues in Chapters 2. In Chapter 3 we aim to provide an analytical categorization of nudge interventions according to the “mechanism of change” that underlie the process from nudge to changed behavior. In Chapter 4 we close in on one nudge, namely prompted stair use interventions, and consider how they are supposed to work (including the assumed mechanism(s) of change), whether they work and are cost effective and explore methodological challenges of finding out if they are effective or not. In Chapter 5 we consider the relationship between nudges and other types of governance interventions as well as how to support the effective implementation of nudges. In Chapter 6 we look at how in Norway, Lillehammer local authority has attempted to introduce the concept of nudge into policy making by setting up a ‘Nudge Committee.’ Here we carry out our own empirical investigation, using qualitative in-depth interviews as our selected methodology, into the extent to which we find the same issues and problems related to what nudges are and how they work in the academic literature and those experienced by the committee members in a “nudge” committee. In our conclusion, Chapter 7, we call for public debate and involvement concerning the use of nudge strategies, as part of the response to the ethical concerns raised by some nudges, and question whether “nudges” are “libertarian paternalist”.

## 2 Nudge Theory: What is a nudge? How do nudges “work”?

In the introduction we highlighted how the publication of *Nudge* sparked considerable academic and political debate about the potential of this seemingly new government intervention to achieve behavior change, a key aim of many government policies. But what precisely is a nudge and how are they supposed to work? To provide answers to these questions, this chapter begins by presenting and discussing Thaler and Sunstein’s definition of “nudge” and their philosophy of “libertarian paternalism”. It then sets out some of the theories and ideas about human behaviour that have shaped “nudge theory” and goes on to consider how other academics have defined and debated the concept. This presentation of nudge theory and the academic debate is intended to inform an analysis of how different nudge interventions work, specifically the ‘mechanisms of change’ that underlie the process from nudge to changed behavior. This chapter provides the building blocks that allow us to achieve a major aim of this thesis, which is to propose an analytical categorization of how different types of nudges work.

### 2.1 What is a nudge?

Thaler and Sunstein define a “nudge” 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. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. (Thaler and Sunstein 2009, 6).

Choice architecture is an idea at the heart of Thaler and Sunstein’s definition of what a nudge is and how they work. Choice architecture is the environment in which people make decisions and, according to Thaler and Sunstein, by making intentional changes to the physical or social environment it is possible to influence people’s behaviour in ways that enhance well-being without restricting choices. In the same way that the design choices of an architect can influence how people within a building behave and interact, “choice architects” are actors (e.g. government or businesses) that can indirectly affect the choices of others, (ibid, 3). For example, a choice architect might purposefully change the display of food in a cafeteria to give greater prominence to fruit, which can act as a prompt for people to select healthier options. Nudges typically work by

engaging the “automatic system” of the human mind and aim to help people live better lives (ibid, 23-24).

Thaler and Sunstein provide a broad but specific definition of “nudge”, with the essence of nudging being about changing the choice architecture of people to influence behavior. It is a broad definition because a wide range of interventions come under the “nudge” umbrella and at the same time specific meaning that there is clarity about what interventions are and are not nudges. While there is general agreement in the academic literature that nudge is a broad concept, some commentators, for example (Hollands et al 2013b, 9) argue that Thaler and Sunstein fail to provide a clear definition of “nudge” because taken at “face value” their definition could include all interventions that influence people’s behavior excluding economic incentives, legislation and regulations.

What is clear, however, is that the concept of “nudge” does not constitute a single intervention. Thaler and Sunstein (2009) presents “nudge” as a concept that encompasses many different types of interventions, including: using the default option to increase the likelihood that a certain choice is selected; influencing decisions by how problems are framed; highlighting what others do, so called social influence, to promote certain behaviours, and interventions that change the physical and/or social environments to prompt a behavioral response.

## **2.2 Libertarian Paternalism**

It is important to highlight the concept of ‘libertarian paternalism’ as central to Thaler and Sunstein’s concept of “nudge”. “Libertarian paternalism” underpins nudge theory and has been described as a political philosophy or ideology (e.g Kusters and Van der Heijden 2015, 286; Marteau et al 2011; Hollands et al 2013b, 10; Baldwin 2014, 833). Thaler and Sunstein (2009, 5) define “libertarian paternalism” as an approach that protects “freedom of choice” but legitimizes choice architects “to steer people’s choices in directions that will promote their own welfare” as judged by the individual themselves. Therefore, nudges are based on what appear to be two opposing concepts: they claim to be “libertarian” by upholding an individual’s right to choose as they desire, *and* “paternalist” because they permit government to take action that can drive people towards welfare enhancing outcomes.

The literature reveals “libertarian paternalism” to be a contested concept. For example, the extent to which nudges preserve individual autonomy is disputed, with some claiming that if nudges are used then individuals are not fully autonomous (Bovens, 2009, quoted from Le Grand and New 2015, 142), and others acknowledging that while nudges do not have a neutral impact on individual liberty, they strike a good balance, in comparison to other governance interventions such as regulations, between promoting well-being and minimising the impact on individual liberty (Le Grand and New 2015,146) . Some commentators have challenged Thaler and Sunstein on their definition of paternalism, for example, Hausman and Welch (2010, 126) argue that whether those who are exposed to a nudge agrees that it is beneficial to them is irrelevant to whether an intervention can be characterised as paternalistic and that paternalistic policies do not always preserve freedom of choice. Philosophical questions concerning whether nudges are “libertarian” or “paternalistic” are outside the scope of thesis but are issues we will return to in the conclusion.

## **2.3 NUDGE THEORY**

One could argue that part of the legitimacy of the nudge approach comes from the fact that it was developed in an academic setting by two professors from the University of Chicago, drawing extensively on evidence from the sciences of human behavior. We will now explore the ideas and theories that have informed the development of the “nudge” approach.

### ***2.3.1 The human mind: the automatic and reflective system***

Thaler and Sunstein (2003, 176) concept of “nudge” draws on research from behavioral economics since the 1970s, and challenges the idea that humans typically make rational decisions in their best interests, as espoused by standard economic theory. Instead they emphasise that sometimes people make poor choices, “choices that they would change if they had complete information, unlimited cognitive abilities and no lack of willpower” (ibid, 175). An analysis of how the human mind functions, based on research by psychologists, is used to explain why individuals are prone to poor decision-making and could benefit from nudges. They describe two cognitive systems in our brain, one what they term the “automatic system”, which is epitomised by uncontrolled, fast and unconscious thinking, and the other the “reflective system”, which is characterized by rational, deliberative and slow thinking. See table 1. This idea stems from a certain reading of cognitive psychology where humans are portrayed as having two modes of thinking which interact with one

another and shape our behavior (Marteau et al 2011; Dolan et al 2010; Kahneman 2011). The cognitive psychologist Daniel Kahneman (2011, 13) has been particularly influential in the development of nudge theory, and popularized the use of the terms “System 1” and “System 2” for what Thaler and Sunstein call the “automatic” and “reflective” system respectively, and Kahneman’s simplified labels for our thinking processes have been widely adopted by scholars and policy makers. Reflecting on the “two cognitive systems” approach to the human mind adopted by Thaler and Sunstein, specifically that people rely too often on their “automatic system” when making decisions, one can see that the idea has informed the design of those nudge interventions that arrange physical environments to steer people towards certain choices in order to improve well-being.

**Table 1: Two cognitive systems**

<b>System</b>	<b>Automatic system</b>	<b>Reflective system</b>
<b>Features</b>	Uncontrolled Effortless Associative Fast Unconscious Skilled Intuitive	Controlled Effortful Deductive Slow Self-aware Rule following Rational Deliberative Conscious
<b>Example</b>	Speaking your first language	Speaking in a foreign language

Source: Thaler and Sunstein 2009, 22.

### **2.3.2 Heuristics**

Thaler and Sunstein (2009, 24-33) draws in particular on Kahneman and Tversky’s work to show how humans often use heuristics, also known as rules of thumb, to make decisions, which leads to systematic errors or biases, resulting in poor decision-making. They focus on three kinds of heuristics - anchoring, representativeness and availability – which arise due to a complex relationship between the automatic and reflective system of the human mind. Anchoring is the process whereby we are asked a question and use anchors, a familiar number, as the starting point for our response, which is then adjusted according to a value that we think, is right. The problem with using anchors is that they are plagued by bias because the changes we make to the value in question are often inadequate. Availability heuristics occur when we are asked questions typically



related to risks and our answers are often biased according to what we remember or associate with the risk in question. Finally, representativeness or similarity heuristics is when people make judgments using stereotypes or what they perceive as representative over more accurate considerations of probability (likelihood). It can be related to people viewing random fluctuations as causal patterns, and the example they provide is that sometime people characterise high cancer rates within one year in a certain area as cancer clusters rather than random events, which is the more likely reason.

To summarise, Thaler and Sunstein show how the heuristics people use in their everyday lives is likely to often lead to poor decisions. To this end, one example of how nudge interventions work are by manipulating flaws in human decision making, for example our reliance on these ‘rules of thumb’, with the aim of promoting better decision-making and enhancing well-being .

### ***2.3.3 Loss aversion***

Other theories that have influenced the nudge approach includes the idea of “loss aversion” which results in losses looming larger than rewards (Kahneman 2011, 284). Thaler and Sunstein (2009, 36-37) presents research that shows people value highly and do not want to give up goods they possess. Furthermore, if they have to give up a possession, they mourn the loss to a greater degree than they are happy if they gain the same object. They argue loss aversion causes people to be content with what they have, even though a change would be for their own good.

### ***2.3.4 Status quo bias***

Individuals are said to demonstrate a “status quo bias”, which is caused by inertia and lack of attention, and leads to people remaining with the current situation or status quo irrespective of whether it is in their best interests (ibid, 38) . Nudges that operate by the careful selection of the “default option”, while giving people the right to opt-out, are recommended when people are faced with many and/or complex choices and aim to influence behavior in ways that promote the individual’s welfare. For example, the use of the default option has been used in practice to automatically enroll people into pension schemes in the UK to encourage savings for retirement, and recommended as an approach to help people choose prescription drug plans in the US that involve numerous and wide ranging features (ibid, 10, 126) .

### **2.3.5 Framing**

Thaler and Sunstein draw on research that shows that how issues are “framed” or described influences our behavior. This approach involves highlighting certain aspects of an issue in order to influence the response and/ or later action (Moseley and Stoker 2013, 7). According to Thaler and Sunstein (2009, 40), framing is a powerful nudge because of people’s tendency to make “mindless” decisions, and the failure of our “reflective system” to check whether reframing a problem would lead to a different answer.

### **2.3.6 Dynamic inconsistency**

The economic idea of dynamic inconsistency is discussed in *Nudge* and describes a situation when individuals initially prefer one option that can promote well-being but then act differently. This is partly explained by the influence of the immediate environment on our behavior and/or our lack of self-control (ibid, 44). For example, our intention might be to exercise because it is good for our health, yet other environmental factors, such as the lure of the TV, may stop us from actually doing it. To make one’s commitments public are put forward as a behavioural approach that can help individuals achieve their goals, such as losing weight, and overcome self-control problems because of our desire to conform with public declarations and avert the potential embarrassment from breaking such commitments by (ibid, 229; Dolan et al 2010, 18, 26).

### **2.3.7 Deferred gratification**

Thaler and Sunstein (2009, 80) define “investment goods”, such as doing physical exercise and eating healthily, as goods where the benefits derived are “deferred” rather than provide immediate gratification, resulting in people paying too little attention to them. Nudges can be used to increase people’s awareness of “investment goods”. It has been argued that nudges are most effective when the action in question is perceived to be the right thing to do by the individual and, therefore, the nudge can help bring the action to the forefront of their mind (John et al 2011, quoted from Moseley and Stoker 2013, 8).

### **2.3.8 Salience**

Thaler and Sunstein (2009, 106) believe in the economic concept of supply-and-demand and argue incentives and prices are important when influencing behaviour. This typically means that increased prices leads to supply increasing and consumers desiring less. They argue that incentives will not

work where people are not paying attention and, therefore, what nudge theory brings to the debate about the effectiveness of governments interventions is highlighting that incentives need to be salient in order to work. Salience is defined as an important influence on our behaviour and occurs when “our attention is drawn to what is novel and seems relevant to us” (Dolan et al 2010, 8). For example, Thaler and Sunstein (2009, 106) argue that modest increases in the price of electricity with the aim of reducing consumer consumption might have less of an impact on the desired behaviour than making the increases “salient”, for example through using “cost-disclosing thermostats”. To summarise, salience is a feature that choice architects can employ to lead people to incentives that have the potential to increase human welfare (ibid, 108).

### **2.3.9 Social influence**

Another important strand of Nudge theory is the role of social influence in shaping our behaviour. A challenge identified is to know how to encourage or discourage certain behaviors or beliefs. Drawing on studies, Thaler and Sunstein (2009, 59). argue a key reason people are influenced by others is due to the power of conformity. They highlight two major ways that we are “nudged” by other people: firstly, through providing information of what other people think or do and, secondly, through peer pressure because of a concern about what others think and fear of being ostracized (ibid, 58). This human tendency to conform can be utilized to nudge people in welfare enhancing directions. The example of a ‘social norms’ approach to reduce alcohol in the form of an educational campaign in Montana, USA that highlights statistical information on use of alcohol, including that “strong majorities” of citizens don’t drink, to encourage citizens to adopt healthier behaviour towards drinking alcohol (ibid, 74).

### **2.3.10 Summary of Nudge Theory**

Nudge theory identifies reasons for people making poor judgments or decisions, for example because they use heuristics, are influenced by how a problem is framed or lack self-control, and it is this analysis on which nudge interventions are based. Thaler and Sunstein do not appear to offer analytical categories of how nudges work but their literature implies that nudges work through different “mechanisms of change”, such as through stimulating our automatic system or harnessing the power of social influence. There is an emphasis in *Nudge* on nudge interventions that operate through the “automatic system” to influence behaviour in order to improve people’s lives. We will now turn to the academic literature to consider if there are differences between how the concept is

understood by scholars in comparison to Thaler and Sunstein, the key architects of nudges. Appendix 1 describes how the scholarly literature was accessed and used in this thesis.

## **2.4 Exploring the academic literature**

The academic literature primarily draws on the book *Nudge* to define the concept of the same name. Most authors define nudges as Thaler and Sunstein do, as changing the choice architecture or environment to influence people's choices and actions to promote certain outcomes. Many authors argue that nudges seek to influence people's behavior through a range of interventions or mechanisms such as the default option, incentives and framing. Some scholars emphasise that nudges work through harnessing flaws in human decision making (e.g. Blumenthal-Barby and Burroughs 2012, 8; Hollands et al. 2013a, 2; Le Grand and New 2015, 135-138; Kusters and Van der Heijden 2015, 279; Hausman and Welch 2010, 126; Waldron 2014).

Most authors argue that a defining feature of nudges is that they don't get people to think consciously about the choices they are prompted to take (Marteau et al 2011; House of Lords Science and Technology Sub-Committee 2011; Kusters and Van der Heijden 2015; Goodwin 2012; Moseley and Stoker 2013). Closely related to this is that most authors highlight that nudges influence behavior by stimulating our automatic system (Marteau et al 2011; House of Lords Science and Technology Sub-Committee 2011) with others agreeing but also highlighting that some nudges work through conscious decision making processes, such as those nudges that provide information (Hollands et al. 2013a; Baldwin 2014). The distinction between nudges that engage an individual in a conscious way and those that do not was evident in (Hollands et al 2013a, 4) systematic scoping review on the effects of choice architecture interventions within small scale micro-environments related to key health behaviours. The majority of interventions included in their study involved the conscious engagement of individuals through information provision, for example about the nutritional content of food, whereas interventions that focused more on semi-conscious engagement of the individual were represented to a much lesser degree in the literature. Overall the literature we consulted for this thesis did not explore in great detail how nudges work.

In the main the literature recognizes the important role played by behavioural economics in particular and also cognitive psychology in shaping nudge theory, with those authors who are

broadly positive to nudges heralding recent advances in these sciences as providing a strong justification for nudge strategies (Le Grand and New 2015; Dolan et al 2010; Moseley and Stoker 2013, 9). Caution is also sounded in some quarters about the limitations of the evidence base, with some scholars arguing that there is currently a lack of evidence on whether the findings from these sciences of human behavior can be applied in practice to change the behaviour of populations (Moseley and Stoker 2013, 9; House of Lords Science and Technology Sub-Committee 2011, 5; Kusters and Van der Heijden 2015, 285).

Some authors use the word “broad” or “wide” to describe the scope of the nudge concept (Hollands et al. 2013, 9; Kusters and Van der Heijden 2015, 279; Baldwin 2014, 834), but this is also implicit in the vast majority of literature as scholars describe nudges as encompassing a wide variety of tools or interventions or refer to many practical examples. Thaler and Sunstein have been criticised for failing to provide definitional and conceptual clarity for “nudge” (ibid) and this is problematic for various reasons, for example making it difficult to evaluate different types of nudges or “nudge” as an overall theory (Baldwin 2014, 834; Kusters and Van der Heijden 2015, 277) or review the evidence (Hollands et al. 2013b, 9).

Different authors have elaborated and/ or made their own definitions of nudges in an attempt to enhance clarity of what nudges actually are. For example, Le Grand and New (2015, 135-138) highlight four sets of mechanisms that governments can use to nudge people: changing the default position; manipulating the frame or context in which individuals make choices; regulating the timing of decisions and using taxes and subsidies. In contrast Thaler and Sunstein arguably exclude the final mechanism from their definition of nudge when they say nudges do not “significantly” change people’s economic incentives. Kusters and Van der Heijden (2015, 279-280) categorise nudges into two types of interventions, according to whether they aim to help individuals achieve their best interests (so called “type 1 nudges”) or direct people towards behaviour that promotes the well-being of wider society (so called “type 2 nudges”). This categorisation of nudges according to goal is intended to assist with the evaluation of nudges (ibid).

In line with Nudge Theory, Moseley and Stoker (2013, 6-7) emphasizes that nudges harness cognitive and social factors that drive our behavior, but also draw our attention to the moral aspects of nudges. Specifically they argue nudge strategies have advantages in certain contexts over other

approaches such as financial incentives or regulations, which may undermine humans' intrinsic motivation to behave in a preferred way, for example in relation to volunteering or being a blood donor (ibid, 7). The same authors exclude persuasive interventions, e.g. media campaigns, from the nudge concept because, they argue, nudges are about framing issues – bringing specific issues to the fore and letting citizens decide - rather than changing beliefs (ibid), and the House of Lords Science and Technology Sub-Committee (2011, 12) agree but also identify 'simple information provision' as falling outside the boundary of a nudge. Some authors exclude "rational persuasion" (Hausman and Welch (2010), 128) and "deliberative decision-making" from the label of "nudge" (John et al, 2009, quoted from Baldwin, 2014, 834). Thaler and Sunstein (2009) in *Nudge* do not talk a great deal about how emotions influence behaviour, yet Baldwin (2014, 835) argues that a characteristic of some nudges is that they exploit individual's emotional weaknesses in order to impede reflective decision making.

Our discussion of the academic literature reveals that nudge is a broad and contested concept, manifest by different academic authors choosing to specify the concept differently to Thaler and Sunstein. Perhaps in response to some of these analytical challenges of working with a new concept like nudge, it has spurred some scholars to further test and clarify the idea. For example, Marteau et al (2011) and Hollands et al (2013b, 9) argue that there is a lack of evidence on the effects of nudges on changing health behaviour and this is partly ascribed to Thaler and Sunstein failing to provide a "precise, operational definition" of what the key concepts of nudge and choice architecture means when applied to public health interventions. In addition, they point out that the way nudges have been operationalised (e.g. through opt-ins, defaults) are not always transferable to influencing health behaviour, which is their research interest. Furthermore Thaler and Sunstein's broad definition of nudges presents the researcher with considerable challenges in terms of assessing the evidence. To overcome these problems, Hollands et al (2013, a & b) propose an operational definition of choice architecture within "micro-environments" (small scale physical and social environments) applicable to public health interventions to facilitate the mapping of evidence for the effects of choice architecture interventions on key health areas. They used the evidence to create a typology of choice architecture interventions in micro-environments. Findings include that most studies reviewed concerned diet related behaviours, and that the two most common nudge interventions were those involving point of choice labelling and prompting. The authors believe the study's approach could be used to explore the application of choice architecture interventions to other policy areas.

To take a second example, Baldwin (2014, 5) argues that Thaler and Sunstein have adopted a “highly inclusive” concept of nudge that encompasses both reflective and automatic thinking systems and, in an effort to provide conceptual clarity, he categorises different nudges according to their impact on individual autonomy in a framework that he calls ‘Three Degrees of Nudges.’ Nudges are located on a kind of continuum whereby “First Degree Nudges” are categorised as respectful of individual autonomy and enabling of conscious decision making (such as nudges that are based on information provision) through to “Second Degree Nudges” and then “Third Degree Nudges”, the latter being designed in such a way as to make it difficult for targets to detect and so obstruct reflective decision making (such as nudges that use framing strategies), thus raising much more serious representational and ethical issues. The author generally approves of “First Degree Nudges” and objects to “Second” and “Third Degree Nudges” on the grounds that they are exploitative of human weaknesses and restrict individual autonomy. Baldwin highlights important concerns about the use of nudges, not least ethical ones, to which we now turn our attention.

## **2.5 Ethical concerns raised by nudges**

Some of the literature provides subjective accounts about what might explain the appeal of nudges, and this was largely expressed in terms that nudges appeared to offer politicians and policy-makers cheap and simple solutions to some of today’s biggest problems without recourse to legislation (Marteau et al 2011; House of Lords Science and Technology Sub-Committee 2011). Related to this point, Dolan et al (2010, 16) argues that harnessing a behavioural aspect to policies, such as using defaults, is not only potentially cheap but can be constructed in such a way that benefits both the state and citizen. Furthermore, both Dolan et al (2010, 16) and Wells (2014) endorses Thaler and Sunstein’s (2009, 5, 236) point that in many situations Government cannot avoid influencing people’s behavior, therefore, they should do this in an intentional way through using nudges to improve well-being, while at the same time leaving individuals free to act as they want.

While the ethics of nudging isn’t the major focus of this thesis, it is important to highlight some aspects of the academic debate concerning this issue, as it provides an insight as to what some authors see as the main problem with nudges. For example, in the health field Blumenthal-Barby and Burroughs (2012) explores the various ethical considerations of using nudges to secure a range

of better health outcomes. Important factors for the ethical acceptability of policy interventions is the extent of infringement into a person's liberty, and the degree to which it is covert (House of Lords Science and Technology Sub-Committee 2011, 12). In this context, there is considerable unease on ethical grounds among the academic community about the fact that nudges typically work through inputting into the "automatic processes" of the human mind in ways that people aren't always aware (ibid, 13; Goodwin 2012, 89; Baldwin 2014, 846). Some commentators suggest some nudges represent a kind of 'underhand paternalism' because they exploit traits in human decision-making, often without the person's awareness, and involve the choice architect advancing their ideas of the "nudges" welfare, which may be contrary to the individual's conception of their own welfare (Baldwin 2014, 846; Goodwin 2012, 89). Related to this point, another criticism of nudge strategies is their impact on autonomy. Hausman and Welch (2010, 128) define autonomy as "the control an individual has over his or her own evaluations and choices." These authors take a broader view of liberty than Thaler and Sunstein perspective that concerns protecting freedom of choice, and argue that those nudges that involve a choice architect "shaping" people's choices in favour of one option instead of employing "rational persuasion" techniques, undermines individual control of their own reflective decision-making and choices.

In response to concerns about the lack of transparency inherent in nudge interventions, two forms of transparency applicable to nudges have been suggested: informing people of the existence of a nudge and ensuring a perceptive person might be able to discern the intervention in question (Bovens, 2011, quoted from House of Lords Science and Technology Sub-Committee 2010, 109). It has been argued that both forms of transparency, but particularly the first type, might limit nudge effectiveness because it may see those who are targets of a particular nudge deliberately act against the choice architect's intentions to the potential detriment of their own good or that of wider society (Le Grand and New 2015, 143) Bovens argued the second form of transparency would also be ethically acceptable to nudge interventions because it would allow disapproving individuals to opt out of the nudge in question (Bovens, 2009, quoted from Le Grand and New 2015, 143). Thaler and Sunstein (2009, 244) themselves have advocated John Rawl's "publicity principle" to increase transparency of nudges, which says that governments should be willing and able to defend their nudge policies to the public. They believe that the adoption of this principle can both constrain and guide the implementation of nudges to safeguard the right of people to avoid the nudge and thus act as they want. However, Hausman and Welch (2010, 133, 135) argue that governments should implement the "publicity principle", rather than simply possessing a willingness to do so, regardless



of the risks it poses to nudge effectiveness because people should be informed of the existence of nudges.

Major criticisms of nudges concern that they manipulate or exploit flaws in human decision-making to influence people towards certain choices rather than helping people to become better decision makers (Waldron 2014; Baldwin 2014, 856). There is also a concern that government bureaucrats or politicians may use nudges in a way that maximises their own self-interest, rather than citizens, and that governments are subject to bias and error in their decisions in the same way that individual citizens are (Rebonato, 2012, quoted from Le Grand and New 2015, 144; Waldron 2014). In contrast it has been argued that all paternalist interventions involve a trade-off between promoting well-being and minimising impact on autonomy, but nudges fared better than other interventions (e.g. regulations) when it came to advancing welfare, particularly for those people suffering from reasoning failure, and involve a smaller infringement of the individual's autonomy (Le Grand and New 2015, 138, 146).

House of Lords Science and Technology Sub-Committee (2011, 12-13) discusses an additional criteria for the ethical consideration of nudges as being the degree to which it is popular with, or welcomed by, the public. Dolan et al (2010, 73) agree that some people would be reluctant to sign up to behavioural approaches being used on themselves because they challenge the dominant idea of individuals as rational decision-makers and replace it with one in which individuals are influenced by the "choice architecture" shaped by others. They recommend that further consideration is given to seeking "democratic permission" to using behavioural approaches, including "nudge", particularly when the approach used is subtle or powerful. Moseley and Stoker (2013, 9) also recommend citizen involvement to define the behaviour to be encouraged via the nudge and the form the nudge will take. Continuing with this theme, Baldwin (2014, 845) implies there is an inherent 'democratic deficit' in nudge interventions because they are typically "triggered administratively" and thus less likely to be subject to public debate that surrounds policy measures that require legislation.

## **2.6 Conclusion of chapter**

Our journey in this chapter has involved exploring how Nudge Theory, which provides evidence of why humans sometimes make poor choices, has informed the development of a broad array of nudge interventions that aim to influence behaviour in welfare enhancing directions while simultaneously leaving individuals free to act as they please. We have also highlighted the considerable debate among the academic community about what exactly constitutes a nudge. In particular, our literature review reveals nudge to be a concept that different academic authors define somewhat differently to Thaler and Sunstein, and where the assumed mechanisms that make nudges work are also somewhat diverse. We welcome the work undertaken by scholars to further test, clarify and challenge the idea of nudging, particularly in light of the highly positive way in which nudges have been embraced by many Governments across the world.

### **3 Towards an analytical categorisation of nudge interventions**

One of the main purposes of this thesis is to really understand how nudges are meant to work, and our approach is to specify the “mechanisms of change” that underlie the process from “nudge” to changed behaviour. Building on our knowledge of nudge theory described in the previous chapter, our aim in this chapter is to provide an analytical categorisation of how “nudges” may work, and use examples to illustrate these categories.

#### **3.1 Terminology**

“Mechanism” is a core concept in analytical sociology, and has been defined as:

A constellation of entities and activities that are organized as such that they regularly bring about a particular type of outcome, and we explain an observed outcome by referring to the mechanism by which such outcomes are regularly brought about.

(Hedström and Bearman, 2009, 5)

These authors point out that a number of different definitions of “mechanism” exist in the field of sociology but common to them all is a focus on bringing clarity to the regular changes that are being observed (for example during an intervention) by explaining how they are produced. In this thesis we use the term “mechanism of change” as meaning the aspect(s) of an intervention (here: a nudge) that frequently brings about a change in behaviour among people who are subjected to it. There are similarities between “mechanisms of change” and “Theory of Change” (ToC), which is a theory based approach to evaluation and involves making explicit the assumptions that link the intervention’s inputs (such as resources) to achievement of the desired end results (Weiss 1998, 55, 62). “Program theory” represents one of two subsets of ToC (the other being implementation theory), and concerns theories about which mechanisms of change “produce” behavioural responses among those who are exposed to it:

Program theory, as I use the term, refers to the mechanisms that mediate between the delivery (and receipt) of the program and the emergence of the outcomes of interest.

The operative mechanism of change isn’t the program activities per se but the response the activities generate. (Weiss 1998, 57).

### 3.2 Discussion about how different nudges work

There is agreement in the literature that nudge is a broad concept, made up of diverse interventions, and, therefore, it is perhaps not surprising that theories about how nudges “work” are also diverse. In this section we analyse how different nudges work in terms of “mechanisms of change” and then go on to suggest a way of categorizing nudge interventions.

To recapitulate many theories concerning how nudges work are related to cognitive psychology, explored by various psychologists over the past three decades, and further developed by Kahneman (2011, 13, 15) into a two systems approach to judgement and choice that distinguishes between the automatic, intuitive and fast thinking of “System 1” and the controlled and effortful workings of “System 2” . Drawing on this theory, “nudges” are policy interventions that in the main activate the “automatic system” or System 1 of the brain directly. From a policy perspective, they reduce the cognitive processing involved in making (what the government considers) healthy and environmentally desirable choices in people’s everyday lives. The “mechanism” that makes them work is the direct input the nudge provides into the automatic system of the human mind. This “mechanism” is probably best perceived as influencing semi-conscious behavioural responses. That people rely on various “heuristics” when making decisions, and how nudge interventions may manipulate them, is an illustration of how they work. A practical example is the choice architect who introduces salad as the default option in a cafeteria instead of chips. This nudge works by purposefully arranging the ‘choice architecture’ to give greater prominence to some food choices (here: salads) in order to influence healthier eating. This intervention directly inputs into our “automatic” system and is based on semi-conscious, cognitive based mechanisms of change.

Some “nudges” are assumed to work by appealing to social influence. This relates more to Fischbein and Ajzen’s theory of reasoned action, which argues that the key predictors of a person’s behaviour are “attitudes towards a behaviour...and subjective norms (the influence other people have on a person’s attitudes and behaviour)” (Morisky, Donald E. 2002). Thaler and Sunstein (2009, 71) claim that an effective way of nudging people is by just telling them what others do and think, if that is the behaviour you want to encourage. Such an approach is employed by the earlier cited example of a campaign in Montana, USA that highlights statistical information on drinking alcohol, including that “strong majorities” of citizens don’t drink. This nudge works by providing

information about what others are doing in relation to drinking to encourage citizens to adopt healthier behaviour towards alcohol use. This intervention harnesses social influence and is based on semi-conscious, cognitive based mechanisms of change.

Related to the latter are nudges that are assumed to appeal to our emotions, for example Baldwin (2014, 836) argues that some nudges work by taking advantage of our emotional weaknesses and obstruct reflective decision-making. For example, a graphic image on cigarette packs to highlight some of the risks of smoking is a nudge that aims to provoke a strong cognitive and emotional reaction, and steer people to adopt anti-smoking behaviour. This intervention appeals to our emotions and inputs into our automatic system, and works through sub-conscious or semi-conscious, emotion-based mechanisms of change.

Further out on the spectrum are “nudges” that are assumed to work by *informing* us of the benefits of healthy and/or environmentally friendly behavioural choices, such as prompting stair use via a motivational sign that is placed near the stairs highlighting the health benefits of taking the stairs. This nudge might work by changing individual knowledge and attitudes about this activity (Soler et al 2010, 293). These nudges essentially represent an appeal to the reflective system, and are similar to the group of policy interventions that come under the label “providing information”. Marteau et al (2011) comments that traditional health promotion activities are based on provision of information, requiring “cognitive capacity or thinking space”; in other words their effectiveness depends on our conscious engagement with the intervention in question.

There are also those “nudges” that operate through financial instruments, for example by giving a small up-front financial incentive to encourage people to change their behaviour and make the “right” choice. There are similarities between these types of “nudges” and the policy of Conditional Cash Transfers, which has its roots in South America and is the idea of giving money to parents “conditional” on them sending their children to school or immunizing them against various diseases (Banerjee and Duflo 2011, 78-79). In these types of interventions the government changes the cost-benefit calculus people make before they choose an action. *Nudge* gives the example of a scheme that aims to reduce teenage pregnancy by giving to teenage girls with a baby ‘a dollar a day’ every day in which they avoid pregnancy (Thaler and Sunstein 2009, 232). The mechanism of change for this intervention, as in the previous example, is an appeal to the reflective system.

Appendix 2 provides illustrated examples of nudges and how they work and demonstrates the diversity of nudge interventions.

### **3.3 Provisional categorisation of nudge interventions according to “mechanisms of change”**

What our analysis of different nudges suggests is that most nudges work through stimulating our “automatic system”, but we have also identified examples of nudges that involve the engagement of an individual at a conscious level, and thus appeals to our reflective system. We therefore propose that nudges are divided into the following two categories:

1. “Core” mechanisms that make nudges work: a) interventions that directly enters the automatic system (semi-conscious, cognitive-based mechanisms of change); b) interventions that harness social influence (semi-conscious, cognitive-based mechanisms of change); c) interventions that appeal to our emotions (sub-conscious or semi-conscious, emotional-based mechanisms of change).
2. “Peripheral” mechanisms that make nudges work: interventions that appeal as much or more to the reflective system i.e. changing the overt cost-benefit calculus presumed to be behind behavioural choices or providing information to enable better decisions. They are “peripheral” because they aim to influence decision making at a conscious level and in this regard there is nothing new in policy interventions based on this assumed mechanism of change.

Our analysis and the literature review arguably points to two different interpretations of nudges:

1) “nudges” are low-cost, small-scale interventions, which aim to influence the many choices people make in their everyday lives through manipulating the “choice architecture” or environment in which people make decisions. All policy interventions that are similarly small-scale and aimed at micro-level behavioural change are to be considered “nudges”, regardless of which “mechanisms of change” that can be constructed to justify an assumption that they work.

2) “nudges” are policy interventions that rely on a certain type of “mechanisms of change”: policy interventions that only, or at least primarily, are assumed to work through the “core” mechanisms (for example semi-conscious, cognitive-based mechanisms of change), should be considered “core nudges”. “Peripheral” nudges are those that rely on the conscious engagement of those who are exposed to it.

### **3.4 Conclusion of chapter**

Nudge is packed full of examples of different kinds of nudge interventions. In order to provide an analytically distinct categorisation of different types of nudges, which was missing in Thaler and Sunstein’s book *Nudge*, we have categorised nudges according to their “mechanism of change”. In order to provide an analytically distinct categorisation of different types of nudges, which was missing in Thaler and Sunstein’s book *Nudge*, we have categorised nudges according to their “mechanism of change”. Importantly, our work shows that the “mechanism of change” varies between nudges.





## **4 Investigating if nudges work, and if they are cost-efficient interventions**

We have seen so far that nudges are defined somewhat differently in the academic literature compared to Thaler and Sunstein's definition, and there are also differences in how scholars specify the assumed mechanisms of change. However, going from theories and theoretical mechanisms to actually put nudges in place involves a "translation" into practice, and into the implementation of interventions. Even if a nudge has solid theoretical backing in the form of firmly established "mechanisms", that is no guarantee that an effect will actually show up in practice. In the last instance, if a nudge works is an empirical, not a theoretical, question. Hence one needs empirical studies of actual nudges to see if the assumed effects – regardless of how "theoretically solid" the mechanism of change or theory of change may seem – actually become manifest in practice. In short, we need effect-evaluations.

But how much do we know about the actual effects of nudges? There are by now hundreds of studies of varying quality documenting the effects of different nudges. How solid is this evidence? Since the mechanisms of change or theories of change varies between nudges, (which we have demonstrated in Chapter 3 and in Appendix 2), it is impossible to answer the question in a general way. What I have done is to take a specific, clearly delineated and "simple" nudge – which in addition has been subjected to several empirical studies - to investigate the quality of these evaluation studies, relative to an "ideal standard" for effect-evaluations, which is generally agreed to be Randomised Control Trials (RCTs). My choice of nudge is related to preventive health care because this is a policy field where arguably we need more effective policy tools, not least due to the obesity epidemic.

Therefore, our aim in this chapter is partly to get further under the skin of what a "nudge" is; partly to get closer to an understanding on how they operate (the "mechanisms" that underlie the process from nudge to changed behaviour); and not least (new in this chapter): to discuss how we may reach more solid evidence as regards whether or not the assumed effects actually materialize. We begin our exploration of these questions by examining what the scholarly literature reveals about nudge effectiveness.

## 4.1 Empirical evidence

While there is some evidence that nudges are effective at influencing behavior in ways that enhance well-being, the evidence base appears weak at the current time. On the one hand Thaler and Sunstein's *Nudge* is full of examples of how applying a variety of nudges to different public policy problems, such as tackling obesity or saving the environment, is effective. Le Grand and New (2015, 136) argues that at least some nudge policies, with a particular reference to changing the default option, can increase well-being. David Halpern (2015b), Chief Executive of the UK's Nudge Unit, cites many examples of where nudges have been effective in influencing behaviour change, from strategies to getting job seekers back to work to the use of "social influence" nudge interventions to getting people to pay taxes on time. John's et al (2001, quoted from Moseley and Stoker 2013, 7) used RCTs to test the impact of nudges on promoting civic behavior and showed it had a modest impact. Kusters and Van der Heijden (2015, 286) literature review of 17 nudging trials and evaluations revealed a mixed picture: in some studies nudging achieved its desired outcomes (with one major caveat being that nudge effectiveness seems context dependent), while other studies did not prove successful. Marteau et al (2011) literature review concluded that currently the empirical evidence that nudge interventions used in isolation can improve population health is limited. This reflected both paucity of evidence and evidence of limited or zero effect. In addition, they challenged the assumption of some authors (see Thaler and Sunstein 2009; Dolan et al 2010, 16) that nudging is likely to be cost effective because this has not been subject in general to evaluation.

While many scholars note that nudge theory is built on strong evidence from social sciences with regards to human decision making, challenges persisted with regards to translating these insights into workable policy interventions (Moseley and Stoker 2013, 7). It has been pointed out that nudge is a relatively new policy tool; therefore, it is "unlikely that large scale, cross sector, cross time and cross-country studies have been carried out" (Kusters and Van der Heijden 2015, 288). Scholars have called for more evidence on what works, to what extent, for whom, for how long, in what context, and the size of effects compared to other types of government interventions (Moseley and Stoker 2013; Marteau et al 2011). The scale of this task should not be underestimated in light of the broad range of interventions under the "nudge" umbrella but is needed if governments are to have confidence in the use of individual nudges.

## **4.2 How do we know if nudges work? The importance of evaluation**

Evaluation is important in the field of social sciences because it can provide policy makers and politicians with a range of benefits including evidence on whether policy interventions work, information on cost-effectiveness and an opportunity to learn from the results. One definition is:

*The systematic assessment of the operation, and/ or the outcomes of a program or policy, compared to a set of explicit or implicit standards, as a means of contributing to the improvement of the program or policy. (Weiss 1998, 4).*

Outcome evaluations are a subcategory of evaluation and the aim is to measure the effects/ impacts/outcomes of a single intervention on individuals who are subjected to it.

Nudge is a type of policy intervention where there are social scientific ideas about how the intervention is supposed to work, specifically it claims that by altering the “choice architecture” of a choice you can influence behavior in a certain direction. Weiss’ ‘Theory of Change’ (TOC) evaluation framework is relevant for evaluating nudges, and requires the evaluator to first explain the theory underpinning the intervention in terms of what it is expected to achieve and how, and then to gather data through applying research methodologies to ‘test’ whether the intervention resulted in the desired effect(s) or not (ibid, 55). My key point is that outcome evaluations, which can be theory driven, may provide valuable data on the effects of nudge interventions.

## **4.3 Introducing the nudge: prompted stair use interventions**

We have reported that the scholarly literature is inconclusive about nudge effectiveness with some authors claiming evidence of effects and others a lack of effect. Because the concept of nudge encompasses so many types of interventions, it is fruitful to close in on one policy intervention that there is general agreement constitutes a “nudge” (and also constitutes a nudge based on both interpretations suggested earlier); and then examine in detail the research on this “nudge”. I am keen to choose a nudge of relevance to preventive health policy and concerns increasing physical activity levels. However, since there are so many nudges, and various types of physical activity that can be encouraged, my focus here is on a group of nudge interventions all aimed at influencing a

particular type of physical activity, specifically those that prompt stair use instead of elevators or escalators. These “point-of –decision” or “point-of-choice” prompts, as they are called in the literature, are signs placed near to stairwells, at the bottom of escalators or elevators or on stair-risers to encourage stair use. These signs can be motivational (for example posters or stair-riser banners that contain information about the health or weight loss benefits of using stairs) or directional (such as arrows or footstep symbols that point the way to the stairs) (Bellicha et al. 2015, 293).

Hollands et al (2013b, 23) categorises prompted stair use interventions as an example of an intervention that changes the choice architecture in micro-environments to prompt healthier behavior (and by definition a nudge) in their systematic scoping review. The authors have noted that this is a well-researched area:

Prompting via standardised information or motivational prompts formed a somewhat unique area of the evidence mapped in this review: in relation to the principal cluster of interventions to promote stair use, it comprised a consistent body of primary research, undertaken within broadly equivalent settings and using similar methods, which had been covered in a series of systematic reviews that continue to be updated. (Hollands et al 2013b, 23)

Reflecting on Thaler and Sunstein’s definition of “nudge”, prompted stair use interventions constitute a “nudge” because they involve a choice architect purposefully arranging the physical environment to make certain choices more prominent and thus steer people in directions that can maximize well-being. This type of intervention uses a prompt at the point of decision making, which consist of motivational signs and/ or directional signs, with the aim of ‘producing’ the desired behavior with regards to enhanced physical activity through increasing stair use. It is possible to discern this nudge and, on this basis, it can be avoided by those who it seeks to target, reflecting a core principle of “nudge” interventions that they are avoidable. In addition, the content of information, where it is used, aims to motivate the individual to take action and is salient to the target audience, reflecting another key element of the nudge approach.

While prompted stair use interventions vary, for example in their use of prompt (e.g. directional signs or motivational signs) or messages (e.g. health benefits of stair use or time saved) and in terms

of context (eg worksites or public settings), the desired outcome typically remains constant and is concerned with people increasing their use of stairs when confronted with the alternatives of elevators or escalators.

The table on page 30 builds on Chapter 3 and Appendix 2 analytical categorization of nudge interventions. It illustrates how the design of prompted stair use interventions can vary and explains how this group of interventions, all aimed at increasing stair use, are meant to work.

As the table illustrates, nudges are in practice sometimes used in combination with other interventions, in this case information provision. Stair use interventions can be designed to work through the “core” mechanisms of change by stimulating the semi-conscious processes of our automatic system (i.e. design 2) or the “peripheral” mechanisms of change through primarily appealing to our reflective system to make a decision in our best interests (i.e. design 1). Furthermore, several “mechanisms of change” may underlie a single nudge by working through both the reflective system and the automatic system (i.e. design 3). Nudges that are implemented with other types of policy interventions (here: information provision), increases the number of theories of change or mechanism of change at play simultaneously, and since there may be interaction effects between “mechanisms”, it becomes more difficult to carry out “process evaluations” and disentangle the ways an intervention works (if effect evaluations show that it works).

**Table 2: Categorising nudge interventions that aim to increase stair use**

Design	Example of a study that uses such an approach	Theory of Change: how is the nudge supposed to influence behaviour?	Mechanism(s) of change	Category of nudge
Design 1: Prompting stair use via motivational signs placed near the stairs, escalators or elevators highlighting the health benefits of taking the stairs.	Blamey, Mutrie, and Aitchison (1995) study investigated whether Scottish commuters or shoppers would respond to an intervention consisting of motivational signs encouraging them to take the stairs rather than the escalator. Signs saying "Stay Healthy, Save Time, Use the Stairs" were placed in a city centre underground station where stairs (two flights of 15 steps) and escalators were adjacent.	This nudge informs people of the benefits of increasing stair use and in doing so might work by altering a person's knowledge and attitudes about this activity, and potentially the benefits of physical activity more widely (Soler et al 2010, 293)	Input into the reflective system.	Periphery nudge as it is designed to appeal more to the reflective system.
Design 2: Prompting stair use through directional signs in the form of footstep symbols or arrows placed near the stairs	Green arrows pointing to stairs were put next to railway-station escalators in Copenhagen, in the hope of encouraging people to take the stairs. (Economist 2012)	This nudge works through using arrows, displayed at the point of decision making, to try to influence behavior, by activating the individual to follow them and use the stairs.	Input into the automatic system	Core nudge as it influences behavior in a semi-conscious way.
Design 3 is a mixture of the above interventions, using health information <i>and</i> directional signs to encourage stair use.	A hypothetical study using this approach might combine motivational health signs and green arrows as referenced in the two studies above, perhaps also in a railway station setting	This nudge engages <i>both</i> our reflective system through providing information of the health benefits of stair use and our automatic system through the use of arrows in order to lead to the desired outcome: increased stair use.	This nudge aims to work through several mechanisms of change, both inputting into the reflective system and automatic system	A mixture of a core and peripheral nudge because it both activates our semiconscious processes and appeals to our reflective decision making system.

#### **4.3.1 Why is this nudge relevant to preventive health policy?**

While the main thrust of this chapter is exploring the methodological strengths and weaknesses of “nudge” evaluation studies, we were also keen that our selected nudge is of relevance to health and social policy. The potential of nudges to steer people towards healthier behavior is the subject of intense debate in academic and policy circles. Thaler and Sunstein (2009, 8) claim that obesity is a problem that nudges can solve, and argue high rates of obesity raises questions about the rationality of people’s choices, and that it would be foolish to argue our choices related to diet, smoking and drinking are always increasing our well-being.

We have highlighted some examples of nudges that come under the umbrella of “preventative health policy” (see Appendix 2), and the rise of nudges as a new policy tool can be viewed in part as a response to the perceived weaknesses in information provision approaches to health promotion, which have been described as "at best...modestly effective at changing behaviours" (Marteau et al 2011). It has also been pointed out that nudges have been used ‘successfully’, for example by industry, to nudge people towards unhealthier behaviours, such as eating foods high in fat, sugar and salt, because of the strong impact of environmental factors and the role of our automatic system in shaping our choices and actions (ibid).

Increasing physical activity levels in the population is a global health priority and vital in the fight against obesity, which today affects nearly a quarter of all European adults (WHO 2014). It is recommended that people undertake 30 minutes of moderate-intensity activity 5 times per week (WHO 2015). In addition, WHO guidance outlines a range of measures that society and individuals can take to increase physical activity levels, and two of these measures are particularly relevant to our nudge as they are about including an element of physical activity into everyday activities and having workplaces that encourage physical activity among staff (ibid). It has been argued that incorporating small bouts of exercise into daily life, such as stair-climbing, can contribute to the achievement of current guidelines on physical activity levels (Soler et al 2010; Nocon et al. 2010; Bellicha et al 2015). To conclude, nudge strategies, such as prompted stair use interventions (if effect evaluations show that they work), can be used together with other evidence based interventions in order to provide a comprehensive governmental response to the rising prevalence of obesity affecting most countries of the world.

#### **4.4 Systematic reviews of prompted stair use interventions**

As already noted, interventions that promote stair use is a rich policy area: many studies have been carried out in a range of countries and at least four systematic reviews have been published since 2002. Systematic reviews aim to provide an objective, comprehensive and scientific summary of the evidence on a particular topic by including all studies that meet the reviewers’ criteria (Petticrew and Roberts 2006, 9). They are the best method to address questions related to whether a particular intervention works (ibid). They are important for, amongst other reasons, supporting the development of public policy based on the best possible evidence.

To this end we will consult systematic reviews on prompted stair use interventions to acquire knowledge about if this particular nudge really works and to shed light on what the authors of these review identify as the strengths and weaknesses of the research design of these studies.

## **4.5 Findings from three systematic reviews of prompted stair use interventions**

### **4.5.1 About these studies**

- We exclude from our analysis here the first systematic review on this topic by Kahn et al. (2002) because it has been updated by Soler et al (2010). All three remaining reviews examined the effectiveness of stair use interventions, with Nocon et al. (2010) only including “stair climbing” studies and the other two including both stair-climbing and stair use (where ascent and descent is combined) studies (Soler et al 2010; Bellicha et al, 2015). The main outcome for studies was increasing stair use or stair climbing.
- All reviews reported on changes in stair use/ climbing at baseline and after the implementation of the point-of-decision prompt (PDP).

### **4.5.2 Study design**

- All studies included in the reviews were time-series designs
- All reviews commented on the very different characteristics of the studies concerned with increasing stair use, such as types of prompts used (eg motivational or directional signs), messages displayed on the signs, monitoring periods, and settings.
- Soler et al (2010) noted that no studies on economic effectiveness met the requirements of their review, and Bellicha et al (2015) also noted that a minimal number of studies reported on the cost of the intervention
- Limitations identified included the relatively short duration of the interventions, which means there is a lack of evidence about the long term impact of such interventions. Both Nocon et al (2010) and Bellicha et al (2015) argued there were methodological weaknesses in evaluation studies due to the lack of control groups..
- Bellicha et al (2015) noted that very few studies reported on implementation issues, leading to a recommendation that future evaluation studies pay greater attention to ‘process’ evaluation rather than just ‘outcome’ evaluation



- Bellicha et al (2015) note a lack of attention to external validity in these studies.

#### **4.5.3 Effectiveness**

- Soler et al (2010) review indicates that PDP are effective in bringing about on average a modest increase in stair use as an alternative to the elevator or escalator. Nocon et al (2010) found a significant increase in stair climbing where PDP are used in escalator settings, but no significant increase in most elevator settings. Bellicha et al (2015) found indications that stair use interventions are effective in increasing stair climbing in public settings, but limited evidence of effectiveness in worksites, with the alternative to stairs being an escalator and an elevator respectively.
- Two reviews - Soler et al (2010) and Nocon et al (2010) - recorded no significant difference on the effects of the intervention according to gender, and Soler et al (2010) also noted no differences according to racial groups.
- Bellicha et al (2015) compared different types of PDP (motivational and/ or directional signs) in workplace settings, and found that using both types of signs increased stair climbing in 83% of studies.

#### **4.5.4 Context**

- Only Bellicha et al (2015) separated and analysed studies according to settings, specifically whether they took place in worksites or public settings (such as train stations or shopping malls).
- It appears that stair use interventions are sensitive to context, with the effects being bigger in public settings than worksites.

### **4.6 Summary of systematic reviews and our secondary evaluation**

We have set out how systematic reviews on prompted stair use interventions indicate that there is evidence of the effectiveness of these interventions. The finding that stair use interventions that used both directional and motivational prompts, the latter involving information, increased stair use in workplace settings, suggests that nudge effectiveness can be enhanced by combining governance interventions, and that different “mechanisms of change” may underlie a single intervention (i.e. by inputting into both the automatic and reflective systems). See Table 2, Design 3 for an illustrated example.

Stair use interventions, it is claimed, are likely to be effective for both genders and across different groups in society (Soler et al 2010). Such interventions also appear to be sensitive to context in light of the finding that they are more effective where the alternative to stairs is an escalator. Therefore Eves (2010) argues you cannot generalise about the effectiveness of PDP to increase stair climbing when the alternative to stairs are elevators which, in turn, are more common in worksites. There is an interesting debate in the scholarly literature about whether interventions are context dependent (see Kusters and Van der Heijden 2015), or whether there is a potential for findings to be generalized across different groups in the population or other settings if interventions are based on similar assumptions (Weiss 1998, 71). Ray Pawson (2002) “realist evaluation” approach is relevant here and claims that the same “mechanisms” may operate in many interventions across different policy areas but they are dependent on contexts – they may work in some contexts but not others. He proceeds to investigate under which circumstances and for whom a particular mechanism is likely to have a large effect and where the effect is likely to be smaller. Therefore he attempts to generalize a common “mechanism” across different types of interventions, and argues that the purpose of evaluations should be to investigate the contexts in which a mechanism of change is likely to be effective (or not).

The systematic reviews highlight methodological weaknesses in studies that evaluate the effects of prompts to encourage stair use including: the lack of control groups; the relatively short duration of studies which means limited evidence about long term impact of the interventions; the lack of cost-effectiveness data; lack of process evaluation and lack of attention to external validity issues. We want to drill down even deeper into the methodological strengths and weaknesses of this particular nudge and to see what extent the concerns that are raised in the systematic reviews are reflected in a small-scale secondary evaluation that we will conduct. The key point of this exercise is methodological: how to be certain that a nudge has an effect, that the effect persists across time, that the effects justify the costs, and that the findings are generalizable to other settings. A secondary evaluation involves critically assessing the methodology the authors used to reach their findings, considering amongst other questions, how robust is the methodology, where are the weak spots? This is important if we are drawn to evidence-based conclusions, which take into account the strengths and weaknesses of the methodological approach used in these studies, on the effects of an intervention (here: prompted stair use interventions).

## **4.7 Approach to identifying studies for our secondary evaluation**

I will pick at random ten studies that use prompts to encourage stair use as identified by Hollands et al (2013b) in their large scale scoping review on choice architecture interventions within small scale micro-environments. The limitations of this secondary evaluation are clear, namely that it is based on a sample of only ten studies. Notwithstanding its limitations, our purpose here is to build on the findings of the aforementioned systematic reviews and shed more light on the methodological strengths and weaknesses of studies that aim to promote the use of stairs.

## **4.8 Approach to analyzing studies for our secondary evaluation**

Rossi, Freeman, and Lipsey (2004) identify what to look for when reading through an evaluation-study claiming to have found specific effects of an intervention. They argue Randomised Field Experiments (RFE) constitutes the most methodologically rigorous research design. We can use their work to create a checklist that will allow us to make an assessment of the methodological strengths and weaknesses in the study of nudges that aim to promote stair-use. Our approach is to look in detail at 10 studies in this area and answer the questions below:

- Did the authors claim the intervention had an effect on stair use? Positive or no effect.
- Did they use a control group when assessing the effect?
- If there was a control group, did it take the form of a Randomised Field Experiment?
- Does the study use a time-series design? In time-series designs the same methods to collect data are used at two or more points in time (Seale 2012).600).
- Was the baseline measured?
- Was the outcome measured after the intervention?
- Were multiple measurements of outcome taken before the intervention?
- Were multiple measurements of outcome taken after the intervention?
- Was the study subject to a statistical test?
- Was a cost-efficiency analysis conducted?
- Did the authors articulate the program process? This is to demonstrate that the intervention is carried out to an acceptable standard to have a realistic likelihood of generating the intended effects.
- Did the authors articulate the program theory? This defines the program's objectives and spells out the desired effects
- Duration of intervention

**Table 3: Findings of Secondary Evaluation**

Study	Claim of effect?	Control group?	Randomised Field Experiment?	Time series design?	Baseline measurement?	After measurement?	Multiple measurements before?	Multiple measurement afterwards?	Statistical test?	Cost-efficiency analyses conducted?	Assessment of program process?	Assessment of program theory?	Duration of intervention
Kerr, Eves, and Carroll (2001)	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	12 weeks
Olander and Eves (2011)	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	5 days
Eves, Webb, and Mutrie (2006)	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	6 weeks
Adams and White (2002)	none	N	N	Y	Y	Y	N	Y	Y	N	Y	Y	4 weeks
Andersen et al. (1998)	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	N	1 month
Blamey, Mutrie, and Aitchison (1995)	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	3 weeks
Boutelle et al. (2001)	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	4 weeks
Boen, Maurissen, and Opdenacker (2010)	Y	N	N	Y	Y	Y	N	Y	Y	N	N	N	2 days
Coleman and Gonzalez (2001)	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	N	1 month
Masters and Eves (2006)	none	N	N	Y	Y	Y	Y	Y	Y	N	N	N	2 weeks

## 4.9 Textual analysis of findings of secondary evaluation

*No studies used Randomised Field Experiments (RFE) or control group designs. All studies used time-series design to claim causality*

This finding mirrors the results of the systematic reviews, which also revealed time series designs as the most common research design in prompted stair use interventions. Rossi, Freeman, and Lipsey (2004) (262) views RFE as the strongest research design, which can give the evaluator greater confidence in the validity of estimated effects of the intervention and the robustness of conclusions reached compared to other designs. Therefore, applying Rossi, Freeman, and Lipsey (2004) 'checklist', the dominance of time-series designs for prompted stair use interventions would be regarded as a weakness in the methodology the authors used.

Well-implemented Randomised Field Experiments (RFE), for example Randomised Control Trials, is widely viewed as the 'gold standard' for establishing causal relationships in evaluation studies (Schwandt 2007; Rossi, Freeman, and Lipsey 2004; Howick 2011). In RFE participants are randomly assigned to either an 'intervention group' who receive the intervention under investigation or a 'control group' who do not. Outcomes are measured for both groups and the difference between them is calculated and ascribed to the intervention, with statistical tests providing information on whether the difference in outcomes are due to chance or the likely effects of the intervention. One of the strengths of constructing the two groups using a randomized procedure is that it reduces bias because people have an equal chance of ending up in either group. By having equivalent groups in terms of number of participants and characteristics of interest to the intervention, the control and intervention group are influenced to the same extent by factors external to the intervention (Rossi, Freeman, and Lipsey 2004, 237-238). Therefore, one of the key advantages of using RFEs is that the effects of the intervention can be isolated.

It is interesting to note that the UK Nudge Unit has carried out over one hundred RCTs since 2010 across different policy areas, and it has been argued that many of these RCTs provide "solid evidence" for policy makers and politicians on the effectiveness of behavioural approaches. For Halpern, this rise in "experimental government" is one of the biggest impacts that the Nudge unit has had on the UK government's policy making processes (Halpern 2015b).

While Rossi, Freeman, and Lipsey (2004) put forward a strong case for the methodological superiority of RFEs for assessing effects, they acknowledge that they might not always be appropriate. For example, they can be expensive, time-consuming, require high technical skills, unsuitable for ethical reasons and the decision to undertake them will also depend on the potential importance of the results (ibid, 238). To this end, quasi experimental designs (or control group designs as we will call them) may be a viable alternative to RFEs for assessing outcomes for certain interventions, including our chosen nudge, although we need to be mindful of the risk of selection bias in the way the two groups are constructed. Control group designs also involve establishing a control and an intervention group that are as similar to each other as possible, but participants are not randomly assigned to either group (ibid, 237). Comparing the units that received the intervention with equivalent units that did not is a typical way of telling whether the program was responsible for the desired outcomes or whether other variables were responsible (Weiss 1998, 61).

Our secondary evaluation and the three systematic reviews on prompted stair use interventions included no studies that were evaluated by control group designs and, as such, this appears to be a weakness in the methodological design of these types of interventions. This is perhaps surprising because this “nudge” intervention, and potentially others, lend themselves to small-scale, inexpensive, control-group effect evaluations, arguably better than other public policy interventions, since they tend to be simple and specific interventions and, therefore, it is relatively straightforward to isolate the effects of the intervention from other factors. Further endorsement of using control groups comes from Pfeffer and Sutton (2006, 84-85) who identify the use of small scale experiments as an example of evidence based management. These experiments are similar to control group designs and involve experimenting with new business practices in certain sites (the intervention group) and comparing the results to control sites. If successful, such experiments can provide, according to the authors, evidence for larger scale implementation across organizations.

Some authors question whether it is indeed possible to find a comparable control and intervention site for prompted stair use interventions, i.e. two buildings with similar: users, design in terms of escalators or elevators and numbers of floors (Adams and White 2002; Nocon et al 2010). Adams and White (2002, 280) suggest this may constitute an “inherent constraint” in stair promotion studies, yet Nocon et al (2010, 637) maintains that these studies should use control groups so they are “more methodologically rigorous”. We are also of the view that in order to improve methodological robustness, researchers undertaking stair use interventions should strive to source a

comparable control site, explain limitations of their study if the control and intervention sites are not exactly the same and address criticisms of weak methodological design if control sites/groups are not used. The reasons for doing so are compelling. The fact that there were no control group studies throw some doubt on the strong statements made in the systematic reviews quoted earlier that there was evidence of effect, for example, Soler et al (2010, 292) review reported “strong evidence of effectiveness of the point-of-decision prompt intervention in increasing the use of stairs”. It is interesting to note that Campbell Collaboration systematic reviews emphasise that the best evidence about the effects of interventions is provided by RCTs, and specify strict criteria to ensure evidence from other research designs is credible. To this end, applying the Campbell Collaboration criteria to the studies we considered as part of our secondary evaluation, it is unlikely that any of the studies would have qualified for such a review because they lacked a robust evaluation design (i.e. a RCT or strong comparison group).

#### ***4.9.1 Few studies evaluated cost effectiveness***

As Rossi, Freeman, and Lipsey (2004, 332) points out, as well as knowing about how well an intervention has been carried out and its effects, it is important to know whether the outcomes produced justify its costs, and this is particularly important today in the context of constrained budgets being a reality for many governments. As we noted in the literature review, nudge interventions are widely claimed to be cheap, however, this is impossible to verify without evaluators collecting and analysing data on cost effectiveness. Our secondary evaluation revealed only a minority of studies assessed cost-effectiveness, and limited information on cost of interventions was identified in the studies considered by two systematic reviews (Bellicha et al 2015; Soler et al 2010). The lack of attention to this issue is a methodological weakness in stair use evaluations.

#### ***4.9.2 All studies carried out some sort of statistical analysis***

Rossi, Freeman, and Lipsey (2004, 242) would regard this aspect as a strength of these studies, allowing the evaluator to have a significant degree of certainty that the difference in effect is due to the likely effects of the intervention rather than chance. This was typically an element of evaluation studies that were included in the systematic reviews of stair use interventions.

#### ***4.9.3 All studies measured effect both before and after the intervention***

Rossi, Freeman, and Lipsey (2004, 250) would regard this as a strength of the methodology of these studies, citing statistical advantages to having both measures, arguing that estimates of the interventions' effects are likely to be more accurate when baseline measurements are taken.

#### ***4.9.4 A majority of studies employed multiple measurements of effect before and after the intervention***

Rossi, Freeman, and Lipsey (2004, 250) would view this characteristic of the study as strength of the research design in those studies that measure effects at several points in time. The more the evaluator measures the effect before and after the intervention, the greater the confidence they can have in their estimate of program effect (ibid)

#### ***4.9.5 Only one third of studies explained program theory, and only one study out of ten evaluated the process.***

The lack of process evaluation of stair use interventions was identified in Bellicha et al (2015) systematic review, and identified as a gap in our secondary evaluation. Rossi, Freeman, and Lipsey (2004, 235) puts a strong case for evaluators clearly articulating program theory, which should specify desired effects. Related to this, process evaluation should be conducted together with outcome evaluation in order to demonstrate that the “intervention is sufficiently well implemented to have a reasonable chance of producing the intended effects”(ibid). This sentiment is echoed by Patton (2008, 120) who argues ‘impact evaluation’ must describe implementation processes to enable the evaluator to “discuss and judge the relationship between what was done and was established”. Therefore, the fact that the majority of authors appear not to have spelled out the program theory for evaluation studies nor undertaken some kind of process evaluation can be identified as a weaknesses in some stair use evaluation studies.

#### ***4.9.6 Limitations of claimed effectiveness of studies due to short intervention periods***

The relatively short intervention periods for these stair use nudges, ranging from two days to 12 weeks in our secondary evaluation, means that it is difficult to draw firm conclusions about their long term effectiveness. Evaluators need to be satisfied that data is collected for a sufficiently long enough period of time in order to show that an intervention has led to sustained behaviour change.



## 4.10 Conclusion of chapter

We draw similar conclusions about the methodological weaknesses of prompted stair use interventions as those reached by authors who analysed six studies that aimed to increase the number of people taking the stairs:

Although generally successful in increasing stair use, these studies share a number of methodological weaknesses which limit the conclusions that can be drawn from them. All (...) used a nonrandomized, quasi experimental design with retrospective control to assess the benefits of stair promotion posters. This approach prevents true comparisons from being drawn or external influences on stair use from being excluded. (Adams and White 2002, 273).

It is our view that we cannot make categorical statements about the effectiveness of prompted stair use interventions because our secondary evaluation has uncovered noticeable methodological weaknesses, largely confirmed in the systematic reviews, in the evaluation studies compared to what Rossi, Freeman, and Lipsey (2004) sets out as important when assessing the strength of the methodology of a study. Methodological weaknesses include the lack of control groups, limited articulation of program theory, limited process evaluation and lack of cost efficiency analyses.

We have had a particular focus here on the weakness of methodological design due to lack of control groups because there is general agreement in the literature that methodologies that have a control group have strengths over other methodologies in terms of assessing intervention effects (e.g Weiss 1998; Rossi, Freeman, and Lipsey 2004; Nocon et al 2010). A control group can help the evaluator to assess whether the outcomes are due to the intervention or whether there are other reasons for the effect. Although Rossi, Freeman, and Lipsey (2004) has said control group designs gather less convincing results and are weaker on validity grounds than well-conducted RFEs, they are arguably a good design match for prompted stair use interventions in light of their simplicity and small-scale.

A particular shortfall in evaluation studies for prompted stair use interventions was the general lack of cost-effectiveness studies. Mere effect studies, although difficult to carry out are not enough – politicians would like to know if the effect is large enough to justify the costs. The lack of such studies, which was also remarked in the literature review, is likely to be an important factor when actual policy makers contemplate whether to implement nudges or not. Therefore, we recommend that future evaluations of prompted stair use interventions consider the use of control groups when assessing the effect as well as pay greater attention to assessing the cost effectiveness of these interventions..

It is important to highlight the various strengths in the methodology of prompted stair use studies that our secondary evaluation has highlighted, particularly the gathering of before and after data, use of statistical analysis and how most studies took multiple measurements of effects before and after the intervention, together these are factors that improve the evaluator's estimate of the intervention's effects.

To sum up, our research has demonstrated that even this simple, easy-to-delineate nudge is actually more complex in terms of “mechanisms of change” than one might assume (eg some work through both the automatic and reflective processes of the mind). Although evidence points to prompted stair use interventions increasing stair use at least in some settings (ie in public settings when the alternative to stairs is an escalator) our knowledge is not very certain. This is not to discourage anyone in policy-making from implementing this nudge, but just to illustrate how very difficult it is for science to be absolutely “sure” about anything. Hence, evidence-based policy is in practice often based on the best possible evidence rather than 100 percent certain evidence. And the policy of “nudges” is unlikely to be an exception.

## **5 Nudges and policy implementation**

In the previous chapters we demonstrated that nudge is a broad and contested concept, and offered our own analytical distinctions of nudges based on an understanding of their “mechanisms of change”. In this chapter we continue to dig deeper as to what nudges are by delving into questions such as what is the most effective ways to implement nudges, to what extent does the concept share similarities with “older” types of policy interventions and are nudges really a brand new idea as so often claimed? We draw on the scholarly literature to help us find answers to these questions.

### **5.1 Ensuring the effective implementation of nudges**

It is fruitful to distinguish between nudge as a concept and policies to implement nudges. It is particularly important in the UK Government context because the appeal of nudges is primarily as a non-regulatory instrument for achieving behaviour change. The Senior Government Minister Oliver Letwin said that while:

“there is a considerable place for legislation and regulation (...) where we can achieve an effect that otherwise you would achieve by legislation, either directly or through nudge, without having to regulate, we prefer that route ...” (Lewin, 2010, quoted from House of Lords Science and Technology Sub-Committee 2011, 32).

Furthermore Letwin said that the UK Government set up the UK Nudge Unit to help government departments consider “non-regulatory means of achieving behaviour change” (ibid, 33). The UK Government’s opposition to using regulatory approaches to promote behaviour change, such as legislation and fiscal policies, is usually on the grounds that they are perceived as coercive (House of Lords Science and Technology Sub-Committee 2011, 108).

Because Thaler and Sunstein’s definition of “nudge” emphasises that they do not constitute a mandate, can be easily avoided by those who are the targets and rules out financial incentives, one might assume that the implementation of nudges precludes the use of some government interventions, such as financial incentives or regulations. This position is misleading, and even

Thaler and Sunstein (2009, 252) accept the use of legislation in certain contexts, even though they state their inclination is for “libertarian and less intrusive interventions.” To this end scholars have attempted to separate the issue of what a nudge is from what type of policies are most likely to be effective at enhancing them. Marteau et al (2011) argues that a single nudge may not be enough to create the desired effects, and effective nudging may demand regulations. For example legislation may be required to effectively implement the healthy nudge of displaying fruit at checkouts in supermarkets because the voluntary implementation of this nudge may not lead to it being adopted and therefore have minimal effect. To take another example, Thaler and Sunstein (2009, 203) presents as an effective nudge fuel economy labels (USA) that highlight in salient ways the estimated annual fuel costs of different cars, the aim being to nudge people towards fuel efficient vehicles. In the US car companies are required by law to provide fuel economy information about new cars. One can surmise that by making fuel economy information a voluntary measure for manufacturers may have resulted in this nudge not being implemented, suggesting that the implementation of nudges and their effectiveness may rest on regulations. These examples show that other policy instruments, such as legal requirements, often underpin nudges and may be required for effectiveness. Some scholars (Baldwin 2014, 843; Waldron 2014), however, draw our attention to what they view as a contradiction at the heart of the nudge approach, specifically that nudges might be avoidable for some but not for all, as Waldron (2014) puts it “soft paternalism for consumers” may presume “hard regulation for businesses.”

To dig a bit deeper into this whole issue about options for implementing nudges we explore a nudge that is aimed at limiting over-eating and, thereby reducing prevalence of obesity: reducing plate sizes in restaurants. This involves some kind of change in the physical environment of people. Research by Brian Wansink shows that reducing your dinner plate size from 12 inches to 10 inches results in people serving and eating 22% less (Wansink, quoted from Hansen 2011). In addition reducing plate size has been shown to reduce food waste and therefore contribute to environmentally friendly goals (Kallbekken and Saelen 2013). But how do you get restaurant owners to implement smaller plates? You could seek recourse to the traditional trichotomy of: 1) issue laws and regulations (serving food on plates larger than 10 inches is from 01.01.2017 forbidden in restaurants); 2) incentives (“restaurants that can document their plates have a diameter no larger than 10 inches, can receive a tax subsidy of a specified value” or; 3) provision of information to appeal to restaurant owners to adopt the measure (“ A memo from the Department of Health: Dear restaurant owners, did you know that you can enhance the health of your customers

and at the same time save money by cutting down on food waste by introducing max 10 inch plates?!”). Therefore, the effective implementation of nudges will often utilise traditional governance interventions, such as regulations, incentives or information, but which strategy delivers the most effective outcome is an empirical question and should be considered on a case-by-case basis.

## **5.2 Are nudge strategies alone enough to tackle major policy challenges?**

There is a debate in the academic literature and policy circles about whether nudges used on their own are effective tools to tackle public policy challenges compared to traditional interventions. Marteau et al (2011) highlights the “indirect harm” that might be caused by focusing too much on nudge interventions in the area of improving population health at the expense of potentially more effective interventions. The authors make the case for the continued use of tax and other regulatory instruments to tackle health problems related to obesity, tobacco and alcohol consumption, and suggest that just nudging people in healthier directions is not enough to tackle the scale of the public health problems we face. This sentiment is echoed by Moseley and Stoker (2013, 9) who, while broadly supportive of the further development of nudge strategies, warns against abandonment of “harder” types of government interventions, such as regulations and financial incentives, aimed at influencing behavior. The House of Lords Science and Technology Sub-Committee (2011, 5) agree that nudges alone are not sufficient, and their report concluded that the most effective ways to change the behavior of a population, including in the field of health, is to use a mixture of regulatory and non-regulatory measures. In response to this report, the UK Government said they agree that there are few areas where nudging alone would be sufficient, citing the “necessary” regulatory and taxation regime around smoking and alcohol consumption (Cabinet Office 2011, 8). Finally, Kusters and Van der Heijden (2015, 282) analysis of a range of nudging studies show that nudges are often used as an addition to traditional government interventions, leading them to question whether they constitute an independent governance strategy.

In the main there is agreement in the academic literature that nudges typically need to be used in combination with other interventions if they are to be effectively deployed as an instrument against some of society’s most intractable policy challenges, such as obesity.

### 5.3 The relationship between nudges and ‘older’ types of policy interventions

Thaler and Sunstein (2009, 6) reject as nudges those policies that “significantly” change individuals’ economic incentives, yet *Nudge* contain many cases of nudges that share similarities with other types of policy intervention, particularly incentives and information provision. Take for example fuel economy labels on cars that estimate annual fuel costs to encourage the purchase of more fuel efficient cars, should this be described as a nudge intervention or an intervention based on information provision? Or take a scheme that gives “a dollar a day” to teenage girls with a baby each day they do not fall pregnant, does this intervention constitute a nudge or an approach based on financial incentives? Thaler and Sunstein point to salience as the distinguishing feature that makes these two examples nudges: the first because the nudge is designed to make salient the cost of fuel inefficient cars and the second because the small payment is salient enough to discourage teenage girls from getting pregnant. There is discussion in the literature as to whether you can define an intervention as a nudge just because it is designed in such a way to be salient (Hausman and Welch 2010, 12; Selinger and Whyte 2012, 127).

Hausman and Welch (2010, 127) dispute whether some nudges in *Nudge* fit within Thaler and Sunstein’s philosophy of Libertarian Paternalism. They argue *Nudge* “mistakenly” gives examples of interventions as nudges - and by default “paternalistic” - when they amount to “giving advice” “providing information” or “rational persuasion”, such as health warnings on cigarette packs or signs advising people to drink water on a hot day. Paternalism involves substituting the ‘choice architect’s’ judgement with that of the ‘nudgees’ for their own good, whereas nudges based on information provision do not constitute a paternalistic intervention because it regards individuals as sovereign decision-makers (ibid). Therefore, another aspect of the debate in the literature is whether it is correct to label some interventions as nudges when they instead provide incentives or information to stimulate rational, reflective decision making.

Shifting our focus to large scale policy interventions, Thaler and Sunstein (2009, 196-197) suggest environmental strategies that involve better incentives, including taxes on greenhouse gases or cap-and-trade systems, are nudges by claiming that they are “in a sense a cousin of libertarian paternalism” because people can side-step the tax by ceasing to pollute. Some authors claim these

types of policies are not nudges but instead involve a significant change in economic incentives (Selinger and Whyte 2012, 11) or are coercive (Hausman and Welch 2010, 125).

To summarise, Thaler and Sunstein claim a broad range of policy interventions as nudges by arguing that they are in line with the principles of “libertarian paternalism”, for example because they do not limit choices and aim to improve human welfare, or have other features of nudges, such as salience. However it is contested in the literature as to whether some of the examples presented in *Nudge* are genuine nudges or constitute another form of government intervention, such as financial incentives or information provision. In light of these findings, Selinger and Whyte (2012, 12) suggests another way of categorizing nudge (different from our dichotomy between “core” and “peripheral” nudges presented earlier in the thesis) as “fuzzy” in instances where there are legitimate differences in interpretation among academic authors, an “authentic nudge” or not in fact a nudge. This chapter has uncovered yet more evidence of the wide ranging nature of the concept of nudge.

#### **5.4 Environmental factors**

People’s behaviour is influenced by the physical environment, and Nudge Theory emphasizes that people can be influenced by “small changes” in the context or environment (Thaler and Sunstein 2009, 2). Marteau et al (2011) comments that nudging is not new but builds on established sociological and psychological theory that illustrates how environments effects and limits how we act.

In our everyday lives there are many examples of ‘choice architects’, from advertisers to city planners and architects, deliberately manipulating the physical environment in particular to influence our behavior in ways that we are often not consciously aware. Examples include architecture and marketing. For example businesses can specify that social spaces are created in office buildings to encourage informal working together across different parts of the organization (Myerson quoted from Dolan et al 2010, 84). Research shows that supermarkets that strategically place confectionary by the checkout are ‘successful’ in influencing parents’ purchase of such products as they are pestered by their children as they walk through this area (University of Sheffield 2014). Product placement in TV and films is another example of how advertisers can

subliminally influence consumer behavior. Finally, city planners may design new housing estates that are car-free in order to encourage walking, cycling and social interaction among residents. In these types of interventions the mechanisms that influence people's behavior are often the same as a nudge, namely the activation of our automatic system, although for often very different purposes.

This discussion has highlighted that there is a considerable grey area between the so-called new idea of “nudges” and established interventions that seek to influence people's everyday behaviour, without the individual being fully consciously aware that this is what is happening.

## **5.5 Conclusion of chapter**

While we maintain that Thaler and Sunstein provides a broad yet specific definition of nudge, the examples they use in *Nudge* appear to “stretch” their initial definition and share similarities with other governance tools, for example information provision or financial incentives. Furthermore, we suggest that there is nothing new in the idea that environmental factors influence behaviour, and pre-dates Thaler and Sunstein's concept of ‘nudge’. We have also highlighted that the effective implementation of nudges often requires the use of traditional governance instruments, such as regulations or incentives. Therefore, our key point is that while nudges may sometimes work thorough the “automatic system”; *implementing* nudges typically work through an appeal to the reflective system, as we demonstrated through the example of how you might get restaurant owners to introduce the nudge of smaller plate sizes.



## **6 Translating nudges from academic debates to policy-making debates: An empirical study of the Lillehammer nudge committee.**

The previous chapters have investigated the concept of “nudge” in the academic literature since Thaler and Sunstein’s original contribution; discussed various theories of how they work; and – by going in-depth on the analysis of one particular “nudge” – discussed methodological challenges in finding out if they actually work or not. So far, we have stayed within the academic literature, namely: the academic/scholarly debate about “nudges”, and how nudges work. However, a particularly interesting aspect of Thaler and Sunstein’s book *Nudge* is that it has not only spurred academic activity; the concept has also been taken on board by politicians, and led to political initiatives, in the form of politically appointed departments and committees, both nationally and locally, to come up with concrete proposals for “nudges”, and/or to implement nudges (see discussion in the introduction). This dual nature of the “nudge-debate” – it taking place simultaneously in the academic and political/ policy field – makes it interesting to include in this thesis on what “nudges” are, how they work, and how effects can be measured, also a study of the political and policy side of the “nudge-debate”. Some key questions in this regard: How do “nudges” – a concept originating in an academic setting – enter into a policy-making process? Does anything “happen” to the concept once it is inside such a process? How do politically appointed actors, albeit coming from a range of backgrounds, perceive this tool (or at least: new concept) and relate it to traditional types of policy interventions, such as information provision or incentives? Since this thesis is particularly concerned with “nudges” used as a policy tool with regard to health and social policy, we are particularly interested in policy and political processes surrounding “nudges” aimed at reaching health or social/environmental goals.

In this chapter we carry out our own empirical investigation into a “nudge committee” in Lillehammer, Norway, which was appointed to advise and/or implement nudges. Our purpose is to explore to what extent we find the same issues, problems, and effects related to what nudges are and how they work in the academic literature and in Lillehammer local authority’s Nudge Committee.

## 6.1 Key information on Lillehammer local authority's nudge committee

- The idea to set up a nudge committee in Lillehammer was contained in a proposal from one political party to the local council (“kommunestyre” in Norwegian). The term “local council” refers to an “assembly elected by the citizens of a municipality in charge of the municipal political administration” (Lexin Online dictionaries). Specifically, the Green Party (MDG) wrote an “interpellation” that proposed the creation of a committee to implement nudging measures in Lillehammer local authority. An interpellation is a “question from a member of parliament to a minister of the government” (ibid). At a local government level it is the formal right of locally elected politicians to submit formal questions to the leadership of the local authority (e.g. the Mayor).
- The interpellation put forward the case for nudges as small, cost-saving measures that can make it easier for Lillehammer's citizens to make environmentally friendly choices. The interpellation was considered by the Mayor who responded by recommending instead that nudging was included as a concrete measure in Lillehammer's Climate Plan, which was under development. The local council voted for the interpellation instead of the Mayor's suggestion and thus a nudge committee was born on 24 April 2004.
- The mandate of the committee isn't set out in a separate document but is taken from the interpellation that was passed in the local council. The decision is as follows:
  1. The municipality puts down a committee to investigate the potential of nudging in Lillehammer. The committee shall formulate measures and seek project funding.
  2. The municipality introduces the measures that meet the requirements for climate friendliness, cost savings and/or health benefits.<sup>2</sup>

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<sup>2</sup> Original decision from Lillehammer local council: 1. Kommunen setter ned en komite som skal undersøke potensialet nudging har I Lillehammer. Komiteen skal utforme tiltak og søke prosjektmidler. 2. Kommunen innfører de tiltakene som oppfyller krav til klimavennlighet, kostnadsbesparelser og/eller helsegevinst.

- The committee has a secretary, from the administration, and leader, who is a politician.
- There is no ‘expiry’ date for the committee.
- There are no formal reporting structures for the committee, but the secretary has updated the municipal executive committee - representatives of the local council that prepares cases to be considered by the full local council - about the work of the committee. The two politicians on the committee have met with the chief officer of the administration at their request.
- The first meeting of the committee took place on 23 June 2014. The committee meets approximately once a month for up to 90 minutes.
- As of 5 November 2015 there were 8 committee members: two local (municipal) politicians, a representative from the administration, an academic from the local University College, a masters’ student, a PHD student, a representative from the local refuse company and a behavioural analyst.

## **6.2 Fieldwork in Lillehammer**

I heard about the establishment of Lillehammer local authority’s nudge committee when doing background internet research on my thesis, using search terms along the lines of “nudging in Norway”, and found news articles on Lillehammer local authority website as well as psykologisk.no (translated as psychological) about this initiative. I first made contact with Lillehammer Nudge Committee on 17 May 2015 expressing interest in their work and asking if I could evaluate a “nudge” that Lillehammer local authority were planning or in the process of implementing for inclusion in my thesis. I received a response from them on 10 June 2015, which included an invitation to attend their next meeting and some minutes of previous meetings. Although I originally proposed evaluating one of the committee’s nudge interventions, this was not in fact feasible as I was limited by a one-year study and instead I received their permission to include the experiences of the nudge committee in my thesis. I followed the work of the Lillehammer’s nudge

committee in these ways: attending three meetings (31 August, 12 October and 2 November 2015), having access to some minutes of meetings and other documents of relevance, and conducting qualitative interviews in November 2015 with eight current and former members of the committee. Five interviews were carried out face-to-face and three were carried out over the telephone, and interviews lasted approximately 30 minutes. My last correspondence with a member of the committee was on 2 December 2015.

### **6.3 Ethical approval for the study**

Ethical issues are a major concern when carrying out social research and should be considered during all stages of a study, from framing the research question to presenting the findings (Bryman 2012, 130). Major areas of ethical concerns in the field of social research, include harm to participants, lack of informed consent, invasion of privacy and deception (ibid, 143). To help the researcher navigate the ethical issues that may arise during a study, various social research bodies (e.g. the the Norwegian National Research Ethics Committees) and scholars (e.g. Bryman) have developed ethical guidelines. I received ethical clearance for my research from the Data Protection Services for Social Research in Norway (hereafter NSD). In order to adhere to NSD's ethical requirements, prior to the interviews I provided information to my potential informants setting out the purpose of my study, what participation implies, that personal data and information divulged during the interview will be treated confidentially and the ways in which the empirical data will be stored and used in my thesis to ensure participants' anonymity (see Appendix 3). All eight informants gave informed consent to take part in my study, and were made aware that they could withdraw from the study at any point.

An issue that I am particularly mindful of is ethical considerations surrounding the presentation and dissemination of my work. I am aware that the publication of the work may have possible political consequences for my informants, for example they are generally positive to the potential of nudges and need to be prepared that my independent research may produce results that are not what they expect. It is, however, my ethical duty to draw conclusions based on the empirical data collected. This requires the researcher to be transparent with informants that my thesis is an independent piece of research. The committee operated independently from the political leadership of Lillehammer council, and was not given a dedicated budget.

## **6.4 Discussion of methodology for the empirical study**

As previously stated, I attended three meetings of the nudge committee. I presented myself and my research interest at one meeting (31 August 2015) and asked members questions in order to gain a better understanding of the work of the committee. I did not seek permission to tape record any of the committee's meetings because I was concerned that this might inhibit discussion in some way and, therefore, I mainly used the meetings and minutes of meetings for background purposes. Although I was drawn into the debate at some meetings, I tried to assume the position of observer. A major advantage of attending meetings and becoming more familiar with some committee members was that it facilitated the building of trust between myself and potential informants and made it easier for me to approach members to gain their permission to participate in my study. I was successful in the sense that the majority of current and former members of the committee agreed to participate in my research.

I read minutes of meetings, some corporate documents from Lillehammer local authority and the interpellation primarily as background sources on the work of the nudge committee, which helped me to structure the interview guide (see Appendix 4), write some background material on the committee for inclusion in this thesis and also have sufficient knowledge about the nudge committee in order to carry out the interviews in a credible way.

The main method I used to obtain data was qualitative interviews, which are in-depth, loosely or semi-structured interviews Byrne (2012, 208). Benefits this method offers the social researcher include: insight into informants' attitudes, values and feelings; flexibility; the opportunity to raise sensitive issues; and the ability to explore responses in greater detail to bring out contrasting perspectives (ibid, 211; Tonkiss 2012, 232). Reflecting on my experience of using qualitative interviews, they did indeed provide me, the researcher, with a means to explore in depth people's ideas and experiences of applying the concept of "nudge" to a range of public policy issues in Lillehammer. The interviews also provided me with the flexibility to probe the informant if I was unclear about their meaning or wanted to dig deeper into their understanding or view of a particular issue. I believe the interviews were an appropriate method to uncover what was going on inside the committee, and between the committee and its relevant political and administrative environments, and gave respondents the opportunity to speak openly and honestly about their experiences. Such openness, I believe, would have been difficult to achieve if I had used an alternative research

method, such as focus groups. Furthermore, during the analysis process, I was able to bring to the fore differing viewpoints about what nudges are, which illuminated elements of the literature review and confirmed earlier findings in the thesis, such as the broad scope of the concept.

On a more practical note, there were particular benefits of carrying out interviews compared to focus groups, such as the flexibility that interviews provided my busy informants to choose a date and time for the interview that suited them. In contrast it probably would have been difficult to have found a convenient date and time where all eight informants could have attended a 1-2 hour focus group discussion. I explore in greater depth the limitations of this method, including issues surrounding subjectivity of the researcher, after my analysis of the qualitative interviews.

## **6.5 Analytic strategies**

The strategy used to analyse the empirical data is thematic analysis, which is concerned with extracting key themes from one's data (Bryman 2012, 717). This approach provides the researcher with flexibility because, as Schwandt (2007, 291) comments, it does not depend on "specialised procedures of analysis" Thematic analysis was facilitated by the audio recording of interviews and the production of transcripts. The transcripts were studied to identify key themes in the interviews, as well as deviant cases and similarities and differences between informants' responses. Quotations from the interviews are used to support analysis. My research questions and findings from the academic literature provided a structure for analysing and reporting my empirical research.

## 6.6 Findings and analysis of the qualitative interviews

### 6.6.1 Influenced by international debate on nudges

Our introduction highlighted the strong impact of Thaler and Sunstein's book *Nudge*, manifest by high book sales, considerable media coverage and the establishment of national 'nudge units' in the UK and USA. Our empirical research shows that Lillehammer local authority and members of the committee have also been influenced by the debate surrounding the book. For example one informant commented how interest in nudging was sparked by a radio programme and the work of "GreeNudge", a high-profile organization in Norway that promotes nudges to influence environmentally friendly choices.

*I listened to a radio program a couple of years ago and then I got interested in it and started to read about it and then saw GreeNudge and what they do, and it woke me up to the idea.*

Informants reflected on national and international interest in nudges, for example, how what they were doing in Lillehammer had generated media and political interest, and how they were aware of nudges being implemented in other countries. For example:

*We see nudges being implemented effectively in other places. Lillehammer in general is a forward thinking city. We are the first nudge committee in Norway.*

There was a sense conveyed by the informants that nudging was an exciting new idea being debated and experimented with across the world. In this context, the setting up of the first committee in Norway to explore the potential of "nudge" strategies was associated with Lillehammer being an innovative and trail-blazing local authority where new ideas are tested. Some of the committee members articulated that the establishment of the nudge committee seemed to represent a shift in the type of policy instruments that Lillehammer local authority uses towards behavioural approaches, as these two quotes from two different informants illustrate:

*It (nudging) is a way of introducing behavioural science to the politics of a municipality.*

*It is a new beginning for Lillehammer local authority to start thinking in that direction.*

To summarise, in the main the academic literature had a focus on how the publication of *Nudge* generated wide interest in media, political and policy circles. Not only has this debate influenced parts of the academic community to further explore and test the new concept, but it was also an important factor that led to the establishment of the Lillehammer nudge committee as a means of bringing this very popular concept into the policy making processes of a Norwegian local authority.

### **6.6.2 What are nudges?**

Broadly speaking, interviewees defined nudges as approaches that can influence people's behaviour in environmentally friendly or healthier directions. Some respondents spoke in terms of nudges as arranging environments to influence people's choices, which reflected the main definition of nudge provided by Thaler and Sunstein (2009, 6) and largely adopted by the scholarly literature. To illustrate this point, one respondent defined a nudge as:

*the set-up of the environment, either physical or non-physical, to help or support people make better choices whether financially, health wise or environmentally friendly.*

There were differences in terminology used in the academic literature and by informants, for example the term "choice architecture", which we identified in the introduction as being at the heart of the nudge concept, was not used by interviewees. Some committee members, in a similar way to the scholarly literature, emphasised the contribution of cognitive psychology to developing the nudge concept, and a majority of respondents highlighted the strong evidence base behind nudge approaches. The academic literature tended to describe nudges as comprising of different types of interventions (such as defaults, framing devices), and this was reflected to some extent in the interviews, for example, one interviewee described nudge as a "collection of situational interventions focussing on the physical environment" and another informant associated nudges with tools such as prompts and reminders. One of the ways in which informants showed awareness that nudge is a broad concept, a key finding from the literature review, is by acknowledging that



nudges could be applied to a wide range of policy areas, such as financial decisions or taxation policy, while maintaining that the focus of the committee was on changing environmental and health behaviours.

The nudge committee members often defined nudges in terms of their characteristics. For example, informants often described nudges as small-scale, simple, low-cost and voluntary interventions that make it easier for people to perform desired behaviour(s), for the wider good, without people being aware that they are in place, as these quotes illustrate:

*A nudge is a small intervention that is supposed to work on people's behaviour in a way that they don't feel manipulated, for the greater good. They can help people make the right choices without having to think too much about it.*

*An action that makes it more easy to make the right decision. ....Like a push in the right direction but not forcing anything.*

Reflecting on the two different interpretations of nudges proposed at the end of Chapter 3, data from the interviews supports the version of nudges as small-scale policy interventions that aim to influence the small, day-day choices that people make.

The literature highlighted that nudges work primarily through the automatic system, although some scholars identified that some nudges engage the reflective system and emotional processes. In contrast, interviewees spoke mainly in terms of nudges working semi-consciously, inputting into the “automatic system” (using Thaler and Sunstein’s language), and operating through “core mechanisms of change” (using our analytical categorisation of nudges).

### **6.6.3 Nudge as a wide ranging concept**

Committee members debated what it means to nudge people. Alluding to disagreements among committee members, one interviewee clarified that nudges are not about “punishing people.” Another informant argued there was “confusion” among some committee members at meetings

about what nudges are because coercive measures or information provision did not equate with this informant's understanding of "nudge":

*because many of the ideas sometimes have elements of forcing people and just giving information and trying to make them make pro-environmental choices and that is not my exact understanding of nudges.*

There was further evidence in the interviews of informants reflecting on some of the debate at committee meetings and questioning whether some of the proposals discussed there were in fact nudges, according to their definition. For example, the nudge committee was involved in a competition with local schools to get ideas for reducing energy use, and one informant questioned whether this initiative constituted a nudge because "nudges don't require people thinking too much", thus the respondent was associating nudges with semi-conscious thinking.

One other policy suggestion that had been discussed several times in the committee was providing more parking places and charging stations for electric cars as well as reserving the best car-parking spaces for these cars, to make it easier for people to make more environmentally friendly vehicle choices. Can this example be classified as a nudge because, in Thaler and Sunstein's language, it involves the choice architect arranging the environment to "nudge" or encourage electric cars over more polluting vehicles? Or would it be an example of the local authority merely providing more car parking spaces and facilities for this increasingly popular type of car and in light of the council's target of 20 percent of zero emissions cars by 2020? Or is it simply evidence of a popular concept (here: nudge) being used to put forward or make more visible a specific policy agenda (here: infrastructure for electric cars)?

These examples seem to confirm the view of some scholars (eg Hollands et al 2013b, 9) that "nudge" hasn't been defined clearly enough by Thaler and Sunstein and as it stands can incorporate a huge number of behavior change interventions, making it vulnerable to various actors "stretching" the concept for their own purposes. Reflecting on the scope of the concept, one informant commented:

*It is a very open concept and can be used for all sorts of reasons. Maybe this is also one of its weaknesses. It might appear a bit simplistic and you might oversell it.*

#### **6.6.4 The ethics of using “nudge”**

We highlighted that in the academic literature the case against nudges was often on ethical grounds, for example, nudges were regarded by some as manipulative of human-weaknesses influencing people without their conscious awareness. While one interviewee said that part of the role of the nudge committee was to debate the ethical aspects of nudges, overall there was limited reference to possible ethical issues raised by nudges among respondents, although it is important to point out that the interviewees were not asked this question directly. One informant appeared to show awareness of the ethics of “nudge” when commenting that nudges often work without people’s knowledge: “sounds a bit like manipulation but it is very small”. The interviewee appeared to defend the potentially manipulative aspect of nudges in order to influence people’s environmental behaviour as appropriate in relation to the scale of the environmental problems facing us. One possible explanation for why members of the Lillehammer nudge committee did not focus on the ethics of nudge was perhaps because they viewed nudge as a harmless, legitimate, small scale intervention to help people do the “right thing” for the “greater good” that did not in fact raise significant ethical concerns. Self-selection might also be a factor: people who did not or do not think nudges are legitimate, are unlikely to volunteer to sit on this type of committee.

#### **6.6.5 Exploring their appeal to policy makers and politicians**

When the nudge committee were asked for ideas as to why nudges were appealing to policy makers and politicians, similar ‘pros’ of nudges were identified by the interviewees and in the literature, for example, respondents identified that they represented small-scale, cost-effective, evidence based and voluntary interventions, and these characteristics were appealing to politicians. Some informants suggested that the “voluntary” nature of nudges boosted the election chances of politicians because using stronger measures to change human behaviour, such as legislation to reduce car use, were politically unpopular:

*The aspects of it (nudges) being non-intrusive and non-invasive, that you shouldn't notice you're being guided in more environmentally friendly or health friendly directions, is part of the appeal for policy makers so if we can design the physical environment, e.g. signs, that can impact people without them even noticing, it is easy*

*for a politician to say ok we can do that because they don't have to worry about being re-elected.*

Many informants focused on nudges as cost-effective interventions, in terms of saving the council money through changing human behavior in environmentally friendly directions and the low-cost of designing and implementing them. This was identified by some informants as a particularly important feature of nudges in light of the tight financial circumstances faced by many local authorities in Norway. Indeed, nudges as cost effective interventions was put forward as one of the key reasons that the proposal (interpellation) to set up a nudge committee got passed with broad political support:

*I have an environmental perspective but for politicians it's always economic. Here you can have both, it's (nudges are) like a 'kinder egg'. Small changes and you will save money and have other (positive) effects on health and the environment.*

Interestingly, one interviewee articulated that there were differences among committee members as to whether the “main function” of a nudge is “saving money or making it easier for the public to act pro-environmental”. The respondent clarified that saving money might be a by-product of using nudges and “a good thing” but “is not the main reason for this committee.” As reflected in the literature, the claim is made by some scholars, not least by Thaler and Sunstein, that nudges are cheap policy tools and/ or can deliver cost-savings, but there is a lack of hard evidence as to whether this is the case, as illustrated by ‘prompted stair use’ interventions that we explored in detail in the previous chapter which lacked cost effective analyses. Our empirical research strengthens the case for future evaluation studies of nudge interventions to pay greater attention to the cost-effectiveness of nudges for two key reasons: 1) to strengthen the evidence base in this area and; 2) in light of the importance of this factor for politicians and policy makers in determining whether interventions are adopted or discontinued.

#### **6.6.6 Nudging as an important health and social policy tool**

The role of the committee, as set out in the mandate, is to promote nudges that bring health and environmental benefits, and most committee members identified this as the policy focus of the

committee, although the emphasis was on nudges that encourage environmentally friendly behaviours. Most interviewees identified nudges as having the potential to make a contribution to changing human behavior to solve some of today's environmental problems, although there was recognition, as there is in the literature, that other governance interventions, such as taxation, subsidies or incentives, are needed alongside nudges to tackle the scale of the environmental problems we face, as this quote illustrates:

*You need a whole range of packages to influence people's behavior; this is an established fact in environmental psychology and health literature*

#### **6.6.7 Limitations of nudges and narrow remit of the nudge committee**

There was a sense conveyed during the interviews that informants felt constrained to a certain extent by the mandate of the committee and the philosophy of libertarian paternalism on which "nudge" is based because, as one informant put it, they needed to "stay away from big issues..(as this would require incentives or rewards)". Another informant commented how other strategies to achieve environmental behavior change "might be more problematic from a libertarian paternalist perspective". Reflecting on the committee's mandate, one informant returned to their definition of "nudge" that places an emphasis on them as small scale interventions that can influence behavior, to justify the perceived narrowness of the mandate:

*The mandate is slightly too limited but we're not a committee with large powers and it can be important to do small things and be an inspiration.*

One of the challenges that several informants highlighted was coming up with ideas for "small" nudge projects that fit the mandate of the committee, constituted a "nudge" and had gains over other potential solutions in terms of efficiency, effectiveness and cost. For example, it was pointed out that technological solutions to reducing electricity use, such as light sensors, might be more effective than 'nudging' people to do the same.

### **6.6.8 Nudges as a vehicle for driving forward environmental policy in the local authority**

It is also worth mentioning that several members of the nudge committee said that their interest in nudges, as well as other approaches to achieving behavioural change, was primarily from an environmental perspective. Therefore, one could argue that some informants perceived strategic value in nudges, specifically that the establishment of the nudge committee and the popularity of nudges as a concept, as an opportunity to increase the visibility of environmental issues in the local authority for the greater good. As one informant put it, you should not underestimate the “symbolic effect” of having a nudge committee in a local authority that has a focus on promoting environmental friendly actions.

### **6.6.9 *Measuring the effects of nudges***

Interviewees were asked for their ideas on how to measure the effect of nudges. They were asked to illustrate their responses with respect to a nudge intervention that either painted footsteps to stairs to encourage stair use or to rubbish bins to encourage the correct disposal or recycling of rubbish as these were two nudges that had been discussed on several occasions by the committee. Measuring the effects of nudges and demonstrating that they have an effect was identified by informants as an important matter for governmental organisations for a number of reasons: particularly in the context that nudges are a new policy instrument and people need persuading of their merit, and the financial pressures on public finances has increased the focus on low cost, evidence-based and cost-effective policy interventions.

Reflecting on what Rossi, Freeman, and Lipsey (2004) identified as important strengths in the methodological design of evaluation studies, we can see that committee members cited similar issues, including: the need to measure effects before and after the intervention; having a control group or site and the importance of measuring effects over a longer time scale to get a better picture of a particular intervention’s effectiveness. Respondents had many ideas concerning the practical implementation of nudges and how you might go about measuring effects, such as: using ‘electronic counters’ to measure changes in stair use; observations; weighing or “pluck analysis” of rubbish to see if the intervention was effective in getting more people to use the rubbish bins or recycle; and interviews or questionnaires. One respondent suggested that you “continually nudge things”, i.e. have the effective intervention permanently in place, to reduce the occurrence of people returning to

their behavior pre-intervention, in response to two issues that have been highlighted both by scholars and by several respondents, namely the perceived low cost of implementing nudge interventions and in response to the challenge concerning how do you sustain desirable behavioural change.

There were differences in opinion among respondents about how easy it is to measure the effects of nudge interventions, with one respondent arguing that an advantage of nudges are that “you can in fact measure effects” with others highlighting difficulties in this area. For example, the complexity involved in measuring the effects of some nudges was illustrated by some informants with the example of the so-called “nudge cup”, a nudge intervention that had been discussed in meetings and was the idea of giving local authority staff a ceramic cup to cut down on waste from paper cups and save soap and thus aimed to make people aware of the “carbon footprint” of their actions. As one informant explained:

*Lots of questions have to be asked to make sure it has an effect. It has to do with how much you clean, use hot water and detergent used. You can't suggest things off the top of your head but need to speak to staff in the council to make sure it can be done.*

The difficulties in measuring the effects of this nudge was put forward by informants as a reason as to why it hadn't been implemented, and it also highlights another implementation challenge brought to the fore in this empirical study, namely that responsible policy makers or practitioners need to have the necessary skills and time to design, implement and measure the effects of nudges.

Other methodological challenges of working with nudges noted by respondents were the “reactive effects” of taking part in an intervention, i.e. if an individual knows they are being “nudged” to perform certain actions, would they conform or do the opposite? . This issue has been hotly debated in the academic literature, and has been characterized in terms of a trade-off between transparency and effectiveness (Le Grand and New 2015, 143). One respondent argued that they should not hide the measuring devices (i.e. electronic step counters) and, therefore, the authority would need to be open about the nudge. Another respondent commented that in order to counter potential opposition to nudge interventions, implementers need to put a strong case for why the nudge in question was being implemented. While the respondents who made these observations in the interviews did not

link their comments to the ethical debate related to nudges, they reveal an awareness of some of the ethical problems raised by nudges and their suggestions of how to respond to such challenges is concerned with increasing transparency.

This empirical study revealed disagreements among committee members about whether you needed to measure the effects of all nudge interventions that were under consideration. One respondent needed more “convincing” on whether to measure the effects of some nudges, specifically mentioning nudges that aim to increase stair use and nudges that aimed to reduce food waste by reducing plate size, because evaluation studies have “proved” that they work. By way of clarification, it was likely the informant selected these two nudges as examples because they had been discussed at committee meeting and/ or publicized by GreeNudge. This viewpoint could be presented as a “deviant case”, and even the respondent recognized that this viewpoint was probably not held by other committee members. By exploring deviant cases we can draw attention to the ‘norms’ held by most respondents, specifically that it is important for the local authority to measure the effects of interventions that they implement. The same informant did backtrack to an extent with the suggestion that there could be factors particular to Lillehammer that might affect the results of a specific intervention, reflecting the importance of context. Another informant argued that context matters and nudges have to be designed to fit Lillehammer’s particular circumstances. The debate taking place in the nudge committee mirrors, to some extent, the debate among scholars with regards to the generalizability (or not) of policy interventions. For example, the view of scholars such as Weiss (1998) is that it is possible to generalize about the effects of interventions if they are based on similar assumptions. In contrast scholars such as Kusters and Van der Heijden (2015) argue that context matters, and just because an intervention works in one setting, doesn’t mean it will work in another. Therefore, our empirical research revealed that informants had an awareness of debates about generalizability of social research, and such debates about whether some nudge interventions are sensitive or not to context is also present in the academic literature.

The researcher was particularly struck by the comprehensive and thoughtful way in which committee members addressed interview questions related to how to measure the effects of nudge interventions and the challenges involved, which seemed to confirm that the Nudge Committee was made up of members with considerable knowledge of how to carry out research projects, measure effects and analyse results. Perhaps this observation isn’t surprising in light of the strong academic background of many members of the committee.



### **6.6.10 Categorising the work of Lillehammer’s Nudge Committee**

Drawing on the wording of the interpellation, we have described the committee as one that was appointed to advise and/ or implement nudges. The interviews revealed a lack of clarity among respondents about the mandate of the committee, whether it was broadly speaking an implementation committee or an advisory group, and whether the targets of nudges were the local authority employees or citizens of Lillehammer.

*It is a broad group and we have lots of good ideas. Very good discussion. But it’s not clear how we make these brainstorming into action*

*We are an advisory group right now*

*I’m more of an advisor*

*It can be a kind of expert group for the council that can be asked to suggest things for them*

*The main problem this group is facing at the moment is turning something into life and not just talking about good ideas.*

Reflecting on data from interviews and minutes of meetings, the Lillehammer nudge committee’s work seems to be in-between a think-tank for the city council on nudge interventions and an academic resource on nudges, rather than an implementation committee, and this is illustrated by its mandate which doesn’t specify any control over administrative and other implementation resources.

### **6.6.11 Challenges – public/ staff involvement and communication**

Interview respondents identified various challenges related to the practical aspects of implementing nudges in Lillehammer local authority: 1) the need to convince staff in the local authority of the value of this new approach; 2) raising awareness of the nudge committee and building commitment for its work among the political leadership and senior members of the administration. Proposed solutions included the implementation of small “nudge” projects and demonstrating that they are effective. An interesting comparison is the experience of David Halpern, Chief Executive of the UK’s Nudge Unit who in his book “Inside the nudge unit” said that nudges and the Nudge Unit initially faced deep skepticism from policy makers partly because the application of insights from

the behavioral sciences to UK government policy represented a new approach. However, he claims, they managed to win over these skeptics by testing out various nudges (and other behavioural approaches) using RCTs and, therefore, over a two-year period they were able to provide policy makers and others with evidence of their effectiveness. In a revealing quote Halpern said: “Behavioural Insight Team’s experiments showed that seemingly small changes could have big effects and most of the interventions cost virtually nothing.” (Halpern 2015b)

A further challenge, identified by some informants, was the need to work in partnership with other staff from the local authority and relevant organisations to ensure the effective implementation of a specific nudge. For example, one informant commented that you need to give people a good explanation for the proposed intervention:

*People in the council have to agree that it is a good idea because some people might see it as an annoyance and that is a problem with implementing nudges*

Potential solutions to this challenge, suggested by informants, included involving the targets of the nudge, for example council employees or local citizens, in the design of nudges and other environmental behavioural approaches to spark innovation and enthusiasm. The importance of citizen engagement in designing nudge strategies, particularly for controversial or sensitive issues, is raised in the literature by scholars such as Moseley and Stoker (2013, 9) who argue such an approach can increase the chance of the intervention generating long term behavior change.

## **6.7 Methodological awareness**

An important aspect to being an accomplished social researcher is to show a self-reflective approach throughout the research process, including towards the methods used to answer the research question(s), the analysis process and conclusions drawn. Here is one definition:

Reflexivity involves critical self-scrutiny on the part of researchers, who need at all stages of the research process, to ask themselves about their role in the research ... It involves that the researcher approaches the research from a specific position and this

affects the approach taken, the questions asked and the analysis produced. (Byrne (2012, 213).

I am a researcher who is white, female and middle class. By clarifying my position as a researcher at a personal and political level, I recognize that ‘who I am’ may have influenced my study. Reflexivity has been identified as an element of ethical practice (Bryman 2012, 39, 151).

Byrne (2012, 213) argues that differences between the interviewer and interviewee, such as age, gender, class, ethnicity, may influence the interaction. For example the respondent may withhold some relevant information, or they may only share experiences that they think the researcher wants to hear. In the context of my research, it is possible that carrying out the interviews in English, when the informants’ first language was Norwegian, affected the quality of the data. Generally speaking the respondents’ standard of English was high, however, there were times when some interviewees struggled with finding the right word or express themselves in English. While this represents a possible limitation with the empirical study, I am of the view that the respondents were able to answer all my questions and express themselves clearly enough despite the fact that all were responding in their second language. This may be because the English language is widely spoken and understood in Norway.

My experience of conducting the interviews gave me an insight into the power of the interviewer to frame the discussion. For example, I referred to the fact that the ethical debate concerning nudges wasn’t a major preoccupation of informants in the interviews; however, perhaps if I’d have asked a direct question on this topic, such as ‘do you think nudges raise any ethical considerations?’ it may have revealed a greater interest in the ethical debate. Nevertheless, I believe my analysis was measured because I was careful to point out that ethical issues were not raised voluntarily by informants, and also highlighted some parts of the interviews where respondents appeared to refer to ethical concerns. I also said in my data analysis that the interviewees didn’t use the term ‘choice architecture’ when defining a nudge, and this may also be because I, the interviewer, didn’t introduce the term during the interview, again perhaps indicating how the interviewer can shape the discussion and terminology used by informants.

Part of having a reflective approach to research, requires the researcher to question their use of the data. In terms of my study, I need to question whether my analysis focused too much on certain pieces of data and disregarded other data, perhaps because the former was more in line with my personal opinions about nudges, and thus reflecting my own biases. In an attempt to overcome these problems, I tried to immerse myself in, and become familiar with, all my data, so that I could draw as much as possible on all the different perspectives the research uncovered. When using my data I have also tried to show awareness of and present deviant cases. In addition, I have sought to support my analysis with empirical evidence.

I found that I had a wealth of information from a small number of interviews, and I wasn't able to analyse all the information because my analysis was driven by my research questions and a comparison of findings from the literature about the issues related to what nudges are and how they work with the perspectives of nudge committee members. Issues periphery to this focus, while interesting, could not be included. I also wanted to highlight that that my research focus shifted during the course of my thesis, so whilst my interview schedule had many questions that sought to understand the committee's links to decision-makers or strengths and weaknesses of a nudge committee to take forward nudges, much of this material didn't end up being used, instead my data analysis emphasized issues such as how did the committee define nudges, what are the pros and cons of using them, in order to make comparisons with the academic literature. This is sometimes what happens when one carries out research and is not methodologically problematic as long as the researcher is aware of such shifts in focus.

Although my research did not constitute a process or outcome evaluation of the nudge committee, my experience made me reflect on the potential value of using interviews as an evaluation tool, specifically because it provided a space for my informants to reflect on their involvement in the nudge committee and nudge as a policy instrument. While conducting the interviews I felt the interviewees took the process seriously, carefully considered my questions and delivered thought-through and thoughtful responses. The evaluation literature points to some of the "soft outcomes" of evaluation, such as has the experience led to different actors coming together or sparked ideas into how different policies could be enhanced? (Kosters and Van der Heijden 2015, 285). Patton (2008, 109) argues the process of being involved in an evaluation can be of intrinsic value to participants and can encourage, for example, reflective thinking or a change in behaviour. I can only speculate

as to what my informants gained from participating in the interviews, but will never know for certain.

## **6.8 Conclusion of chapter**

In this chapter we have identified many similarities between the kinds of issues and problems that have been aired in the academic literature, and those aired in a nudge-committee appointed to advise and/ or implement nudges in Lillehammer, for example awareness of nudge as a broad concept, an emphasis on nudges working at a ‘semi-conscious’ level and differences in opinion about what nudges actually are. The committee members raised many of the issues that we concluded as vital issues in the secondary evaluation of the prompted stair use intervention, such as the importance of cost-effectiveness, generalizability, the value of control groups and the need to measure effects over sufficiently long timescales. Furthermore, methodological robustness, evidence of effect and cost effectiveness was identified by informants as important factors for winning over actual decision-makers (in this case: the council in Lillehammer).

The empirical study has revealed that members of the committee are enthusiastic about “nudge”, a new potential tool, but perhaps also that a new concept has certain actors being tempted to define policy suggestions they already have under the new umbrella of a popular concept. If actors start to re-define earlier proposals as “nudges”, this might work to stretch the initial concept. In contrast the debate in an academic setting has typically involved scholars drawing attention to the broad scope of the concept of nudge as defined by Thaler and Sunstein, followed by testing and experimenting with the concept in order to enhance conceptual clarity.

One of the most striking differences between the academic literature and views expressed by the nudge committee in interviews was the limited reference to the ethical debate about nudges among informants, perhaps because they view nudges as harmless, small-scale interventions that aim to help people make better choices and thus do not raise serious ethical considerations. We must be careful not to make sweeping generalizations here as we have referred to some aspects of the interviews where ethical concerns were implied, such as in relation to whether you tell people that a nudge is in place. Also, in light of the fact that some informants identified nudges as being “voluntary measures” and do not involve compulsion, might go some way to explain why

committee members in the main have expressed little self-doubt in regards to the ethics of nudge as they may share Thaler and Sunstein's view that people can avoid them (although this is an issue of contention in the literature). In contrast, the ethical issues raised by nudges was a major concern in the academic debate, expressed in terms of limiting peoples control over their own decisions, how they are manipulative of human foibles and concern that people are often not consciously aware of them.

One informant argued that nudges deliver "big effects from small changes", and this sentiment about the effectiveness and cost effectiveness of nudges was often expressed during the interviews. However, there was much more uncertainty in the scholarly literature about the effectiveness of nudges, both in terms of changing behavior and the cost benefits. However linking these two issues together - uncertainty among scholars about whether there is evidence to show that nudges work and are cost effective, and Lillehammer's Nudge Committee view that politicians and policy makers need to be convinced about the benefits of nudges - strengthens the case for robust evaluation of nudge interventions to build the evidence base on whether or not nudges amount to an effective governance intervention and deliver value for taxpayers' money.

## 7 Conclusion

In our conclusion we reflect on our research questions and consider “what we have learned”

“Nudge” is a relatively new policy tool that has been applied to diverse policy areas, from public health to environmental protection. We have argued that Thaler and Sunstein provide a broad yet specific definition of nudge. However, we have shown that nudges are defined somewhat differently in the academic literature compared to Thaler and Sunstein’s definition. There are also differences in how scholars specify how nudges are supposed to influence behavior. It is a broad concept because “nudge” comprises of a wide range of policy interventions and, therefore, our research suggests that you can’t regard nudge as a single intervention or generalize about how they work and whether they work. Implications for research and practice include that issues related to how nudges operate and whether they are effective need to be considered on a case by case basis.

*Nudge* has a particular emphasis on nudge interventions that operate through the “automatic system” of the human mind and influence “semi-conscious” mechanisms of change. However, our analysis revealed that some nudge interventions work through other mechanisms of change, specifically the activation of the “reflective system”. Therefore, the “mechanisms of change” or “theories of change” vary between different types of nudges. Our approach to categorising nudges according to whether they work mostly through the semi-conscious side of our mind (labelled as “core” nudges) or rely on conscious deliberation of those who are exposed to it (labelled as “peripheral” nudges) is useful for researchers and practitioners because it provides a framework for classifying and think about different types of nudges.

In order to measure the effects of nudges and thus reach more solid conclusions about whether the desired effects emerge or amount to cost-effective interventions, we refer to outcome evaluations. Our in-depth investigation into studies that evaluated the effects of point-of-decision prompts to encourage stair use revealed methodological weaknesses in these studies, particularly a lack of control group design and cost-effectiveness analyses. Therefore, we cannot make categorical statements about the effectiveness of prompted stair use interventions. Our aim here has not been to say that it is impossible to find out about the effects of nudges, but highlight the challenges in

reaching truly evidence-based conclusions of relevance to policy-makers. In practice policy makers and politicians must always act on the best evidence available at the time of a particular decision, but we need to be aware how much doubt that may exist, even with regard to a very “simple” and in principle easy-to-study-effects of interventions, such as nudges to increase the use of stairs.

We distinguish between nudge as a policy and policies to implement nudges and argue that the successful implementation of nudges often require the use of other policy interventions, such as information provision or incentives. Drawing again on insights as to whether nudge interventions work through the conscious or less conscious side of our mind, we highlighted that effectively implementing nudges typically rests on an appeal to the reflective system, as we demonstrated with the example of how you implement the nudge of smaller plate sizes as a measure to reduce obesity.

Our empirical study of Lillehammer nudge committee revealed a great deal of overlap between how the committee members discussed nudges, and how nudges are discussed in the academic literature, particularly in relation to how to measure effects, the importance of cost-effectiveness and whether the findings are generalizable to other settings etc. Interviews with committee members brought into sharper focus the need for strong evidence from evaluation studies, both evidence of effect and cost effectiveness, if proponents of nudges are to “win over” politicians and policy-makers to support the view that nudges can be part of the solution to today’s policy problems.

## **7.1 Revisiting the ethical debate**

We can revisit the ethical debate about nudges in light of our analysis of nudges according to mechanisms of change. This suggests that ethical concerns are much more severe for nudges that work through our “automatic system” because individuals are not fully consciously aware of them. In contrast, ethical consequences are limited for nudges that work through the “reflective” processes of our mind, as these types of nudges preserve individual control over their own decisions.

Ethical concerns about the “hidden” way in which nudges work – i.e. through inputting into our semi-conscious cognitive processes – need to be addressed from a democratic perspective and we offer some suggestions to this effect. If proposals to implement nudges in a community (like in Lillehammer) are discussed in an open way, with citizens having the opportunity to reflect on the



pros and cons of using them, then one might possibly argue that citizens are able to voice their approval or disapproval of nudges through such democratic processes. If the local council decides to go ahead with implementation of nudges, following such an open public debate, citizens are likely to possess general awareness that they are in place and thus can avoid them. The ballot box also provides citizens with the opportunity to vote against politicians that want to “nudge” them, if they object to being subjected to such policy interference. Regardless of whether citizens agree or disagree with politicians that want to “nudge” them, nudges - and liberal paternalism with it – is at least to some extent secured, or legitimized, because it has been through an open, democratic process. We also argue that, alongside such public debate about the use of nudges the design of nudges should not just be a “top down process” decided by bureaucrats and politicians, but instead employ deliberative public involvement approaches to provide citizens with genuine opportunities to shape the development of a proposed nudge or nudges. This is a broader concept of democracy than citizens having the opportunity to vote every 4-5 years but recognizes that citizen involvement in policy making in-between elections offers the potential to enhance both the public acceptability and effectiveness of nudge approaches. How government bodies can foster dialogue with the public about the use of nudges demands further attention from decision-makers.

## **7.2 Are nudges “libertarian paternalistic”?**

Thaler and Sunstein (2009, 253) argue libertarian paternalism is not an oxymoron: “Choice architecture can preserve freedom of choice while also nudging people in directions that will improve their lives”. But does this claim stand up to scrutiny: can nudges really be characterized as both “libertarian” and “paternalist”? Many argue not. Some commentators claim that nudges are not libertarian at all, and the mere act of nudging people towards certain choices, without recourse to “rational persuasion”, is enough to curtail individual liberty (Hausman and Welch 2010, 128). In relation to paternalism, if one defines government paternalism as the replacement of what the individual perceives as for their good for that of the government (ibid,130), then arguably some examples of “nudges” do not qualify as paternalist because they represent an appeal to a person’s “reflective system”. There are grounds to question whether Thaler and Sunstein’s philosophy of libertarian paternalism are applicable to “nudge” interventions.

Setting aside the philosophical debate about nudges, today’s societies face huge policy challenges, not least obesity and climate change, requiring significant behavioural change, and nudges

alongside traditional governance interventions, may be an important part of Governments response to tackle them. Nudge theory is based on firm evidence from the sciences of human behavior, yet the evidence on whether nudges work and are cost effective is currently weak. With the interest in nudge strategies showing no signs of abating, it is vital that nudge interventions are subject to rigorous evaluation to build the evidence base for this relatively new and popular policy tool.

## **Appendices**

**Appendix 1:** Use of scholarly literature in this thesis

**Appendix 2:** Examples of nudges and how they work: towards an analytical categorization of nudge interventions

**Appendix 3:** Information provided to informants requesting their participation in research and statement of consent

**Appendix 4:** Interview Schedule

## **Appendix 1: Use of scholarly literature in this thesis**

Silverman (2011, 401) highlights the importance of a master thesis containing a literature review, particularly because it allows the researcher to locate their study within the broader literature in the field and build on, rather than repeat, earlier research. Some of the search terms used to search literature for inclusion in this thesis are as follows: “nudge”, “nudging,” “nudge theory” and “choice architecture”. The databases I used to gain access to peer reviewed academic articles included Oria (a search engine for Norwegian academic libraries) and Academic Search Premier. I also used Google searches to uncover other useful articles or books. The time period for my searches was 1 January 2008 till 1 October 2015. While searching the literature I excluded studies of individual nudge interventions because I was mainly interested in nudge theory and how academic authors have defined and debated the concept. The literature included in this thesis has given me a good oversight of some of the advantages, issues and concerns with using nudges. Bias may have crept in the studies I selected, for example by focussing too much on British scholars or scholars that I have come across in previous academic endeavours. On occasions I have cited secondary sources, rather than consulting the original source, which might also be regarded as a methodological weakness, but in such cases I refer to both the primary and secondary reference.

It is important to highlight that I also included in the literature review UK policy reports on nudges, namely by Dolan et al (2010) and the House of Lords Science and Technology Sub-Committee (2011), which lack the academic rigour of peer reviewed articles, although it is important to highlight that the former report was written by people with a strong academic background and the later report was largely informed by relevant members of the UK academic community. I also used three opinion pieces on nudges, written by academics, which were not peer reviewed (Waldron 2014; Wells 2014; Selinger and Whyte 2012).

## **Appendix 2: Examples of nudges and how they work: towards an analytical categorization of nudge interventions**

### **Summary of approach**

1. Nudges are based on findings from cognitive psychology and behavioural economics and refute the idea at the heart of classical economic theory that people make rational judgments in their best interests, instead asserting human decision-making is characterized by poor judgment and biases. Nudge theory also shows humans are influenced by our emotions, wider society and environmental factors.
2. Nudges aim to harness these insights to influence our decision-making in welfare-enhancing ways. For example, our reliance on heuristics results in biases in our decision-making, and these heuristics are manipulated by nudges to improve decision-making.
3. We propose “the theory of change” and “mechanisms of change” for different nudge interventions.
4. All examples are drawn from Thaler and Sunstein (2009) *Nudge* unless specified.

<b>Influences on our behaviour highlighted by Nudge Theory</b>	<b>Example of a nudge that applies insights from Nudge Theory to influence behaviour</b>	<b>Theory of Change: how is the nudge supposed to influence behaviour?</b>	<b>Mechanisms of change</b>	<b>Type of mechanism</b>
People rely on heuristics	Approach to elicit donations: Charities aim to maximize donation levels by suggesting different amounts that people can give. The values are carefully selected to influence the amount people donate.	This nudge manipulates people's reliance on heuristics, specifically anchors, by suggesting a starting point for our thought processes in relation to charity giving. The nudge is intended to influence behaviour towards higher donations by steering the individual towards one of the options that the choice architect (here: the charity) proposes.	Input into the automatic system. Semi-conscious, cognitive-based mechanisms of change.	Core
People are loss averse and are affected by how decisions are framed.	Public health campaigns that highlight years lost through smoking instead of years gained by giving up have been found to be more impactful (Wilson et al., 1997, 1996 quoted from, Moseley and Stoker 2013).	This nudge works by harnessing our propensity to avoid losses by highlighting years lost through smoking in order to steer people towards anti-smoking behavior.	Input into the Automatic system. Semi-conscious, cognitive-based mechanisms of change.	Core
People lack self-control and engage in mindless choosing	Plate size influences the amount of food eaten. Therefore the introduction of smaller plates in restaurants aims to combat mindless eating that leads to overconsumption.	This nudge works by altering the environment of people, in this instance through purposefully reducing the plate size in a restaurant, to encourage a reduction in food consumption levels.	Input into the Automatic system. Semi-conscious, cognitive-based mechanisms of change.	Core

<b>Influences on our behaviour highlighted by Nudge Theory</b>	<b>Example of a nudge that applies insights from Nudge Theory to influence behaviour</b>	<b>Theory of Change: how is the nudge supposed to influence behaviour?</b>	<b>Mechanisms of change</b>	<b>Type of mechanism</b>
Status quo bias	When buying an alcoholic drink in a bar, the default option is a small glass.  Adapted from: Marteau et al (2011)	This nudge manipulates human inertia and lack of attention – factors that lead to people sticking to the status quo - which means in this case people adopt smaller glasses and thereby reduce their alcohol consumption.	Input into the Automatic system. Semi-conscious, cognitive-based mechanisms of change.	Core
Society	Thaler and Sunstein (2009, 74) give the example of a ‘social norms’ approach to reduce alcohol in the form of an educational campaign in Montana, USA that highlights statistical information on use of alcohol, including that “strong majorities” of citizens don’t drink	This nudge works by providing information about what others are doing in relation to drinking to encourage citizens to adopt healthier behaviour towards alcohol use	Appeal to social influences. Semi-conscious, cognitive-based mechanisms of change.	Core
Our immediate environment	Putting tobacco products in closed cupboards in shops.  Example adapted from: Marteau et al (2011)	This nudge works by changing the physical environment in shops to make tobacco less salient and visible. Therefore it aims to suppress Automatic System influences that can lead to the purchase of tobacco among, for example, infrequent tobacco users.	Input into the Automatic system. Semi-conscious, cognitive-based mechanisms of change.	Core

<b>Influences on our behaviour highlighted by Nudge Theory</b>	<b>Example of a nudge that applies insights from Nudge Theory to influence behaviour</b>	<b>Theory of Change: how is the nudge supposed to influence behaviour?</b>	<b>Mechanisms of change</b>	<b>Type of mechanism</b>
Our immediate environment	Salad rather than chips becomes the default side order in a cafeteria  Example from Marteau et al 2011.	This nudge works by purposefully arranging the 'choice architecture' to give greater prominence to some food choices (here: salads) in order to influence healthier eating.	Input into the Automatic System. Semi-conscious, cognitive-based mechanisms of change.	Core
Our immediate environment influences our decision making	Prompting stair use via motivational signs that is placed near the stairs, escalators or elevators highlighting the health benefits of taking the stairs.  Example from Soler et al (2010)	This nudge informs people of the benefits of increasing stair use and in doing so might work by changing individual knowledge and attitudes about this activity (Soler et al 2010, 293)	An appeal to the Reflective system	Peripheral
Dynamic inconsistency, procrastination	A website is established where people can publicly declare their intentions to achieve a welfare enhancing goal, for example to increase physical activity levels.	This nudge is based on an awareness of individuals' propensity to procrastinate when seeking to achieve healthier lifestyles (here: increased physical activity). Yet by providing opportunities for individuals to make a public declaration of their health goals, this nudge seeks to increase the chances of the person achieving the goal to avoid public embarrassment.	An appeal to the Reflective System	Peripheral



<b>Influences on our behaviour highlighted by Nudge Theory</b>	<b>Example of a nudge that applies insights from Nudge Theory to influence behaviour</b>	<b>Theory of Change: how is the nudge supposed to influence behaviour?</b>	<b>Mechanisms of change</b>	<b>Type of mechanism</b>
Framing	Graphic images on cigarette packs to highlight some of the risks of smoking  Adapted from Baldwin (2014, 836)	This nudge works by using powerful imagery on cigarette packs, which aims to provoke a strong cognitive and emotional reaction, and steer people to adopt anti-smoking behaviour.	Appeal to our emotions. Sub-conscious or semi-conscious, emotional-based mechanisms of change.	Core
Salience	Fuel economy labels on new cars that provide information on estimated annual fuel costs of a particular vehicle and allows consumers to make comparisons with vehicles that are similar	This nudge works by providing salient information with regards to the high costs of energy inefficient cars and thus seeks to drive behaviour towards the purchase of more fuel efficient cars.	An appeal to the Reflective System	Peripheral
Salience	A scheme to reduce teenage pregnancy that involves giving to teenage girls with a baby 'a dollar a day' everyday that they avoid getting pregnant again.	The small payment is salient enough to influence people towards the desired behaviour.	An appeal to the Reflective System	Peripheral

## **Appendix 3: Information provided to informants requesting their participation in research project and statement of consent**

### **Request for participation in research project**

**Master's thesis title:** *Can you increase physical activity levels through using “nudges”?*

*A review of nudge theory, the effects of nudges on physical activity and lessons from implementing nudges in Lillehammer*

**Document written by Victoria Sande, 20.10.2015**

#### **Background and Purpose**

I am a student undertaking a Master's Degree in International Social Welfare and Health Policy at the Oslo and Akershus University College of Applied Sciences, Faculty of Social Sciences.

My master's thesis is on the topic of nudging. Thaler and Sunstein (2009, 6) in their book 'Nudge' define a 'nudge' as “any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.” My thesis will explore nudge theory, how nudges are supposed to influence behavior and whether there is evidence that you can increase physical activity levels through nudges. It will also consider the experiences of Lillehammer local authority's nudge committee, which has been set up to implement nudges in Lillehammer, and will seek to draw out lessons for others.

You are requested to participate in my study because you have been involved in Lillehammer local authority's discussions about implementing 'nudge' interventions.

#### **What does participation in the project imply?**

Data collection will be via interviews lasting approximately one hour. Questions will concern your interest in nudging; how you got involved in the committee; what you think are some of the advantages of setting up a committee of this kind; the types of challenges you have come up against when trying to implement nudges in practice and how these might be resolved.

All information that you provide during the interview will remain confidential. The data collected will be analysed and presented in my thesis anonymously.

## **What will happen to the information about you?**

All personal data will be treated confidentially. Only I will have access to personal data. The names of individuals taking part in interviews or being observed in meetings of the nudge committee will be changed so that they are not identifiable in the publication. Personal data / recordings will be stored to ensure confidentiality, specifically by a list of names being handwritten on paper and stored in a locked draw, separate from the rest of the data.

My personal computer will be password protected, and this will be kept in a locked room in my house. Printouts will be protected from unauthorized access by being kept in a locked draw or shredded. Recordings will be protected from unauthorized access by being saved on my computer which is password protected and the recording will be deleted from the recording device.

The project is scheduled for completion by May 2016. The data will be made anonymous by project completion

## **Voluntary participation**

It is voluntary to participate in the project, and you can at any time choose to withdraw your consent without stating any reason. If you decide to withdraw, all your personal data will be made anonymous.

If you would like to participate or if you have any questions concerning the project, please contact the student responsible Victoria Sande by telephoning xxx or emailing xxx. You may also contact the project supervisor Einar Øverbye, Professor of Political Science at Oslo and Akershus University College by telephoning xxxx or emailing xxx

The study has been notified to the Data Protection Official for Research, Norwegian Social Science Data Services.

## **Consent for participation in the study**

I have received information about the project and am willing to participate

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(Name printed and signed by participant, date)

## Appendix 4: Interview Schedule

# Interview guide for members of Lillehammer local authority's nudge committee

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1. How would you define a nudge?
2. Why are you interested in nudging?
3. Nudges have been implemented in many countries, including the US, UK and Sweden. What key factors would you identify that explain their appeal to policy makers and politicians?
4. Do you know where the idea of setting up a nudge committee come from? How did you get involved in the committee?
5. What do you understand as being the mandate of the committee?
6. What do you think are some of the advantages of setting up a committee of this kind?
7. I'm interested in hearing and documenting your's and the committee's ideas of how to measure the effect of nudges. Thinking about one of the nudges you have discussed in the committee of painting footsteps to rubbish bins or to stairs, how would you go about measuring the effect of this intervention? What do you think might be some of the challenges of measuring the effects of nudges?
8. To your knowledge, what kinds of challenges have the committee come up against / or might come up against in the future when trying to implement nudges in practice? How might the committee go about trying to resolve some of these challenges?
9. Do you know about the processes the committee has to go through to secure funding for its nudges? Have you got any comments on this?
10. Have you or other members of the committee had any discussions with the municipal administration and its other committees to get nudges implemented? What happened?
11. What top tip would you give to others who are interested in embarking on a committee of this kind to get a new idea implemented?
12. Final question: Would you be willing to take part in a follow up interview in Spring so I have the option of following any important developments in the work of the nudge committee, and your perspective on these, in the next 4-5 months?

*Thank you again for your time.*

## References

- Adams, Jean, and Martin White. 2002. "A systematic approach to the development and evaluation of an intervention promoting stair use." *Health Education Journal* 61 (3):272.
- Andersen, Ross E., Shawn C. Franckowiak, Julia Snyder, Susan J. Bartlett, and Kevin R. Fontaine. 1998. "Can inexpensive signs encourage the use of stairs? Results from a community intervention." *Annals of Internal Medicine* 129 (5):363-369.
- Baldwin, Robert. 2014. "From Regulation to Behaviour Change: Giving Nudge the Third Degree." *Modern Law Review* 77 (6):831-857. doi: 10.1111/1468-2230.12094.
- Banerjee, Abhijit, and Esther Duflo. 2011. *Poor economics : a radical rethinking of the way to fight global poverty*. New York: Public Affairs.
- Bellicha, Alice, Aurélie Kieusseian, Anne-Marie Fontvieille, Antonio Tataranni, Hélène Charreire, and Jean-Michel Oppert. 2015. "Stair-use interventions in worksites and public settings — A systematic review of effectiveness and external validity." *Preventive Medicine* 70:3-13. doi: 10.1016/j.ypmed.2014.11.001.
- Blamey, Avril, Nanette Mutrie, and Tom Aitchison. 1995. "Health promotion by encouraged use of stairs.(effect of signs on choosing stairs instead of escalators)." *British Medical Journal* 311 (7000):289.
- Blumenthal-Barby, J. S., and Hadley Burroughs. 2012. "Seeking Better Health Care Outcomes: The Ethics of Using the “Nudge”." *American Journal of Bioethics* 12 (2):1-10 10p. doi: 10.1080/15265161.2011.634481.
- Boen, Filip, Katrien Maurissen, and Joke Opdenacker. 2010. "A simple health sign increases stair use in a shopping mall and two train stations in Flanders, Belgium." *Health Promotion International* 25 (2):183-191. doi: 10.1093/heapro/daq001.
- Boutelle, K. N., R. W. Jeffery, D. M. Murray, and M. K. Schmitz. 2001. "Using signs, artwork, and music to promote stair use in a public building." *American journal of public health* 91 (12):2004.
- Bryman, Alan. 2012. *Social research methods*. 4th ed. Oxford: Oxford University Press.
- Byrne, Bridget. 2012. "Qualitative Interviewing." In *Researching Society and Culture* edited by Clive Seale, 206-226. London: SAGE.
- Cabinet Office. 2011. *Government Response to the Science and Technology Select Committee Report on Behaviour Change*. London.

- [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/60538/Government-Response-House-of-Lords-Inquiry-Behaviour-Change.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60538/Government-Response-House-of-Lords-Inquiry-Behaviour-Change.pdf)
- Coleman, K. J., and E. C. Gonzalez. 2001. "Promoting stair use in a US-Mexico border community." *American journal of public health* 91 (12):2007.
- Campbell collaboration (date unknown). *Campbell collaboration systematic reviews: policies and guidelines*. Campbell collaboration.  
[http://www.campbellcollaboration.org/artman2/uploads/1/C2\\_Reviews\\_policy\\_guide\\_lines\\_draft\\_5-1-13.pdf](http://www.campbellcollaboration.org/artman2/uploads/1/C2_Reviews_policy_guide_lines_draft_5-1-13.pdf). Accessed: 17.5.2016
- Dolan, Paul., Michael Hallsworth, David Halpern, Dominic King, Ivo Vlaev. 2010. *MINDSPACE: influencing behaviour through public policy*. London.  
<http://www.instituteforgovernment.org.uk/sites/default/files/publications/MINDSPACE.pdf>
- Eves, Frank F. 2010. "Point-of-Decision Prompts to Increase Stair Use." *American Journal of Preventive Medicine* 38 (5):573-574. doi:  
<http://dx.doi.org/10.1016/j.amepre.2010.02.004>.
- Eves, Frank F., Oliver J. Webb, and Nanette Mutrie. 2006. "A Workplace Intervention to Promote Stair Climbing: Greater Effects in the Overweight." *Obesity* 14 (12):2210-6. doi: <http://dx.doi.org/10.1038/oby.2006.259>.
- Goldin, Ian, and Kenneth Reinert. 2012. *Globalization for Development. Meeting new challenges*. New York: Oxford University Press.
- Goodwin, Tom. 2012. "Why We Should Reject 'Nudge'." *Politics* 32 (2):85-92. doi: 10.1111/j.1467-9256.2012.01430.x.
- Halpern, David. 2015a. "Inside the nudge unit." W.H. Allen.  
[http://www.amazon.co.uk/Inside-Nudge-Unit-changes-difference/dp/0753556537#reader\\_B00TGIX6V2](http://www.amazon.co.uk/Inside-Nudge-Unit-changes-difference/dp/0753556537#reader_B00TGIX6V2). Accessed 11 April 2016.
- Halpern, David. 2015b. "Inside the Nudge Unit: how small changes can make a big difference". Public lecture to the to the London School of Economics. September 15.  
<http://www.lse.ac.uk/newsAndMedia/videoAndAudio/channels/publicLecturesAndEvents/player.aspx?id=3201>. Accessed: 22 September 2015.
- Hansen, Pelle G. 2011. "Nudge yourself to a healthier life: plate size."  
<http://inudgeyou.com/archives/421>. Accessed 2 February 2016.
- Hausman, Daniel M., and Brynn Welch. 2010. "Debate: To Nudge or Not to Nudge." *Journal of Political Philosophy* 18 (1):123-136. doi: 10.1111/j.1467-9760.2009.00351.x.

- Hedström, Peter, and Peter Bearman. 2009. *The Oxford handbook of analytical sociology*, *Oxford handbooks*. Oxford: Oxford University Press.
- Hollands, Gareth J., Ian Shemilt, Theresa M. Marteau, Susan A. Jebb, Michael P. Kelly, Ryota Nakamura, Marc Suhrcke, and David Ogilvie. 2013a. "Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions." *BMC Public Health* 13 (1):1-13. doi: 10.1186/1471-2458-13-1218.
- Hollands, Gareth., Ian Shemilt, Theresa M. Marteau, Susan A. Jebb, Michael P. Kelly, Ryota Nakamura, Marc Suhrcke and David Ogilvie. 2013b. *Altering choice architecture to change population health behaviour: a large scale conceptual and empirical scoping review of interventions within micro-environments*. Cambridge: University of Cambridge.
- House of Lords Science and Technology Sub-Committee. 2011. *Behaviour change: 2nd report of session 2010–12 (HL paper 179)*. London.
- Howick, Jeremy H. 2011. *The philosophy of evidence-based medicine*. Hoboken: Wiley-Blackwell.
- Kahn, Emily B., Leigh T. Ramsey, Ross C. Brownson, Gregory W. Heath, Elizabeth H. Howze, Kenneth E. Powell, Elaine J. Stone, Mummy W. Rajab, and Phaedra Corso. 2002. "The effectiveness of interventions to increase physical activity. A systematic review." *American journal of preventive medicine* 22 (4 Suppl):73.
- Kahneman, Daniel. 2011. *Thinking, fast and slow*. New York: Farrar, Straus and Giroux.
- Kallbekken, Steffen, and HaKon Saelen. 2013. "'Nudging' hotel guests to reduce food waste as a win-win environmental measure." *Economics Letters* 119 (3):325.
- Kerr, Jacqueline, Frank Eves, and Douglas Carroll. 2001. "Six-Month Observational Study of Prompted Stair Climbing." *Preventive Medicine* 33 (5):422-427. doi: <http://dx.doi.org/10.1006/pmed.2001.0908>.
- Kosters, Mark, and Jeroen Van der Heijden. 2015. "From mechanism to virtue: Evaluating Nudge theory." *Evaluation*. 21 (3):276-291. doi: 10.1177/1356389015590218.
- Le Grand, Julian, and Bill New. 2015. *Government Paternalism: nanny state or helpful friend?*: Princeton University Press.
- Lindrstand, A, S Bergstrom, H Rosling, R Birgitta, and B & Tylleskar Stenson, T. 2006. *Global Health: An Introductory Textbook*: Student Literatur.
- Marteau, Theresa M., David Ogilvie, Martin Roland, Marc Suhrcke, and Michael P. Kelly. 2011. "Judging nudging: can nudging improve population health?". *BMJ: British*

- Medical Journal* 342.. doi:228. <http://www.bmj.com/content/342/bmj.d228>. Accessed 25 May 2015
- Masters, Rsw, and Ff Eves. 2006. "An uphill struggle: Effects of a point-of-choice stair climbing intervention in a non-English speaking population." 35 (5):1286-1290.
- Moseley, Alice, and Gerry Stoker. 2013. "Nudging citizens? Prospects and pitfalls confronting a new heuristic." *Resources, Conservation and Recycling* 79:4-10. doi: <http://dx.doi.org/10.1016/j.resconrec.2013.04.008>.
- Nocon, Marc, Falk Müller-Riemenschneider, Katleen Nitzschke, and Stefan N. Willich. 2010. "Review Article: Increasing physical activity with point-of-choice prompts - a systematic review." *Scandinavian Journal of Public Health* 38 (6):633-638. doi: 10.1177/1403494810375865.
- Obama, Barack. 2015. *Executive Order 13707. Using Behavioral Science insights to better serve the American People*. September 15. Washington.
- Olander, Ellinor K., and Frank F. Eves. 2011. "Effectiveness and Cost of Two Stair-Climbing Interventions--Less Is More." *American Journal of Health Promotion* 25 (4):231-236.
- Online LEXIN Dictionaries (2016) The Norwegian Directorate for Education and Training, <http://lexin.udir.no/?&ui-lang=eng>. Accessed: 16 May 2016.
- Patton, Michael Quinn. 2008. *Utilization-focused evaluation*. 4th ed. ed. Los Angeles: Sage.
- Pawson, Ray. 2002. "Evidence and Policy and Naming and Shaming." *Policy Studies* 23 (3):211-230. doi: 10.1080/0144287022000045993.
- Petticrew, Mark, and Helen Roberts. 2006. *Systematic reviews in the social sciences : a practical guide*. Malden, Mass: Blackwell Publishing.
- Pfeffer, Jeffrey, and Robert Sutton. 2006. "Management Half-Truths and Nonsense: HOW TO PRACTICE EVIDENCE-BASED MANAGEMENT." *California Management Review* 48 (3):77-100.
- Rossi, Peter H., Howard E. Freeman, and Mark W. Lipsey. 2004. *Evaluation : a systematic approach*. 7th ed. ed. Thousand Oaks, Calif: Sage.
- Schwandt, Thomas A. 2007. *The SAGE dictionary of qualitative inquiry*. 3rd ed. ed. Los Angeles, Calif: Sage.
- Seale, Clive. 2012. *Researching society and culture*. 3rd ed. ed. London: Sage.
- Selinger, Evan, and Kyle Powys Whyte. 2012. "What Counts as a Nudge?" *American Journal of Bioethics* 12 (2):11-12 2p. doi: 10.1080/15265161.2011.634485.
- Soler, Robin E., Kimberly D. Leeks, Leigh Ramsey Buchanan, Ross C. Brownson, Gregory W. Heath, and David H. Hopkins. 2010. "Point-of-Decision Prompts to Increase Stair



- Use: A Systematic Review Update." *American Journal of Preventive Medicine* 38:S292-S300. doi: 10.1016/j.amepre.2009.10.028.
- Thaler, Richard H., and Cass R. Sunstein. 2003. "Libertarian Paternalism." *American Economic Review* 93 (2):175-179. doi: 10.1257/000282803321947001.
- Thaler, Richard H., and Cass R. Sunstein. 2009. *Nudge : improving decisions about health, wealth, and happiness*. [Rev. and expanded ed.]. ed. New York: Penguin Books.
- The Economist. 2012. "Nudge nudge, think think. The use of behavioural economics in public policy shows promise." <http://www.economist.com/node/21551032>. Accessed: 29.2.2016.
- Tonkiss, Fran. 2012. "Focus groups." In *Researching society and culture*. 3rd ed. , edited by Clive Seale. London: Sage.
- University of Sheffield. 2014. "Supermarkets exposing children to high calorific junk food at the checkout." January 24. <https://www.sheffield.ac.uk/news/nr/junk-food-in-supermarkets-1.343263>. Accessed 4 February 2016.
- Waldron, Jeremy. 2014. "It's all for your own good." *The New York Review of Books*. October 9.
- Weiss, Carol H. 1998. *Evaluation : methods for studying programs and policies*. 2nd ed. ed. Upper Saddle River, N.J: Prentice Hall.
- Wells, Thomas. 2014. "2 Cheers for Libertarian Paternalism!" *3 Quarks Daily*.
- WHO. 2014. "Global Health Observatory Data." WHO. [http://www.who.int/gho/ncd/risk\\_factors/overweight/en/](http://www.who.int/gho/ncd/risk_factors/overweight/en/). Accessed 14 March 2016.
- WHO. 2015. "Physical Activity." WHO. <http://www.who.int/mediacentre/factsheets/fs385/en/>. Accessed 13 April 2016.