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Master Thesis

‘’Nudging- An overview of a controversial theory and its applications’’

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Abstract

Nudge theory, according to its founders Richard Thaler and Cass Sunstein, is a kind of libertarian paternalism that helps people towards making choices that can improve their health, wealth and lives. The theory relies on the insights of behavioral economics, and to be more specific, in the assumption that people behave systematically in an irrational way, when asked to make choices, due to cognitive restrictions. Since its first presentation in 2008, the theory has been used in several cases by both government and private administrations, in an attempt to guide individuals towards making preferable decisions, always on the basis that these decisions would be better for them. In this master thesis, we review the relative literature of the theory's applications in both the private and the public sectors, and also examine the effectiveness of its applications. Specifically, we examine examples where nudge theory was applied successfully, like in the UK's Behavioral Insights Team and in nudge units around the globe. In addition to that, we present the implementations of the theory in the private sector and in particular, we will discuss the concept of nudge management, that is now applied by many big organizations. Moreover, we will also present applications related to the controversial field of using nudges for commercial purposes. Finally, since nudging is considered to be by many scholars a controversial practice, we will also investigate the ethical concerns that often arise from the interventions related to the behavioral insights and we will present arguments against the theory, based on other behavioral models.

Table of Contents

Introduction

The idea behind this thesis comes from the interest of investigating how the nudge theory has become widely used by both the private and public sector, in an attempt to reform the decision-making process, since it was first proposed in 2008 by Richard Thaler and Cass Sunstein in their famous book. This theory, as we will discuss in more detail in Chapter 1, is related to the interdisciplinary field of behavioral economics, which combines knowledge from cognitive psychology, behavioral theory and economics. In particular, nudging lies on the premise that when people make choices in their everyday life, they are influenced by cognitive limitations of the human mind (namely, heuristics and cognitive biases) and thus, they are incapable of making the best decisions for themselves. The ultimate goal of nudge theory, as described by its founders, is to improve the life of humans, by helping them make the right decisions going beyond their own limitations.

In Chapter 2, we will review the relative literature of the theory's applications, in both the public and private sector. As we will discuss, its applications are expanding in a variety of fields: social welfare, education, healthcare, labor efficiency, environmental protection, people management and even consumer's behavior. In particular, in the public sector, nudging has been widely used as a policy making tool, in an attempt to help public administrations in formulating policies that will promote human well-being. All over the world, nations have become very interested in nudges and numerous examples of their application can be found in international literature. The most representative example is that of the Behavioral Insights Team (or Nudge Unit) of the United Kingdom. The growing interest in nudges comes from the fact that their implementations require low cost and effort. In addition to that, since they considered to be liberty-preserving approaches, they are used in an attempt to reduce mandates and bans by the policy-makers. In the private sector, implementations of behavioral insights are also considered to be a useful tool in promoting the employee's wellbeing, while there are also numerous examples of nudging customers towards making the nudger's preferable decisions.

In Chapter 3, we will further discuss the ethical concerns that arise from the implementation of nudge theory in both the private and the public sector. As we will further investigate, many academics and public commentators argue against this practice, due to the political, practical and most of all ethical implication of nudging. Critics claim that nudging manipulates people's

choices and thus restricts freedom. In addition to that, serious concerns also arise with regards to the intentions of the nudger and whether this approach in behavioral change is as effective as nudge's advocate claim it is, since it is based on a controversial model of human decision-making.

Having reviewed all of the above, we conclude that applications of this theory have helped people improve their lives in many cases, by guiding them to make more rational decisions than they would by themselves. However, the applications of nudge theory are not always "innocent" and aimed at the welfare of the people. There are people and organizations who apply it for personal gain, something that is strictly contradictory to the guidelines of Libertarian Paternalism. This element, along with the ethical concerns, the lack of transparency and the fact that its effectiveness has not been proven yet without a doubt, are still issues that remain unresolved and should be tackled, if this theory is to proceed being applied in the future.

Chapter 1: The Nudge Theory

1.1 Introduction

Nudge theory was introduced to the public through the book ‘’Nudge: Improving decisions about health, wealth and happiness’’, in 2008, by Richard Thaler and Cass Sunstein.[1] Richard Thaler is a theorist in behavioral economics and one of the founders of modern behavioural economics, along with the economists Amos Tversky and Daniel Kahneman. In 2017, Thaler won the Nobel Memorial Prize in Economic Sciences for his contributions to behavioral economics. Since 1995, he has served as the Charles R. Walgreen Distinguished Service Professor of Behavioral Science and Economics at the University of Chicago. Cass Sunstein is an American legal scholar at Harvard University, who served as the Director of the White House Office of Information and Regulatory Affairs from 2009 to 2012, during Obama's Presidency.

The two scholars worked together for five years, on projects related to the interdisciplinary field of behavioral economics, which combines knowledge from cognitive psychology, behavioral theory and economics. *Nudging* lies on the premise that when people make choices they get influenced by cognitive limitations of the human mind. This argument, called bounded rationality, was initially introduced by Herbert Simon[2]. Bounded rationality suggests that in decision making, our rationality is not as perfect as described by the classical economic model, but is limited by the information available to us, the cognitive barriers and time constraints [3].

The ultimate goal of nudge theory, as claimed by its founders, is to improve the life of humans, by helping them make the right decisions going beyond their limitations. Their book presents its application in many different fields: social welfare, education, healthcare, labor efficiency and environmental protection. As Sunstein claims, as nudge can be considered any liberty-preserving approach that points people in the right direction, but also allows them to go their own way[4]. According to the authors: “It is legitimate ... to try to influence people’s behavior in

1 Thaler R and Sunstein CR (2008) ‘’Nudge: Improving decisions about health, wealth and happiness.’’ New Haven, CT, and London: Yale University Press, 2008.

2 Simon, H. A., (1957), ‘’Models of man; social and rational’’, New York: John Wiley & Sons, 1957.

3 Simon H.A., (1982), ‘’Models of bounded rationality: Empirically grounded economic reason’’, Vol. 3, MIT Press, Cambridge.

4 Sunstein CR, (2014), ‘’Nudging: A very short guide’’, 37 J. Consumer Pol’y 583

order to make their lives longer, healthier, and better. In other words, we argue for self-conscious efforts, by institutions in the private sector and also by government, to steer people's choices in directions that will improve their lives''[5]. As a result, the theory is presented as another form of paternalism; the libertarian one[6].

The libertarian aspect of their movement lies in the principle that people are always free to choose. The paternalistic aspect lies in the claim that, since individuals tend to make bad decisions due to the lack of full attention and others cognitive restrictions , it is legal for the so-called choice architects[7] and policy makers, to find new innovative ways to influence people's behavior in order to help them make better and healthier choices for themselves.

Nudging is a policy-making tool that aims to help both public and private administrations in formulating policies that both employees and citizens need, while promoting human well-being growth. A principal advantage of the theory, as its founders state, is that nudges are not mandates and so they avoid compulsion. The authors claim that the most important applications of libertarian paternalism are related to public policy and law and they strongly recommend a reformation of this sector [8]. Indeed, the policies suggested by the libertarian paternalism have already been embraced by the US and UK government[9]. Their main advantage is their low cost (in many cases, they cost nothing), so they impose no burden on taxpayers and since they are liberty-preserving approaches, they always allow freedom of choice. In many domains, including the protection of the environment, family law and education, Thaler and Sunstein argue that a better government equals less government compulsion and more freedom of choice. In their own words ''If incentives and nudges replace bans, government will be both smaller and more modest.''[10]

Most of the arguments against libertarian paternalism rely on the idea, that by using this method people will lose their freedom of choice, but the truth is that there are numerous examples

5 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'',New Haven, CT, and London: Yale University Press, page 5.

6 Sunstein C.R., Thaler R.H. (2003) ''Libertarian Paternalism Is Not an Oxymoron'', University of Chicago Law Review, 2003

7 For further details, please see paragraph 1.3

8 Ibid.5, at page 15

9 For more details, please see chapter 2.

10 Ibid.5, at page 15

where it is obvious that not influencing people's choice is inevitable[11]. Almost in every aspect of life, people continuously make choices that will influence the behavior of a few other individuals. In most of the cases, as the authors claim, there is no way to avoid nudging in some directions, and whether intended or not, these nudges will affect what people choose. So, they conclude, nudging already exists in every choice architecture, and unintentional nudges can have major effects on people's life.

1.2 Heuristics & Cognitive Biases

Nudging relies on the interdisciplinary field of behavioral economics, which combines knowledge from cognitive psychology and behavioral theory, using microeconomic decision theory as a baseline[12]. In economic theory, it was once considered that all economic decisions were made on a rational basis based on different economic values. However, behavioral economics supports that in fact, people do not always behave rationally and that they systematically may make poor economic decisions.

Behavioral economics is strongly influenced by the biases & heuristics program of Nobel prize winner Daniel Kahneman and Amos Tversky, which is rooted in dual-process theories of cognition and information processing[13]. Kahneman's dual-system theory became more popular in his famous book "Thinking, Fast and Slow" in 2011[14]. In these dual-process theories, the human information processing takes place through two different types of systems: the automatic and the non-automatic or reflective; these theories offer a tool for further explaining and predicting human behavior[15] and seek to explain how the supposedly irrelevant features of decision-making contexts systematically influence human decision making and behavior[16].

11 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' , New Haven, CT, and London: Yale University Press, page 11.

12 Samson, A., (2017), ''The Behavioral Economics Guide 2017'', retrieved from http://www.behavioraleconomics.com.

13 Kahneman, D. & Tversky, A. (1979) ''Prospect theory: an analysis of decision under risk. Econometrica'', Journal of Econometric Society, 47:263–91.

14 Kahneman, D. (2011) ''Thinking, Fast and Slow'', New York: Farrar, Straus and Giroux.

15 Evans, J.S.B. (2008),'' Dual-processing accounts of reasoning, judgment, and social cognition'', Annual Review of Psychology 59:255–78.

16 Gawronski, B., Sherman J.W. & Trope, Y. (2014) ''Two of what?: A Conceptual Analysis of Dual-Process Theories.'', In Dual-Process Theories of the Social Mind, pp. 3–19. New York: Guilford.

The central thesis of the two-system model is that when a person reaches the point of making a decision, the human brain is divided into two distinct systems, called system 1 (the Automatic one) and system 2 (the Reflective one) [17]. System 1 is fast and operates instinctively, requiring minimum effort. In other words, it works subconsciously. In addition, this system is highly influenced by emotions, prejudices and past experiences. On the other hand, system 2 is more rational and takes action when the brain needs to process more complex information, requiring effort and attention.

These two systems are linked to a series of heuristic and cognitive biases[18]. The heuristic methods are simple and spontaneous mental rules or shortcuts that we follow when we have to make a decision or solve a problem. These intuitive rules can help us make good decisions or even prevent us from doing so. In particular, system 1 is more prone to use these cognitive "bypasses", named heuristics, to facilitate us in making quick decisions and often leads us to wrong choices. Systematic errors that result from the use of a heuristic are called cognitive biases. In their initial research, Tversky and Kahneman proposed three main heuristics: availability, representativeness, and anchoring[19]:

1. **Availability:** In psychology, availability refers to how easy it is, for a particular idea, to come to our mind. The availability heuristic is a kind of a ‘’mental short’ that we use when we estimate how likely an event is, based on how easily it can come to our minds. This heuristic can make us misjudge an event’s probability [20]. For example, when an infrequent event can be brought easily to our minds, due to the fact that it happened recently, this heuristic makes us to consider it more possible to happen again than it actually is. For example, it has been noticed that when a plane crash takes place, people tend to be more afraid of planes for a short period of time after the accident.
2. **Representativeness:** The representativeness heuristic is seen when people use categories, for example when asked to judge the probability that an object or event A belongs to a category B [21]. When individuals categorize things, relying on their

17 Thaler R and Sunstein CR (2008) ‘’Nudge: Improving decisions about health, wealth and happiness.’’ , New Haven, CT, and London: Yale University Press, page 21.

18 Ibid, at pages 24-41.

19 Ibid.

20 Tversky, Amos; Kahneman, Daniel (1973), "Availability: A Heuristic for Judging Frequency and Probability", Cognitive Psychology, 5 (2): 207–232,

21 Kahneman, Daniel; Tversky, Amos (1972). "Subjective probability: A judgment of representativeness", Cognitive Psychology. 3 (3): 430–454.

representativeness, they are using the representativeness heuristic. In particular, in order for an object or event to have a high representativeness for a specific category, it must be very similar to a prototype of that category. Representative has two meanings: the prototype used for comparison is representative of its category, and representativeness is also a relation between that prototype and the item being categorized [19,20] .

3. **Adjustment:** Anchoring or adjustment is a heuristic, used when people make numeric estimations, while another relevant value is available to them. According to Tversky and Kahneman's original description, this heuristic is present when a readily available number—the "anchor"— results in shifting either up or down our answers in a way that seems plausible[22]. In Tversky and Kahneman's experiments, when presenting an anchor, people did not shift their answers far enough from the anchor. Hence an anchor can affect the estimation, even if it is clearly irrelevant. In one experiment, subjects watched a number being selected from a spinning "wheel of fortune" and they had to guess whether a given quantity was larger or smaller than the ‘’anchor’’. Surprisingly, their responses correlated well with the irrelevant number they had been given[23] . Experimental results like the above, indicate that people can base their estimations on evidence which is selectively brought to mind by the anchor [24].

Kahneman and Tversky also studied, how decision-making and probability estimation are strongly influenced by the framing effect and cognitive biases [25]. The most important cognitive bias that we deal with during the decision-making process, are the following:

- The Optimism Bias: This bias refers to the fact that people usually tend to underestimate the chances of failure or the probability of negative things happening to them. This bias is correlated to the planning fallacy, that describes the tendency to failure while managing project timelines and also often to overlook project risks.

- Status Quo Bias: This bias refers to people’s tendency to stick with their current situations. This is partly explained, by the fact that it is harder to justify a change of course, than it is to

22 Baron, Jonathan (2000), ‘’Thinking and deciding’’ (3rd ed.), New York: Cambridge University Press, page 235 .

23 Plous, Scott (1993), ‘’The Psychology of Judgment and Decision Making’’,McGraw-Hill, pages 145-146.

24 Koehler, Derek J.; Harvey, Nigel (2004), ‘’Blackwell handbook of judgment and decision making’’,Wiley-Blackwell, page 99.

25 Thaler R and Sunstein CR (2008) ‘’Nudge: Improving decisions about health, wealth and happiness.’’ , New Haven, CT, and London: Yale University Press, pages 34-40.

justify the status quo (the current situation). Status quo is considered to be a reference point, and any change from that that is perceived by the individual as a loss. In other words, this cognitive bias explains our preference for familiarity.

-Herd Mentality: Herd mentality describes people's tendency to get influenced by society's beliefs. People can be influenced by their peers to adopt certain behaviors and this influence comes for a rather emotional, rather than rational independent analysis. In finance, this term is also used to describe investors' tendency to follow what other famous investors are doing.

-Framing Cognitive Bias: Framing is when someone reaches a decision that was based on the way information is presented, rather than based just on facts. In other words, the way options are presented to people affect their conclusions. Framing works, because in many cases people tend to be passive decision makers, while the Reflective system gets highly affected by this bias.

1.3 Choice Architectures

As discussed, decision makers are affected by the way information is presented to them and many features, noticeable or not, can influence their decisions. In their book, Thaler and Sunstein claim that choice architectures can have an important impact on the lives of others and that is why, they try to guide them in designing the appropriate decision-making environment[26]. The term ''choice architect'' refers to the individual who creates the environment, in which a specific decision will be made. The authors present the tools (namely nudges), that are available to ''choice architects'', with the ultimate goal to help them nudge people to the right directions, while maintaining the philosophy of libertarian paternalism, which is not forcing specific outcomes upon anyone. These nudges include creating defaults, expecting error, understanding mapping of choices, giving feedback, restructuring complex choices to more simplified ones and finally creating incentives for individuals [27].

The basic idea underlying in the concept of nudging, is that people are not homo economicus, as described in the economic theory[28]. This means that they do not have the infinite ability to make rational decisions. Economic agents always rely on their Reflective system meaning, in

[26] Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' , New Haven, CT, and London: Yale University Press, pages 89-92.

[27] Ibid, at pages 93-109.

[28] Ibid, at page 7.

simple terms, that an individual with interests and preferences has a rational capacity oriented to maximizing those preferences [29]. Unlike this assumption, in nudge theory, they make repeated mistakes when it comes to thinking and choosing, since they easily get affected by feelings, prejudices, and past experiences. That is why, as the authors claim, people are nudgable and each choice architect should take into consideration the human nature, in order to positively affect people's behavior, especially in cases where people are least likely to make good choices for themselves[30].

A very good example in the book, that shows how choice architectures can affect people's choices and as a result to contribute to their well-being, is the one with the cafeteria in a school [31]: Imagine that the manager of food services for a city school system, runs a series of experiments, in order to evaluate whether the way that the food is displayed to the students, affects their eating habits. Through these experiments, the manager finds out that the way the food options are displayed to the children, actually affects their choices. To be more specific, foods that are displayed at the beginning or end of the line, are more likely to be consumed in comparison to the items that are placed in less visible locations. As the authors suggest, the manager of food services plays the role of the choice architect. His actions affect children's eating habits. Through this example, the authors want to point out that even small and apparently insignificant details can have significant impacts on people's behavior. In addition, they recommend that when it comes to an individual's decision making, a good rule of thumb is to assume that "everything really matters."[32]

As in the above example, there are many others in the book that indicate that many people in our everyday life, turn out to be choice architects, most of them without even realizing it[33]. For example, doctors describing the available treatments to patients can be considered choice architectures, since the way they present to the patients their available treatment options affect their final choice. The list of examples of choice architectures are limitless: human resource administrators creating and managing health care plan enrollment, marketing managers

29 Domenec Mele, César González-Cantón (2014), Chapter 1, ''Human Foundations of Management: understanding the Homo Humanus'',Springer, 2014

30 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' , New Haven, CT, and London: Yale University Press, pages 8-9.

31 Ibid, at pages 1-3.

32 Ibid, at page 4.

33 Ibid, at pages 37-39.

designing sales strategies, teachers and consultants explaining the educational options available to a teenager and so on[34].

The idea of designing the right choice architecture is not new. Don Norman in his book ''The Design of Everyday Things'' in 1990, also presented a very similar approach to that introduced by Thaler and Sunstein[35]. Norman's book is based on the idea that designers should always remember, while designing their objects, that these will be used by humans, who are dealing every day with a wide variety of choices and cues. So, he recommends that it is each designer's responsibility to create user - friendly environments for the people who make decisions[36]. In a world of Econs, designing details would have no impact, but for human beings, each detail in the way an option is available, plays a crucial role on the decision-making process and so choice architects should be aware of their power to influence choices.

The authors are also aware of the fact that there are cases where choice architectures do not always have the best intentions, when it comes to influencing people's behavior. For example, marketing companies usually focus on selling products, not considering if the product fits to the consumer's needs, which is not always their priority[37]. On the other hand, conscientious choice architects, do have the power to self-consciously construct nudges in order to try to move people in the proper directions that will make people's lives better. One thing that the authors highly support, is that having in mind how the human brain works and its cognitive limitations, can provide us with tools needed in order to create good decision-making environments. Keeping all the above in mind, the authors have presented some basic principles of effective choice architecture, or in other words, some important nudges:

I. **Defaults rules** (e.g., automatic enrollment in programs, including education, health, savings)[38] : Defaults are a powerful tool in choice architecture, since they represent the path of least resistance and require the least effort. When we face a default option, that is an option that will be chosen if we do nothing, chances are that we are going to follow it, even if it is not the most beneficial for us. Avoiding these default options is not

34 Ibid, at pages 93-108.

35 Don Norman (1990), the Design of Everyday Things, Doubleday Business, 1990.

36 Ibid.

37 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' , New Haven, CT, and London: Yale University Press, page 237.

38 Ibid, at pages 93-95.

feasible, since in every choice architecture system, there must be a related rule that determines what will happen if the user decides to do nothing[39]. An example that they present, is that of some dangerous machines, like lawn mowers that are designed to stop operating, when the user doesn't hold the handle, or electronic devices like smartphone or computers enter sleep mode after a certain period of inactivity. Of course, the user can adjust the length of time before the device goes into sleep mode, but implementing that choice takes some action. Another example is the automatic renewal for magazine subscriptions, that results in many people being subscribed to magazines, that they don't actually read, wasting their money because of their inertia in changing the default option. These behavioral tendencies toward doing nothing indicate that indeed default choices are powerful. That is why the authors claim that it is very important to realize that the defaults rules should be selected in a way that can make the chooser's life easier and better. The authors suggest a different kind of default options, that is expected to benefit citizens in many occasions (for example automatically enrolled in retirement plans and automatic enrollment in health care plans)[40].

II. **Simplification in choice architecture:** Complexity is a serious problem when it comes to decision-making. People tend to adopt different strategies for making choices, depending on the complexity of the available options[41]. Complexity is the reason why important programs (involving education, health, finance, poverty, and employment) fail or succeed less often than they might. That is why the authors suggest, government programs that provide help for individuals and organizations should become navigable and the simplification of forms and regulations should be considered a high priority[42].

III. **Uses of social norms** (let people know what other people do): As the authors recommend, one of the most effective ways of nudging people, is by letting them know what other people tend to do in a certain situation[43]. Expressions like "the majority of people in your town pay their taxes on time" might have a huge impact on other people's behavior, due to the herd mentality that describes people's tendency to get influenced by their peers and that results in adopting certain behaviors.

39 Ibid.

40 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'', New Haven, CT, and London: Yale University Press, page 117-118.

41 Ibid, at page 103

42 Ibid.

43 Ibid, at pages 57-66.

IV. **Mapping:** The relation between choice and welfare is characterized by the authors as mapping[44]. A good system of choice architecture should provide people with all the information needed in order to help them select options that are better for themselves and cover their needs. In order to achieve that, they claim that information about various options should become clearer, so that people are aware of the impact of their choices.

V. **Expect error & give feedback:** A good system of choice architecture should be aware of the fact that people often make mistakes and must be ready to help them improve themselves by providing appropriate feedback. An important type of feedback is the one that proactively warns us that things might go wrong[45].

VI. **Incentives:** Incentives are considered to be very important economic forces, that choice architects should take into consideration, while designing a system. In particular, the authors suggest that the most significant modifications that must be made to a standard analysis of incentives is salience.[46] That means, that people must always be able to actually notice the incentives they face and in order to do so, good choice architects should take steps to direct people's attention to the existing incentives. An example that they give, is that of a thermostat which is programmed to inform the customer about the cost per hour when lowering the temperature a few degrees, instead of just increasing the electricity's price[47].

All the above nudges have been widely used in many applications, both in the public and private sector. The theory has been supported by many scholars, who accept it as an important tool that can help people make better decisions for themselves and for society. As the founders of the theory claim, nudging must be governed by transparency and should always be subject to public evaluation[48]. In addition to that, they claim that in contrast to mandates and bans, nudges remain a liberty-preserving approach in policy-making, by preventing compulsion, as well as manipulation[49]. All over the world, nations have become very interested in nudges and numerous examples of their application have been documented. The growing interest in nudges, comes from the fact that their implementations require low cost, and in the case of

44 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'', New Haven, CT, and London: Yale University Press, page 100.

45 Ibid, at pages 96-98.

46 Ibid, at page 107.

47 Ibid, at page108.

48 Sunstein CR,(2014), Nudging: A very short guide, 37 J. Consumer Pol'y 583

49 Ibid.

public policy, they impose no burden on taxpayers. In addition to that, since they considered to be liberty-preserving approaches, they always allow freedom of choice and they can be highly effective. For example, default rules simplifications, and uses of social norms have sometimes been found to have even larger impacts on human behavior, than significant economic incentives. In the next chapter, we will further investigate the implementation of libertarian paternalism in both the private and public sector.

Chapter 2: Applications

2.1 The Behavioral Insights team (or Nudge Unit) in the United Kingdom

The Behavioral Insights team or Nudge Unit was founded in 2010, by the new coalition government led by David Cameron of the United Kingdom, in an attempt to improve government policy and services, while saving the government's money. The newly formed coalition contacted Richard Thaler and proposed him to lead the program with the help of David Halpern, who was then selected to create the Behavioral Insights Team (BIT) or Nudge Unit . It is the first organization created by a government, with the aim to gather contributions from various disciplines in the behavioral field, in order to design interventions and programs that could help individuals make better choices to their own advantage, while keeping their freedom of choice[50]. As stated in Richard Thaler's book ''Misbehaving: the making of behavioral economics'':

''*The official mission of the Behavioral Insights Team (BIT) was left broad: to achieve significant impact in at least two major areas of policy; to spread understanding of behavioral approaches across government; and to achieve at least a tenfold return on the cost of the unit. The basic idea was to use the findings of behavioral science to improve the workings of government*"[51].

In April 2013, it was announced that the Behavioral Insight Team would be partially privatized as a mutual joint venture. Since February 2014, BIT's ownership is split equally between the government, the charity Nesta, and the team's employees, each one owning a third of the business. As reported by the Financial Times[52], this was the first time the UK's government has privatized civil servants responsible for policy decisions. BIT's focus remains aligned with the UK's government and numerous applications of its work can be found in the literature.

50 See: https://www.bi.team/blogs/dont-tell-me-what-to-eat/

51 Thaler, R.H. (2015). Misbehaving. The making of Behavioral Economics, page New York: W.W. Norton & Company.

52 Source: https://www.ft.com/content/571eef16-8d99-11e3-9dbb-00144feab7de

One of BIT's first programs was related to fraud, error and debt.[53] In particular, the BIT team, in collaboration with the British tax collection authority (HMRC), implemented some experiments in order to test how effectively social norms can encourage individuals to pay their tax debts on time[54].

The results were very encouraging; The 'test, learn, adapt' approach that was adopted by the Behavioral Insights Team, showed that the effectiveness of different interventions and insights depends heavily on the context and setting[55]. These results demonstrate that even relatively insignificant changes to processes, forms and language can have a significant, positive impact on people's compliance and can help save public time and money. The basic ideas underlying these trials are seven insights from the behavioral studies: make it easy, highlight key messages, use personal language, prompt honesty at key moments, tell people what others are doing, reward desired behavior, highlight the risk and impact of dishonesty.[56] The methodology used was that of randomized control trials (RCTs), where at different groups of people, different interventions were applied (for example a modified letter, a changed process, a text message), while continuing to treat the one group as business per usual, in order to determine the difference in effectiveness of each of the interventions[57].The results were impressive; the simple and relatively cheap use of letters alone, resulted in "a high debt clearance rate of more than 70% of new self-assessment cases"[58].

In order to further increase this metric, HMRC implemented social norms as nudging factors, so that they make the letters more effective. In particular, the BIT redesigned the letters with the goal to make them easier to understand and added sentences that highlighted the fact that most of the people pay their taxes on time, in order to see how these social norms will affect the behavior of citizens. Most of these letters contained sentences like ''9 out of 10 people in Britain pay their taxes on time'' (instead of only 1 out of 10 do not pay in time) and other variations that could inform people about the fact that most of their fellow citizens actually pay

53 The Behavioral Insights Team (2012), Applying behavioral insights to reduce fraud, error and debt
54 Ibid, at page 22
55 Ibid, at page 3
56 Ibid, at page 7
57 Ibid, at page 21
58 Ibid at page, 22

their taxes on time [59]. The results showed a 15 percentage point increase in payments from the group that received these modified letters, in comparison to the control ones.

Public health was considered to be a high priority for the BIT, so many experiments were carried out in order to develop new policy practices that would lead to the reformation of the health sector. Statistics in the UK have shown that many bad lifestyle habits like smoking, alcohol, lack of physical activity and consumption of unhealthy food contribute to an increased number of deaths[60]. The BIT in collaboration with the Health Department of the UK implemented a number of campaigns and interventions, in order to nudge people to a healthier lifestyle, with the ultimate goal to save both lives and money. For example, checklists were introduced, in order to reduce errors in clinical teams. In addition, interventions managed to reduce DNAs (Did Not Attends), meaning missed doctor appointments, by 30%, using a combination of simple behavioral approaches, like letting the patients to complete the appointment card instead of the nurse doing it for them (active commitment) and letting them know, by simple messages, that most of the people turned up promptly to their appointments[61].

Regarding alcohol consumption, various interventions were implemented, in order to reduce harms associated with it. These interventions included price signals (larger alcohol taxation for high strength beers) and social norms, in order to increase awareness about the actual levels of alcohol consumption by others, an approach that was tested through a specific 'Drinkaware' campaign with students in Welsh universities[62]. Among other interventions related to food, the BIT, in collaboration with food industry partners, agreed to reduce the levels of salts in food in an effort to reduce the annual number of deaths related to strokes caused by hypertension, an intervention that could potentially save up to 4,500 lives per year [63].

With regard to smoking, the BIT invested on campaigns promoting smoking substitutes like e-cigarettes, that remain until today the most successful alternative for people who wish to quit smoking.[64] In addition to that, in order to help women quit smoking during pregnancy, the BIT designed stickers that were placed on pregnancy tests, containing messages that informed

59 The Behavioral Insights Team (2012), ''Applying behavioral insights to reduce fraud, error and debt''.
60 The Behavioural Insights Team (2011). Update Report 2010-2011
61 Ibid
62 Ibid
63 Ibid
64 The Behavioural Insights Team (2015). Update Report 2013-2015

women about where they can seek for help. This intervention was based on studies showing that only 45 percent of women who smoke quit spontaneously, when finding out they are pregnant and the rest of them might intend to quit, but do not have the resources or information to do so.[65] This experiment was tested in areas with high rates of women smoking during pregnancy, but the results were not remarkable[66].

With regards to organ donation, the UK government had to face the fact that, while most of the people (polls suggest 9 out of 10) support organ donation, only a small percentage of them end up registering to join the NHS Organ Donor Register. In order to close the gap between intention and action, new effective interventions were implemented and the trial testing results were impressive.

In particular, the Behavioural Insights Team conducted a big Randomised Controlled Trial (RCT) in partnership with NHS Blood and Transplant (NHSBT), the Government Digital Service (GDS, who run GOV.UK), the Department for Health (DH), and the Driving & Vehicle Licensing Agency (DVLA)[67]. The purpose of the research was to investigate how interventions could affect the cognitive bias of the status quo. To be more specific, the trial tested the effect of different messages on high traffic websites that encourages people to join the NHS Organ Donor Register. Trial testing showed that the best-performing message "If you needed an organ transplant, would you have one? If so please help others'' could lead to an annual increase of 96,000 registration.[68]

BIT achieved to also reduce the number of errors in prescribed medication in UK hospitals, by modifying the prescription charts[69], an intervention that aimed to protect patients from taking antibiotics that they might be allergic to. In addition to that, in order to reduce pressure on hospitals with limited capacities, they redesigned the referral websites and added features that could inform people about long waiting times at specific hospitals. These interventions led to

65 The Behavioural Insights Team (2015). Update Report 2013-2015, page 14.

66 Ibid

67 The Behavioural Insights Team (2013) ,''Applying behavioural insights to organ donation''

68 Ibid

69 King, D, Jabbar, A, Charani, E, Bicknell, C, Wu, Z, Miller, G, Gilchrist, M, Vlaev, I, Franklin, BD & Darzi, A (2014), ''Redesigning the "choice architecture" of hospital prescription charts: A mixed methods study incorporating in situ simulation testing''. BMJ Open.

38% reduction of referrals to overbooked hospitals[70]. Furthermore, the number of unnecessary prescriptions of antibiotics was decreased, due to interventions based on social norms, that informed doctors that the number of their antibiotics prescriptions was above average[71].

In September 2014, the Behavioral Research Centre for Adults and Skills was founded. Its purpose was to conduct research on the education field and to come up with intervention that would help adults with low educational level to stick to new educational programs, in order to improve problems that they were facing (social exclusion, less productivity and lower income). The main issue was that in many colleges, there was a high number of attritions at key moments. After sending encouraging text messages to students, the results show a 7-percentage point increase in attendance, in comparison to the control group. In addition to that, the team noticed that the number of students who did not continue their studies after the mid-term break, decreased by 36% in the treatment group in comparison to the control one.[72] Encouraging text messages were also effective in increasing the number of students applying to competitive universities by 17% [73].

The BIT also implemented behavioural insights, in order to support policy makers on important social issues like crime, immigration and national security[74]. The underlying idea was that policy body cameras might be able to restore public faith in law enforcement and at the same time support policemen on their everyday duties. Experiments took place in order to evaluate the impact of body worn cameras on policemen. As the results indicated, when policemen were wearing these cameras, they felt safer. In addition, it was noticed that when policemen were wearing body worn video cameras, they tend to have fewer days of absence, in comparison to those who did not (an average of 3.3 fewer days)[75].

The BIT also collaborated with Avon and Somerset police, in order to establish a new strategy that would result in more diversity in the police forces, in an attempt to create a multicultural law enforcement agency. Results indicated that applicants from black or minority ethnic

[70] The Behavioural Insights Team (2017). Update Report 2016-2017.

[71] Hallsworth, M, Chadborn, T, Sallis, A, Sanders, M, Berry, D, Greaves, F, Clements, L & Davies, (2016), ''Provision of social norm feedback to high prescribers of antibiotics in general practice: A pragmatic national randomized controlled trial'',The Lancet

[72] The Behavioural Insights Team (2015). Update Report 2013-2015. p.21

[73]Ibid 70.

[74] Ibid, at page 28

[75] Linos E., Reinhard J., Ruda S. & Sanders M., (2017) Measuring the impact of body worn video cameras on police behaviour and criminal justice outcomes.

(BME) backgrounds tend to have lower success rates at their first test, due to the ‘’stereotype effect’’. The BIT contacted a Randomised Controlled Trial (RCT) where the control group received the business as usual email, informing the candidates about the upcoming test, while the treatment group received an adjusted encouraging email. These interventions increased the success rate of the treatment group at 20% [76].

In addition to the above, the Behavioral Insight Team has conducted many trials, in order to find ways to improve other important policy areas, like consumer and finance, energy, environment, sustainability and gender equality. In particular, consumers' protection has always been considered as a top priority for the BIT team and that is why numerous trials took place, in order to design policies that can offer meaningful choices and quality for consumers, particularly as they evolve in the digital age, while helping them save money [77].

In April 2015, the Behavioral insights Team in collaboration with the Treasury worked together for the launch of a new pension system. The new system allowed individuals to decide how they wish to spend their pension, in comparison with the old system, that obligated most pensioners to purchase an annuity with their pension pots. In order to support the new system, the BIT provided information to help citizens deal with the complexity of pension information and guidance through the decision process[78]. The team collaborated with the UK government's Pension Wise service and through different interventions they investigated different ways of encouraging people to access the Pension Wise guidance services. The results were impressive: a tenfold increase in the proportion of savers visiting the Pension Wise website for guidance was noticed[79].

Moreover, the BIT applied behavioral insights in order to reduce household energy consumption. Studies showed that behavioural factors often result in overconsumption of energy, leading to suboptimal use of heating systems. The team conducted experiments in order evaluate the potential energy-saving in houses that did not have proper heating controls systems and the results indicated that smart heating controls technologies can reduce the annual household gas consumption, contributing in increasing the annual savings up to 6% [80]

76 Ruda S., (2015) Promoting diversity in the Police
77 The Behavioural Insights Team (2015). Update Report 2013-2015.
78 Ibid.
79 The Behavioural Insights Team (2016). Update Report 2015-2016, page 24.
80 The Behavioural Insights Team (2016). Update Report 2015-2016, page 29.

Furthermore, in 2016 the Behavioral Insights team expanded their work on issues related to gender equality, applying behavioural insights for the prevention of gender discrimination in the workplace[81]. Their main goal was to increase women's representation on executive boards, protect their rights for equal treatment (with schemes like the Shared Parental Leave) and minimize the gender pay gap. Although a number of interesting trials have been performed, the results showed no significant impact on the prevention of gender inequality in the workplace[82].

To sum up, the above applications indicate the significant impact that the work of the Behavioral Insights Team has in a broad range of policy fields, including consumer and finance, energy and sustainability, health and wellbeing, education, home affairs and gender equality. The organization often highlights the fact, that it is always following its initial principle, that is using liberty-preserving approaches that can provide solutions, when an individual's behavior can lead to negative results. Over the years, the BIT has applied various interventions in many fields, conducted numerous trials and designed many programs, with the aim to gather further behavioral insights that could help individuals make better choices to their own advantage, while protecting social welfare. As a result, a great amount of literature has been produced. Nowadays, almost every government department in the UK is using behavioral insights, in order to provide efficient policies to the citizens[83]. Just in the period 2016-2017, the BIT expanded its operations in 25 countries (including North America and Australia), conducted 163 trials in various policy areas and opened new offices in Singapore and New Zealand. While the team's focus always remains on social impact, their interests have also shifted to more complex behavioral challenges[84]. In addition to that, the team has collaborated with many international organizations (like OECD, the World Bank, UNDP) in projects related to the behavioral sciences [85].

The pioneering work of the Behavioral Insights Team in the UK set the example and many other governments across the globe followed, by establishing different nudge units. In the coming chapter, we will briefly outline interventions related to behavioral insights by other

81 The Behavioural Insights Team (2018). Update Report 2017-2018, page 26.
82 The Behavioural Insights Team (2017). Update Report 2016-2017, page 33.
83 The Behavioural Insights Team (2017). Update Report 2016-2017, page 4.
84 Ibid
85 Afif, Zeina; Islan, William Wade; Calvo-Gonzalez, Oscar; Dalton, Abigail Goodnow. 2019. Behavioral Science Around the World: Profiles of 10 Countries (English). eMBeD brief. Washington, D.C.:World Bank Group, page 6

public administrations, as in most of the cases, the interventions are quite similar to that applied by the BIT.

2.2 Nudge Units around the globe

After the BIT's formation, several countries around the world started to express an interest in behavioral economics and in particular in using nudging as a policy making tool. Many countries including Australia, Canada, Denmark, France, Germany, Netherlands, Singapore, and the United States soon followed the UK's example and established their own units. As we shall see below, these units have conducted numerous trials and designed many programs in various policy fields. In addition to the nudge units across the globe, other organizations were also established with the goal to apply behavioral insights in policy making. For example, in 2016 in Peru, the Ministry of Education created MineduLab, an innovation lab which operates in the field of education policy and supports teachers and students in everyday challenges. Moreover, the Abdul Latif Jameel Poverty Action Lab (J-PAL) is now an established research center in India, applying behavioral insights in policy making for poverty eradication. Other countries such as Mexico, Indonesia, Kuwait, Kenya, Qatar, and the U.A.E. have also explored the applications of behavioral insights in public policy, through collaborations with various organizations such as the BIT, ideas 42, the World Bank, and J-PAL[86].

In Australia, many government departments are using behavioral insights in order to provide efficient policies in the public sector. In 2012, the first unit named The New South Wales Behavioral Insights Unit was established, supported by the Behavioral Insights Team in the UK. Following this, many other units were created [87]: the Australian Securities and Investments Commission (ASIC) Behavioral Economics Unit in the Department of the Environment and Energy (2014), the Behavioral Economics and Research Team in the Department of Health (2015), the Behavioral Economics Team of the Australian Government (2016) and the Victorian Behavioral Insights Unit (2016). Until today, the Australian Tax Office, the Department of Social Services, the Australian Consumer and Competition Commission, the Department of Human Services and the Department of Jobs and Small Businesses, all have

[86] Afif, Zeina; Islan, William Wade; Calvo-Gonzalez, Oscar; Dalton, Abigail Goodnow (2019), Behavioral Science Around the World: Profiles of 10 Countries (English). eMBeD brief. Washington, D.C.World Bank Group, page 6.

[87] Ibid, at page16.

their own behavioral insights teams[88]. After its establishment in 2016, the Behavioural Economics Team of the Australian Government (BETA), which is the Australian Government's central unit for applying behavioural insights (BI) to public policy, has completed almost 30 projects with over 30 partners, claiming to have delivered up to twenty-five million dollars per year in direct benefits to government[89].

In an attempt to decrease the prescription rate of antibiotics, as that is estimated that they result in the death of over seven hundred thousand people per year, due to the rise of antimicrobial resistance, the BETA in collaboration with the Department of Health implemented some experiments in order to see how effectively social norms can encourage doctors to reduce the number of prescriptions. The results were impressive: by sending informed letters to doctors, the prescription rate was reduced by 12.3 percent. In a period of six months, the results showed an overall decrease of 126,000 in antibiotics prescriptions[90]. The BETA also collaborated with the Department of the Environment and Energy in an attempt to encourage Australian citizens to switch energy providers, in order to save hundreds of dollars per year. To achieve that, the team redesigned the electricity bills, with the aim to draw attention to key information and also included encouraging messages, letting people know about their alternatives for better plans. The trial was tested in 4,200 citizens and the results indicated an increase in people's confidence by 13 percent. Despite the fact that the results did not show an impressive shift in people's intention to actually switch their energy providers, the results indicate that simple simplifications can actually boost consumer's confidence[91]. In the last four years, the BETA, in collaborations with many government departments, has also applied behavioral insights in many other fields. For example, SMS reminders were sent to people informing them about their credit card debt, in an attempt to help them pay faster and avoid high fees. Results indicated that this intervention helped people maintain a smaller balance in a period of twelve months[92]. In addition to that, the BETA in collaboration with the Australian Taxation Office applied social norms as nudging factors, in order to increase tax compliance. These interventions led to an increase of $23 millions in government's revenue [93].

88 Ibid.
89 Impact report (2019), BETA.
90 Ibid, at page 4.
91 Ibid, at page 8.
92 Ibid, at page 9.
93 Ibid.

The Danish Government, although it doesn't have a dedicated behavioral team, has also been interested in the applications of behavioral insights in many policy areas. The Danish Business Authority, the Danish Taxation Authorities, the Danish Environmental Protection Agency, the Ministry of Industry, Finance and Industrial Affairs, and the Ministry of Health are some of the government bodies that have ran projects related to the application of behavioral insights, with the support of organizations like the Danish Nudging Network, that was established in 2010 and the nudging consultancy iNudgeyou, established in 2011[94]. For example, in 2015, the Danish Ministry of Taxation, with the support of iNudgeyou achieved to increase tax compliance for businesses up to 10%, while applying simple interventions (email reminders) focused on loss aversion[95]. Many interventions have also been tested in other fields: the Ministry of Environment and food of Denmark, in collaboration with the Danish Nudging Network, have worked together in many projects that aim to reduce food waste, increase food recycling and also promote healthy options in different food categories [96].

The Netherlands is another country that has applied behavioral insights in many policy areas. The Behavioral Insights Network Netherlands was established in 2014, but an interest in nudge theory and its potential impact on policy making was first noticed in 2009, when the Netherlands Scientific Council for Government Policy (WRR) published the report ''The Human Decider"[97], with the aim to promote the application of behavioral insights in public policy. Until today, many trials and interventions have taken place in different policy areas including home affair, environment, health, education and finance[98].

Other European countries where applications of behavioral insights took place are France and Germany. In 2013, the Secretariat-General for Government Modernization (SGMAP) in France, one of the Prime Minister's services, started to apply behavioral insights in public policy making. Until today, the SGMAP in partnership with other organizations like NudgeFrance and the consulting firm BVA, has implemented interventions related to behavioral insights in many different policy areas, including environment, health, and road

94 Afif, Zeina; Islan, William Wade; Calvo-Gonzalez, Oscar; Dalton, Abigail Goodnow (2019). Behavioral Science Around the World: Profiles of 10 Countries (English). eMBeD brief. Washington, D.C.World Bank Group, page 52.

95 Hansen, P. G. (2017), Nudging Taxation, iNudgeyou.

96 Ibid 94, at page 54.

97W.L. Tiemeijer, C.A. Thomas en H.M. Prast (2009), De menselijke beslisser- over de psychologie van keuze en gedr ag, Amsterdam University Press.

98 Behavioral Insights Network Netherlands (2017), A Wealth of Behavioural Insights.

safety[99]. In 2015, Germany established the first behavioral unit within the Federal Chancellery's Directorate General for Political Planning, Innovation and Digital Policy [100]. Until today, the team has worked on many behavioral projects related to healthcare, finance, consumer welfare and public service[101].

In the United States of America, the first application of behavioral insights is related to the Pension Protection Act in 2006, a legislation that resulted in the reformation of the private pension law system in USA[102]. Through this legislation, all employers were automatically enrolled in a pension plan, in an attempt to protect those who were not familiar with their retirement options. In addition to that, the law encouraged employers to offer training to their employees for their retirement preparation. The idea of the automatic enrollment was based on insights of behavioral economy, claiming that defaults rules in choices architecture can protect individuals through the decision- making process.

In the period 2009-2012, the office of Information and Regulatory Affairs (OIRA) collaborated with other government departments on projects involving the implementation of behavioral insights in effective policy making. In 2013, the first behavioral insights team was formed in the White House, in an attempt to support federal government in conducting trials and interventions in different national policy fields[103]. In 2015, President Barack Obama issued an executive order, urging the government departments to use behavioral insights for the reformation of policy making in various fields and also established the Social and Behavioral Sciences Team (SBST), but the team is no longer active since January 2017. The SBST was a subcommittee of the National Science and Technology Council, consisting of behavioral scientists, policymakers and civil servants across twenty-two different government departments and councils, including the Departments of Defense, Agriculture, Veterans Affairs, Health and Human Services, Education, Housing and Urban Development, Justice and Energy[104]. In 2015, a team consisting of scientists formed the Office of Evaluation Sciences

99 Ibid 94, at page 64.

100 Ibid 94, at page 73.

101 Afif, Zeina; Islan, William Wade; Calvo-Gonzalez, Oscar; Dalton, Abigail Goodnow (2019). Behavioral Science Around the World: Profiles of 10 Countries (English). eMBeD brief. Washington, D.C.World Bank Group, page 73.

102 Urban Institute (2015), Pension Plan Structures before and after the Pension Protection Act of 2006, U.S. Department of Labor, Employee Benefits Security Administration.

103 Ibid 101, at page 147.

104 Social and Behavioral Sciences Team (2016), 2016 Annual Report, Executive Office of The President National Science and Technology Council, Washington, D.C. 20502

(OES) within the General Services Administration (GSA). This team has collaborated extensively with SBST in many projects, offering the scientific support in applying behavioral insights across the US government. Until today, the OES continues to support many agencies while implementing interventions and trials related to behavioral insights across different sectors. Nowadays, many other states including New York, Philadelphia, and Washington, D.C. have their own behavioral insights teams, while other such as Boston and New Orleans collaborate with behavioral scientists in different national projects[105].

Other countries that have applied behavioral insights in the police making process are Canada and Singapore. Singapore's government has collaborated extensively with the Behavioral Insights Team of the UK since 2012 and in 2016 a new office started operations in the country[106]. Since then, the BIT has collaborated with fifteen national agencies, including the Ministry of Manpower, the Public Services Division of the Prime Minister's Office and the Ministry of Home Affairs, in attempt to reform the policy making process into one that has a more beneficial social impact in various fields, including retirement plans, health and wellbeing, education and home affairs. The Ontario Behavioral Insights Unit, is the first behavioral insights team in Canada and was established in 2013[107]. Since then, many others have followed: the Employment and Social Development Canada has its own team since 2014 and the Privy Council Office has established the Impact and Innovation Unit (IIU) in 2015, supporting the Canadian government in the implementation of behavioral insights across the federal level. Moreover, the Canada Revenue Agency created the Accelerated Business Solutions Lab in the same year, the Province of British Columbia Behavioral Insights Group was established in 2016 and, finally, in 2017 the Personnel Research in Action team was established by the Department of National Defence, applying behavioral insights related to the Canadian Armed Force procedures. Many projects related to the applications of behavioral economics have also been conducted in many areas across the country. All the above organizations, although they mostly work independently, often collaborate in projects across departments at the federal level and the IIU is usually leading the efforts and coordinating the processes[108].

105 Afif, Zeina; Islan, William Wade; Calvo-Gonzalez, Oscar; Dalton, Abigail Goodnow (2019). Behavioral Science Around the World: Profiles of 10 Countries (English). eMBeD brief. Washington, D.C.World Bank Group.

106 Ibid105, at page 111.

107 Ibid 105, at page 35.

108 Ibid.

2.3 Applications of the theory in the private sector

2.3.1 Nudge Management

As reported in the previous chapter, there is a vast literature related to applications of behavioural insights in public policymaking. Alongside this, applications of behavioral insights have also been noticed in the private sector and the concept of ‘’nudge management’’ has started to attract the interest of many international private organizations. The term ‘’nudge management’’ refers to a scientific managerial approach, that uses insights of behavioral economics and in particular the nudge theory in designing interventions that can help increase the knowledge worker productivity[109]. The term ‘’knowledge worker’’ refers to employees, whose effectiveness and productivity relies heavily on their capability of complex decision making and judgment[110]. In other words, the productivity of the knowledge worker of the 21st century, depends primarily on his interactions with other employees, shareholders and customers.

Increasing knowledge worker productivity has been studied by many management scholars and there are many scientific reports that indicate that in order to strengthen the potential for innovation and achieve the objectives of the organization, managers need to focus on a managerial approaches that focus on the optimization of fast thinking and unconscious behavior among employees[111].The principal idea underlying the concept of nudge management is that of the dual process theory of mind. As discussed on Chapter 1, these dual-process theories consider that the human information processing takes place through two different types of systems: the automatic (or system 1) that contains our intuitive thing and the non automatic (or system 2), which contains the logical reflective side of thinking.

As Elbert et al. (2017) report, most traditional managerial approaches are focusing on an attempt to strengthen the abilities of the rational system, while most of the human’s mistakes

109 Ebert Philip, Freibichler Wolfgang (2017), Nudge Management: applying behavioral science to increase knowledge worker productivity, Journal of Organization Design 6:4

110 Drucker Peter, (1999) Knowledge Worker Productivity: The Biggest Challenge, California Management Review Vol. 41, NO. 2 Winter, 1999

111 MLA (7th ed.) Brynjolfsson, Erik, and Andrew McAfee (2011) ‘’Race against the Machine: How the Digital Revolution Is Accelerating Innovation, Driving Productivity, and Irreversibly Transforming Employment and the Economy.’’.

should be attributed to fails of the automated system[112]. As the authors claim, the knowledge of how the human brain actually works could benefit private organizations, by providing the tools needed in order to implement the right choice architecture, with the ultimate goal to make people more efficient, productive and happier at their workplace. Some of the implementation that they suggest in their article are the following[113]:

Improving efficiency of meeting: Studies have shown that employees spend a lot of time in meetings due to the *information bias*—the tendency to seek more information in workplace, due to the misperception that this will lead to better results[114]. Some effective nudges that might reduce the time spent in meetings, would include some default rules: managers can decrease the default duration of meetings from 60 minutes to 30 minutes. In this way, new social norms are created, and the expectation of smaller meetings would make people more efficient.

Improving task and planning efficiency: As previously mentioned in Chapter 1, the optimism bias is correlated to the planning fallacy, that describes the tendency to failure while managing project timelines and also often to overlook project risks. Nudge management can be a useful tool in preventing planning fallacy; the idea is that employees can share their key objectives and their timelines in front of their co-workers. Sharing them in front of people can affect the optimism bias due to the fear of failure and also increase their commitment. In addition that, in order to reduce distracting factors in productivity, nudges can be also applied: for example, ‘’no meeting days’’ or ‘’work from home’’ days can reduce employees’ distraction and result in more efficiency, and default rules like ‘’turn off the sound effects’’ related to unconscious actions like checking constantly emails or social media, can also have a positive impact on task engagement[115].

Google is a highly representative example of a company that has applied nudge management with great results[116]. The company’s ongoing successful story relies not only on its dedication to continuous technological innovation, but also on applying innovative approaches to human management. In particular, Google is applying nudge theory in various forms to increase productivity and happiness of its employees. The company’s management approach doesn’t

112 Ebert Philip, Freibichler Wolfgang (2017), Nudge Management: applying behavioral science to increase knowledge worker productivity, Journal of Organization Design 6:4, page 2

113 Ibid, at pages 3-4.

114 Ibid

115 Ibid

116 Ibid, at page 2.

include a tight management control system that involves strict rules for its employees and cannot be described as ‘’controlling’’. In contrast to a strict managerial approach, its management system focuses on the optimization of the choice architecture, in an attempt to help employers, make better decisions in their workplace, to be happier and increase their productivity and their potential for innovation.

As described in many popular books published by the company, different types of interventions have taken place in order to contribute to its employee’s welfare[117]. For example, office architecture has been redesigned and the so called ‘’micro kitchens’’ have been created, in order to help employees share their knowledge, increase brainstorming and social contact. In addition to that, food choices in the cafeteria have been architected in a way that promotes a healthy lifestyle.

Many other companies around the world have implemented interventions related to the nudge management approach. For example, Lawline, a leading provider of online legal continuing education has established ‘’No meeting Wednesdays’’ and also offers to its employees the option to work from home some days per month[118]. In fact, we could say that this nudge is quite popular nowadays, since many companies -especially startups- offer the possibility of working from home, in an attempt to make employees feel more flexible with their time management.

Boston Consulting Group (BCG), is another example of a company that has applied interventions related to behavioral insights in order to increase its employees’ work-life balance, which is now considered to be a top priority. As the firm reported, a reformation of its email system took place, in an attempt to reduce the emails sent by managers after office hours[119]. In particular, they included a pop-up window, that reminds the sender that the email is about to be sent after working hours. As reported by the firm, these digital nudges have a great impact and can help organizational goals towards improving employee’s behavioral consistency[120].

117 Lazlo Bock (2015) ‘’Work Rules!: Insights from Inside Google That Will Transform How You Live and Lead’’, MLA (7th ed.)

118 see : http://www.forbes.com/sites/entrepreneursorganization /2015/06/24/how-to-be-super-productive-on-a-no-meeting-day

119 Fetherston J., Bailey A.,Mingardon S.,Tankersley J., (2017), ‘’The Persuasive Power of the Digital Nudge’’, Boston Consulting Group.

120 Ibid.

Default rules can also have beneficial impact on environmental protection. One example is that of Rutgers University in New Jersey[121]. In 2008, the university changed its default printer setting from “print on a single page" to “print on front and back." This simple default rule resulted in a decrease of paper consumption, by over fifty-five million sheets in just three years, which corresponds to a 44 percent reduction and is equivalent to saving 4,650 trees. These results indicate once again, that small and cost-effective nudges can help people in organizations make better decisions that will lead to beneficial results not only for the organization but also for the environment.

Another example is that of the British airline company Virgin Atlantic that used nudges in an attempt to make pilots reduce fuel consumption. The airline tested a series of interventions that could affect pilots’ behavior. In particular, three hundred and thirty-five pilots were randomly assigned to groups, including a group that was informed through a letter that they were taking part in a study of fuel consumption. The results were quite impressive: the group of pilots that got informed about their participation in the emission study, resulted in saving up to 3 million pounds in fuel consumption and also led to a significant decrease of carbon dioxide emissions (approximately 20,000 tons) [122]. This is one of the most successful implementation of behavior insights in the private sector and indicates that simple and low-cost nudges can have a great impact on both the organization and the environment.

Nowadays, the interest of incorporating insights of behavioral economics by private organizations has increased. Many reports from consulting firms can be found in literature, including Boston Consulting Group, Deloitte and McKinsey Quarterly, that take over projects related to the transformation of business structure of big companies, based on the insights of behavioral theories[123]. As the above examples strongly indicate, there can be no doubt that the implementation of scientific proved managerial approaches, such as nudge theory, can have a major impact on employees’ efficiency, productivity, behavioral consistency and can also

121 Sunstein C., Reisch L., (2008) ‘’Automatically green: behavioral economics and environmental protection’’, Harvard Environmental Law Review Vol.38, 2008.

122 Greer K. Gosnell, John A. List, Robert Metcalfe (2016), ‘’A New approach to an age-old problem: solving externalities by incenting workers directly’’, NBER publications.

123 Güntner A., Lucks K., Sperling-Magro L.,(2019)’’ Lessons from the front line of corporate nudging’’, McKinsey Quarterly.

contribute to individuals' wellbeing in their workplace, while at the same time satisfying the company's objectives.

2.3.1 Nudging customers

In the context of public policy-making and when facing challenges related to fields like healthcare and environmental protection, nudge theory and behavioral insights are almost generally accepted as beneficial tools, that can help increase optimum behaviors, through the implementation of the right choice architecture. In addition to that, as mentioned above, using nudge theory in people's management, can also lead to great results related to people's productivity and wellbeing in their workplace. In this part, we will shortly discuss the applications of the theory in a controversial area, that is using nudges for commercial and marketing goals. The approaches used in the private sector are quite similar as in the public sector, but the objectives can be quite different. As we will further examine, there can be found many examples of nudging consumers towards preferable choices.

Since the rise of behavioral economics and the spread of nudge theory, many enterprises around the world have adopted new marketing policies, that use behavior insights with the goal to nudge people towards making certain choices. Nudge marketing takes advantage of individuals' mental shortcuts and biases, by changing the choice architecture in a way that can influence an individual's behavior. One example is that of default rules that are widely used in the controversary marketing approach named ''negative option marketing'' (NOM). The idea underlying this marketing approach is that consumers need to take action in order not to buy or stop using a product or service.[124] In case the consumer does nothing, that is equivalent to a silent agreement. This method takes advantage of cognitive bias like status quo and inaction, in order to somehow ''manipulate'' individuals to desired actions[125]. Examples include cases such as magazine annual subscriptions, where the customer is automatically re-subscribed to another year of membership, unless he takes action (request to unsubscribe) , or free trial

124 Licata, J. W. and Von Bergen, C. W. (2007). "An exploratory study of negative option marketing: Good, bad or ugly?", International Journal of Bank Marketing, Vol. 25 No. 4, pp. 207-222.

125 Sunstein,C.R. (2013), "Deciding by default",University of Pennsylvania Law Review,Vol.162 No.1, pp.1-57.

memberships to online websites, where customers get charged after the trial period, without being asked if they wish to do so.[126]

Taking a look at the above approaches, the idea that nudges that are profitable for firms are bad for consumers is easy to come to our minds. Despite the ethical concerns that arise from the applications of behavioral insights in the private sector, there are numerous studies that present some ‘’beneficial nudges”, in the sense that there are cases where the desire of profit maximization in an enterprise, can also be aligned with consumer’s benefit.

As mentioned above, simplification of choice architecture plays a crucial role in decision-making. In particular, as one experiment indicates, limiting the offered choices to customers may have a great benefit to increasing purchasing. New York Times conducted an experiment in a grocery store on two different days[127]. On the first day, customers were exposed to twenty-four different types of jam flavors and on the second day to only six. Impressively, purchases increased from 3 percent to 30, corresponding to 600 percent more sales, by just reducing the available options of jams. These results indicate that ‘’more is not always better’’ and points out that simplification of choice architecture, as discussed in chapter 1, can indeed nudge individuals towards reaching a decision more easily.

Another example that shows that companies can use nudges in order to help customers make healthier food choices is described by Krose et al., who conducted an experiment in Dutch train station stores[128]. In this experiment, researchers tried to investigate whether the way the food options are displayed to customers can actually affect their choices. In particular, there were two experimental groups: in the first group, healthier food choices where displayed close to the cash desk, while on the other experimental group, the layout of the healthy food choices was the same, but there were also signs, containing messages that informed people about the importance of adopting a healthier lifestyle. Researchers wanted to find out, if the fact that people knew that they were being nudged, affected their choices. The results showed that customers’ purchasing patterns were significantly healthier, when healthy food options were

126 VonBergen, Clarence W.; Kernek, Courtney; Bressler, Martin S.; and Silver, Lawrence S. (2016) "Cueing the Customer Using Nudges and Negative Option Marketing," Atlantic Marketing Journal: Vol. 5 : No. 2 , Article 12.

127 Payne CR, et al., (2014) ‘’Shopper marketing nutrition interventions’’, Physiology and Behavior, vol.136, pp.11-120

128Kroese FM,Marchiori DR,Ridder DT (2016) ‘’Nudging healthy food choices: a field experiment at the train station’’, Journal of Public Health, Vol.38, Issue 2, pp.133–137.

more visible in both groups. In addition to that, letting people know about the fact that they were being nudged, showed no negative results and, in fact, people stated that they appreciated the effort.

In another example, hotels use behavioral insights in order to nudge customers towards reusing towels in hotel bathrooms, in an effort to reduce both expenses related to laundry and environmental waste. In an experiment that took place in the 4-star hotel TUI Magic Life, two different groups of customers were encouraged by small cards to reuse their towels[129]. In the first group, the message was informing customers about the positive environmental impact of reusing towels. In the second group, the message was adjusted with the hope to nudge customers towards the preferable behavior by using the force of habit. In particular, the message was "*Reuse me again tomorrow. Just like at home."* The results were very promising: the rate of reused bath towels increased in both scenarios, and even more impressive is the fact that, in the second group, the percentage was even more: 49.4% in comparison to 38.6% in the threat scenario. On an annual basis, these results correspond to a reduction of 129,000 litres of water consumption and 1,676 decrease in carbon dioxide emissions.

To summarize, all the above applications indicate that interventions relying on behavioral insights can indeed have a great impact on human behavior. The fact that the theory works well, especially when it comes to results related to the number of people that can get influenced by nudges, is unquestionable. Despite that fact, many ethical concerns can arise when nudging individuals towards preferable behavior. Especially in the private sector, when consumers are being manipulated in order to reach preferable decisions that are not always in alignment with their welfare, nudging can also be considered as a dangerous practice. In the next chapter, we will further discuss the ethical concerns of nudging and will also present some arguments against the theory.

129 Cristian Rapp (2017) ''Study on the re-use of hotel towels: Force of habit saves laundry and cuts pressure on the environment''', TUI Group, retrieved by: https://www.tuigroup.com/en-en/media/press-releases/2017/2017-08-08-study-on-the-re-use-of-hotel-towels

Chapter 3: Criticism

As was expected, this approach to behavioral change (nudging) is something that has faced harsh criticism. Many academics and public commentators argue against this practice, due to the political, practical and most of all ethical implication of nudging. These people believe that nudging manipulates people's choices and thus restricts freedom. Some critics argue that "Libertarian Paternalism" is an oxymoron, despite the efforts of Sunstein and Thaler to disprove this fact[130].

The first aspect of the criticism is related to the theory's morality, with a focus on the intentions of the nudger and whether this approach in behavioral change, restricts the liberty of the people to make their own decisions. Another argument make, is that the whole theory is based on the fact that people are most of the time irrational in their decision-making process and therefore, they are unable to make the right decisions for their own well-being, while critics have concluded, based on further research and bibliography, that people are not as irrational as behavioral scientists claim[131]. Thaler and Sunstein disregard all criticism and state that "the anti-nudge position is a literal non-starter"[132]. In addition to that, they argue that nudging is a liberty preserving, just as long as it is guided by Libertarian Paternalism and Rawls' publicity principle [133]. This principle will be analyzed a bit further below.

Thaler and Sunstein's "defense" is based on three main well-supported arguments, but we can not ignore the counterarguments that the critics make and their concerns. In fact, Pelle Guldborg Hansen and Andreas Maaløe Jespersen argue in their paper, that all of the lines of argumentation of the founders of nudge theory are seriously flawed[134]. Following all the above, we will present the main issues that are being discussed by critics.

130 Mitchell, Gregory (2005),'' Libertarian Paternalism is an Oxymoron'', Northwestern University Law Review, Vol. 99, No. 3.

131 Foka- Kavalieraki Yulie, Hatzis Aristides N., (201))''Rational After All: Toward an Improved Theory of Rationality in Economics'', Revue de Philosophie Economique 12: 3-51.

132 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' New Haven, CT, and London: Yale University Press, page 11.

133 Cass R. Sunstein, Christine Jolls & Richard H. Thaler (1998) "A Behavioral Approach to Law and Economics," 50 Stanford Law Review 1471, page 1533

134 Hansen, P., & Jespersen, A. (2013). ''Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy'', European Journal of Risk Regulation, 4(1), pp. 3-28.

- ***Is choice architecture inevitable?***

On the first line of criticism, regarding nudge theory's morality, Thaler and Sunstein argue that nudging is an inevitable fact in people's lives and decision making[135]. For example, even the choice architecture of a decision making context is something that could greatly influence our behavior and ultimately our decision. That is something that happens, even if the choice architecture is completely random. So, if we accept that behavioral economics in general and specifically nudge theory are based on the fact that people do not act as perfectly rational agents, able to make the optimal choice every time and that on the contrary, we seem to often make "bad" decisions, that prove to be harmful to us, our loved ones and our society, even when a better choice is evident, we can understand Thaler and Sunstein's first argument, that we are always being nudged. That means that our decisions are being influenced constantly, even if there is no "architect" or "nudger" behind the influence, no one who is actively and intentionally trying to manipulate us . For example, every store has its own design and order of products. It is inevitable that some products will be seen first by the customer and some later on [136]. The customer is much more likely to buy something that he saw when he first entered the store, than something that is in the far back. So with this argument, we can conclude that the "neutral design" of choices exists, even if the architecture and the eventual results are fortuitous. To be more specific, even if no one is trying to consciously alter our behavior to achieve a desirable decision, we are always being nudged. Having claimed the above, Thaler and Sunstein conclude that nudging is an unavoidable fact of our everyday decisions and it is thus unreasonable to try and take measures to avoid it[137].

The critics, of course, do have an answer to the abovementioned argument of Thaler and Sunstein and they do not accept the justification that, since we are being nudged anyway, we should embrace it, instead of trying to avoid it. The basis of their counterargument is that it would be wrong to ignore the issue of intentionality[138]. While it may be true that we are being unintentionally nudged by the condition and choice architecture, is it the same thing as being intentionally manipulated to make a certain decision? They also argue that the responsibility

[135] Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' , New Haven, CT, and London: Yale University Press, page 11

[136] Cass Sunstein, The Ethics of Nudging, 32 Yale J. on Reg. (2015), page 10.

[137] Ibid 135, at page 11.

[138] Hansen, P., & Jespersen, A. (2013). ''Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy'', European Journal of Risk Regulation, 4(1), page 10.

of the choice and its aftermath is something that we must also take into account. For this reason, critics do not fully accept Thaler and Sunstein's definition of nudge as "any aspect of the choice-architecture that alters people's behavior in a predictable way", but prefer Hausman and Welch's approach, who define nudging as "ways of influencing choice", as this definition takes intentionality into account.[139] In particular, critics claim that intentionality is a crucial part of nudge's definition and thus cannot be ignored.

- **Does nudging improve people's lives?**

The second argument that Thaler and Sunstein use in order to reinforce their position, is that nudging is used in an effort to improve people's behaviors, leading them to make better decisions for themselves and/or their society. This, of course, applies if the nudge approach follows the principles of Libertarian Paternalism. Basing this position on their previous argument as well, they state that, since we have accepted that people are being constantly nudged, even if no one is actively nudging them, it is better that people are nudged in a way that actually helps them make better decisions and live better and healthier lives. Finally, after having stated the above, Thaler and Sunstein state that nudging people in the right direction, if one has the ability to do so, may actually even be a moral obligation[140].

But like all arguments, the nudge founders' above statement has its issues. First of all, the critics ask, how is it possible to judge what would be in the people's best interests? In many cases, people have not even thought too much about their preferences, much less express them. This is something that could pose severe obstacles in Thaler and Sunstein's basic principle, that nudging is used to help people make better decisions for themselves, since the "nudger" may not know what the best decision for each individual might be. Even when people are asked about their preferences or opinions, their answers could be biased based on the choice architecture and the way their choices are presented. In addition, Hansen and Jespersen emphasize that nudging is not equal to Libertarian Paternalism[141]. Nudging is a channel being used to trigger changes in behavior, while Libertarian Paternalism sets the guiding lines, rules,

139 Hansen, P., & Jespersen, A. (2013) ''Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy'', European Journal of Risk Regulation, 4(1), 3-28.

140 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' New Haven, CT, and London: Yale University Press.

141 Ibid, at page 12

and constraints of the nudge[142]. So, when arguing about whether nudging is good or bad as a principle, we must really take into account the fact that it is not always used "for good" and this is something that even Thaler and Sunstein agree to. As a result, nudging is something that could encourage abuse of power[143].

- ***Is nudging liberty preserving?***

Finally, the third argument of the nudge approach supporters is that this method does not limit people's freedom. It does not manipulate incentives or regulate the current options. A person is free to dismiss anything that the nudge is meant to promote and behave in a completely different way. This concludes that the nudge approach to behavioral change is liberty preserving and it does not restrict the liberty of the citizens in any way [144].

However, as the critics argue, the whole theory behind behavioral economics and nudge theory are based on the fact that people are not hyper-rational beings and that their choices are in fact being manipulated very easily. This means that we can not state that people have the ability to reject a nudge easily or even at all [145].

- ***The transparency issue***

Thaler and Sunstein do not ignore the possible "bad" applications of their theory. That is why, they are strong advocates of transparency, when applying the nudge approach[146]. As Sunstein states, nudging is not another form of mandates and bans[147]. He also points out that it is very important for choice architecture to be governed by transparency, so that people can be aware of any kind of interventions that might take place, so that they can review them and decide whether there are beneficial or no. In addition, both of nudge theory's founders endorse the publicity principle as written by philosopher John Rawls [148]. This principle, in a simplified definition, states that governments must not be able to apply any kind of policies that they

142 Ibid.

143Thaler Richard H. (2015)''The Power of Nudges, for Good and Bad'', New York Times, retrieved by: https://www.nytimes.com/2015/11/01/upshot/the-power-of-nudges-for-good-and-bad.html

144 Cass R. Sunstein, ''Nudging: A Very Short Guide'', 37 J. Consumer Pol'y 583 (2014), page 2

145 Hansen, P., & Jespersen, A. (2013) ''Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy'', European Journal of Risk Regulation, 4(1), at page 15.

146Ibid 144, at page 2

147 Ibid.

148 Cass R. Sunstein, Christine Jolls & Richard H. Thaler, "A Behavioral Approach to Law and Economics," 50 Stanford Law Review 1471 (1998), page 1532.

would not be able or willing to defend publicly to its own citizens[149]. In fact, they take this principle a step further, introducing a more proactive approach, stating that the government "should not be secretive about what it is doing" and that "they should be happy to reveal both their methods and their motives"[150]. However, even they agree that such an approach is often difficult to implement. For example, in the case of subliminal advertising, which is something for which people show great discomfort, even disclosing the fact that they are being influenced would not suffice in ensuring ethical legitimacy[151]. For this reason, Thaler and Sunstein state that this kind of manipulation should not be implemented, because it is inevitably non transparent and impossible to monitor[152].

This statement is something that is being strongly criticised by Hansen and Jespersen[153]. They argue that transparency and monitoring in not always feasible in some nudges, that the authors claim to be ethical. They claim, that if transparency is relying on the principle of visibility, then many nudges that are described as ethical by the authors, could not be considered as so. One example would be that of using stripes at the beginning of dangerous curves on the road, in order to create "a sensation that driving speed is increasing"[154], or the default rules related to organ donation[155]. The critics argue that these applications of nudge theory are neither visible nor easy to monitor and should thus not be acceptable by Thaler and Sunstein as ethical, if they are strictly relying on their abovementioned principle[156].

Finally, Hansen and Jespersen distribute the nudges in four categories and label them as manipulative or not, according to the category in which they belong[157]. Non transparent nudges, regardless of the system that they engage (reflective or automatic) are considered manipulation by the critics (see Table 1, below).

149 John Rawles, ''A Theory Of Justice'', Political Studies, vol.19 (1971), page 133.

150 Thaler R and Sunstein CR (2008) ''Nudge: Improving decisions about health, wealth and happiness.'' New Haven, CT, and London: Yale University Press, page 245.

151 Ibid

152 Ibid

153 Hansen, P., & Jespersen, A. (2013). Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy. European Journal of Risk Regulation, 4(1),page 16.

154 Ibid

155 Ibid

156 Ibid

157 Ibid, at page 23

	Transparent	Non-transparent
System 2 thinking	Transparent facilitation of consistent choice	Manipulation of choice
System 1 thinking	Transparent influence (technical manipulation) of behavior	Non-transparent manipulation of behavior

Table 1: The different type of nudges, as described by Hansen and Jespersen[158]

- ***Are we as irrational as behavioral scientists view us?***

As described in Chapter 1, nudge theory is based on the principles of behavioral economics and in particular in the dual-process theory. As described above in more details, the underlying idea is that people do not always behave rationally and that they systematically may make poor economic decisions due to cognitive restrictions. The underlying theory of behavioral economics has also faced harsh criticism, since many scholars have identified problems in their methodology and as a result, some serious concerns have arisen, related to the validity of their empirical data.[159] In particular, there are other theories that suggest that people are not as irrational as behavioral economics claim them to be. These theories suggest that mistakes in decision-making are justified through external factors rather than to cognitive restrictions, and thus nudging people towards preferable directions is unnecessary and dangerous[160]. In addition to that, critics claim that people are able to learn from their mistakes and with the appropriate information, it is possible to avoid them in the future[161]. Another strong argument against the theory is the following: even if we accept that theory is correct and that people are not inherently rational, what makes the choice architects (being irrational human beings themselves), able to nudge people towards the right decisions[162]?

158 Hansen, P., & Jespersen, A. (2013). Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy. European Journal of Risk Regulation, 4(1),page 23.

159 Foka-Kavalieraki Yulie (2016) '' Φιλελεύθερος Πατερναλισμός: Μια Κριτική Προσέγγιση'', Νεύσις, page 2

160 Ibid.

161 Ibid.

162 Ibid.

First of all, the fact that people are not perfectly rational in their behaviors and decision-making process is undoubtable. But critics claim that a model that portrays them as completely irrational is also not correct. One could argue, that if humankind was really that bad in its decision making process, it is possible that homo sapiens would not have been able to survive and evolve through all of the challenges of natural selection. As the critically acclaimed economist and behavioral scientist Herbert Gintis claims, the conclusions of behavioral economics that indicate that human choice is generally irrational, is completely contradictory to everything that we know so far about evolution and cognitive abilities[163].

In addition, critics of behavioral economics argue that the aforementioned model does not adequately explain the human decision-making process, but instead focuses on recording the "mistakes" people often make when faced with a choice. The explanation given by the dual-process theory , is not enough to explain the mechanisms behind human behavior and has a huge margin of error when attempting to forecast it. In contrast to that, the neoclassical model that supports that humans are mostly rational in their decision-making process, is much more accurate when trying to predict human behavior[164].

Another issue related to behavioral economics is that the theory does not take into account the ability of people to learn and self-correct future similar behaviors. This is something that is supported by experiments, since when people are put through similar experiments more than one time with minor differences, for example in the framing of the experiment, even the most basic and popular cognitive mistakes, as explained by behavioral economists, seem to disappear[165].

In literature, it is widely accepted that, until today, there is not such a theory that can sufficiently explain human behavior, and that is why researchers are still looking into developing a better model. On theory that has accepted significant interest is that of ecological rationality, which has been somewhat independently developed from many researchers in

163 Gintis, Herbert. 2012. "An Evolutionary Perspective on the Unification of the Behavioral Sciences." In Evolution and Rationality. Decisions, Co-operation and Strategic Behaviour., Samir Okasha & Ken Binmore, eds. New York: Cambridge University Press, page 229.

164 Foka- Kavalieraki Yulie, Hatzis Aristides N. (2011)''Rational After All: Toward an Improved Theory of Rationality in Economics'', Revue de Philosophie Économique 12: 3-51.

165 Foka-Kavalieraki Yulie (2016)'' Φιλελεύθερος Πατερναλισμός: Μια Κριτική Προσέγγιση'', Νεύσις,page 2

different fields, such as experimental economics, behavioral sciences, game theory, psychology, artificial intelligence and cognitive sciences[166]. This theory is based on evolution and while it is based on heuristics as well, it recognizes that the environment plays a very important part in the decision making process. There are multiple approaches of this theory amongst the different researchers from the different science fields, but this is something that they all have in common[167].

In conclusion, most of the critics claim that the whole basis of libertarian paternalism, which is that people are completely irrational in their decision-making process, is not sufficient to explain human behavior. They support that, while it is true that people make mistakes when making a choice, other factors need to be taken into account, such as the environment and the ability to learn and correct behavior in the future. On the contrary, better models have been developed that more accurately explain and predict the result of a behavior or decision. This is something that poses a strong counterargument to Sunstein and Thaler claim, that nudges are ethical because they aim to help people make better decisions for their own welfare, because they are unable to do so themselves.

- ***How effective are nudges?***

As mentioned in the literature, it is of great importance to realize that the effectiveness of a nudge is not assessed by the level of which people complied with the desires of the nudger that applied it [168]. We can say that one nudge was effective, only if it was successful in achieving its final goal, which is that a person is making decisions that are better suited to their needs [169].

In most of the cases, it is ,unfortunately, quite a difficult task to monitor and assess the effectiveness of these types of interventions. As described by Yulie Foka-Kavalieraki, this happens due to four main reasons[170]: First of all, third parties have limited or no access to databases containing the data, processes and results of a nudge application. Secondly, because, as stated before, nudges vary in kinds and levels of transparency, and for someone to detect,

166 Mata, Rui et al. (2012) “Ecological rationality: a framework for understanding and aiding the aging decision maker.” Frontiers in Neuroscience vol.6

167 Foka-Kavalieraki Yulie, (2017) ’’Οικονομική Ψυχολογία’’, Papadopoulos Publications, page 92.

168 Foka-Kavalieraki Yulie (2016) ’’ Φιλελεύθερος Πατερναλισμός: Μια Κριτική Προσέγγιση’’, Νεύσις, page10

169 University of Zurich, "Nudging does not necessarily improve decisions.", ScienceDaily (2019), from www.sciencedaily.com/releases/2019/01/190116111017.htm

170 Ibid 168, at page 9.

observe and analyze them is an extremely difficult task[171]. Thirdly, most nudges are applied on a small scale, so they cannot be considered as a statistical sample, that allows us to predict its effectiveness in the rest of the population. Fourthly, the performance of the nudges is not constant over time, and despite the fact that the results might be quite impressive in the beginning, their effectiveness seem to be decreased in future applications[172].

In addition to the above, an evaluation from Mullane and Sheffrin in 2012, which included two of the most important regulatory plans of the USA and the actions of the Behavioral Insights Team of Great Britain concluded the following[173]:

I. There is no clear line between "hard" and "mild" paternalistic adjustments.
II. The empirical data analysed to show the effectiveness of the nudge are controversial or weak.
III. Behavioral scientists often set low standards when it comes to the efficacy of their proposals.
IV. The government of Great Britain is not transparent about its applications of behavioral sciences to its citizens.
V. There doesn't exist one simple nudge that is ideal for every problem, but every issue requires complex planning with many alternatives.

To summarize, in this chapter we reviewed the concerns of nudge theory's critics and identified the possible issues underlying it. The literature about the criticism of the theory is vast and focused on two main categories: The ethics and moral implications and the effectiveness of it. The critics argue that even though choice architecture may be inevitable to an extent, we can not ignore the intentions of the choice architect if this person is using the architecture to change people's behavior. In addition, they doubt the fact that nudge is liberty preserving and they state that nudges are not always transparent, which is something that even nudge's founders admit. Lastly, although the advocates of nudge claim that its effectiveness is proven, that seems to be questionable. Measuring the effectiveness is really difficult and in many cases the results are measured with false criteria. Some critics even argue against the very basis of the theory,

171 Yeung, Karen (2012) "Nudge as Fudge." Modern Law Review 75: 122-148.

172 Voyer, Benjamin G (2015) "Nudging' Behaviours in Healthcare: Insights from Behavioural Economics." British Journal of Healthcare Management 21: 130-135.

173 Maggie Mullane and Steven Sheffrin (2012)'' Regulatory Nudges in Practice'', White paper, Department of Economics and Murphy Institute, Tulane University.

which is that humans are incapable of making the right decision for their own welfare. Taking into account the arguments of both sides, the only thing that we can be certain about is that there are many issues about nudge theory that remain unresolved and further examination needs to take place in order to reach more accurate conclusions.

Conclusions

In this master thesis, we analyzed the concept of nudging, a theoretical model that is based on the principles of behavioral economics. We reviewed many applications of the nudge theory in both the public and the private sectors and discussed the concerns and criticism it faces. As its applications indicate, nudging can be considered as an exciting and promising practice and many governments, public and private institutions are currently applying it, to bigger or smaller extents. The growing interest in nudges comes from the fact that their implementations require low cost and effort. The applications in many cases show promising results, that lead us to believe that nudging is a practice that indeed has a high potential to help people make better decisions and ultimately improve their lives. In particular, in the public sector nudging has been considered as an important policy-making tool by many governments, in an attempt to help public administrations in formulating policies that will promote citizen's well-being.

As presented in more detail above, the most representative example is that of the Behavioral Insights Team (or Nudge Unit) of the United Kingdom, who conducted many RTCs in order to investigate whether interventions related to the behavioral insights can have a positive impact on citizen's life. Although the results definitely indicate that nudging can be quite effective in the sense that people can get influenced by the way an option is presented to them, or by social norms that exist in the decision-making process, the results in many cases, are quite poor. For example, healthcare is a field where the BIT put a great effort and several interventions took place. Among many applications, the most successful examples were those related to interventions that resulted in 12.3% reduction in antibiotics prescription by doctors, or 38% reduction of referrals to overbooked hospitals, or a reduction in DNAs (Do Not Attendees) in hospitals of 30%. In other cases, like for example in an attempt to reduce the number of pregnant women who quit smoking, the interventions showed no promising results.

In the private sector, implementations of behavioral insights are considered to be a useful tool in promoting the employee's wellbeing, while there are also numerous examples of nudging customers towards making the nudger's preferable decisions. As we saw in the above-mentioned examples, companies like Google effectively use nudge management in their everyday operations and successfully improve their employees' productivity, knowledge

sharing, as well as their satisfaction in the workplace. They even help them lead healthier lifestyles, by using choice architecture to promote healthier food options. Other examples include companies that apply a policy of a day in the week where no meetings are taking place, allowing employees to work from home and generally helping them have a better work-life balance. A particularly interesting example is that of Boston Consulting Group. The company introduced a system that displayed a pop-up message to the managers when they were trying to send it to an employee at a time when they were not supposed to be working. In addition, many companies use nudge management to encourage their employees to be more environmentally friendly and cost-efficient. Such are the examples of Rutgers Uni, that dramatically reduced (-44%) paper consumption by setting the default printer setting to "prin on front and back" and that of Virgin Atlantic, which saved £3m and reduced carbon dioxide emissions by 20.000, just by informing their pilots that they were taking part in a fuel consumption study.

Nudge theory is also broadly applied from companies to consumers. This is something that many times goes against Thaler and Sunstein's values, because most of the time it is not used to improve people's lives. On the contrary, it is often used as a marketing technique, aiming to increase the company's profit without caring about the welfare of the customer. As we saw, nudging can be highly effective in those cases and that indicates that is can be also viewed as an unethical practice. We also reviewed the experiment of The New York Times, conducted in a grocery store. The results indicated that just reducing the number of options of a product can greatly increase sales and profit, in this experiment by 600%! On the other hand, we cannot ignore that there are cases where companies are nudging customers to improve their well-being. In many stores, healthier food is placed near the entrance, promoting a healthier lifestyle. In addition to that, some companies try to improve their customers' environmental footprint, like for example TUI Magic Life Hotel, which increased the number of customers who reused their towels by 49%.

As we have discussed, the interventions related to the behavior insights are nowadays expanding in a variety of fields. However, as claimed by many scholars, there are some very valid points that criticize the theory and its applications and we surely cannot ignore them. Thaler and Sunstein have gone to great lengths to combat criticism, but there are still some concerns that are unanswered. First of all, they claim that such a practice is unavoidable, since the concept of choice architecture exists, even if no one is actively changing it towards an end.

But they do not take into account the aspects of intentionality and responsibility. Furthermore, they argue that nudges improve people's lives. This is something that has been proven to be true on many occasions, but they ignore the fact that the libertarian paternalist may not know what is best for the person being nudged. In addition, nudge's founders claim that it is liberty preserving, since people are free to reject the choice presented by the choice architect. But, if we strictly take into account the model of behavioral economics, that states that humans behave in a completely irrational way, then we can assume that they do not truly have the ability to reject it. In addition to that, choice architects are unable to decide what would be an optimum option, as they are being also restricted by their cognitive restrictions. More issues arise, when we think that this model is just another behavioral approach and in many cases, it is not as accurate as behavioral economists claim it is. That is something that leads us to doubt both the ethics and the effectiveness of the theory. Also, the effectiveness of nudges has been measured in a wrong way in many cases, when the measurement relies on how much people comply with what the libertarian paternalist wanted, instead of how much the people's lives were improved. Accurately assessing the results of nudges is something that has been proven to be an extremely difficult task and more examination must take place in the future, in order to be able to reach accurate conclusions.

All in all, the fact that there is a vast literature of applications of nudge theory is quite promising, because this fact alone indicates that big and small public and private organizations are taking an interest in using scientific approaches to improve people's lives. Different kinds of administrations have started to realize the need to incorporate such methods into their operations, either in their management approach, marketing approach (in the private sector) or policy-making in the public sector, where the theory is broadly used in very important social fields like healthcare and environment. As Thaler stated during his Nobel prize speech '*''To make accurate predictions, we need to enrich economic theories by adding insights from other social sciences. By incorporating human into economic models, we improve the accuracy of economics just like the microscopes increase the resolution of images in biochemistry.''* Indeed, despite the fact that some scholars might agree and some others might disagree with the interventions related to behavior insights, one thing is for sure: the world cannot (and should not) ignore behavioral scientists' role in humans' everyday life: knowing how our brain actually works can help us reform simple daily routines like the food we eat or to have a huge impact on larger areas like policy-making in different public sectors. Even though the proposed model of human decision making is not perfect, the results are promising and can not

be ignored. Of course, more examinations must take place in the future, in order to be able to reach accurate conclusions and enrich our practices with accurate scientific insights.

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