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**BEHAVIORAL ECONOMICS  
AND PUBLIC HEALTH:  
POLICY, ETHICS,  
AND DIGITAL IMPLEMENTATION**

**PRESA UNIVERSITARĂ CLUJEANĂ**

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**Presa Universitară Clujeană**

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# Introduction

This book draws primarily from unpublished chapters of my doctoral dissertation – “Developing public health policies: Behavioral economics theories and experiments” - completed at Babeş-Bolyai University between 2014 and 2018. My doctoral research explored the intersection of behavioral economics, public health policy, and ethical considerations in applying behavioral insights to health-related decision-making. I've brought these chapters together because they still speak to pressing issues in how we develop and implement public health policies today, especially as digital health tools gain traction. The fundamental concepts from my academic work haven't changed, but I've refreshed the material with new findings and expanded the discussion to show how behavioral economics can shape better public health approaches—from policy design to digital interventions.

Recent neuroscientific evidence posits that behaviors are driven by automatic and unconscious deliberations instead of extensive, outcome-oriented reflections. Therefore, focusing on involuntary and spontaneous cognitive processes has the potential to positively influence health risk behaviors and avert diseases, with the ultimate goals of improving health and reducing healthcare costs. Behavioral economics, the combination of psychological insights and economics to predict individual decision-making, could be used to generate and advance positive changes in health-risk behaviors through improved public policies. My thesis consists of five chapters on public health and policy from the perspective of behavioral economics, and explores the conundrums of applying behavioral economics insights to alter human behaviors.

**Chapter 1**, *Behavioral economics and public policy-making*, represents an introduction into the topic of my book and sets the foundation for the other three chapters. I provided a working definition of behavioral economics and discussed the factors that impede individuals to make decisions in line with both their best interest and policy objectives. Since policy outcomes largely depend on how individuals act and behave in relation to the objective of the policy, understating individual behaviors and their assumptions is crucial for development of cost-effective policies. Next, I argued the importance of behavioral economics-informed public policies and their potential to improve individual health and well-being, and foster economic development, I detailed strategies to integrate these into policy programs, and I shortly presented existing behavioral economics state- and EU-level working groups.

**Chapter 2**, *Use of behavioral economics insights to inform the policy adoption process: a case study on the Romanian legislation banning smoking in public places*, fills in the research gap on

how behavioral economics-informed approaches could be used to influence official public policy makers in order to lend support to policies through the policy adoption process. I conducted nine semi-structured interviews with key stakeholders involved in the development, support, promotion, and adoption of the 2015-2016 legislation endorsing smoke-free public places in Romania. I found nine behavioral economics principles/insights used by the subjects to support the Romanian smoke free legislation in public places in the policy adoption process. I used the insights gained from these interviews to develop a behavioral economics-informed policy instrument which can potentially be used to gain support of policy makers in the policy-adoption process in countries with volatile political context and no continuity in political support across governments.

**Chapter 3, *The ethics of behavioral economics***, largely deals with issues of government influence and manipulation when implementing behavioral economics-informed public health policies and programs. The solution I proposed to meet these ethical concerns on government manipulation entails making nudges transparent and assessing proposed policies through three frameworks: Faden and Sirine's ethical approach to public health; the values of an ethical state; and the Nuffield Council on Bioethics' "intervention ladder", a tool designed to help with the ranking of public health interventions based on their coerciveness. I used two case studies to exemplify the application of the solution I put forward: a case study on the use of bots and botnets to change social norms towards vaccination, and a case study on amending the Law no. 457/2004 on advertising and sponsorship of tobacco products.

**Chapter 4, *Behavioral economics and mobile health (mHealth) interventions***, reviews how behavioral economics principles can be used to improve the effectiveness of digital health interventions, with a focus on mobile health apps. Despite the existence of over 350,000 health apps, approximately 80% are abandoned within two weeks of download. This chapter examines how key behavioral concepts—present bias, loss aversion, choice architecture, social norms, and cognitive load—can explain this engagement gap. The chapter identifies critical behavioral bottlenecks across the user journey and presents evidence-based strategies to address these challenges, along with practical applications on four case studies. The presented framework offers practical guidance for developing mobile health interventions that align with human decision-making patterns rather than idealized behavioral models.

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# Chapter 1: Behavioral economics and public policymaking

## 1.1. Summary

In this chapter I first provide a working definition of behavioral economics and discuss the factors that impede individuals to maximize their utility when making a decision: heuristics (cognitive shortcuts), cognitive biases, and contextual influences. These prompt people to make decisions which are not in their best interest and in line with policy objectives. Since policy outcomes largely depend on how individuals act and behave in relation to the objective of the policy, understating individual behaviors and their assumptions is crucial for development of cost-effective policies.

Next, I argue the importance of behavioral-informed public policies and their potential to improve individual well-being and foster economic development, I detail strategies to integrate these into policy programs, and I shortly describe existing behavioral economics state-level and EU-level working groups. Afterwards I provide an introduction into the impact of behavioral economics on public health policies and its demonstrated potential to improve individual health and quality of life, and reduce healthcare costs.

The remaining of the chapter concentrates on the four main types of arguments brought forward by critics of behavioral economics: (1) lack of a unifying theoretical framework of the field; (2) use of vague/ unclear definitions, especially for the concept of nudge; (3) methodological concerns and lack of evidence to support the use of this approach; and (4) the unethical character of some behavioral economics-informed initiatives.

## 1.2. What is behavioral economics?

The fundamental assumptions of traditional economics theory imply that humans are perfectly rational beings motivated by self-interest, who select the option that would maximize their utility at the end of a decision process (H. A. Simon, 1955). This entails that individuals: (1) have access to complete information related to his environment and the decision to be made; (2) are capable to deal with choice complexity and compute the utility of all decision alternatives by taking into account external events and scenarios, and to calculate their associated probabilities; and (3) are not influenced by their emotions or contextual factors when making the decision.

In reality, humans better fit the description that behavioral economists have put forward for them. That is, humans are “boundedly rational” beings. Herbert Simon, who first introduced this concept in 1957, argues that: “The capacity of the human mind for formulating and solving complex problems is very small compared with the size of the problems whose solution is required for objectively rational behavior in the real world — or even for a reasonable approximation to such objective rationality” (H. Simon, 1957). More specific, the concept of bounded rationality “assumes that the decision maker must search for alternatives, has e incomplete and inaccurate knowledge about the consequences of actions, and chooses actions that are expected to be satisfactory (attain targets while satisfying constraints)”(H. A. Simon, Demattè, & Raffaele Mattioli Foundation, 1997). In other words, individuals have limited information, and cognition and take reasoning shortcuts when making decisions, all these leading to suboptimal choices. The role of behavioral economics is to map the reasoning shortcuts emerging in the decision-making process due to individuals’ bounded rationality and make us of these in order to improve the outcomes of the decision making-process.

Behavioral economics lies at the intersection of economics and psychology, and involves the integration of behavioral and psychologic insights into economic models, to predict the decision-making process of individuals (Mullainathan & Thaler, 2000). The field of behavioral economics is built on three main pillars: (1) heuristics, or rules of thumb/cognitive shortcuts, used by individuals when making decisions based on their common sense and experience (Tversky & Kahneman, 1974); (2) cognitive biases, which are systematic errors that stem from heuristics and are responsible for mistakes in reasoning and judgement, most often due to personal preferences (Tversky & Kahneman, 1974); and (3) contextual influences, such as the way in which decision alternatives are presented or framed, which can easily influence the outcome of the decision-making process.

Even though the interest in behavioral economics increased exponentially since 2002, when Daniel Kahneman was awarded the Nobel Prize in Economic Sciences for “having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty” (Kahneman & Smith, 2002), the roots of behavioral economics go far beyond the last one decade and a half. First, in 1953, there was the work of Maurice Allais, who showed that actual observed individual choices are not in line with the classical economics axiom of expected utility maximization (Allais, 1953). Next, in 1975, Herbert Simon has put forward the concept of “bounded rationality”, arguing individuals’ limited capacity to process information (H. Simon, 1957). In the 1970s, Daniel Kahneman and Amos

Tversky published two influential papers introducing the concepts of anchoring, availability and representativeness (Tversky & Kahneman, 1974), as well as the concepts of loss aversion, reference points, and framing (Kahneman & Tversky, 1979). More research into behavioral economics was initiated in 1986 when the Russell Sage Foundation launched a behavioral economics research program (Russell Sage Foundation, 2017). The idea of temporal discounting, put forward by George Lowenstein in 1992 in his “Choice over time” book, explained people’s preferences for immediate outcomes as opposed to long-term or delayed results when they make decisions (Loewenstein & Elster, 1992). After Daniel Kahneman’s winning of Nobel Prize in 2002, Barry Schwartz’s “The paradox of choice” (Schwartz, 2004), Dan Ariely’s “Predictably irrational” (Ariely, 2008), Richard Thaler’s “Nudge” (Thaler & Sunstein, 2008), Kahneman’s “Thinking fast and slow” (Kahneman, 2011), Cass Sunstein’s “Simpler – the future of Government” (Cass Sunstein, 2013), Phil Barden’s “Decoded” (Barden, 2013), Alan Samson “Behavioral economics guide” (2014) (Alan Samson, 2014), and Richard Thaler’s “Misbehaving – The making of behavioral economics” (Thaler, 2015) continued to shape the development of the behavioral economics field.

### **1.3. Behavioral economics and deviations from rational health behaviors**

The traditional, neoclassical model of economic decision making is translated in the field of health through Grossman’s rational model of health capital (Grossman, 1972). This model of health-related rational decision-making describes how individuals should make decisions about their health. The model depicts “good health” as a commodity and is built on the assumption that individuals own a certain amount of health capital, which inherently declines with age. To support this health capital, people can spend their time and money to do “investments” in healthy, preventive behaviors and good healthcare services. In the light of this model, harmful health behaviors are considered negative investments in “good health”. These are predicted to continue as long as people maximize their health utility. That is, up to the point in which the costs (time, money, health status) of engaging in such behaviors equal the benefits (the pleasure resulting from engaging in such behaviors). When the costs are disproportionate to the benefits in terms of health utility, individuals are predicted to stop engaging in unhealthy behaviors. However, this is seldom the case, as shown by Thaler and Sunstein (Thaler & Sunstein, 2008). Instead, individuals continue to engage in behaviors that minimize their health utility, such as smoking, drinking, or eating unhealthy.

As opposed to Grossman's model which describes how decisions about health should be made, behavioral economics sets out to describe how these decisions are actually made in the context of individuals' "bounded rationality" (H. Simon, 1957). Most often, people are imperfect information processors, especially when they have limited time to make decisions, and rely on rules of thumb. Tversky and Kahneman have shown that heuristics can induce systematic errors in the process of decision making (Tversky & Kahneman, 1974). In turn, these heuristics have been found to contribute to risky health behaviors (Mullainathan & Thaler, 2000; Thorgeirsson & Kawachi, 2013).

There are multiple authors who have developed taxonomies of cognitive biases as a function of how these translate in deviations from rational health behaviors (Luoto & Carman, 2014; Pinto et al., 2016; Thorgeirsson & Kawachi, 2013). As a complement to Simon's "bounded rationality notion", these authors bring forward the concepts of "bounded willpower" and "bounded selfishness". I will use this framework to further expand on the topic of behavioral economics insights and how these inform departures from health utility-maximizing behaviors, integrating the cognitive biases listed by authors above in a single, unified theoretical background.

### *Bounded rationality*

*Anchoring* shows that individuals' decisions can be biased towards a pre-existing reference point (Alain Samson, 2014). This type of bias can significantly influence the size of a portion individuals serve at a meal, which has been shown to be strongly related with the size of their plates (D. R. Just & Wansink, 2014a).

*Affect heuristics* refer to the reliance on emotional reactions (rather than on rational computations of risks) in the process of decision-making, when individuals do not have the necessary resources to make informed decisions balancing risks and benefits (Finucane, Alhakami, Slovic, & Johnson, 2000). This heuristic can be easily applied to individuals' engagement in preventive health behaviors. For example, a recent study has found that affect towards flu vaccination predicts vaccination intention (Nancy Chen, 2015).

*Loss aversion and regret aversion* are two important behavioral economics concepts related to individuals' preference towards gains rather than losses (Alain Samson, 2014). In the field of health, these concepts can be applied to behaviors such as smoking cessation, where it was found that loss-framed smoking cessation messages were more effective in reducing number of smoked cigarettes as opposed to gain-framed messages (Paul Romanowich & Lamb, 2013).

*Optimism and overconfidence* reflect individuals' inability to accurately calculate the risks they are exposing themselves, as well as their tendency to assign higher occurrence probabilities to positive events and lower occurrence probabilities to negative events (Alain Samson, 2014). Among other risky health behaviors, people tend to exhibit this bias in relation to lower risk perceptions towards their likelihood of being involved in a traffic accident (DeJoy, 1989).

*Priming effect* depicts the effects that apparently unimportant details can have on people's thoughts and actions, by making them associate previous memories in the context of new stimuli (Alain Samson, 2014). This means that simply asking/surveying individuals about a health behavior can influence them to engage in those specific behaviors (Levav & Fitzsimons, 2006).

*Salience* (availability heuristics) is a behavioral economics concept that involve individuals making decisions based on the most recent information they can remember on a specific topic (Alain Samson, 2014). This bias is strongly related to similarity (or representativeness heuristics). Together, they can lead to poor health behaviors on the part of individuals, including health professionals, who can be affected by salience and similarity when making decision about patient diagnostics and prescriptions (Klein, 2005).

*Status Quo*, strongly related with the concept of inertia, refers to individuals' preference for things to not change (Alain Samson, 2014); this is due to the fact that individuals are usually reluctant to any changes in their life. This behavioral economics concept could explain, for example, why women decide to have (or not) cancer screening (Ackerson & Preston, 2009).

#### *Bounded willpower*

*Channel factors* refer to small "nudges" that can prompt individuals to engage in a one-time health behavior, such as vaccination, attending medical appointments, taking the decision to become an organ donor, etc. (Pinto et al., 2016).

*Commitment contracts* represent a strategy that allows individuals to restrict their future choice options to alternatives that would maximize their utility (Kurth-Nelson & Redish, 2012). For example, research has shown that individuals who make pre-commitments to uptake or cease a specific behavior are more likely to do so, especially when these pre-commitments involve financial/monetary implications (Thorgeirsson & Kawachi, 2013).

*Decision fatigue* reflects individuals' selection of suboptimal choices after a prolonged process of making decisions (Alain Samson, 2014). This is due to cognitive fatigue related to computations regarding the costs and benefits of various choice alternatives through a longer

period of time. This concept was most recently reflected in the work of Hickman and colleagues regarding the decision fatigue faced by caregivers of critically ill patients (Hickman, Pignatiello, & Tahir, 2017).

*Ego depletion* is in line with the concept of decision fatigue, the former depicting a decrease in individual self-control that leads to increase impulsivity and, ultimately, to less “restrained” decisions (Alain Samson, 2014). This concept has been applied, among other, in the area of food consumption, where it was found that it has a moderating effect on the implicit preferences of food consumption (Wang et al., 2016).

*Feedback*, or the immediate verbal or written reaction to an action, can help individuals to self-regulate their behaviors. For example, it was found that individuals who monitored their diet and caloric intake were more likely to lose weight (Burke et al., 2012).

*Framing* posits that the outcome of a decision process depends on how decision alternatives are presented. For instance, similar to the idea underlying the concept of loss aversion, individuals tend to get involved in a behavior when it is positively framed, but they are more likely to engage in avoid a behavior when it is negatively framed. To demonstrate this concept's application, I bring forward a study which found that subjects exposed to positively framed messages regarding HPV vaccination were more likely to express support for voluntary vaccination as opposed to subjects exposed to negatively framed messages (Gesser-Edelsburg, Walter, Shir-Raz, & Green, 2015).

*Intertemporal choices* imply the fact that most often people make choices by thinking about their short-term costs and benefits rather than their long-term interest. In other words, this means that individuals value more a benefit that they are receiving in the present (i.e. the pleasure of smoking a cigarette) as opposed to a future benefit (good health in 50 years) (Loewenstein, Brennan, & Volpp, 2007).

#### *Bounded selfishness*

Behavioral economics undermines the neoclassical economics assumption that people act in their best self-interest and incorporate the concepts of altruism and spiteful behavior in the model of human decision making. These two notions have tremendous implications on the development and outcome of peer-based interventions and support the use of social norms as a means to promote uptake of healthy or desirable behaviors (Thorgeirsson & Kawachi, 2013).

The behavioral economics precepts listed above represent powerful tools that can be harnessed to make “healthy behaviors automatic and easy” (World Economic Forum, 2017). This is extremely important in the context of the current public health burden of disease and their associated human and healthcare costs. More specifically, chronic diseases are responsible for 39.5 million of deaths worldwide (World Health Organization, 2017). Even so, WHO’s burden of disease estimates for the next decades suggest a continuous rise in the prevalence of these conditions. For example, only in 2015, 15 million deaths were due to ischemic heart disease and stroke (World Health Organization, 2017c). Most NCDs-related deaths occur in low and middle countries, such as Romania. To put this into perspective, in 2014, NCDs were estimated to account for 92% of all registered deaths in Romania (World Health Organization, 2014). This upward trend is partly due to the ageing of the population and the decline in communicable, infectious diseases. However, one important element in this mix is individuals’ engagement in four modifiable lifestyle risk factors: overeating, lack of physical activity, tobacco consumption, and alcohol abuse (World Health Organization, 2017b). Since most individuals understand the importance of personal health and are aware of the long-term negative effects of these lifestyle risk factors but continue to engage in them (Willis Towers Watson, 2015), behavioral economics can offer a better understanding of the factors that prompt these harmful behaviors (Thorgeirsson & Kawachi, 2013).

#### **1.4. Behavioral economics-informed policies**

Policy outcomes largely depend on how individuals act and behave in relation to the objective of the policy. That is, the outcome of a tax compliance-related policy will depend on the extent to which individuals abide to the regulations enforced by the policy. Similarly, the results of a policy aiming to increased physical health will be greatly contingent upon whether and how often individuals engage in physical activity. Taking into account that human behaviors are results of decision-making processes influenced by heuristics (cognitive shortcuts), cognitive biases, and contextual influences (Tversky & Kahneman, 1974), individuals often make decisions which are not in their best interest and in line with policy objectives. Recognizing that policy outcomes are depend on human behaviors and, in turn, human behaviors are influenced by a wide range of personal and environmental/contextual factors represents the first step in designing better policies (Joint Research Center, 2016). Therefore, understating individual behaviors and their assumptions is crucial for development of cost-effective policies (Joint Research Center, 2016).

Behavioral economics has been credited with the power to help policy makers in designing better public policies and avoiding the development and implementation of cost-intensive, ineffective programs (Mcauley et al., 2007). In his essay on “Empirically informed regulation”, Cass Sunstein argues that empirically-informed policies, including behavioral economics-informed policies, can generate small, inexpensive policy changes with large positive effects (CR Sunstein, 2011).

In the last decade several authors and working groups have put forward quite a few behavioral economics strategies that can guide development of public policies. In 2005, a team of 12 behavioral economists affiliated with world-leading universities such as Yale University, MIT, Cornell, University of California Berkeley, and Harvard University recommended types of behavioral science to be integrated in public policies, by bringing up examples from finance (retirements saving plans), agriculture (use of fertilizers), and justice (design of police lineups) (Amir et al., 2005). Their paper argued that behavioral economics can inform public policy by influencing the environment where the decision making process takes place and encouraged researchers to make the first steps towards policy makers if they want the latter to integrate behavioral sciences in their policy programs.

Similarly, McAuley suggests four behavioral economics strategies that can guide development of public policies (Mcauley et al., 2007): (1) asymmetric paternalism; (2) harnessing the power of defaults; (3) motivating behaviors; and (4) testing citizens’ reactions to policies. We will now develop on these. To begin with, the concept of asymmetric paternalism refers to developing policy regulations that can both create benefits for individuals who make poor decisions and not hinder those who make right decisions (Camerer, Issacharoff, Loewenstein, & O’Donoghue, 2003). Next, the use of opt out rather than opt out alternatives has been found to significantly improve enrollments on organ donation registries (Johnson & Goldstein, 2003), savings for retirement plans (Beshears & Choi, 2005), or enrollment in programs to improve physical health (S. Halpern, Ubel, & Asch, 2007). Third, the issue of motivating behaviors refers to the potential detrimental effect of offering incentives (extrinsic rewards) on intrinsic motivation, especially in which concerns involvement in civic behaviors (i.e. such as jury duty). Finally, behavioral economics can enrich the results of regular ex ante and ex post evaluations of policy initiatives, by urging policy makers to look more in depth at the assumptions of their policies and the actual behavior of their citizens.

More recently, Cass Sunstein proposed four main strategies, each consisting of two or three practical, real-life approaches to incorporating empirical, behavioral sciences-based findings into

decision-making models (CR Sunstein, 2011). More specifically, he suggested policy makers to employ concepts such as inertia and procrastination, framing and presentation, and social influences in their policies, along with evidence-based assumptions of individual decision-making (i.e. use of heuristics, personal experiences, and unrealistic expectations).

Lending support to behavioral economics as a natural extension of neoclassical economics, Chetty (2015) argues that behavioral economics has three main implications from the perspective of public policies (Chetty, 2015): (1) it can offer new policy tools by employing insights from psychology; (2) it can generate better predictions regarding the outcomes of existing policies, by adding concepts such as inertia to classic economic models developed for decisions with long-term economic impact, such as enrollment in retirement saving plans; and (3) it can develop “new welfare implications”; that is, by taking into account the impact of behavioral biases on individual decision-making, behavioral economics can help policy makers to ground their policies on an individual’s experienced utility rather than on its decision utility (the utility that relates to the objective of the policy-maker and the policy). This is in line with the idea that integration of behavioral insights in policy initiatives can prevent development of policies based on unrealistic expectations about citizens’ behavior, and ultimately prevent the enforcement of sub-optimal policies (Joint Research Center, 2016).

Following the advice of Amir and his colleagues, to reach out to policy makers and have them incorporate behavioral sciences in their policies (Amir et al., 2005), author and working groups have worked in recent years to translate behavioral economics principles and insights in lay language and tools to be used by policy makers. Such tools include the New Economics Foundation’s Behavioral economics – seven principles for policy-makers (Dawnay & Shah, 2005); MINDSPACE: Influencing behavior through policy (The Behavioral Insights Team, 2010); and EAST: four simple ways to apply behavioral insights (Service et al., 2014a). As a consequence, in the last years, behavioral economics has been used intensely by international organizations such as European Commission (within its own Foresight and Behavioral Insights Unit) (Joint Research Center, 2016), the Organization for Economic Co-operation and Development (OECD, 2017), or the World Bank (The World Bank, 2015).

First European Commission’s explicit effort to integrate behavioral insights in its policies was in 2009, when it banned the use of defaults (pre-set opt in options) in consumer online contracts (European Commission, 2009). In regards to the Organization for Economic Co-operation and Development, its first look into the topic of behavioral economics and its relationship with regulatory policy was in 2013-2014, when they prepared a their first report on Regulatory Policy

and Behavioral economics (Rice & OECD, 2013b). This was later followed by a report on Behavioral Insights and Public Policy: Lessons from Around the World (OECD, 2017), published in 2017. Similarly, the World Bank, in its World Development Report (The World Bank, 2015), made the case for an in depth understanding of the human behavior as a strategy for sustainable economic development.

In addition, Behavioral Insight Teams, formal structures within national governments established to advise and support policy makers to integrate behavioral insights in their policy programs, have been developed in several high-income countries (refer to Table 1). Nonetheless, in 2014 the “Nudging for good” network is jointly established by the largest European Consumer Good companies, and the European Nudge Network (TEN) is founded in Copenhagen. Even if they do not really have individual and fully operational behavioral insight teams, starting with 2015 Italy and France have made important steps in adding a “nudge” approach to their policies, by developing Think tanks on this topic.

Table 1.1 below contains the list of countries which have developed behavioral insight teams within their government and the year in which these teams have been established. A quick look at the table suggest that behavioral economics insights are being largely used by governments of high-income, developed, and political stable countries.

Table 1.1. List of Behavioral Insight Teams around the world

| <i>Country/ Institution</i>  | <i>Name of the behavioral insight unit</i>                                                          | <i>Year of establishment</i> |
|------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------|
| The United States of America | White House Office of Information and Regulatory Affairs                                            | 2009                         |
| The United Kingdom           | Behavioral Insight Team<br>Behavioral Economics and Data Science Unit                               | 2010                         |
| Denmark                      | iNudgeYou                                                                                           | 2010                         |
| The Netherlands              | Behavioral Insight Network                                                                          | 2014                         |
| European Commission          | Foresight and Behavioral Insights Unit, within the Joint Research Centre of the European Commission | 2014                         |
| France                       | Secretariat-General for Government Modernization                                                    | 2014                         |
| Germany                      | A team in the Staff of Policy Planning Unit                                                         | 2015                         |

|           |                                     |      |
|-----------|-------------------------------------|------|
| Finland   | “Design for Government” project,    | 2015 |
| Austria   | “Motivating State” project          | 2015 |
| Australia | Behavioral Team of Australia (BETA) | 2015 |
| Qatar     | Nudge Unit                          | 2015 |

### 1.5. Implications of behavioral economics for public health policies

Previous sections of this chapter made the case for individuals as imperfect information processors that make decisions which are not in their best long-term interest. This applies to decisions regarding health, healthcare, and health behaviors. For instance, people fail to show up for medical appointments or take their medication, they refuse to take medical tests due to fear of finding a diagnostic, miss vaccinations, or engage in health damaging behaviors (i.e. tobacco use, alcohol consumption, physical inactivity, poor nutrition). These behaviors ultimately lead to poorer health, lower quality of life, increased burden of disease, and increased healthcare costs. Therefore, having policy-makers nudge individuals in a direction that improves their health will ultimately improve their wellbeing while also improving healthcare (Rice, 2013a). This approach to public policy is defined as asymmetric paternalism. Asymmetric paternalism strives to help individuals affected by bounded rationality, willpower or selfishness to make the decisions that would maximize their utility, while at the same time not hindering rational individuals who make decisions in an informed way (Camerer et al., 2003). This concept will be discussed in detail in Chapter 4, with a focus on nudging as a strategy to foster behavioral change.

Matjasko and colleagues have proposed a list of behavioral economics concepts that would be most relevant to be integrated in public health policies: status quo, framing, availability heuristics, social norms, and intertemporal preferences (Matjasko, Cawley, Baker-Goering, & Yokum, 2016). All these concepts have been discussed in details in Section 1.3 of this chapter. The incorporation of behavioral economics precepts in public health interventions has been found to generate increased program enrollment (Johnson & Goldstein, 2003; Madrian, 2014; Milkman, Beshears, Choi, Laibson, & Madrian, 2011) and program adherence (Maciejewski, Farley, Parker, & Wansink, 2010), as well as uptake of healthy behaviors (Scott D Halpern et al., 2015; Matjasko et al., 2016; OECD, 2017; Thaler & Sunstein, 2008).

The potential impact of behavioral economics in reducing morbidity and preventing deaths, especially in relation to non-communicable diseases, has been highlighted by The Human-

Centric Health Project, in a recent report (World Economic Forum, 2017). This project proposes a shift from the classic healthcare model which is focused on health professionals/providers, to a focus on a system of stakeholders jointly engaged in prevention of non-communicable diseases. More specifically, the authors of this report focused on guidelines to transform the health ecosystem to be more human-centered, by incorporating behavioral economics precepts at the level of three stakeholder sectors: insurers, retailers, and health technology. The foreseen outcomes of the proposed behavioral economics-informed model of targeting non-communicable diseases makes a compelling case for its integration in public health policies (World Economic Forum, 2017).

Even so, the integration of behavioral economics into public health policy raises several concerns, including the need for these policies to be carefully designed and tested, as well as continuously monitored and evaluated (Matjasko et al., 2016). Similarly, the European Commission's Joint Research Center recommends the "Test, Learn, Adapt, Share" approach to selecting the behavioral economics-based policy alternatives that can render the largest public health impact (Joint Research Center, 2016). The first step in this approach, "Test", refers to empirically comparing alternatives based on their outcomes; this usually entails the implementation of randomized controlled studies (RCTs) to separate the effect of other factors from the effect of the proposed intervention. Contrary to popular beliefs, it has been demonstrated that scientifically sound RCTs can be conducted even with small monetary investments (Haynes, Service, Goldacre, & Torgerson, 2012). Steps two and three, "Learn" and "Adapt", refer to using the results obtained in step one to improve the design of the policy. Last, but not least, "Sharing" refers to the dissemination of results as a strategy to allow replication and encourage similar initiatives across countries. In this regard, it is recommended for both positive and negative/null results to be disseminated/published, to avoid duplication of work for testing ineffective policy alternatives (Joint Research Center, 2016).

To conclude, behavioral economics insights have tremendous potential to improve public health policy, but more theoretical and empirical research is needed to find: (1) what behavioral economics precepts are effective and for which behaviors; (2) what is the long-term impact of these behaviorally-informed initiatives (Madrian, 2014). Only having this information available will make the incorporation of behavioral economics insights into policy initiatives cost and outcomes-effective.

## 1.6. Caveats of behavioral economics

Critics of behavioral economics rely on four main types of arguments to question this field: (1) lack of a unifying theoretical framework of the field; (2) use of vague/ unclear definitions, especially for the concept of nudge; (3) methodological concerns and lack of evidence to support the use of this approach; and (4) the unethical character of some behavioral economics-informed initiatives.

We will first discuss about the lack of a unifying, all-encompassing theory of behavioral economics. In this respect, Thomas Rice highlights the fact that since Kahneman and Tversky's prospect theory, there have been some initiatives to build a grand theory of behavioral economics, but these initiatives have currently no results (Rice, 2013a).

Second, skeptics bring forward the lack of clear definitions for some of the most used behavioral economics concepts. To exemplify this claim, I will use the concept of nudging as an example. As previously stated, nudging has been defined as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008). Therefore, this definition excludes initiatives that adjust economic incentives to be categorized as nudge-based interventions. However, except for the exclusion of economic incentives, it is not clear what other approaches can be defined as nudges (i.e. use of social norms, behavioral cues, etc). Therefore, there is no working definition of nudging (Marteau, Ogilvie, Roland, Suhrcke, & Kelly, 2011). In addition, some misconception exist regarding the definitions of behavioral economics, behavioral insights and nudging, as most often people use these interchangeably (Joint Research Center, 2016; Perry, Chhatralia, Damesick, Hobden, & Volpe, 2015). To shed some light on this matter, I will provide a short explanation regarding the distinction between the three terms. First, behavioral economics represents a discipline at the intersection of economics and psychology. On the other hand, behavioral insights are defined as "the application of behavioral sciences to policy and practice with a focus on (but not exclusively) automatic processes" (Chadborn, 2014). Finally, nudging represent a particular type of behavioral economics intervention. On a side note, there also some challenges regarding the distinction between traditional economics and behavioral economics initiatives that use incentives (Rice, 2013a).

Third, critics of behavioral economics suggest that there is too much excitement towards this "new" scientific discipline considering the available limited evidence on its effects (Marteau et al., 2011). In the same line, a report released by UK's House of Lords argues that "non-regulatory measures used in isolation, including nudges, are less likely to be effective" (UK

House of Lords, 2011), and recommends the use of a wide range of strategies to develop effective policies (as opposed to only behavioral insights), including regulations. Also, balanced against traditional economics measures, behavioral economics interventions seem to be less effective in the case particular behaviors. For example, a regulatory policy designed to reduce alcohol consumption in youth by prohibiting the sale of alcohol products to youth and increasing alcohol taxes would likely be more effective than a behavioral intervention only (Marteau et al., 2011).

Methodological concerns regarding this field include reliance on laboratory studies with small samples, lack of replication studies, small effect sizes of behavioral economics-informed initiatives, and the uncertainty regarding their long-term effects (Hollands et al., 2013a; John et al., 2011; Marteau et al., 2011). Nonetheless, the lack of information on the cost-effectiveness of behavioral economics approaches are also raising concerns regarding the fact that its benefits outweigh the costs (Marteau et al., 2011). Coming in the defense of behavioral economics, Loewenstein and Ubel argue for behavioral economics as a “complement, not substitute for, more substantive economic interventions” (Loewenstein & Ubel, 2010)

Last but not least, the use of some behavioral economics precepts, such as use of default options, can raise large concerns when applied to sensitive topics such as end of life care. In this respect, a study conducted in 2013 introduced default options for seriously ill patients and asked to select from three alternatives of pre-set end-of-life alternatives (i.e. standard advice, comfort-oriented, life-extended oriented). The results of the study showed that most individuals went with the pre-set option (S. D. Halpern et al., 2013). These results are especially important because they can be extended to whether individuals accept services and how they use resources.

## Chapter 2: Use of behavioral economics insights to inform the policy adoption process – a case study on the Romanian legislation banning smoking in public places

### 2.1. Summary

Behavioral economics-informed public policies have the potential to significantly improve outcomes of policy decisions. In this context, a rapidly growing body of research examines and identifies tools to help policy makers incorporate behavioral economics precepts in their programs, to positively influence citizens' behavior. Yet, there are much fewer studies that evaluate how behavioral economics-informed approaches are used to influence the official public policy makers in order to lend support to certain policies through the policy adoption process. This study aims to fill in this gap, by using the process by which Romania adopted the legislation banning smoking in public places as a case study.

Guided by elite interviews methodology, we conducted nine semi-structured interviews (Jan-Feb 2017) with key stakeholders involved in the development, support, promotion, and adoption of the 2015-2016 legislation endorsing smoke-free public places in Romania. The selection criteria of the respondents were their importance and type of role during the entire public policy process involving the anti-smoking legislation. Interviews were conducted face-to-face (n=3), over the telephone (n=4), or through video-conferencing (n=2), depending on subjects' preferences and availability. We transcribed all interviews and analyzed them using a hybrid deductive-inductive thematic analysis strategy at the semantic level, to identify and explore any behavioral economics insights used by stakeholders to gain the support of policy makers.

We found nine behavioral economics principles/insights used by the subjects to support the Romanian smoke free legislation in public places in the policy adoption process. Most of the time, these principles were used unknowingly. In addition, we found support for the fact that BE principles increased the influence of the anti-smoking actors and, by this, contributed to the adoption of the smoke free legislation. We used the insights we gained from these interviews to develop a behavioral economics-informed policy instrument which can potentially be used to gain support of policy makers in the policy-adoption process.

BE principles can be effective both in influencing citizens and policy makers. Although it should be applied and tested in other policy case studies to assess its validity, the proposed policy instrument could be especially relevant for policy makers from countries with volatile political contexts and no continuity in political support for legislative efforts across governments, who aim to advance public health legislation.

## **2.2. Background**

### *Behavioral economics and public policies*

Neuroscience findings suggest that human behaviors are driven by unconscious reflections rather than in-depth, consequence-focused deliberations (Nilsen et al., 2012). Based on such results, behavioral economics, which employs psychological insights into human behaviors to influence decision-making, has shown to have the potential to foster positive behavioral change (World Economic Forum, 2017). Thus, targeting automatic cognitive processes has the potential to alter human behaviors in ways that are beneficial for both individuals and communities (Marteau et al., 2012). Recognizing that individuals do not act as rational agents and that some of their decisions have long-term, negative individual and societal effects, policy-makers are increasingly interested in using behavioral economics insights to inform the development of better public policies (Joint Research Center, 2016).

As a consequence, policy tools which encompass the use of behavioral economics insights for policy development have been developed for the use of policy-makers. Their purpose is to help policy-makers develop legislation that will generate positive and cost-efficient changes in the society. Some of these tools are: (i) Behavioral economics – seven principles for policy-makers (Dawnay & Shah, 2005); (ii) MINDSPACE – Influencing behavior through policy (The Behavioral Insights Team, 2010); and EAST – four simple ways to apply behavioral insights.

Over the last decade, behavioral economics has been used intensely by international organizations such as European Commission (within its own Foresight and Behavioral Insights Unit) (Joint Research Center, 2016), the Organization for Economic Co-operation and Development (OECD, 2017), or the World Bank (The World Bank, 2015). In addition, Behavioral Insights Teams have been developed within national governments of the United States of America (2009), United Kingdom (2010), the Netherlands (2014), France (2014), Germany (2015), Austria (2015), and Finland (2015). As it can be observed, all of these countries are high income, consolidated democracies.

### *The political system in Romania*

Romania is a semi-consolidated democracy with a communist past, and, according to the International Monetary Fund, has a developing economy (2015). It is a semi-presidential republic, with bicameral Parliament, and since 2016 it has a party list vote-proportional representation voting system. Since 2007, when Romania joined the EU, has struggled to meet the bloc's anticorruption requirements and continues to have one of the highest poverty rates in the European Union. The country's courts and law enforcement authorities continue to suffer from problems including corruption, political influence, and inefficient resource allocation (Freedom House, 2016). As a result of corruption, economic hardship and communist legacy, the levels of trust in politicians and in political institutions are among the lowest in the EU (Armingeon & Guthmann, 2014).

No single political party has been able to dominate both the executive and legislative branches since 2012. However, the Social Democratic Party (PSD) has been the most influential political force in the country over the last five years, a period of time that covered the public policy process involving the anti-smoking legislation.

Romania is also a country with short ministerial time in office, particularly in the case of the ministers of health, having 14 different Ministers of Health between 2008 and 2016 (with an average of 6.8 months in office/ individual). Other studies found that the ministerial durability tends to be higher in both old and new democracies, but with considerable cross-national variation. Thus, a research of 14 West European states between 1945 and 1984 found that cabinets last for 2.9 years, while ministers remain in office, on average, for 4.5 years (Frognier, 1991). In CEE, the picture looks remarkably different. A comparative study in 11 ex-communist countries between 1993-2003 found two patterns: a group of countries where the ministerial duration scores above average (Czech Republic, Hungary, Slovakia, Slovenia) and another group where the duration of ministers is below average (Poland, Bulgaria, Romania, Estonia, Latvia, Lithuania). The mean duration of ministers in Romania was 706 days, with 23% of them spending in office up to one year (Müller-Rommel, Fettelschoss, & Harfst, 2004).

### *Tobacco control policy in Romania*

The main organizing body in tobacco control in Romania is the Ministry of Health (MOH). MOH adopted the first most important piece of national tobacco control legislation, the Law no. 349 on

the prevention and combat of the effects of tobacco products' consumption, in 2002. In 2006, Romania has signed the World Health Organization Framework Convention for Tobacco Control (WHO FCTC). As a result, the Law no. 349/2002 was modified and improved in the last years 11 years to meet FCTC guidelines for tobacco control, the last modification of this piece of legislation consisting in the adoption of the Law no. 15/2016 on banning smoking in public places. To help countries align with FCTC guidelines and assess their progress, World Health Organization put forward the MPOWER measures. Table 3.1 below depicts the status of the implementation of the FCTC in Romania on July 2017.

Table 2.1. WHO FCTC implementation in Romania (World Health Organization, 2015d)

| Tobacco industry influences are still high in Romania, with tobacco companies being the second largest contributors to the state budget. | MPOWER measure                   | Implementation level                                           |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------|
|                                                                                                                                          | Smoke-free public places         | Yes, Law no. 15/2016 (introduced in 2016, not always enforced) |
|                                                                                                                                          | Warning labels                   | Graphic, 35% of pack                                           |
|                                                                                                                                          | National QuitLine (yes/ no)      | Yes                                                            |
|                                                                                                                                          | Insurance for NRT/ other         | Partial                                                        |
|                                                                                                                                          | Anti-tobacco media campaigns     | No                                                             |
|                                                                                                                                          | Advertising bans/ enforcement    | Partial (point of sale exemption)                              |
|                                                                                                                                          | Taxes (%of retail/benchmark=75%) | 75.41%                                                         |

Currently, the industry leader in Romania is British American Tobacco, which holds 42.9% of the total tobacco products market share (Superbrands Romania, 2016). In spite of the Romanian legislation forbidding tobacco companies to interfere with public health policies, these have been actively opposing the adoption of the Law no. 15/2016 by holding speeches in the Health Commission of the Parliament just before voting meetings, discrediting policy-makers supporting the law, or paying journalism scholarships to influential bloggers and reporters to create controversies about established health and economic facts, among other subservice tactics (Tatu-Chițoiu, Mihăiță, Ciobanu, Munteanu, & Coman, 2017). Yet, even in this political and economic context, the Law no. 15/2016 was adopted (and is being currently enforced) after two years of sustained political and civil efforts.

#### *Case study: The Law no. 15/2016 banning smoking in public places*

The topic of banning smoking in enclosed public places was first discussed in the Romanian political context in 2010, when tobacco policy and medical experts met with members of Health Commissions in the Chamber of Deputies and the Senate, to try to convince policy-makers to adopt a legislation banning smoking in public places.

Another similar initiative took place in 2012, but the bill was blocked for several years, only for it to be revived at the beginning of 2015 with the help of Aurelia Cristea, Social Democratic Party deputy, and the “Romanian Breaths” Coalition. The coalition gathered support from more than 250 non-governmental organization and 50 public figures who engaged in a sustained, 9-month awareness and advocacy campaign to support the smoke-free public places legislation. After being challenged in the Romanian Constitutional Court in December 2015 by a group of senators, the law was finally promulgated on January 29<sup>th</sup> 2016 and came into force on March 17<sup>th</sup> 2016.

The adoption of this smoke free legislation got Romania up 12 places on the Tobacco Control Scale, currently ranking the 7<sup>th</sup> out of 35 EU countries on the list of nations with comprehensive tobacco control policies (Tatu-Chițoiu et al., 2017). The success of this policy initiative was also acknowledged by the World Health Organization by awarding Romania the World No Tobacco Day award in 2016 (World Health Organization, 2016).

#### *The support from the public opinion regarding the Law no. 15/2016 banning smoking in public places*

The legislation regarding the ban of smoking in public places was one of the most citizen-supported public policies ever implemented in Romania. To put this into perspectives, two quantitative research studies conducted in 2015 and 2016 show that between 72 and 84% of Romanians agreed or completely agreed with the implementation of smoke-free public places before the Law no.15/2016 has even come into force (Asociatia React, 2015; IRES, 2016). In October 2016, at six months after the law came into force, 85% of the Romanian adult population reported they support the newly implemented law banning smoking in public places (Mercury Research, 2017).

#### *Study aim and contribution to the field*

The aim of this study was to explore the use of behavioral economics insights (either deliberately or not) in the policy adoption process as a means to foster the support of policy makers for new public health legislation. Policy-makers have been encouraged to use behavioral insights to inform their policies and as a means to influence the behavior of the general population in a positive way (Dawnay & Shah, 2005; Service et al., 2014a; The Behavioral Insights Team, 2010). In this context, a rapidly growing number of studies examine the use and impact of such policies. Yet, to our best knowledge, there are no published studies that evaluate how behavioral economics-informed approaches are used to influence the official

public policy makers in order to lend support to certain policies through the policy adoption process. This study aims to fill this gap, by using the process by which Romania adopted legislation banning smoking in public places as a case study.

The results of this study are especially relevant for those who aim to influence legislators in semi-consolidated democracies by using behavioral economics-informed approaches.

## **2.3. Methods**

The study was approved by the Institutional Review Board – Public Health (#FWA00011456). A copy of the approval can found in Appendix B3. A copy of the informed consent is included in Appendix B2.

### *Recruitment of participants*

In line with the elite interviews methodology (Harvey, 2011), we decided on a sample of 8 to 10 subjects. The final sample consisted of 9 individuals. The selection criteria of the respondents were their importance and type of role during the entire public policy process involving the anti-smoking legislation.

### *Data collection*

Nine semi-structure interviews were conducted between January and February 2017 by the lead author, with background in tobacco control research. Interviews were conducted face-to-face (n=3), over the telephone (n=4), or through video-conferencing (n=2), depending on subjects' preferences and availability. Interview lasted between 30 and 63 minutes (M=43.3; SD=10.9). We audio-recorded and transcribed all interviews. No incentives were offered to subjects for their participation in the study.

### *The semi-structured interview guide*

We selected a semi-structured approach to our interview guide in order to allow for flexibility and further exploration during the interview process (J. A. Smith, 2016). The interview guide was developed in a three-stage process by taking into account the main concepts included in three policy-maker-oriented tools used to inform the development of behavioral economics-based policies: (i) Behavioral economics – seven principles for policy-makers (Dawnay & Shah, 2005);

(ii) MINDSPACE – Influencing behavior through policy (The Behavioral Insights Team, 2010); and EAST – four simple ways to apply behavioral insights (Service et al., 2014a). First, we extracted all concepts included in these tools and their definitions, to assess overlaps between concepts/principles across tools.

Second, we compiled a list of unique concepts and principles included in these tools and developed semi-structured interview questions and probes to explore these. Last, we reviewed the tobacco control policy processes and initiatives undertaken between 1990 and 2016 in Romania, to develop interview questions that would elicit information entailing contextual socio-cultural and economic aspects influencing the adoption of the 15/2016 Law. The aim of this final stage was to ensure that behavioral economics insights which were not included in the interview guide in phase two but were used unknowingly in the process of adopting the Law no. 15/2016 will be identified and explored in the interview.

The interview guide was piloted and adjusted with one subject, during the first interview. The final guide covered informants' experiences of tobacco control advocacy and their experience with the adoption of the ban of smoking in public places legislation, as well as their views and understanding of this process. A copy of the interview guide translated into English can be found in Appendix B1.

### *Analysis*

We used a hybrid deductive-inductive thematic analysis strategy at the semantic level, to analyze all transcripts and explore the use of behavioral economics insights (either deliberately or not) in the policy adoption process, to meet the objective of the study. We developed a codebook based on the concepts included in the interview guide and adjusted it to include the new themes and codes that emerged from the transcripts after an initial reading. The coding scheme was restructured and codes were (re)grouped into categories during the coding process.

## 2.4. Results

A total of nine subjects participated in our research. These were policy makers (n=3), activists/non-governmental organization members (n=2), and public communication (n=1), tobacco policy (n=1), and medical experts (n=2). Table 2 presents a description of study subjects and the unique identification numbers we used in reporting the results below.

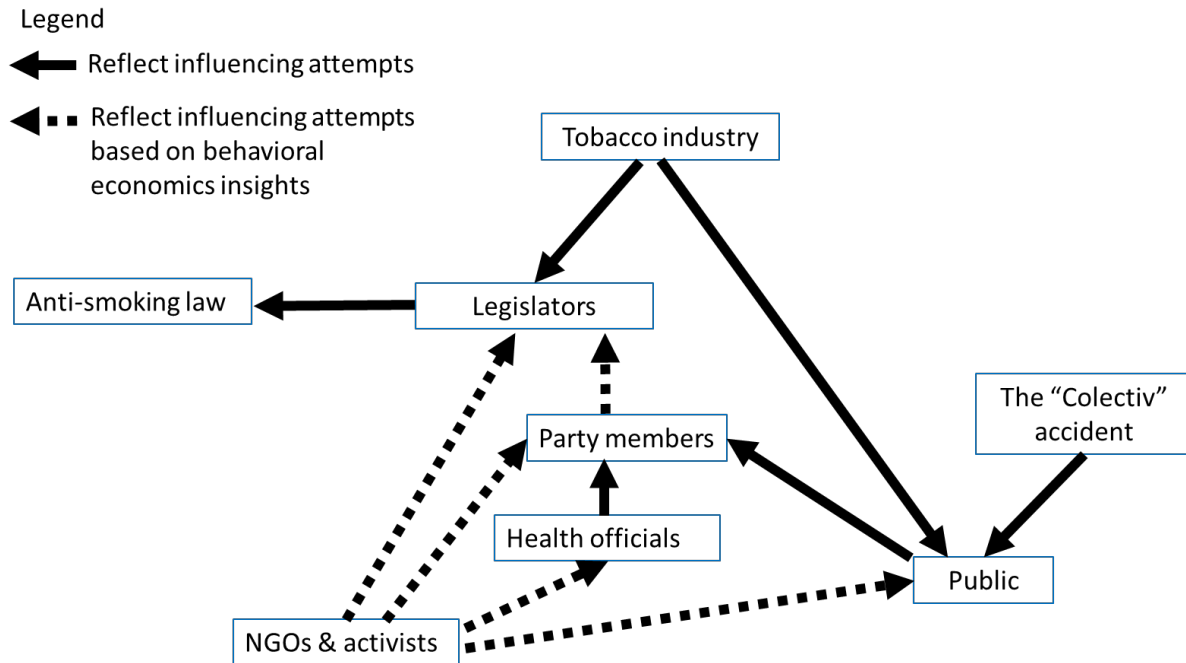
Table 2.2. Characteristics of study subjects

| <i>Profile/ expertise</i>   | <i>N</i> | <i>Subject ID</i>               |
|-----------------------------|----------|---------------------------------|
| Policy-maker                | 3        | Subject 1, Subject 5, Subject 8 |
| Public communication expert | 1        | Subject 3                       |
| Tobacco policy expert       | 1        | Subject 2                       |
| Activist/ non-profit        | 2        | Subject 7, Subject 6            |
| Medical doctor              | 2        | Subject 4, Subject 9            |

### *Overview of findings*

Subjects gave accounts of their experience throughout the process of adopting the Law no. 15/2016 on banning smoking in public places, described the actions they undertook to get the policy in place, and discussed about the factors that hindered or facilitated this process. As a result of our analysis, four main themes emerged from the data, which reflect (1) the use of power networks to support the policy adoption process; the positive and negative impact of the (2) political and (3) public contexts and events on the process of adopting the policy banning smoking in public places; (4) and the use of mixed, complementary communication strategies and channels to reach policy makers and the general population. In analyzing our results, we focused on emphasizing the role of behavioral economics principles in the policy adoption

process across the themes mentioned above, while simultaneously taking into account external circumstances that might have had an impact on the policy adoption process (refer to Figure 1).



### Theme 1: Use of power networks to support the policy adoption process

All subjects interviewed acknowledged the importance of the networks established to support the adoption of the Law no. 15/2016 on banning smoking in public places. Fostering the power of networks represents one common principle in behavioral economics. We identified four types of networks from the narratives of our subjects: the “core team” that supported the law, the Romania Breaths coalition, a network of policy makers found in close contact with the core team, and a network of national and international institutional stakeholders which landed public support to the smoke-free legislation.

#### *The core team*

The core team consisted of the “*hard core advocacy group, to say so... people who have been at the forefront of the battle*” (Subject 7, activist).

*[The effort to support the law] was not coordinated by one person. Rather, there was a coordination group which was made up of a few key people who covered all partnership areas. There were people from the area of medical associations of cardiology and pneumology. There were the two main pillars... representatives of youth organizations – the Romanian Youth Forum, and representatives from organizations protecting mothers and*

*children. And there was a person coordinating the public communication part. So somehow, it was this group that coordinated the effort and practically tried to put all pieces in the puzzle (Subject 3, public communication expert)*

#### *Romania Breaths coalition*

Understanding that they needed “*enthusiasts in big teams*” (Subject 4, medical expert), the core team gathered around 250 non-governmental organizations to support their cause.

*“Virtually each of these organizations has involved people and their expertise to contribute to this process. From elements of public communication to the arguments we have prepared for policy makers and all the legal elements of this process – debates in the specialized committees, tons of legal, economic, and health studies, and so on. So basically it was a common effort. There were not necessarily clear delimitations between the responsibilities of each one of these persons. The responsibilities somehow came from their area of expertise. [...] the medical experts, when medical arguments were needed, came up with arguments and studies; the legal experts we had in the group helped us with legal arguments; when it came to support the economic impact of the law, there were organizations and associations who contributed to this ... we had NGOs that did research studies to assess the population’s level of support for the law. People contributed with what they considered they could do for our cause. Obviously, there was also a need for coordination of all these elements” (Subject 3, public communication expert)*

#### *Policy makers’ network*

Even with significant support from the civil society, two interviewees reported that the law banning smoking in public places would not have been adopted without the help of an informal network of policy makers:

*“[we had] a few influential factors inside the Parliament, because otherwise it would not have mattered what the civil society did, it would not have mattered how much we tried, it would have been impossible if there were not, even informally, some groups trying to politically influence this process. I am talking about a legitimate, legal political influence... but which was a “driving force”, something to pull this law or push it so it would go through all parliamentary procedures; because a law can be blocked very easily, or stay in a committee... or in a drawer for a long time” (Subject 1, policy maker)*

This network consisted of policy makers belonging to multiple political parties who „supported the law and who spoke about it constantly, and whom we would activate whenever we felt that

*we are in a crisis, to intervene somehow... by participating in the chamber's meetings, by intervening in the discussions taking place there, by fighting for the law to be included on the daily agenda, or for it to be discussed in the [health] commission" (Subject 8, policy maker).*

#### *The support received from national and international institutions*

Within the discourse associated with the use of power networks as a means to support the adoption of the smoke-free legislation, the involvement of national and international institutional stakeholders has emerged from subjects' narratives as a means to give legitimacy to their advocacy effort: *"the international structures that joined us... starting with the WHO Romanian office, the Ministry of Health, the WHO... these European networks for combating tobacco and smoking" (Subject 7, activist)*

*"We had position statements from the European Commission, from the WHO, which sent a letter to the Parliament. Including this fact, that I send the initial legislative project to the WHO and asked them to release an official opinion on it... it mattered a lot. That's because I had the arguments to say in the [health] commission "Look, I have the opinion of the WHO on this bill". So it was not just the argument that I, as a parliamentarian, have the right to have legislative initiatives. But I have a list of reasons and a few official statements of support as well" (Subject 8, policy maker)*

## **Theme 2: The political context**

### *Changes in political support for the smoke free legislation over time*

In terms of the political context in which the process of adopting the smoke free legislation took place, interviewees expressed their concern regarding the small improvements in political support regarding this legislation over time. In the light of Romania signing the FCTC, this piece of legislation was first proposed and discussed about in 2010.

*"There have been many years when this problem was not on the Parliament's agenda. Then there were all sorts of initiatives... more or less influential, but which were never completed (Subject 2, tobacco policy expert)*

*"[the law] was buried somewhere in a drawer in the Romanian Parliament... there was not only indifference towards it, but also many obstacles in its way. Somehow the previous initiators [of this law] gave up this battle because it was too difficult" (Subject 3, public communication expert)*

In 2015, once the smoke-free legislation was brought again into the attention of policy makers in the Parliament, interviewees' accounts suggest a lack of support and interest on the part of policy makers regarding this topic:

*"In many moments we had the feeling that we are fighting battles that we should not be fighting... or that things should come more naturally. We had long debates in the Health Commission, and that energy could have been allocated differently and more productively... anyway, that was the situation. It was a commission that mostly consisted of doctors... but where we got stuck in many procedural delays. We were expecting... from the area of the experts... to go there and to present our arguments, a debate to take place, our arguments to be accepted... there was where the bureaucratic conflicts began to emerge, with many delays, with many things that we had to learn on the go... and conflicts of interest started to appear"* (Subject 3, public communication expert)

Even after the Law no. 15/2016 was voted, adopted, and enforced starting with March 2016, several interviewees expressed their concern regarding the future of this piece of legislation, in the context in which there have been attempts to amend the law in a way that would make it void.

*"So they have to be monitored. For us it is obvious that the battle must not end, that we must monitor and defend any attack, more or less explicit, on the law. Often these very good laws for Romania can be very easily disarmed though a small procedural amendment in a norm... something that is passed overnight, unseen and unheard by anyone".* (Subject 7, activist)

#### *Interferences of the tobacco industry*

This concern among interviewees is exacerbated by the involvement of the tobacco industry in the political and public debate regarding the smoke-free legislation, both during the adoption process and after the law came into force. More specifically:

*"Throughout this [law adoption process] there were the obvious interferences of the tobacco industry that was present everywhere... and which made its presence felt through various articles in the press, through various warnings and threats saying that the revenues to the state's budget will decrease, that smuggling will increase.... Issues like this. And, of course, their presence in parliament, including in the Health Commission, when we also appealed to the international convention on tobacco control"* (Subject 8, policy maker)

*“... information that can be officially and legally obtained from the Parliament shows that the tobacco industry, representatives of casinos and cigarettes traders went very often to the Parliament, including to the Health Commission [...] this lead to prolonged deadlines and the refusal to discuss this bill earlier, including violations of procedures from the operating rules of the commission, such as voting in the plenum” (Subject 9, medical expert)*

#### *The vote for the law*

Even in this harsh political context, the Law 15/2016 received a favorable vote from policy makers. This was attributed by interviewees to four main elements. First of all, one subject suggested that some policy makers voted in line with the opinion of the general population:

*“Let’s not forget that the Parliament is the living image of the country and that polls showed that more than 70% of the population supported banning smoking in public places. And then it is clear that those who are in the Parliament would vote such a law.” (Subject 5, policy maker)*

Several subjects mentioned that policy makers have come to acknowledge the public health impact of the law, and that they gave it a positive vote because they believed that it would improve the health of current and future generations:

*“I think they finally realized the benefits of its law are enormous as opposed to its costs. So they knew they were doing something good, a good that transcends a parliamentary term... or two or three parliamentary terms” (Subject 1, policy maker)*

One subject in our interviewed group discussed about the fact that he asked for policy makers to publicly show their support for the smoke free legislation. This is in line with the use of the behavioral economics principle of having people commit to a specific cause, as a means to increase their future adherence to and compliance with it.

*„Yes, and I asked for their consent to publish the list of those who supported the law and they gave me their consent. And I also did not miss any opportunity to remind people that there are 105 parliamentarians who support this law, they are on the list of supporters...” (Subject 8, policy maker)*

The policy makers’ own smoking behavior was described in some cases as relevant for the vote, especially by the two interviewees who were medical experts:

*“Parliamentarians who were doctors were clearly divided in two categories by their smoking status. Many of the opponents of the law were smoker doctors. Non-smoker doctors have*

*been very helpful, they have been of great support. So they have been at the extremes...”*  
(Subject 9, medical expert)

### **Theme 3: The public opinion context**

#### *Changes in public opinion support for the smoke free legislation over time*

Contrary to the lack of/ poor support for the Law no. 15/2016 by policy makers, the support coming from the general public has increased in 2015-2016. If in the early months of 2015, at the *beginning of the advocacy effort, the public opinion did not show much support for this piece of legislation* – “The polls showed that there was not much support... over time people have understood that not smoking in public places is not the end of the world” (Subject 1, policy maker), the subjects’ narratives regarding this aspect have changed by the end of the bill adoption process, resulting in great support for the smoke-free law, including from the part of tobacco users.

*“...the public opinion was mostly involved at the end of it [the process of adopting the bill]... or rather in the moments when the law was attacked last year, than throughout the entire process. We felt the debate towards the end of 2015, when the law was near its adoption and when the greatest pressures from the opponents have begun. So at the moment when it came into the public’s eye... it was extremely debated, but I think that was needed... because this has increased the level of awareness [toward the law]”* (Subject 3, public communication expert)

*“This is basically the second poll conducted... we conducted one in August and I remember that over 80% of the smokers were supporting the measures. That was surprising for us because we did not expect it. And the survey, as far as I remember and know, was done at the European level in 6 countries, and was done by those who prepare the Eurobarometer. So it cannot be said that there have been manipulations or other arrangements.”* (Subject 2, tobacco policy expert)

#### *The fire at the “Colectiv” club*

The fire, which resulted in 64 deaths, took place in October 2015, in the same week in which the Law 15/2016 was removed over night from the Health Commission’s voting agenda. The narratives of two interviewees suggest that this accident has prompted the public opinion to bring up issues related to the poor national legislation regarding people’s protection against fire, including the issue of tobacco use in indoor public areas.

*“The bill has been left in a drawer for many years and if that unfortunate event would not have happened, the “Colectiv” tragedy, and subsequently several Romanian music bands would not have publicly declared that they would no longer concert in those places where smoking is allowed, nothing would have happened to the law. The law would have been buried.”(Subject 5, policy maker)*

#### **Theme 4: Use of mixed, complementary communication strategies and channels to reach policy makers and the general population**

##### *Communication with the general public*

The two sub-themes emerging from our data relate to the efforts conducted by interviewees to close the circle of communication with the general public and the policy makers. Subjects’ accounts suggest a multifaceted communication process with the general public - *“We can also talk about communicating with the public which had all forms possible, including videos on certain TV stations that have accepted to broadcast them, videos created by the Romanian cardiology and pneumology societies; Facebook and social media in general; news articles; bloggers who got involved and have written about the topic”* (Subject 2, tobacco policy expert).

##### *Communication with policy makers*

The communication with policy makers regarding the subject of this smoke free national regulation was described by interviewees as more complexed, both from the perspectives of the communication channels employed (i.e. formal or informal, oral or written), as well as from the perspective of the topics approached by our interviewees.

*“Communication was made in writing... letters sent both from those in Romania and from the international associations that supported the law. So all the means of communications have been used – social media, Facebook. I don’t think there was a means of communication that we have not used”* (Subject 2, tobacco policy expert)

*“Usually we had these talks face to face”* (Subject 1, policy maker)

*„There have been email contact lists that we developed based on public data for these commissions... we knew that in some cases they [parliamentarians] are more receptive to receiving printed materials rather than receiving emails. There were situations in which certain reports have been sent physically”* (Subject 3, public communication expert)

*“We had only one formal discussion when, in the parliamentary group, the decision to support and vote the bill was made. But for the rest, the discussions were informal”*  
(Subject 5, policy maker)

Interviewees’ narratives relate to the use of a combined communication strategy designed to enforce their message, by delivering it through multiple communication channels:

*“The strategy was to combine various communication methods. If we were to send a personalized letter, that letter... the message or the content was also publicly transmitted through bloggers of the media, or it was communicated through individual discussions... we took good care and made sure that the message will reach the recipient. Let’s say there was a main message and there were always secondary ways of ensuring that the message has reached the recipient and that the recipient knows about the existence of the message”* (Subject 2, tobacco policy expert)

The content of the messages delivered to policy makers consisted partly of scientific facts/arguments and partly of information appealing to the emotions/feelings of policy makers (this topic is discussed in the following section). The content of messages based on scientific arguments was related to the positive health impact of this piece of legislation; comparisons between Romania and other countries which have already implemented the smoke free legislation; the economic costs of tobacco use and the healthcare savings generated by the application of this law; the issue of human and employee rights to a non-toxic environment; and the economic implications of the legislation from the perspective of the bar, restaurant, and hotelier industry. Due to its relevance for the use of behavioral economics insights in the process of adopting the smoke free legislation, we are expanding here on the subjects’ narratives regarding the costs and benefits of this legislation.

*“...many policy makers were saying that this [the policy] is an unpopular measure and that it cannot bring them any benefits. It was very difficult to work on this...”* (Subject 2, tobacco policy expert)

*„It is difficult to quantify what was the level of conviction regarding the costs vs benefits subject... I believe it was a decision based on an empirical, personal evaluation of the benefits against the costs, against the studies and the data we had”* (Subject 3, public communication expert)

*“I told them [to policy makers] times and times again that it [the legislation banning smoking in public places] is a preventive measure, which costs us nothing from the state budget” (Subject 8, policy maker)*

*“There are economic studies conducted in 2014-2015 saying that we are losing one million in direct costs. So we had the argument of hospitalizations and costs associated with those who smoke” (Subject 4, medical expert)*

Another important aspect which emerged from the data reflected the political costs experienced by Aurelia Cristea, the main political promoter of this law, who basically ended her political career – “For Ms. Aurelia Cristea this [law] cost her she’s political career. She was excluded from all party positions, she used to be the DPS candidate for the Cluj city hall – she was publicly slaughter by the press closed to DPS. She was stoned in the local press and, in the end, she was excluded from the list on parliamentary elections” (Subject 5, policy maker).

#### *Characteristics of the messages delivered to policy makers*

Along with the use of power networks to support the adoption of the Law no. 15/2016 (please refer to Theme 1), the use of previous commitments to the cause as a means to gather votes for the law (Theme 2), and the discussion about the costs and benefits of supporting the law (Theme 4), we identified other six behavioral economics principles in our subjects’ accounts regarding their communication process with policy makers: (1) affect, (2) receptiveness, (3) simplify message, (4) attract attention, (5) social norms, and (6) messenger.

*Affect.* Most interviewees mentioned to have delivered messages resorting to the emotions/feelings of policy makers to gather their support for this legislation:

*“This is a topic that involved a great deal of emotion from the beginning. More seriously speaking, it is actually ... the first law that addressed a change of behavior in Romania, if we are to think about it from a historical perspective”(Subject 3, public communication expert)*

*“First of all, I think that this emotional side has been linked to children, to the fact that society, in general, has to protect the young generation from turning them into addicts ... because smoking creates addiction ... so here we went on the emotional side. Everyone has children, everyone... I do not think that, even if they are smokers, they like to see their babies smoke or see sick children” (Subject 2, tobacco policy expert)*

*“Absolutely. I appealed to emotions because I talked about the drama of having a disease caused by tobacco when you are not a smoker... about the drama of having to go to a job*

*where people smoke even though you are not a smoker, and about the fact that you have to be exposed to smoke in a professional space. I talked about the drama of the smokers who get serious ill... because they do... and we empathize"* (Subject 7, activist)

**Receptiveness.** Interviewees mentioned approaching policy makers in the days or moments when they were more likely to be opened to discussions about the smoke free law:

*"The key moments were usually represented by either debates, or presentations of the law... so most of the discussions took place in the moments that preceded or followed a relatively formal moment"* (Subject 1, policy maker)

*"These things derive from the program of the parliamentarians or the program at that specific time. Their working days number has increased. At that time, they were at the Parliament on Mondays, Tuesdays and Wednesdays. And then somehow everything was concentrated in those days. Mondays were generally days for plenary meetings and votes. Tuesdays and Wednesdays were commission days. So we focused our communication in those days"* (Subject 3, public communication expert)

**Simplify message.** Message simplification was mentioned by two interviewees, as a strategy to improve policy makers' understanding of the messages' content:

*"We tried to build the messages we send so as to be as short as possible"* (Subject 3, public communication expert)

*"I have provided information for others to use. In fact, I have provided information for others to translate it in an easier to understand format"* (Subject 9, medical expert)

**Attract attention.** Subjects' narrative describe means through which the attention of policy makers was drawn and directed towards the content of the messages they developed to support the smoke free policy, by employing strategies such as personalization of messages or use of various editing techniques.

*"So there were many punctual communications. Especially during the time when we had problems with the Health Commission. I wrote individually to the members of the Health Commission. Or, likewise, to the Minister and Ministry of Health. Of course we used many general messages, but we also used many individual messages. Normally, every time they [parliamentarians] receive a personalized message, they read it more carefully than when they are copied to a list or when they receive a message with dear sir /madam..."*  
(Subject 2, tobacco policy expert)

*“We tried to build the messages we were sending so as to keep them as short as possible, to highlight some paragraphs... we know that they don’t read too carefully. Somehow all of these message outline techniques have been used” Subject 3, public communication expert)*

*“Yes, I used bold, italics. I used formatting techniques, I made visual layouts... I am determined person from this point of view” (Subject 7, activist)*

*Social norms.* One interviewee described the use of the social norms as a means to emphasize the fact that the support for this smoke free legislation exceeded the borders of political parties. *“And, of course, I did not miss any occasion to emphasize the fact that there are 105 parliamentarians who support this law, they are included on the list of supporters” (Subject 8, policy maker)*

*“Yes, we used this as well [references to other politicians who support the law], we used their number [of the politicians who support the law], and we used the fact that they are from all political parties. Every time I went to someone from another parliamentary group I said <<Look, it is not just the SDP [Social Democratic Party] initiative, it is an initiative that has nothing to do with the party, but it has everything to do with health policy” (Subject 8, policy maker)*

*Messenger.* This behavioral economics principle suggests that people’s behavior is influenced by the person who communicates the information. Since our interviewees’ accounts emphasize the large number of public figures (i.e. singers, artists, journalists, and bloggers) and well-known non-governmental organizations invested in supporting the smoke free legislation, we believe this might have led to increased support for the law banning smoking in public places from both policy makers and the general public.

*“We have not only used the public opinion though Facebook or mail messages, but generally used the statements of well-known journalists, athletes, doctors, artists... including of those who work in the hospitality industry – renowned chefs, and so on” (Subject 8, policy maker)*

The findings listed in the Results section are graphically represented in Figure 3.2.

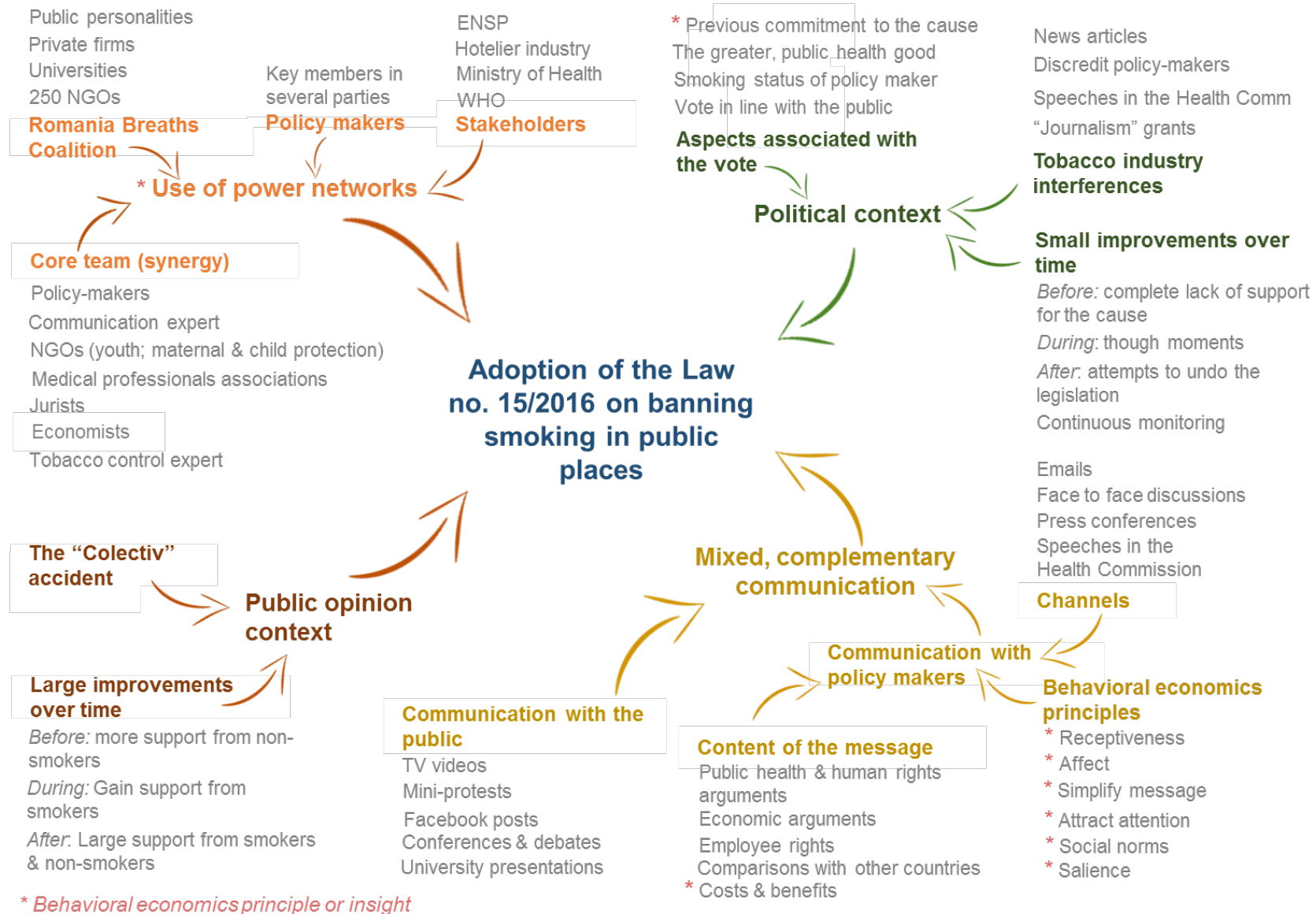


Figure 2.2 – Summary of the themes, codes, and behavioral economics insights emerging from the data

## 2.5. Behavioral economics-informed policy instrument

Our analysis rendered a number of nine behavioral economics principles or insights used in gathering support for the Law no. 15/2016 on banning smoking in public places: fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, affect, and costs and benefits. These are compiled and defined in Table 3.3 presented below.

Table 2.3. Behavioral economics-informed policy instrument to be used in the policy adoption process

| <i>BE principle/insight</i> | <i>Original tool</i>     | <i>Original definition</i>                                                                                                                                                                                                                                                                                                                                                                    | <i>Proposed definition (for the policy adoption process)</i>                                                                                                                                                                                              |
|-----------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use of power networks       | EAST                     | “Governments can foster networks to enable collective action, provide mutual support, and encourage behaviors to spread peer-to-peer”(Service et al., 2014a)                                                                                                                                                                                                                                  | Advocacy efforts should start from a core team covering all areas of partnership and fostering the power of inter-related networks formed at the level of official policy makers, civil society, and institutional stakeholders                           |
| Social norms                | MINDSPACE<br>EAST<br>NEF | <p>“We are strongly influenced by what others do” (The Behavioral Insights Team, 2010)</p> <p>“Describing what most people do in a particular situation encourages others to do the same” (Service et al., 2014a)</p> <p>“Other people’s behavior matters. People are encouraged to continue to do things when they feel other people approve of their behavior”(Dawnay &amp; Shah, 2005)</p> | Use number and, with their approval, names of official policy makers who support the legislation, to show the extent of the support for a bill. If possible, show that support comes from official policy makers belonging to multiple political parties. |
| Simplifying the message     | EAST                     | “Make the message clear” (Service et al., 2014a)                                                                                                                                                                                                                                                                                                                                              | Send information related to the policy you want to promote in lay terms and on multiple channels. Sending the same message multiple times will make the                                                                                                   |

|                    |                  |                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                |
|--------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                    |                  |                                                                                                                                                                                                                                                                                  | message stick with policy makers.                                                                                                                                                                                              |
| Attract attention  | EAST             | “Use of images, color or personalization” (Service et al., 2014a)                                                                                                                                                                                                                | Highlight and/or underline words in your emails or letters sent to policy makers; use italics, images, or develop specific layouts for your messages. When possible, always use the full name of the recipient of the message. |
| Messenger          | MINDSPACE        | “We are heavily influenced by who communicates information” (The Behavioral Insights Team, 2010)                                                                                                                                                                                 | Partner with well-known individuals and public figures from multiple sectors of activity and have them promote your policy.                                                                                                    |
| Receptiveness      | EAST             | “Prompt people when they are likely to be most receptive” (Service et al., 2014a)                                                                                                                                                                                                | Know the schedule of policy makers. Approach and contact them just before and after a debate/speech/ presentation regarding your proposed policy is taking place.                                                              |
| Affect             | MINDSPACE        | “Our emotional associations can powerfully shape our actions” (The Behavioral Insights Team, 2010)                                                                                                                                                                               | Similar to individuals in the general population, policy makers are influenced by emotionally charged messages, especially when messages relate to something of relevance to them.                                             |
| Commitments        | MINDSPACE<br>NEF | “We seek to be consistent with our public promises, and reciprocate acts” (The Behavioral Insights Team, 2010)<br><br>“People’s self-expectations influence how they behave: they want their actions to be in line with their values and their commitments”(Dawnay & Shah, 2005) | Asking for a public commitment from policy makers to support a law will most likely translate in a positive vote for that law.                                                                                                 |
| Costs and benefits | EAST             | “We are more influenced by costs and benefits that take effect immediately than those                                                                                                                                                                                            | Bring into the discussion the immediate financial and economic costs and benefits related to supporting a policy                                                                                                               |

|                                          |                                                              |
|------------------------------------------|--------------------------------------------------------------|
| delivered later” (Service et al., 2014a) | and back them with numbers. Use recent economic evaluations. |
|------------------------------------------|--------------------------------------------------------------|

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Note: *NEF: New Economics Foundation, Behavioral economics – seven principles for policy-makers* (Dawnay & Shah, 2005); *MINDSPACE: Influencing behavior through policy* (The Behavioral Insights Team, 2010); *EAST: four simple ways to apply behavioral insights* (Service et al., 2014a)

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## 2.6. Discussion

The aim of this research was to explore the use of behavioral economics insights (either deliberately or not) in the policy adoption process, as a means to foster the support of official policy makers for new public health legislation. In order to attain this aim, we used the Romanian Law no. 15/2016 on banning smoking in public places as a case study and we conducted interviews with key stakeholders involved in the development, support, promotion, and adoption of this legislation endorsing smoke-free public places. We found that several behavioral economics principles were used by our interviewees to gather support the Romanian legislation banning smoking in public places in the policy adoption process: fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, costs and benefits, and affect. The same principles were previously recommended by researchers and behavioral economics experts to be used by policy makers in their policies’ development and implementation, to positively nudge citizen’s behavior (Dawnay & Shah, 2005; Service et al., 2014a; The Behavioral Insights Team, 2010). Based on our results, we propose a behavioral economics-informed policy instrument which can potentially be used to gain support of policy makers and other stakeholders involved in the policy-adoption process.

To date, the focus of behavioral economics-informed policy initiatives was mostly on legislation implementation and enforcement (Sousa Lourenço, Ciriolo, Almeida, & Troussard, 2016), two key issues highlighted in a recent OECD regulatory policy report as in need of rapid improvement (*OECD Regulatory Policy Outlook 2015*, 2015). Therefore, efforts to include behavioral insights into policy implementation and enforcement are legitimate and, most important, proven to be successful (OECD, 2017). Yet, little or no attention has been paid to the situation of countries with turbulent political environments as a function of the degree to which behavioral economics-informed efforts can support the policy adoption process.

Most low and middle income countries underwent positive political and economic changes in the last decades. These changes have driven important policies and reforms in the field of public health, but some countries are still struggling to gather political support for policies that would foster better health for their citizens and ultimately decrease the burden of disease and healthcare costs. This is due to increased political instability, lack of continuous support for legislative efforts across governments, and interference of private industries (i.e. big tobacco, big pharma, or big food). In the context of the lengthy process associated with effective policy development, adoption, and promulgation, the current political environment makes it almost impossible to pass meaningful policies with a large public health impact, such as tobacco control or physical activity regulations. And the situation is similar in other low and middle income countries in Eastern Europe, such as Bulgaria, Albania, Ukraine or the Republic of Moldova.

Our results lend support for the fact that the use of behavioral economics insights increased the influence of the anti-smoking actors and, by this, contributed to the adoption of the smoke free legislation in Romania. For example, the narratives of our interviewees depict the use of multiple, inter-related networks of individuals and groups (the core support team, Romania Breaths coalition, network of policy makers, and network of organizations) which grew constantly between 2015 and 2016, and which gathered significant support for the legislation endorsing smoke-free public places in Romania. On the other hand, two interviewees believe the accident at the “Colectiv” Club, where 64 young people died and 147 were injured, has had a major role in passing the Law no. 15/2016, even though the accident was not caused by smoking. The explanation put forward by our interviewees is that policy makers were potentially pressured by the public opinion to support this law in the light of the “Colectiv” accident. We are unable to completely untangle the impact of this incident from the influence the use of behavioral economics insights has had on the adoption of the legislation endorsing smoke-free public places. Yet, we can still shed some light on this matter. The accident at “Colectiv” generated street protests and political changes at the end of 2015, leading to opposition against the Romanian government and requests for a “restart” of Romanian politics. This subsequently led, among others, to discussions about the urgent need for Romania to have better public policies in the area of health and justice. One paper analyzing 2,057 Facebook and 14,433 website comments posted by users of an online, daily newspaper in relationship to the “Colectiv” accident found that the discussion regarding the smoke free legislation constituted a marginal topic in the comments (Grădinaru, Patraș, & Postolea, 2016). More specifically, it was related to the larger theme of improved public health policies, including regulations in the area of

emergencies & natural disasters, and regulations focusing on hygiene in hospitals. Therefore, people saw the smoke-free legislation as yet another issue on a long list of aspects that need to be solved (Grădinaru et al., 2016). Taking this into account, and the fact that the accident was not caused by smoking, we believe that the smoke free legislation in public places had a lower rank order on the policy agenda related to the accident at “Colectiv” club. Therefore, we are persuaded to consider that the “Colectiv” accident had a marginal impact on the adoption of the smoke-free legislation.

However, a larger impact on the outcome of the legislators’ vote could have had the great support this law had from the public opinion, even before its implementation (Asociatia React, 2015; IRES, 2016). To be more specific, being aware of the fact that up to 84% of the Romanian adult population supported the legislation before its implementation might have influenced policy-makers’ vote in a positive way. However, except from the narratives of one subject (subject 5, policy maker) who suggested that the Parliament is the “living image of the country” and that policy makers voted in line with the public will, no information supporting such a scenario emerged from the data collected from the other eight interviewees. Instead, in their opinions, parliamentarians were difficult to get convinced to offer a positive vote for the Law no. 15/2016 despite the civic support coming from citizens. At the same time, a study on which sets of actors have how much influence over public policy - average citizens; economic elites; and organized interest groups, mass-based or business-oriented-, questions the idea that general support of the public has a significant effect on policy makers' decisions. Martin Gilens and Benjamin Page found that in the US context economic elites and organized groups representing business interests have substantial independent impacts on U.S. government policy, while average citizens and mass-based interest groups have little or no independent influence (Gilens & Page, 2014). We do not have comparable data for any other country than the US, but it is likely that the same result will hold in semi-consolidated democracy with a party list vote-proportional representation voting system, such as Romania.

A key aspect that is still to be discussed is related to the political costs incurred on the policy maker who was the initiator and the primary supporter and political promoter of this regulation, Ms. Aurelia Cristea - this law cost her political career. The negative personal outcome this legislation had on the political career of Ms. Cristea could be considered as disincentive for other policy makers who are undecided about getting involved in similar policy efforts.

As a final note, our findings raise the question put forward by critics of libertarian paternalism (Gill & Gill, 2012; Selinger & Whyte, 2012; M. D. White, 2010), who are doubtful about the

legitimacy of the legal authorities (being them public health authorities or not) to interfere with (or nudge) individual decisions towards “good behaviors”. Similarly, to a certain extent, our results call into question whether policy makers are the best persons to nudge the general public to change its behavior, when they themselves are subjected to the same behavioral influences as their voters. Even so, we believe our results, and the policy instrument we are proposing, have the potential to open a new field of research in behavioral economics.

Our study had several limitations. First, we had a small number of interviewees. Yet, they were the key stakeholders involved in the development, support, promotion, and adoption of the 2015-2016 legislation banning smoke-free public places in Romania. In addition, by selecting subjects based on their importance and type of role during the entire public policy process involving the anti-smoking legislation, we obtained data that reflects a holistic view of the context and processes that took place during the policy adoption process. This ultimately allowed us to identify and explore the use of behavioral economics insights by our subjects to support the Romanian smoke free legislation in public places.

## **2.7. Conclusion**

This study showed that behavioral economics insights can be effective in influencing official policy makers. We used the insights we gained from the interviews we conducted to develop a behavioral economics-informed policy instrument which can potentially be used to gain support of policy makers in the policy adoption process. Although it should be applied and tested in other policy case studies to assess its validity, the proposed policy instrument could be especially relevant for policy makers from countries with volatile political contexts and no continuity in political support for legislative efforts across governments, who aim to advance public health legislation.

## **2.8. Acknowledgement**

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# Chapter 3: The ethics of behavioral economics

## 3.1. Summary

For several decades now for-profit companies have been using insights from psychology and economics to influence their consumers' behaviors in an attempt to increase revenues. As shown in Chapter 1, governments have recently set up "behavioral insights teams" to inform policy strategies that would nudge citizens to make decisions which are in their best interest and in line with policy objectives. Yet, this approach raises several ethical considerations, some related to the balance between government influence and manipulation, other similar to the issues that have been raised against public health in previous decades, such as the protection of individual liberties against the attainment of collective benefits.

The aim of this chapter is two-fold. First, I propose a solution to meet the ethical concerns related to government manipulation when implementing behavioral economics-informed public health policies. This solution entails policies to be assessed through and meet the criteria of three frameworks: Faden and Sirine's ethical approach to public health; the values of an ethical state (welfare, autonomy, dignity, and self-government, as described by Cass Sunstein); and comply with the Nuffield Council on Bioethics' "intervention ladder", a tool designed to help with the ranking of public health interventions based on their coerciveness.

Second, I discuss ethical concerns on using behavioral economics insights to influence policy makers themselves (previously discussed in Chapter 3) to foster their support in order to advance public health legislation. More specifically, I focus on how the shortcomings of policy makers (they can be subjected to the same cognitive biases, heuristics, and contextual influences to which regular citizens are) could be exploited to gain political support for public health legislation. Yet, in order to ensure that policy makers are neither coerced nor maliciously manipulated to support a policy that would not make citizens better off, I propose several prerequisites for this endorsement: the public policy in need for support is in line with Faden and Sirine's (2016) ethical framework; it does not infringe upon the values of an ethical state: welfare, autonomy, dignity, and self-government; and, in what concerns the autonomy and liberty of policy makers, the behavioral economics-informed initiative targeting them is situated on Steps 2-5 of coerciveness on the Nuffield Council on Bioethics' "intervention ladder".

Throughout this chapter I also discuss the issues of interrelated paternalism, libertarian paternalism, preservation of freedom of choice, and nudges. I also use two case studies to exemplify the application of the ideas I put forward.

## **3.2. Behavioral economics-based public health policies from an ethical perspective**

### **3.2.1. Two approaches to public health ethics**

Powers and Faden (2006) see public health as a critical element of social justice (Powers & Faden, 2006). More specifically, introducing a new theory of well-being, Powers and Faden (2006) propose six dimensions to social justice: a healthy life; safety against violence; self-rule or self-government regarding decisions that will affect individuals' future; self-respect and respect from others; capability to form attachments (especially important for children); and reasoning competencies. Therefore, in order to preserve social justice, governments should ensure an adequate level of attainment on these dimensions for every individual, with a special focus on the health needs of children and minority groups exposed to inequalities and deprivation. Building on their life-long work, these two authors also argue that health should be the outcome of socially just decision-making.

The definition of public health entails the “promotion and protection of the health of people and the communities where they live, learn, work, and play” (American Public Health Association, 2017). By extension, public health automatically implies: a focus on populations rather than on individuals; the provision of collective services designed to prevent diseases and promote health, with a specific emphasis on prevention; and coordinated action directed by governments or public institutions. Yet, these implications lead to important ethical dilemmas related to the (1) protection of individual rights versus collective/public good and the (2) availability of resources (and their distribution) to promote public health (Faden & Sirine, 2016).

In order to justify public health policies from an ethical perspective, I will focus on two main approaches – the biomedical approach focusing on the individual, and the Faden-Shebaya framework that focuses on populations (Faden & Sirine, 2016).

The biomedical approach is guided by four main principles: respect for autonomy, nonmaleficence, beneficence, and justice (Childress & Beauchamp, 2013). The first principle, respect for autonomy, ensures individuals privacy and the liberty to make their own decisions in respect to their health (i.e. when invited to take part in health interventions). Yet, there are ethical implications regarding the tradeoff between respecting individual liberties and

advancement of individual health outcomes. The basic idea behind this statement is that the state, in a paternalistic attempt motivated by societal costs, may implement health programs that restrict individual liberties in order to protect the individual himself or herself, but it can also do so in an attempt to protect people from the negative health effects of the actions taken by other individuals (Kass, 2001). This is where the principle of beneficence comes into action. More specifically, the rule of beneficence refers to a “moral obligation to act for the other’s benefit ... often by preventing or removing possible harms” (Beauchamp, 2016). As an illustration of these principles, I bring forward the case of the Severe Acute Respiratory Syndrome (SARS), the first severe and communicable disease posing a major public health threat in the 21<sup>st</sup> century (World Health Organization, 2015a). SARS led to severe or lethal pneumonia and has spread internationally during the epidemic that took place between November 2002 and July 2003, resulting in 8098 infected individuals and 774 deaths in 37 countries (World Health Organization, 2015a). Since then, the disease resurfaced five times, the last documentation of the virus being made in December 2017, in China (McKie, 2017). Local governments, coordinated by the World Health Organization, managed to contain the disease by placing individuals who exhibited SARS symptoms in quarantine and isolation in an attempt to protect uninfected persons. These two confining strategies (i.e. quarantine and isolation) can be implemented on a voluntary basis or can be made mandatory by legal authorities. The case of SARS represents an extreme example of public health action that restricts individual liberties in an attempt to promote public health and prevent diseases. Yet, even in critical situations like this one, the restriction of individuals liberties should be minimized (but still be in line with public health requirements) and should be implemented by respecting the rights of individuals being confined (Blum & Talib, 2006). This is in line with the principle of non-maleficence – “do no harm”.

The fourth biomedical principle discussed in this chapter is the principle of justice, which argues that individuals should benefit from a fair treatment, including from the point of view of the costs and benefits of public health interventions. This is a difficult mission to accomplish, since public health programs can use taxpayer money to target health risk behaviors in specific sub-populations (i.e. use of condoms in HIV positive individuals), while those specific taxpayers do not have an individual, direct benefit as an outcome of this public health intervention. Yet, this is where Faden and Sirine’s approach to public health ethics can be brought forward to justify the implementation of public health interventions, with reference to the advancement of the collective good/benefit.

Faden and Sirine's (2016) ethical framework shifts the focus from the individual to the larger population, which is more in line with the definition of public health itself, listed at the beginning of this sub-section. These two authors, both prominent public health ethicists, suggest that public health programs and interventions bring an *overall benefit to society*. That is, if grounded in population-based statistics, public health policies and programs have large population-level benefits and individuals are thus better off as an outcome of their implementation. Even if in some cases public health policies, interventions, and programs are targeted towards a specific group of people and do not directly benefit others, the large-, population-level outcomes make public health programs better to have than not to (Faden & Sirine, 2016) because indirectly they benefit everybody. The principle of "*communitarianism*" is in line with this idea, as it suggests that "what is good for the whole is good for its parts" (Phua, 2013). An example in this sense would be public health programs that promote flu vaccination in children as a means to protect the elderly from the health risks of flu. One recent application of this strategy was promoted by NHS England and Public Health England in December 2017, when urging parents to vaccinate their children before Christmas, in an attempt to protect their grandparents from severe health complications on top of their pre-existing heart or lung diseases (Telegraph Reporters, 2017).

Another fundamental principle included in Faden and Sirine's (2016) framework is the one of *collective action*. There are two prerequisites to this. The first one relates to the fact that public health policies and programs work only if all individuals (with few exceptions) are willing to participate and take the same direction of action. Building on the previous example, one illustration of this concept would be parental compliance with vaccination programs that vastly reduce child mortality and morbidity. If there is a sufficient number of parents who do not abide by these programs, there will be outbreaks of communicable diseases that will have negative consequences (including death and severe disability) on the health of both vaccinated and unvaccinated children. The second prerequisite to collective action and efficiency is that these can be reached only by coordinated action conducted by a higher body, such as governments or governmental institutions. Even if interested in their own health, individuals are not able to make decisions that would significantly change the environment they live in because they lack information and expertise to select the optimal alternative, and they also lack power to implement it. In this situation, governmental institutions (advised by their experts) are in charge of making evidence-based public health decisions. Yet, authors claim that policy makers (similar to other humans) are predisposed to cognitive errors and have bounded rationality. Bounded rationality posits that the outcome of the human decision making process is influenced by limited

access to information, cognitive limitations, and time constraints. Thus, policy makers are also prone to mistakes in decision making, this leading to ethical concerns.

Nonetheless, public health should not violate John Stuart Mill's *harm principle*, which posits that it is justifiable to interfere with one's liberty to prevent physical or economic harm to others (Mill, 1869). One landmark public health policy that can be used to illustrate this principle is the banning of smoking in public places as a means to prevent non-smokers' exposure to secondhand smoke. Published in 2006, the Surgeon General's Health Consequences of Involuntary Exposure to Tobacco Smoke report (Office on Smoking and Health, 2006) emphasized the evidence gathered in the previous 20 years on the health effects of exposure to second hand smoke. The findings of this report laid the ground for comprehensive tobacco control policies in the area of smoking in public places, on reasons related to safety. Even if the application of this principle in the matter of secondhand smoke is evident, scholars often raise the issue of how large should the harm against other persons be in order for it to justify the application of this principle (Faden & Sirine, 2016).

Finally, paternalism – or “the interference of a state or an individual with another person, against their will, and justified by a claim that the person interfered with will be better off or protected from harm” (Stanford Encyclopedia of Philosophy, 2005), is the last principle put forward by Faden and Sirine as a critical component of public health ethics. To some extent, all human activities are influenced by external parties, from our shopping behavior to our city transit behavior, and from our lunch selection to the medical services we access. This concept (and its applications) is discussed in detail in the following section.

### **3.2.2. Paternalism, libertarian paternalism, and the preservation of freedom of choice**

The concept of paternalism raises maybe the most heated debates in terms of public health ethics. As already mentioned, paternalism is defined as “the interference of a state or an individual with another person, against their will, and justified by a claim that the person interfered with will be better off or protected from harm” (Stanford Encyclopedia of Philosophy, 2005). A lighter version of paternalism, libertarian paternalism implies only influencing individuals (by a third party with presumably more knowledge and better cognitive abilities) without restricting their freedom of choice (Thaler & Sunstein, 2003).

To put it differently, the concept of libertarian paternalism is based on the assumption that individuals are not good at making decisions, and, in this context, third parties (i.e.

governments) can prevent them from selecting suboptimal, inferior alternatives, while still preserving their freedom of choice. In the words of Thaler and Sunstein, libertarian paternalism is defined as an approach that allows “influencing the choices of affected parties in a way that will make those parties better off” (Thaler & Sunstein, 2003). Yet, this concept raises ethical questions about how and to what extent policy makers are aware of the true needs of individuals and whether they themselves possess the cognitive abilities and rationality traits (i.e. unbounded rationality) to select optimal decision alternatives. Defending this approach, the authors argue that paternalism is used, to a larger or greater extent, any time a public or private institution sets out new guidelines, rules of conduct, or procedures. Since individuals are guided/directed anyway in a direction or another, the goal should be to avoid the recommendation of suboptimal alternatives and to steer people to a situation that will promote their welfare, while preserving their freedom of choice. Therefore, according to these authors, libertarian paternalism is “liberty-preserving” (Thaler & Sunstein, 2008). This vision of libertarian paternalism places it between the two diametrically opposed approaches: paternalistic and laissez-faire.

Yet, critics of libertarian paternalism first argue that this type of paternalism is not “libertarian” because it limits freedom of choice in one way or another (Grüne-Yanoff, 2012). Secondly, they look into how “welfare” is defined and highlight that the working definition of welfare from the perspective of libertarian paternalism does not meet the criteria of liberalism (i.e. subjectivity of individuals’ values) (Grüne-Yanoff, 2012). Because the libertarian paternalism’s definition of “welfare” does not meet the criteria of liberalism, Grüne-Yanoff posits that libertarian paternalism does not represent a distinctive form of paternalism, it is just plain paternalism.

In order to bring out the differences between the two kinds of paternalism, I propose an example related to tobacco control policies. A hard paternalistic approach to tobacco control policy would be the complete prohibition of these harm-inducing products for people under eighteen. In this specific scenario, the policy takes away the individuals’ choice to purchase tobacco products by making the products unavailable. A soft paternalistic approach to the issue of tobacco control policy would be the introduction of higher taxes for tobacco products, which will ultimately increase the price of these products. In this case, therefore, the state is introducing an economic disincentive in order to diminish the purchase of tobacco products, but does not take away the choice to buy these products. Although libertarian paternalism influences individuals’ choices by preserving liberty of choice, the previous scenario should be considered a soft paternalistic approach to tobacco control policy and not a libertarian paternalistic approach. A libertarian

paternalistic line of action in the case of tobacco control policy would be a visual display ban of these products in stores. That is because underage individuals would still retain their choice to buy or not these products (i.e. would not be prohibited to buy these products); however, underage individuals would be less likely to decide to buy tobacco products if they do not see any reminders of the existence of those products. Therefore, the distinction between paternalism and libertarian paternalism resides in the individuals' liberty to choose between alternatives.

Nudges represent a tool in choice architecture interventions. While choice architecture interventions are interventions that alter the environment in which decisions are being made to steer the individuals to select an optimal alternative, nudges are defined as "any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008). The ethical issues around nudges arose from the idea that they "manipulating people's choices" (Bovens, 2008) and diminish people's autonomy to make their own life decisions (Furedi, 2013). Yet, Sunstein argues the contrary.

First, nudges allow freedom of choice to individuals, thus human autonomy is respected. This is even truer in the context in which nudges (and the larger framework of choice architecture interventions) are inevitable because all decisions are anyway taken in a context designed by a higher/other power than the individual. For example, there are managers who decide the location of products in a supermarket; there are policy makers who decide the rewards system in a tax return policy; there are designers who decide the layout of a website, which can influence the behavior of shoppers; etc.

Second, Sunstein discusses the issue of some nudges giving rise to ethical concerns, but only in relationship to specific examples. For example, a concern regarding default rules might not be applied in a situation where incentives are being used (Cass Sunstein, 2015). To put this into perspective, an ethical concern arising due to the default (automated) enrollment of employees in a retirement program will not arise when the same employees are offered an incentive (in the form of an amount of money) to enroll in the same retirement program.

Nudges are also criticized because they are believed to violate individuals' autonomy in making decisions since individuals are not aware of the existence of the nudge (Loewenstein, Bryce, Hagmann, & Rajpal, 2014). Yet, the results of a recent study showed that pre-informing or post-informing individuals about being "defaulted" did not influence most of them to revise their choice (Loewenstein et al., 2014). These results have two major implications. First, individuals

have freedom of choice when selecting alternatives. Second, even if defaults represent an insignificant change in the way choice alternatives are presented, their effects linger on even after the default is being made known.

In his book, *The ethics of influence* (2016), Cass Sunstein makes a good point by emphasizing the fact that for-profit companies use behavioral insights to influence people's behavior every day, from the music they are playing in their stores to the manner in which products are presented. It is basically impossible to eliminate nudges from everyday life. Therefore, it is natural to ask: why not use the same behavioral tactics to promote good health and improve individual welfare, in general? The answer to this question is two-fold.

First, many argue that governments in general (and policy-makers in particular) may not be in the best position to develop and implement policies with a behavioral influence component. This is because members of the government lack behavioral sciences competencies and skills.

Second, there is the issue of whether the preferences of individuals or those of policy-makers will prevail in the development of what Sunstein calls "good nudges" (Cass Sunstein, 2016); if the latter is true, then questions related to manipulation arise (discussed later in this chapter). On the other hand, individuals will favor nudges when these do not promote concealed goals (i.e. when they are transparent) and when they are in line with their interests or values (Cass Sunstein, 2016). At the end of this subsection I include Cass Sunstein's opinion on the use of nudges: "In many cases, nudges are ethically required, not forbidden. In ordinary life we have the duty to warn people who are at serious risk. A government that fails to produce such warnings is often failing to live up to its ethical obligations" (Cass Sunstein, 2016).

### **3.2.3. Assessment of behavioral economics-based public health policies from an ethical perspective**

From an ethical perspective, behavioral economics-based public health policies need to abide both to principles of public health ethics (already discussed in section 4.2.1 of this chapter) and to the values of an ethical state: welfare, autonomy, dignity, and self-government (Cass Sunstein, 2016). In order to uphold these ethical values, Sunstein argues, states must refrain from implementing mandates or bans in the case of freedom and welfare (they can do so to protect safety or the environment), and be more inclined towards choice-preserving alternatives or nudges when designing public health policies and programs. Nudges represent low-cost solutions that have been proven to advance health, prevent diseases, and reduce morbidity and

mortality (Roberto & Kawachi, 2015). They are low-cost solutions because they entail small, inexpensive changes which require only few resources to be implement, but they generate large improvements in outcomes. Yet, in order to be effective, they need to respect the criteria of “good nudges”.

Good nudges improve human welfare (by having the best interest of individuals in mind as a final outcome), protect and promote autonomy in order for individuals to be able select their preferred alternative and opt out from an alternative they don't agree with, support dignity (by giving individuals the information they need to make a decision and by avoiding their humiliation), and last, but not least, promote self-government (Cass Sunstein, 2016). The criterion of self-government can be reached when nudges take people's preferences into account and give them a large weight in determining the design of the nudge and the choice architecture intervention. This can be done by conducting a rigorous formative research and needs assessment phase before the development of the nudge intervention, to account for individuals' attitudes, needs, and preferences in the process of developing the nudge.

Therefore, from an ethical perspective, behavioral economics-based public health policies should promote the overall benefit of society and should support communitarianism, they should be grounded in collective action and should abide by John Stuart Mill's harm principle and last, but not least, should be based on a libertarian version paternalism (Faden & Sirine, 2016). Nonetheless, they should also protect the welfare, autonomy, dignity, and self-government of individuals (Cass Sunstein, 2016).

I propose a review of the Nuffield Council of Bioethics' “intervention ladder” (Nuffield Council on Bioethics, 2007) – reproduced in Table 5.1, as a means to justify the ethical character of behavioral-economics based public health policies. The “intervention ladder” represents a tool designed to help with the ranking of public health interventions based on their coerciveness. The ladder, reproduced in the table below after the one presented in the original report published by the Nuffield Council of Bioethics, depicts eight stages of governmental coercive action.

According to this instrument, a government would be least intrusive by taking no action in respect to a public health threat or when just monitoring the situation. At the other end of the ladder we have governmental policies or programs which significantly restrict individual freedom. As we move from the first step to the eighth step of the ladder, governments need more justification (under the form of scientific evidence, reports, and data) for the

implementation of public health interventions. This justification should be given to both other policy makers (who need to support the policy) and to citizens. Public health policies developed in the spirit of the behavioral economics approach can mostly be categorized as programs described in Step 4 and 5 of the intervention ladder, suggesting a low to moderate level of intrusiveness on the part of governmental planners and policy makers in the life and behavior of individuals.

Table 3.1. The Intervention Ladder (Nuffield Council on Bioethics, 2007)

|                       |                                                                                                                                                                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Most coercive</i>  |                                                                                                                                                                                                                                                                                                            |
| Step 8                | <i>Eliminate choice.</i> Regulate in such a way as to entirely eliminate choice, for example through compulsory isolation of patients with infectious diseases.                                                                                                                                            |
| Step 7                | <i>Restrict choice.</i> Regulate in such a way as to restrict the options available to people with the aim of protecting them, for example removing unhealthy ingredients from foods, or unhealthy foods from shops or restaurants.                                                                        |
| Step 6                | <i>Guide choice through disincentives.</i> Fiscal and other disincentives can be put in place to influence people not to pursue certain activities, for example through taxes on cigarettes, or by discouraging the use of cars in inner cities through charging schemes or limitations of parking spaces. |
| Step 5*               | <i>Guide choices through incentives.</i> Regulations can be offered that guide choices by fiscal and other incentives, for example offering tax-breaks for the purchase of bicycles that are used as a means of travelling to work.                                                                        |
| Step 4*               | <i>Guide choices through changing the default policy.</i> For example, in a restaurant, instead of providing chips as a standard side dish (with healthier options available), menus could be changed to provide a more healthy option as standard (with chips as an option available).                    |
| Step 3                | <i>Enable choice.</i> Enable individuals to change their behaviors, for example by offering participation in a NHS 'stop smoking' program, building cycle lanes, or providing free fruit in schools.                                                                                                       |
| Step 2                | <i>Provide information.</i> Inform and educate the public, for example as part of campaigns to encourage people to walk more or eat five portions of fruit and vegetables per day.                                                                                                                         |
| Step 1                | <i>Do nothing or simply monitor the current situation.</i>                                                                                                                                                                                                                                                 |
| <i>Least coercive</i> |                                                                                                                                                                                                                                                                                                            |

More  
evidence  
needed to  
justify more  
coercive  
interventions

Yet, due to their reliance on population statistics, an in-depth knowledge of the target population, as well as behavioral insights, these programs could be very cost-effective as compared to other alternatives (Roberto & Kawachi, 2015). Governmental policies overlapping with Step 3 on the intervention ladder are not considered to be developed in the spirit of behavioral economics because they merely focus on developing public health programs. Yet, as I shown in Chapter 4, the mere existence of free public health programs does not guarantee that individuals will actually access them (Richburg-Hayes et al., 2017). On the other hand, governmental policies overlapping with Step 6 on the intervention ladder are not considered to be developed in the spirit of behavioral economics because they do not retain individuals' freedom of choice. That is, due to increase taxation for example, individuals might quit/disengage from a specific behavior because they cannot afford it anymore. However, this decision is made due to structural barriers imposed by the outside environment (i.e. lack of money) and not made under the assumption of the freedom of choice.

In order to respect individual autonomy, thus choice, the use of behavioral economics should be openly acknowledged when developing public policies. For example, individuals should be aware of the fact that they are being nudged. In other words, in a situation in which individuals are presented by a pre-selected option on a governmental form (i.e. organ donation registry), planners should include details on why a pre-selected option is available. This strategy might be similar to a situation when an informed consent is being sought before the implementation of a public health intervention. These details could include the psychological, social, or public health reasons behind this strategy. Nonetheless, planners should mention the fact that individuals have the liberty to select the option they prefer best, even if this does not overlap with the pre-selected option (Schweyer, 2017). Last but not least, behavioral economics should be used to protect welfare, autonomy, dignity, and self-government of individuals, and never to coerce individuals or manipulate them to select an option that would make them worse off (Schweyer, 2017).

#### **3.2.4. Case study 1: The use of bots and botnets to change social norms towards measles vaccination**

A bot represents “a program or script that makes automated tasks, edits, or suggestions” (Chen & Konstan, 2015). The idea of this case study stemmed from two researches on the use of bots.

The first one is Cosley's and colleagues' research on the use of the "SuggestBot" to offer personalized recommendations to Wikipedia users on content editing on the website (Cosley, Frankowski, Terveen, & Riedl, 2007). This led users exposed to the SuggestBot to edit four times more website content than users receiving random page editing suggestions. The second, more recent research, was published by Marco Bastos and Dan Mercea and focuses on the existence of a botnet of 13,493 Twitter bots posting more than 65,000, predominantly pro-Brexit messages and disappearing shortly after the Brexit referendum (Bastos & Mercea, 2017). In this situation the bots were not used to create new content, but to retweet existing anti-EU messages and to amplify specific views favorable to the topic of UK leaving the EU, creating "artificial levels of public support" (City Press Office, 2017). In turn, these could have led to a false sense of anti-EU social norms among UK citizens.

Social norms represent a central behavioral economics concept. They informally dictate the acceptable behavior in a society. Since they are extremely powerful in altering individuals' behavior (Service et al., 2014a; The Behavioral Insights Team, 2010), the issue of using bots in promoting any type of social norms (including social norms towards public health behaviors) warrants ethical considerations.

The purpose of this case study is to imagine an exercise on the use of bots for changing social norms associated with measles vaccination and discuss the extent to which this would meet the requirements of an ethical behavioral economics initiative. Yet, before being able to do this, the case study should be described in detail. The public health topic of vaccination is of current relevance and importance since Romania is facing low vaccination rates (they dropped from 95% in 2007 to 86% in 2017) and registers by far the largest number of measles-related deaths in the EU/EEA region (European Centre for Disease Prevention and Control, 2017). One of the factors known to significantly hinder population-level vaccination rates are negative social norms towards vaccination (Oraby, Thampi, & Bauch, 2014). In order to boost positive social norms towards vaccination, policy makers decide to act by introducing bots to social networks (such as Facebook, Twitter, Instagram) to retrieve and redistribute positive messages about vaccination. At a theoretical level, they believe that this will increase the prevalence of predominately positive messages towards vaccinations, which will in turn create positive social norms towards this behavior, which will ultimately increase vaccination rates.

In order to test the ethical character of this scenario, I will apply and discuss the application of Faden and Sirine's ethical approach to public health; the values of an ethical state (welfare, autonomy, dignity, and self-government, as described by Cass Sunstein); and the Nuffield

Council on Bioethics’ “intervention ladder”. The application of these frameworks is included in Table 5.2.

Table 3.2. Assessing the ethical character of a behavioral economics-formed, bots-based initiative designed to increase measles vaccination rates

| <i>Ethical frameworks &amp; principles</i>                                           | <i>Details</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Faden &amp; Sirine’s ethical approach to public health</b> (Faden & Sirine, 2016) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Overall benefit to society                                                           | Since (1) social norms have a large impact on vaccination rates (Oraby et al., 2014) and (2) the implementation of measles vaccination campaigns have been found to increase vaccination rates (Lau et al., 2012; Szilagyi et al., 2000), which in turn improved health outcomes in vaccinated individuals, the implementation of the proposed behavioral economics initiative will generate an overall benefit to society translated into lower morbidity and mortality, and reduced healthcare costs (World Health Organization, 2018).                                                                                                                                   |
| Communitarianism                                                                     | The principle of “communitarianism – what is good for the whole is good for its parts” (Faden & Sirine, 2016) is respected in the proposed scenario since it implies population-wide vaccination. Since unvaccinated individuals are not protected against measles, this enables the disease to evolve into an epidemic. When this happens, the number of deaths increases due to secondary complications such as bacterial pneumonias, gastrointestinal complication, or measles encephalitis (Shanks et al., 2014). Therefore, the absence of a measles epidemic at the level of society/community represents a good for individuals living in that respective community. |
| Collective action                                                                    | The principle of collective action applies perfectly to the issue of vaccination. Firstly, this is because individuals who do not comply and do not immunize                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | <p>themselves or their children will eventually contaminate other members of the community.</p> <p>Secondly, only the government or the state have the power to coordinate vaccination campaigns at a national level. Therefore, the proposed scenario, in which the government acts as the higher decision body and implements a behavioral economics initiative to boost vaccination rates designed to foster positive social norms toward vaccination in an attempt to ensure immunization against measles at the national level, meets the principle of collective action.</p>         |
| J.S. Mill's harm principle                                  | <p>This principle posits that it is justifiable to interfere with one's liberty in order to prevent physical or economic harm to others. In this scenario, there are no infringements on the liberty of the individual: the behavioral economics-based initiative targets social norms only and does not imply the implementation of disincentives for individuals who do not comply with immunization. However, this principle would be broken by individuals who do not vaccinate against measles and end up spreading the disease in the detriment of other members of the society.</p> |
| Paternalism                                                 | <p>Even though the state is the entity proposing the measles vaccination campaign in this scenario, the proposed behavioral economics-based initiative is not a paternalistic one (i.e. it does not interfere with individuals against their will).</p>                                                                                                                                                                                                                                                                                                                                    |
| <b>The values of an ethical state</b> (Cass Sunstein, 2016) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Welfare                                                     | <p>Measles vaccination has outstanding health, cognitive and educational benefits on immunized individuals (Nandi, Shet, Behrman, Black, &amp; Laxminarayan, 2018). Also, immunization is linked with measles decreased mortality and morbidity (World Health Organization, 2018). Childhood vaccination, including</p>                                                                                                                                                                                                                                                                    |

measles immunization, represents – for the last 30 years - one of the most cost-effective public health programs (Masters, Anwar, Collins, Cookson, & Capewell, 2017; Zhou et al., 2004). Therefore, by aiming to increase vaccination rates, the proposed behavioral-economics based initiative will promote social welfare.

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#### Autonomy

The principle of autonomy implies that individuals make their own choices, by themselves. Since the proposed behavioral-economics based initiative aims to change social norms (and does not directly act upon individuals' autonomy), the principle of autonomy is respected in this situation.

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#### Dignity

This principle assumes that individuals are not humiliated and infers that they are given adequate information which they would need in order to make informed decisions. Since the proposed behavioral-economics based initiative does not imply any type of information delivery, just the replication of positive messages towards measles vaccination, it might partly undermine individuals' dignity. This issue could be corrected by adding an informational component to the behavioral-economics initiative. This component should entail information delivery only and should describe the benefits and risks of vaccination. This would allow for individuals to make an informed decision about vaccination.

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#### Self-government

This principle implies that individuals retain their ability to make their own decisions. Since the proposed behavioral-economics based initiative aims to change social norms (and does not directly act upon individuals' self-government), this principle is respected in this situation.

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**Nuffield Council on Bioethics’ “intervention ladder”** (Nuffield Council on Bioethics, 2007)

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 – No initiative                                     | This would imply that the government is making no efforts to ensure vaccination. This does not apply in the proposed scenario.                                                                                                                                                                                                                                                                                                                                                                                           |
| Step 2 – Provide information                               | This would imply that the government is promoting voluntary vaccination by providing information on the benefits and costs of vaccination. As a response to this information, individuals might decide to immunize themselves or their children. This does not apply in the proposed scenario.                                                                                                                                                                                                                           |
| Step 3 – Enable choice                                     | This type of public health program, one that enables choice, is a prerequisite for the proposed behavioral economics-based program. This means that the government already made the necessary arrangements to ensure that individuals have access to vaccines and that immunization clinics are open throughout the country. Therefore, in the proposed scenario, individual choice is enabled due to a pre-existing condition; yet, the scenario itself does not resemble a public health program that enables choices. |
| Step 4 - Guide choices through changing the default policy | The proposed scenario does not imply the use of default policies to book measles immunization.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Step 5 - Guide choices through incentives                  | The proposed scenario does not imply the use of incentives for individuals who undergo measles immunization.                                                                                                                                                                                                                                                                                                                                                                                                             |
| Step 6 - Guide choice through disincentives                | The proposed scenario does not imply the use of disincentives for individuals who do not vaccinate.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Step 7 - Restrict choice                                   | The proposed scenario does not imply choice restrictions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Step 8 - Eliminate choice                                  | The proposed scenario does not eliminate the choice not to vaccinate.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

The behavioral economics-based initiative analyzed in the table above implies the promotion of social norms conducive to vaccination through the use of bots set to retrieve and redistribute positive comments about vaccination on social networks (such as Facebook, Twitter, Instagram). The aim of this case study was to assess whether such a program would be ethically sound from the perspective of the ethical principles and frameworks put forward in this chapter. Summing up the information included in the table above, I can draw three main conclusions. First, the Nuffield Council on Bioethics' "intervention ladder" (Nuffield Council on Bioethics, 2007) is not comprehensive enough to be properly applied in assessing the coercive character of the proposed scenario. Therefore, this issue calls for additional efforts to develop tools that would better meet the characteristics of behavioral economics interventions. Second, the proposed scenario does not respect the principle of individuals' dignity. This issue could be corrected by adding an informational component to the behavioral-economics initiative. Third, except for the principle of dignity, the proposed behavioral economics initiative meets all the requirements of an ethically sound public health program. Therefore, if the program is supplemented with providing adequate information, it can be considered as being ethically sound/acceptable.

### **3.3. An ethical perspective on the use of behavioral economics to influence policy makers**

#### **3.3.1. Influencing policy makers**

Another contested issue related to the libertarian paternalistic view of behavioral economics is the implication that someone else (i.e. policy makers or governmental planners) can make better decisions than individuals can make for themselves. Therefore, it assumes that (1) policy makers know better what is best for individuals, and that (2) policy makers are not subjected to the same cognitive biases, heuristics, and contextual influences to which regular citizens are.

The first issue, also discussed by Sunstein (2016), relates to the fact that government planners have only limited information at their disposal and know less than they should know in terms of behavioral insights and population-based evidence. This, in turn, will impede them to develop good nudges or good choice-preserving interventions. Also, critics of behavioral economics suggest that it can become a tool to promote the abuse of power by decision makers (Farrell & Shalizi, 2011) – issue discussed in-depth in the last subsection of the chapter.

Second, recognizing the importance of the fact that policy makers may be subjected to the same cognitive biases as regular citizens, Paul Brest dedicates a full chapter to the topic of “debiasing policy makers” in his *Behavioral foundations of public policy* (Brest, 2012). In an attempt to assist policy makers (including legislators, administrative officials, and judges) and prevent them being involved in biased decision making, Brest describes a list of biases to which policy makers are susceptible: (1) hindsight bias (appears when a judge cannot determine if a party took action to prevent an incident); (2) anchoring and insufficient adjustment (entails the policy maker being influenced by provided anchors); (3) confirmation bias (depicts ones tendency to interpret new evidence in a way that would support already existing conclusions); (4) and difficulties in prediction (policy markers’ inability to predict the full-range of effects a policy can generate).

Yet, in order to be protected against these biases, governmental planners should know about their existence. This automatically implies that policy makers, at least some of them, should be well versed in what cognitive biases are, and how they should act in order not to be subjected to these in the process of policy-development and implementation. Similarly, they should have at least some knowledge in the field of behavioral insights and/or make use of the expertise of their advisors or counselor who have been carefully selected as part of their teams on grounds related to their behavioral sciences competencies. This is the case of policy-makers in high-income countries with consolidated democracies that instated Behavioral Insights Teams within their national governments (the United States of America, the United Kingdom, the Netherlands, France, Germany, Austria, or Finland) to help with the development of behaviorally-informed public policies in all governmental sectors. It is needless to say that this is not the situation in all countries, due to the lack of data and behavioral sciences expertise of policy makers. Yet, cost-effective public health policies are probably among the most needed public policies in countries characterized by under-funded and under-staffed health sectors. However, since some of these countries might have volatile political contexts and no continuity in political support for legislative efforts across governments (Müller-Rommel et al., 2004), it is beyond difficult to advance important public health legislation, especially when large industries act as intrusive third parties (i.e. tobacco industry, big pharma, big food) in this process. Consequently, the introduction of behavioral scientists and economists in governmental teams would ease the process of translating evidence into cost-effective policies.

As shown in Chapter 3 of this thesis – “Use of behavioral economics insights to inform the policy adoption process: a case study on the Romanian legislation banning smoking in public places”,

behaviorally-informed instruments that could be used to influence both citizens' as well as policy makers' and governmental planners' behaviors are available. However, the existence and use of an instrument developed to influence policy makers in the policy-adoption process could raise ethical concerns.

To put it differently - is it ethically sound to influence the behavior of policy makers in the policy adoption process? I believe an answer to this question can be offered only by (1) assessing this situation against the ethical criteria already discussed in this chapter, and by (2) placing policy makers in the role of citizens as the target group of behavioral economics-based interventions. That is, policy-makers become the target population of a behavioral economics-informed initiative designed to change their policy endorsement behavior. In Chapter 3 of this thesis I found that several behavioral economics principles were used by my interviewees (stakeholders) to gather support for the Romanian legislation banning smoking in public places in the policy adoption process: fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, costs and benefits, and affect. The same principles were also recommended by researchers and behavioral economics experts to be used by policy makers in their policies' development and implementation, to positively nudge citizen's behavior (Dawnay & Shah, 2005; Service et al., 2014a; The Behavioral Insights Team, 2010). Since these concepts are already recommended to be used on regular individuals by policy makers, this implies that their use on policy makers should not raise any particular ethical concerns in terms of the safety of these approaches. However, they might raise ethical concerns because of the role policy makers have in the government, they having the capacity to significantly change the environment individuals live in through their policy decisions.

From my perspective, using behavioral economics insights to influence policy makers to support specific policies is warranted as long as the public policy in need for support: (a) respects the values of an ethical state: welfare, autonomy, dignity, and self-government (Cass Sunstein, 2016); and (b) it is in line with Faden and Sirine's (2016) ethical framework. The policy should be in line with Faden and Sirine's (2016) ethical framework because this would mean it is focused on the overall benefit to society, collective action, communitarianism, and respects the harm principle.

In addition, in respect to the liberty of policy makers, the behavioral economics-informed initiative targeting them should be on Step 2-5 of coerciveness on the intervention ladder (Nuffield Council on Bioethics, 2007).

All these will ensure that policy makers are neither coerced nor maliciously manipulated to support a policy that would not make citizens better off. Balanced against the proven (negative) interference of big industries in the political process, such as the heavy and disrupting involvement of the tobacco industry in the voting of the Law no. 15/2016 (Tatu-Chițoiu et al., 2017), the use of behavioral economics concepts to steer the vote of the policy makers for public health policies with a great positive population impact seems the good side of the coin when it comes to influencing policy makers.

Even so, another issue emerges from this scenario: the legitimacy of the efforts to influence the decisions of policy makers. Governments in democratic societies are given legitimacy by the democratic process that takes place in the selection of their members. This legitimacy empowers the members of the government (i.e. policy-makers) to make decisions that would steer the behavior of citizens in line with policy objectives. Yet, additional legitimacy would be needed in the case of a non-governmental entity attempting to influence the behavior of policy makers. Who is allowed to nudge policy makers? Large industry lobby groups have been engaging in these practices (i.e. influencing the decisions of policy makers) for decades now, with low support/agreement for these practices from citizens and policy makers alike. To meet the need for additional legitimacy in the attempt to influence policy makers by a non-governmental organization/group, a higher standard is needed regarding the definition of what is good for individuals and society. One alternative to meet this higher standard could be the assessment of the topic of the policy through the three ethical frameworks already described in this chapter and exemplified in the next sub-section.

### **3.3.2. Case study 2: Amending the Law no. 457/2004 on advertising and sponsorship of tobacco products**

At the time I am writing up this case study, in February 2018, the 2035 No Tobacco Initiative (in Romanian, *Inițiativa 2035 Fără Tutun*) is seeking public support for new legislation they plan to bring forward to the Romanian parliament and government. They are trying to have the government amend the Law no. 457/2004 on advertising and sponsorship of tobacco products, in order to remove any direct or indirect advertising and promotion for tobacco products. This would include a ban on tobacco products display in stores (i.e. tobacco advertising at points of sale) and on direct advertising such as promotional sales (free samples of new tobacco products or two-for-one offers). The promoters of this legislation back up their policy proposal using recent population-level data describing high children and adolescent smoking rates

(Romania is situated on the 4<sup>th</sup> place in the EU in adolescents tobacco use), young ages at initiation of consumption of tobacco products, and stores as sources of tobacco products for underage smokers. They also argue that articles 17, 19, 24, 33, and 36 of the United Nations Convention on the Rights of the Child, as well as the article 13 of the World Health Organization Framework Convention on Tobacco Control are broken.

Although the public health impact of tobacco use is well known and the strategy to ban tobacco products advertising and promotion has been proven effective to deter smoking in adolescents (Nonnemaker et al., 2016), this legislative proposal can still meet intense opposition in the Romanian parliament and government. More specifically, recent history shows us that in the case of legislation banning smoking in public places that entered into force in March 2016, civil society fought for two years to get it passed. Thus, this current policy proposal represents an ideal candidate for an exercise in which decision makers could be influenced, with the help of behavioral economics, to gain their political support. I will build the proposed scenario for this case study by tapping into the results of the research I conducted and reported in Chapter 3 “Use of behavioral economics insights to inform the policy adoption process: A case study on the Romanian legislation banning smoking in public places”. My findings show that several behavioral economics principles were used by my interviewees to gather support for the Romanian legislation banning smoking in public places through the policy adoption process: fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, costs and benefits, and affect.

For the rest of this subsection I will assess and determine (using the ethical frameworks already described in this chapter) whether it is ethically sound to use the afore-mentioned behavioral economics insights to steer decision makers’ towards supporting this legislation. In order to test the ethical character of this scenario, I will apply and discuss the application of Faden and Sirine’s ethical approach to public health; the values of an ethical state (welfare, autonomy, dignity, and self-government, as described by Cass Sunstein); and the Nuffield Council on Bioethics’ “intervention ladder”. The application of these frameworks is included in Table 5.3.

Table 3.3. Assessing the ethical character of a behavioral economics initiative designed to increase policy support for a law banning advertising and sponsorship of tobacco products

| <i>Ethical frameworks &amp; principles</i>                                           | <i>Details</i>                                                                                   |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Faden &amp; Sirine’s ethical approach to public health</b> (Faden & Sirine, 2016) |                                                                                                  |
| Overall benefit to society                                                           | By supporting (and passing) the policy initiative banning advertising and sponsorship of tobacco |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                            | <p>products, the societal benefit is promoted. Research shows that tobacco control policies in general, and policies banning tobacco advertising in particular, have a positive impact on reducing smoking prevalence (Feliu et al., 2018). In addition, reduction of smoking prevalence has important and positive health and economic outcomes (Ekpu &amp; Brown, 2015). Therefore, passing the proposed law will generate an overall benefit to society.</p>                                                                                                                              |
| Communitarianism           | <p>The proposed policy adheres to the principle of “communitarianism - what is good for the whole is good for its parts” (Faden &amp; Sirine, 2016) because the application of this type of legislation will reduce the overall smoking prevalence (mostly among adolescents and underage smokers) in Romania.</p>                                                                                                                                                                                                                                                                           |
| Collective action          | <p>This principle entails that at public health policies and programs work only if all individuals (with few exceptions) are willing to participate and take the same direction of action. For the purpose of this scenario, this principle applies if the majority of policy makers decide to support the law. If the law comes into force, it will ultimately apply to all citizens.</p>                                                                                                                                                                                                   |
| J.S. Mill's harm principle | <p>There are no physical or emotional harms foreseen for policy makers as part of this behavioral economics-based initiative. The aim is to influence policy makers by the way the information is presented to them, by fostering social norms towards a positive vote for the law, and by securing their commitment to support the law. On the other hand, the law will interfere with the liberty of tobacco companies to advertise their products, but this interference is justifiable because the advertising and sponsorship of tobacco products lead to harm to citizens' health.</p> |

|                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Paternalism                                                                                       | The proposed behavioral economics-based initiative is not a paternalistic one because it does not interfere with policy makers or citizens against their will; however, it will reduce citizens' access to sponsorship campaigns organized by the tobacco industry.                                                                                                                                                                                          |
| <b>The values of an ethical state</b> (Cass Sunstein, 2016)                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Welfare                                                                                           | The economic benefits of reduction in smoking prevalence far outweigh the costs of implementing tobacco control policies (Ekpu & Brown, 2015). Therefore, from the perspective of a cost-benefit analysis, the implementation of a policy banning tobacco advertising would promote social welfare. From the perspective of the proposed behavioral economics-initiative targeting policy makers, the welfare of the decision makers will not be threatened. |
| Autonomy                                                                                          | The proposed behavioral economics initiative respects the principle of autonomy because it allows policy makers to make their own decision regarding the opposition or support for legislation banning tobacco advertising. In addition, the policy would not diminish the autonomy of citizens because they can still decide to use tobacco products, albeit their likelihood to be able to procure these products if they are underage will decrease.      |
| Dignity                                                                                           | The dignity of policy makers will be respected in the proposed scenario because they will be able to base their decision on the available, scientific, world-wide evidence on the topic of banning tobacco advertising.                                                                                                                                                                                                                                      |
| Self-government                                                                                   | Similar to the autonomy principle, the principle of self-government is also met in this scenario.                                                                                                                                                                                                                                                                                                                                                            |
| <b>Nuffield Council on Bioethics' "intervention ladder"</b> (Nuffield Council on Bioethics, 2007) |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Step 1 – No initiative                                     | This would imply that I am making no effort to influence policy makers' support for this legislation. This does not apply in the proposed scenario.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Step 2 – Provide information                               | For the purpose of this scenario, information will be provided to policy makers on the negative effects of tobacco use, the high rates of smoking in adolescents, the extent to which underage citizens buy their products in stores, and the positive effect similar legislation had in other countries. This information will be provided in a simplified manner and in a way that will attract policy makers' attention (such as using bold or underline text; using pictures) and appeal to their affect. Nonetheless, this information will be delivered in the moments when they are most receptive (i.e. when they attend plenary meetings in the Health Commission). |
| Step 3 – Enable choice                                     | In the proposed behavioral economics-based initiative, policy makers retain their right to support or oppose legislation banning advertising and sponsorship of tobacco products.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Step 4 - Guide choices through changing the default policy | The proposed scenario does not imply the use of defaults.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Step 5 - Guide choices through incentives                  | The proposed scenario does not imply the use of incentives for individuals who vote for the law.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Step 6 - Guide choice through disincentives                | The proposed scenario does not imply the use of disincentives for individuals who do not vote for the law.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Step 7 - Restrict choice                                   | The proposed scenario does not imply choice restrictions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Step 8 - Eliminate choice                                  | The proposed scenario does not eliminate the choice to not support the law.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

The behavioral economics-based initiative analyzed in the table above implies influencing the voting behavior of policy makers to obtain their support for a piece of legislation banning advertising and sponsorship of tobacco products. In order to do so, I proposed a scenario that made use of behavioral economics insights, such as fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, costs and benefits, and affect. The aim of this case study was to assess whether such a program would be ethically sound from the perspective of the ethical principles and frameworks put forward in this chapter. Summing up the information included in the table above, the main conclusion is that use of behavioral economics insights to influence the voting behavior of policy makers to obtain their support for a law banning advertising and sponsorship for tobacco products would be ethically sound.

### **3.4. Behavioral economics as benevolent influence or manipulation**

The structure of our societies, democratic or not, is based on rules. Depending on where the state is found on the tyranny–democracy continuum, the state’s rules are more or less invasive or coercive of the individual. Yet, rules are inherently needed for societies to be able to function, grow, and advance (Brennan & Buchanan, 2008). However, it is debatable to what extent these regulations should invade citizens’ privacy, influence, and manipulate their behaviors, especially in democratic states that promote individual liberty and welfare.

For several decades now for-profit companies have been using insights from psychology and economics to influence their consumers’ behaviors in an attempt to increase their own revenues. As shown in Chapter 1, governments have recently set up “behavioral insights teams” to inform policy strategies that would influence or nudge citizens to make decisions which are in their best interest and in line with the government’s policy objectives. Yet, the topic of government influence and manipulation in democratic societies by using behavioral economics insights has sparked many debates in the recent years (N. C. Smith, Goldstein, & Johnson, 2013; Cass Sunstein, 2016; Wilkinson, 2013). More specifically, authors suggest that nudges, the most known and used behavioral economics tool, only work by “manipulating people’s choices” (Bovens, 2008), that they diminish people’s autonomy to make their own life decisions (Furedi, 2013), and last but not least, that they can become a tool to promote the abuse of power by decision makers (Farrell & Shalizi, 2011). I will approach these three criticisms below.

First, behavioral economics is blamed for being manipulative of people’s choices. One characteristic of manipulation would be that it does not respect individuals’ autonomy and

dignity, and because it does not allow for individuals to evaluate the costs of their decisions against the benefits, it might undermine their welfare (Cass Sunstein, 2016). However, this last point is debatable, since there are cases in which individuals would be better off from being manipulated. For example, in the case of heavy smokers or heavy alcohol users who want to quit but are not able to, manipulating them into disengaging from these behaviors would make them better off. Yet, the point of this discussion is not about these very specific scenarios. The point of the discussion is to set a dividing line between the characteristics of behavioral economics initiatives that have the potential to be manipulative and those who aim only to influence or steer the decision-making process. For example, emphasizing the risks of engaging in specific behaviors or describing the benefits an individual will lose as a result of a decision do not count as manipulation. In general, offering plain information (such as the nutritional information on food labels) and allowing for individuals to make their decisions based on that information is not considered to be manipulative, even though this can be labeled as a nudge. However, it can be considered to be persuasive or to have the power to influence individuals. More specifically, in the aforementioned example, individuals' food shopping behavior could be influenced because without information regarding nutritional values being offered to them, individuals might choose to buy a high-fat/ high-salt product.

This was just an example in which information was provided to consumers in a straight-forward manner but which can also constitute a nudge. However, information can be offered to individuals by applying different frames to it. One consequence of this is that decision makers can decide to convey information applying frames that would steer individuals towards a decision alternative or another. That is, instead of just providing plain numbers regarding the proportion of individuals who could suffer from a myocardial infarct, decision makers can choose to report these numbers by applying a relative risk frame (or a loss frame) in an attempt to promote preventive heart checkups.

This would count towards manipulation, but in the same time would increase the rate of engagement in preventive behaviors and increase the potential number of lives saved. The question in this respect is whether being manipulated is defensible in the situation in which it can save one's life. In general, saving lives also entails saving healthcare costs, reduce disability days, prevent productivity loss, and reduce monetary and social (i.e. mourning, grief) costs on family members. These can all be defined as the collective benefits of preventive heart checkups. These being said, from a public health (and a state's) perspective in which collective benefits and the collective good prevail over the individual ones, I believe manipulation is

warranted, especially if it is disclosed. More specifically, it has been found that individuals favor nudges when these are transparent (Cass Sunstein, 2016). Nonetheless, transparency about the existence of nudges will not reduce their impact/effect. This might suggest that individuals are open to being nudged as long as this process is transparent and they are aware of being nudged.

Second, the use of behavioral insights to prompt healthy behaviors and decisions stimulating individual health and welfare are not inherently manipulative and do not diminish individuals' autonomy. Supporting this line of thought, Cass Sunstein argues that manipulation only occurs when individuals "do not have a fair chance to make a decision on their own" (Cass Sunstein, 2016), which is not the case in the libertarian paternalistic framework promoted by behavioral economics. On the contrary. Initiatives that are true to the behavioral economics spirit do not restrict freedom of choice and do not diminish autonomy (Thaler & Sunstein, 2003). As an illustration of this argument, in the above-mentioned example individuals exposed to the relative risk frame of the message promoting heart checkups have the option not to conduct the checkup.

On the other hand, behavioral economics initiatives might restrict the available alternatives based on which a choice will be made, or how Hansen and Jespersen suggest, "nudging is manipulation of choices" (P. Hansen & Jespersen, 2013). Yet, as long as choices are based on citizens' preferences (and this would be the case in the situation of good nudges promoted by true behavioral economists) (Cass Sunstein, 2016), the previous argument will not automatically translate into a negative outcome for individuals. For example, if conducted correctly, a formative-type of research into what people prefer in terms of behaviors, what attitudes they hold and what makes them more or less likely to engage in that specific behavior will greatly benefit decision makers (and citizens alike) in their attempt to provide the best and appropriate strategies to solve various problems. This is basically the definition of evidence-based policy making (Oxman, Lavis, Lewin, & Fretheim, 2009). However, the fact that choices are based on the needs and wants of citizens does not cancel the fact that behavioral economists can, indeed, list a restrictive set of alternatives as possible choices in an attempt to "manipulate choices" (P. Hansen & Jespersen, 2013). Therefore, it can be argued that behavioral economics can manipulate choices, but there is a long way to go from here to the image that Wilkinson is painting for behavioral economics – that of a field treating individuals as "puppets on a string" (Wilkinson, 2013).

A potential alternative that would meet the critiques regarding manipulation and autonomy would be the use of “enhanced active choice” (Keller, Harlam, Loewenstein, & Volpp, 2011). This “favors one alternative by highlighting losses incumbent in the non-preferred alternative” (Keller et al., 2011) and was demonstrated to improve decision-making outcomes far more than the use of nudges, but it needs testing in a field other than treatment of non-compliance.

Third, it is argued that behavioral economics and its tools (such as nudges) can promote the abuse of power by decision makers (Farrell & Shalizi, 2011). This can be true, especially in the context in which policy makers might have a gain by promoting or opposing a particular choice alternative or when they want to control their citizens. An illustrative example of the abuse of power by decision makers is the one provided by the Chinese government, who wants to introduce a “Citizen Score” and rate its 1.3 billion citizens in an attempt to measure individuals’ trustworthiness (Botsman, 2017; A. Hawkins, 2017). This might take the form of a behavioral economics initiative because it will have a strong social norm component and, as shown in previous chapters, social norms are a main component of behavioral economics.

There is no shield that can protect citizens against manipulation, irrespective if the means of influence/ manipulation are grounded or not in behavioral economics. To put it more simply, a gun can work as a good-promoting instrument in the hands of a policeman or a bad-promoting instrument in the hands of a thief. The gun itself is neither good nor bad, the individuals handling the gun possess these characteristics.

Based on the arguments and examples brought in this chapter, it is true that behavioral economics can be manipulative at times, but its manipulative character can be diminished by making nudges transparent (and this does not make them less effective) and by ensuring that proposed initiatives meet the requirements of the three frameworks previously discussed in this chapter: Faden and Sirine’s ethical approach to public health; the values of an ethical state (welfare, autonomy, dignity, and self-government, as described by Cass Sunstein); and the Nuffield Council on Bioethics’ “intervention ladder”.

# Chapter 4: Behavioral economics and mobile health (mHealth) interventions

## 4.1. Behavioral economics in mHealth interventions

Mobile health (mHealth) technologies enable the delivery of health interventions, but most of these applications struggle to maintain user engagement and achieve lasting effectiveness. By 2018, there were an estimated number of 350,000 available mobile health apps (Bates et al., 2018). Due to the technological advances in the last 5 years, this number has most likely doubled. Yet, research indicates that users stop using approximately 80% of downloaded mHealth applications during their first two weeks of utilization (Krebs & Duncan, 2015), while health-related wearable devices stop being used by most users after six months (Ledger & McCaffrey, 2014).

Although mHealth interventions have been found to improve a wide range of health outcomes, including self-management of diseases and treatment adherence (Alkhuzaimi et al., 2024), mental health outcomes (Khosravi & Azar, 2024), or generate reduced healthcare costs (Alkhuzaimi et al., 2024), they have failed to meet their full potential. One explanation for this failure is that mHealth apps are not designed by taking into account the human health decision-making processes.

As outline in Chapter 1, behavioral economics provides a framework that integrates psychological and economic knowledge to predict human decision-making patterns, including health decisions (Mullainathan & Thaler, 2000). Applied to the field of mHealth, behavioral economics can be used to provide an explanation for why people fail to maintain consistent use of digital health tools despite understanding their advantages. Most current mHealth solutions rely on information delivery and tracking functions to motivate behavior change, yet they fail to account for the psychological factors which control health decision-making (Riley et al., 2011). A couple of these factors are cognitive biases, contextual influences, and immediate preferences which guide health-related choices (Thorgeirsson & Kawachi, 2013).

This chapter explores how using behavioral economics principles can support mHealth interventions overcome their current limitations. The goal is to map the user's journey from app download to long-term use and to suggest behavioral insights for each one of these steps, in an attempt to bridge the gap between the potential of mHealth intervention and their actual effectiveness in supporting health behavioral change.

## **4.2. Behavioral economics principles in mHealth interventions**

This chapter will approach and describe several key principles derived from behavioral economics (e.g., present bias; temporal discounting; loss aversion; framing effects; choice architecture; social norms; cognitive load) that may help explain user engagement in mHealth interventions. These principles explain why it is challenging for people to adopt and maintain healthy behaviors as they prioritize immediate gains over future benefits (present bias), feel losses more strongly than equivalent gains (loss aversion) and are affected by how the choices are framed and presented (choice architecture). Social norms and comparison can be used to guide and motivate healthy behaviors, but careful management is needed as this might be perceived as peer pressure, which has been found detrimental to behavioral change. In addition, the mental effort (or the cognitive load) needed to make health-related changes and decisions can lead to “decision fatigue”, which in turn will reduce the effectiveness of mHealth interventions over time. Yet, mHealth interventions that acknowledge the importance of these insights and apply them consistently are better positioned to support behavioral change.

### **4.2.1. Present bias and temporal discounting**

Present bias can be described as the humans’ tendency to weigh immediate rewards much more heavily than future gains or benefits (Frederick et al., 2002). This is a major challenge in health behavior changes. In mHealth contexts, users often face tension between the immediate effort of engaging with an app versus the delayed health benefits it might provide.

Research shows that individuals who demonstrate higher levels of present bias are less likely to maintain long-term engagement with mHealth interventions over time (Moran et al., 2016). This helps explain, for example, why many weight loss and physical activity apps see high initial engagement followed by rapid drop-offs. To address this issue, restructuring incentives to make benefits more immediate and tangible can help overcome present bias. For example, incorporating small, immediate rewards for app engagement rather than focusing exclusively on long-term health outcomes (Patel et al., 2016).

Temporal discounting also explains why mobile interventions frequently fail to motivate preventive health behaviors. People tend to discount the value of preventing a potential future health problem compared to addressing an immediate symptom (Loewenstein & Prelec, 1992). Successful mHealth applications can address this by making future health risks more salient and immediate through visualization techniques or by converting long-term benefits into more immediate rewards through gamification or incentive structures.

#### **4.2.2. Loss aversion and framing**

First described in 1979 by Kahneman & Tversky, loss aversion describes the human tendency to prefer avoiding losses over obtaining equivalent gains (Kahneman & Tversky, 1979). This has been shown to significantly impact how users respond to health information and feedback. In this context, research indicates that people experience losses roughly twice as powerfully as equivalent gains. As a result, framing health behaviors in terms of avoiding losses may be more motivating than emphasizing potential gains.

This behavioral economics principle has been applied in several mHealth contexts. Step-counting apps that frame physical inactivity as "losing" potential health benefits show higher engagement than those framing activity as "gaining" benefits (Patel et al., 2018). Similarly, medication adherence apps that emphasize what patients stand to lose by missing doses have demonstrated improved adherence rates (Volpp et al., 2017).

However, framing effects extend beyond loss aversion to include how health information is presented. The same health data can generate different responses depending on its presentation format. For example, displaying progress toward a goal (70% complete) versus distance from a goal (30% remaining) can impact motivation and persistence with an mHealth application (Consolvo et al., 2009).

#### **4.2.3. Choice architecture and the use of default options**

The design of how options are presented (their order, for example) is defined as choice architecture in behavioral economics. This influences decision-making without restricting freedom of choice. For example, by placing fruits and vegetables at the start of a cafeteria line, customers are more likely to buy them as opposed to in the situation when these products are placed at the end of the line. Choice architecture also includes strategic use of defaults. A very basic of defaults involves pre-selected options which the user can overturn or refuse, ordering of choices, and structuring decision environments. In mHealth, these principles can guide users to make healthier choices while preserving their autonomy, an problem that brings many critiques to the field of behavioral economics.

For example, default settings in mobile apps have been shown to affect users' behavior. Research shows that opt-out defaults (where healthy behaviors are pre-selected) lead to significantly higher engagement than opt-in approaches that require active enrollment (Thaler & Sunstein, 2008). For example, automatically scheduling exercise reminders that users must

actively cancel results in higher activity levels than requiring users to proactively set reminders (Milkman et al., 2021).

Beyond defaults, the structure of choices within health apps influences engagement. Simplifying complex health decisions by limiting options, using progressive disclosure of features, and highlighting recommended choices reduces cognitive load and facilitates healthier decisions. For instance, nutrition apps that present a limited set of healthy meal options rather than overwhelming users with all possible choices have shown improved dietary outcomes (Parker & Schrift, 2011).

#### **4.2.4. Social norms**

Social influences shape health behaviors through descriptive norms (what others do) and injunctive norms (what others approve of). Mobile technologies offer opportunities to leverage these social dynamics. mHealth interventions incorporating social comparison features have demonstrated effects on user behavior. For example, step-counting apps that show users how their activity compares to their peers were found to increase daily steps by 15-30% compared to individual tracking alone (Patel et al., 2016). This effect appears strongest when comparisons are made with specific, relevant reference groups (for example, someone's friends or classmates) rather than generalized populations (i.e., people of the same age as the user).

In addition, social norms are particularly effective when combined with commitment mechanisms. Commitment mechanisms represent ways in which users report their intended plan to follow a specific (healthy) plan. Public commitments to health goals shared through mobile and social media platforms create social accountability and leverage users' desire to be consistent in their public actions. As a consequence, programs that enable users to share goals and progress with their social networks show better adherence than private tracking approaches alone (Hales et al., 2016).

However, despite these benefits, social comparison can sometimes have the total opposite effect, particularly for users performing below average. To address this, effective mHealth interventions often incorporate adaptive social comparison features that present appropriate reference groups or highlight improvement trends rather than absolute performance (Consolvo et al., 2009).

#### **4.2.5. Cognitive load in mHealth interventions**

Health behavior change requires cognitive resources for planning, self-monitoring, and resisting temptation. Cognitive load theory suggests that our mental processing capacity is limited, and when these resources are taxed, decision quality deteriorates (Sweller, 1988). This helps explain why health app abandonment often coincides with periods of stress or competing demands.

Decision fatigue - the worsening quality of decisions after making many consecutive choices - particularly affects health behaviors, which often involve repeated daily decisions. mHealth applications that require frequent, complex interactions may inadvertently contribute to decision fatigue, reducing their effectiveness over time.

Successful behavioral mHealth approaches address these limitations by simplifying interactions, automating decisions where appropriate, and identifying high-leverage moments for intervention. For example, rather than requiring continuous manual food logging, more effective nutrition apps incorporate barcode scanning, photo recognition, or simplified portion estimation to reduce cognitive demands (Rabbi et al., 2015).

Another example are the just-in-time adaptive interventions (JITAI). These represent an advanced application of these principles, using contextual sensing to deliver support precisely when users have sufficient cognitive resources and when the intervention will be most effective (Nahum-Shani et al., 2018). For example, in the case of interventions designed to support smoking cessation, a JITAI component would include assessment of hand movements specific to smoking through a smartwatch and sending automatic push notifications prompting the user to quit smoking.

### **4.3. Behavioral diagnosis and design for mHealth**

#### **4.3.1. Common behavioral bottlenecks in mHealth user journey**

There are three important bottlenecks that typically emerge in the mHealth user journeys: 1) initial download and onboarding, 2) early engagement and habit formation, and 3) adherence and sustained use. Understanding these through behavioral diagnosis lenses allows for targeted design interventions. Behavioral diagnosis suggests that successful onboarding requires minimizing friction while providing immediate value. These bottlenecks are described in detail in Table 4.1.

**Table 4.1. Behavioral bottlenecks in mHealth user journeys**

| <i>User journey phase</i>            | <i>Bottleneck</i>          | <i>Description</i>                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Initial download and onboarding      | Friction costs             | Multiple-steps registration processes discourage completion. For example, Localytics (2015) found each additional registration step reduces completion rates by 20-30%.                                                                                                                                                                                                               |
|                                      | Present bias               | This suggests that a high immediate effort of setup/registration overcomes the delayed health benefits of using the app which, in turn, leads to procrastination. For instance, Perski et al. (2017) observed onboarding processes requiring more than 3-5 minutes experience abandonment rates exceeding 60%.                                                                        |
|                                      | Privacy concerns           | Most users are concerned by the data health apps are collecting, especially in terms of privacy. A survey by Krebs and Duncan (2015) found 70% of potential users abandoned health apps due to data usage concerns.                                                                                                                                                                   |
| Early engagement and habit formation | Unrealistic expectations   | Many users begin with overly ambitious health goals, leading to early disappointment. As a consequence, they stop using the app. This has been demonstrated very early on in the case of mHealth apps targeting physical activity. Eysenbach (2005) documented physical activity apps experiencing 70% dropout rates within the first week when users failed to meet initial targets. |
|                                      | Lack of immediate feedback | Without clear indicators of progress, users struggle to maintain motivation and continuously use the app. Consolvo et al. (2009) observed that applications providing immediate, meaningful feedback retained users at nearly three times the rate of those with delayed feedback.                                                                                                    |

|                             |                      |                                                                                                                                                                                                                                      |
|-----------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             | Competing priorities | New health behaviors must compete with existing routines. Without integration into daily life, mHealth interventions have reduced uptake (Sheeran & Webb, 2016).                                                                     |
| Adherence and sustained use | Hedonic adaptation   | Users become accustomed to initially motivating features. Koivisto and Hamari (2014) observed gamification elements showing decreasing effectiveness after 2-3 weeks of use.                                                         |
|                             | Disrupted routines   | Life events frequently interrupt usage patterns. Ledger and McCaffrey (2014) found that 70% of health apps are abandoned after disruptions to normal routines.                                                                       |
|                             | Slower progress      | As users reach intermediate goals or experience slower progress, motivation declines. Perski et al. (2017) documented physical activity and weight management apps experiencing 60-80% engagement drops when users reached plateaus. |

#### 4.3.2. Behavioral design strategies for addressing key bottlenecks

These proposed behavioral design strategies span over the three phases of mHealth app usage: 1) enrollment and onboarding, 2) commitment devices and pre-commitment strategies, 3) JITAI, and 4) social comparison and normative feedback.

To address initial **enrollment and onboarding barriers**, several simplified enrollment and onboarding design approaches have been proven effective: 1) progressive disclosure, 2) value-first approach, 3) smart defaults, and 4) contextual explanations for data requests. First, progressive disclosure focuses on a phased data/information collection process. In other words, rather than collecting all user information at the first login, effective mHealth designs request minimal initial data at onboarding. Perski et al. (2017) found that applications using this approach achieved enrollment completion rates 30-40% higher than those requiring a comprehensive initial setup. Second, pursuing a value-first approach demands demonstrating core app functionalities before requiring extensive setup to help overcome present bias. Third,

using smart defaults, such as pre-populating form fields with defaults, reduces cognitive load. Thaler and Sunstein (2008) documented forms using intelligent defaults completing 30% faster with 25% lower abandonment rates. Last but not least, context explanations offered in relation to data gathered from users' addresses address their privacy concerns. Krebs and Duncan (2015) found that applications providing transparent explanations for data collection achieved 40% higher completion rates for sensitive information fields. These approaches directly address the behavioral barriers identified in diagnosis by reducing friction, demonstrating immediate value, and addressing privacy concerns through transparency.

To strengthen early **engagement and habit formation**, commitment mechanisms can be implemented through: 1) implementation intentions, 2) symbolic commitments, 3) deposit contracts, and 4) social commitments. Implementation intentions refers to prompting users to specify when, where, and how they will perform health behaviors. In turn, this creates concrete plans for them to follow. Elliott et al. (2021) found mobile interventions incorporating implementation intentions showed 40-60% higher adherence to target behaviors. Symbolic commitments, on the other hand, focus on having users making small commitments towards their goal to create psychological momentum. For example, research documents how uploading a profile picture increased subsequent engagement by 45% in health applications, while setting initial goals increased completed actions by 35% (Oinas-Kukkonen & Harjumaa, 2009). The third strategy, deposit contracts, involves more tangible inputs on the users' side: their money. This strategy allows users to put their own money at stake, and this was found to be a powerful incentive. Lastly, social commitments, such as sharing goals with others through social media platforms, increase social accountability. Studies show that users who shared health goals with at least one other person achieved 65% higher goal attainment rates than those keeping goals private ( Prestwich et al., 2012).

To maintain engagement beyond initial adoption, **just-in-time adaptive interventions** can be used to leverage contextual awareness and offer micro-incentives that would get the users to continue using the app through: 1) utilization of device sensors, 2) small incentives, and 3) variable reward schedules. Using device sensors to identify opportune moments for intervention increases response. Nahum-Shani et al. (2018) found physical activity suggestions delivered when users were detected to be sedentary but not in meetings showed response rates 3-4 times higher than scheduled prompts. In terms of small or micro-incentives, it was found that small, immediate rewards for completing incremental actions maintain motivation. Patel et al. (2016) documented programs offering small points for each interaction achieving 40-50% higher

daily engagement than those offering larger, delayed rewards. Yet, these incentives are best received when the reward timing is unpredictable for the user. Eyal (2014) found that applications using variable reward schedules maintain user engagement 60% longer than those with fixed reward schedules.

The last behavioral design strategy for addressing mobile apps engagement focuses on the use of **social comparisons and normative feedback** through: 1) reference groups, 2) progress monitoring and dissemination features, 3) team-based challenges, and 4) social norms. The selection of reference groups is very important as it impacts the effectiveness of the comparison. Riis and Ratner (2015) found showing users performance compared to slightly better performers increased positive behavioral change by 30% compared to average or top performer comparisons. In addition, structuring competitions between groups rather than individuals leverages social connection. Patel et al. (2016) found that team-based activity challenges in workplace wellness programs achieved 35% higher completion rates than individual challenges. In addition, allowing users to share accomplishments with their networks provides social reinforcement (Sparkman & Walton, 2017).

#### **4.4. Evidence from behavioral mHealth apps**

The application of behavioral economics principles to mHealth interventions has grown significantly in the past decade. This section focuses on four application areas where these strategies have been extensively tested: smoking cessation, physical activity, medication adherence, and chronic disease management. The following subsections examine each application area in detail, highlighting both successes and limitations of behaviorally-informed approaches.

##### **4.4.1. Smoking cessation mHealth apps**

Smoking cessation interventions are considered among the most beneficial and cost-effective public health interventions (Levy et al., 2022). Yet, interventions yield varying degrees of effectiveness due to present bias, which makes immediate smoking rewards more attractive than the delayed health benefits of cessation. The iCanQuit app incorporates multiple behavioral principles, including commitment mechanisms (through public quit dates) and just-in-time support triggered by user-reported cravings. A randomized controlled trial by Bricker et al.

(2020) showed that this application achieved 1.49 times higher quit rates at 12 months compared to traditional cessation resources.

Another important behavioral economics concept that plays a particularly important role in smoking cessation is loss aversion. Mobile interventions that frame continued smoking as "losing" years of life register better outcomes than those framing quitting as "gaining" years. Toll et al. (2014) found the QuitPal application's loss-framed messaging ("Each cigarette takes 7 minutes from your life") produced 28% higher quit attempts than gain-framed alternatives.

Social norms and comparison features also show promise when integrated into mHealth apps for smoking cessation. For instance, Heffner et al. (2015) documented applications connecting users to peer support networks and demonstrated a 54% higher sustained engagement than those focused solely on individual tracking. This effect was strongest when the social network included both current quitters and successful former smokers.

#### **4.4.2. Physical activity mHealth apps**

Lack of physical activity is one of the shared risk factors of non-communicable diseases (NCDs), which account for 75% of all deaths globally (WHO, 2024). Thus, approaching this risk factor from a behavioral economics and mobile health perspective could lower its prevalence which, in turn, would decrease the incidence of NCDs. In the area of physical activity, financial incentives integrated with mobile tracking have shown particular good outcome. Patel et al. (2016) conducted a landmark study of a smartphone-based step-counting intervention with small financial rewards (\$1.40 per day for meeting goals), which increased daily steps by 35% compared to control conditions without incentives. Notably, loss-framed incentives (where participants received money upfront but lost it if goals weren't met) were twice as effective as gain-framed incentives of the same value.

Another behavioral economics concept that demonstrate strong effects in physical activity apps are social comparisons features. Chen and Pu (2014) conducted a 26-week randomized trial of different motivational features in a pedometer app and found participants in the social comparison condition increased their daily steps by 1,850 as compared to the the control group. This amounted to twice the number of steps compares to those receiving individual feedback alone.

Commitment contracts represent another powerful tool. Halpern et al. (2012) reported that users of the stickK platform who created financial commitments in relationship to their physical activity

goals were 3 times more likely to achieve those goals than users without financial commitments. These effects were even more enhanced when commitments were made publicly within the user's social network.

#### **4.4.3. Medical adherence mHealth apps**

Medication adherence represents a classic behavioral challenge, as approximately 50% of patients fail to take medications as prescribed by their doctor (Brown & Bussell, 2011). This non-adherence raises health complications and is generated by behavioral barriers, including forgetfulness, present bias, and disrupted routines.

The MediSafe application combines several behavioral strategies to promote medication adherence: reminders correlated with established daily routines (reducing cognitive load), allowing family members to receive alerts if doses are missed (social accountability), and gamification elements providing immediate reinforcement. Dayer et al. (2013) found this behaviorally-informed approach increased adherence rates by 37% compared to standard care.

Nonetheless, loss aversion is also effective in the context of medication adherence. Volpp et al. (2017) conducted a randomized trial of a mobile intervention that framed non-adherence as "losing protection" against disease and found it produced 31% higher adherence rates than a control condition emphasizing "gaining protection" through adherence. Most importantly, this framing effect maintained its impact even after 12 months.

#### **4.4.4. Disease management mHealth apps**

Disease management apps face unique behavioral challenges because chronic conditions require long-term, sustained self-management. Yet, diabetes management applications show promising results when incorporating behavioral economics principles. The OneDrop® application integrates micro-incentives for glucose monitoring, social comparison with similar patients, and "streak" features that leverage commitment to continued action. Kumar et al. (2018) found these behavioral features increased blood glucose monitoring frequency by 46% compared to standard management tools. Similarly, Quinn et al. (2016) found the WellDoc system for diabetes management, which uses machine learning to identify each user's specific behavioral barriers and tailors interventions accordingly, increased glucose monitoring adherence by 62% compared to standard management tools.

For hypertension management, simplification and strategic defaults demonstrate effectiveness. Morawski et al. (2018) found the SmartBP app, which automatically imports blood pressure readings and establishes default monitoring schedules, increased regular monitoring by 51% compared to manual tracking methods.

#### **4.5. Future research directions in behavioral economics and mobile health**

This chapter brings evidence that the integration of behavioral economics principles into mHealth interventions can increase users' engagement and, thus, their health outcomes. The evidence reviewed shows that behavioral bottlenecks occur throughout the mHealth user journey, from initial download through long-term engagement. Yet, specific behavioral economics principles such as loss aversion, commitment devices, social comparison, and strategic defaults can be effectively used across multiple health domains. The same research shows that the outcomes are enhanced when multiple behavioral principles are combined (as opposed to implementing them in isolation).

Based on this review, future development in this field should focus on several key directions: 1) better personalization, 2) ethical frameworks, 3) integration with healthcare systems. First, advanced personalization approaches that identify individual and personalized behavioral barriers and tailor interventions accordingly seem to have better outcomes. Due to recent advancements in machine learning techniques, we can now identify which behavioral principles work best for specific user characteristics, which represents an important progress in the field of personalized behavioral health interventions. Second, this technological progress calls for the development of ethical frameworks designed explicitly for behavioral digital health. Third, healthcare system integration remains a critical challenge, with many apps still missing interoperability standards. Developing seamless connections between behaviorally-informed mHealth tools and clinical care could substantially enhance their impact and reach.

In conclusion, behavioral economics offers valuable frameworks for understanding and addressing the challenges of digital and mobile health engagement and usage, especially over the long term. By designing mHealth interventions that account for how people actually make health decisions rather than how they should theoretically make them, we can develop more effective tools for supporting positive health behavior change.

## Chapter 5: Conclusions

This book consists of five chapters on public health and policy from the perspective of behavioral economics. The first chapter of the book is an introduction into the topic and lays out the foundation for the remaining chapters. Chapter number two reports on the results of a qualitative research study on use of behavioral economics insights (either deliberately or not) in the tobacco control policy adoption process. The third chapter provides an overview of the ethical concerns arising from the use of behavioral economics in public health policy. Finally, the fourth chapter focuses on how behavioral economics principles can be used to support user engagement across different phases of mobile app usage, from download and onboarding to sustained, long-term use. The main conclusions of each chapter are presented below.

Neuroscientific findings suggest that human behaviors are driven by unconscious reflections rather than in-depth, consequence-focused deliberations (Nilsen et al., 2012). Thus, targeting automatic cognitive processes has the potential to positively alter human behaviors and prevent diseases (Marteau et al., 2012). The aim of the research presented in chapter two was to explore the use of behavioral economics insights (either deliberately or not) in the policy adoption process, as a means to foster the support of official policy makers for new public health legislation. In order to attain this aim, I used the Romanian Law no. 15/2016 on banning smoking in public places as a case study and we conducted interviews with key stakeholders involved in the development, support, promotion, and adoption of this legislation endorsing smoke-free public places. I found that several behavioral economics principles were used by our interviewees to gather support the Romanian legislation banning smoking in public places in the policy adoption process: fostering the power of networks, use of social norms, simplifying the message, attracting attention, commitments, messenger, receptiveness, costs and benefits, and affect. The same principles were previously recommended by researchers and behavioral economics experts to be used by policy makers in their policies' development and implementation, to positively nudge citizen's behavior. The results lend support for the fact that the use of behavioral economics insights increased the influence of the anti-smoking actors and, by this, contributed to the adoption of the smoke free legislation in Romania. I used the insights we gained from the interviews we conducted to develop a behavioral economics-informed policy instrument which can potentially be used to gain support of policy makers in the policy adoption process.

The aim of the third chapter of the book was two-fold. First, I proposed a solution to meet the ethical concerns on government manipulation when implementing behavioral economics-informed public health policies. Second, I discussed ethical concerns on using behavioral economics insights to influence policy makers themselves. Based on the arguments and examples brought in this chapter, it is true that behavioral economics can be manipulative at times, but its manipulative character can be diminished by making nudges transparent (and this does not make them less effective) and by ensuring that proposed initiatives meet the requirements of the three frameworks previously discussed in this chapter: Faden and Sirine's ethical approach to public health; the values of an ethical state; and the Nuffield Council on Bioethics' "intervention ladder".

Finally, in chapter four, I provided an overview of how behavioral economics can enhance the design and effectiveness of mobile health interventions. I discuss how, despite the proliferation of health apps, most fail to maintain user engagement, with approximately 80% abandoned within two weeks of download. I explain key behavioral economics principles that influence health behaviors, including present bias (overvaluing immediate rewards), loss aversion (avoiding losses more than seeking equivalent gains), choice architecture (how options are presented), social norms (influence of others' behaviors), and cognitive load (mental effort required for decisions). I detail common behavioral bottlenecks that occur throughout the user journey from initial download and onboarding to long-term adherence, and present evidence-based strategies to address these challenges. Through case studies in smoking cessation, physical activity, medication adherence, and disease management applications, I demonstrate how behaviorally-informed design approaches can significantly improve engagement and health outcomes. The integration of behavioral economics into public health represents an evolving field with significant potential to transform both policy development and health behavior change, especially in the new age of artificial intelligence. Throughout this book, I have demonstrated how behavioral insights can be applied across multiple domains – from influencing policymakers to supporting individual health decisions through mobile technologies. The evidence presented suggests that behavioral economics offers practical frameworks for addressing the complex challenges of public health by acknowledging how people actually make decisions rather than how they should theoretically make them. While ethical considerations remain important, particularly regarding transparency and autonomy, the application of behavioral principles to public health can be both effective and ethically sound. Future public health efforts should integrate traditional interventions with behavioral economics principles to create more effective and sustainable solutions.

## Appendix to Chapter 3

### A1. Semi-structured interview guide used in the policy research

#### INTERVIEW GUIDE\*

\*Note: the original document was developed and used in Romanian; below I provided the English translation of the original document.

|                               |                                                                                                                                                                                                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of the research project | Exploring the utilization of behavioral economics insights in the process of promoting, voting, and adopting public policies: Case study on the Law no. 15/2016 on banning smoking in public places |
| Coordinating institution      | Department of Public Health; Department of Political Sciences<br>College of Political, Administrative and Communication Sciences<br>Babes-Bolyai University                                         |
| Research team                 | Oana M. Blaga, PhD(c)<br>Prof. Univ. Gabriel Bădescu                                                                                                                                                |

**Interview script:** First of all, I would like to thank you for agreeing to participate. I invited you because I am interested to understand more about your experience with the process that led to the voting and promulgation of Law no. 15/2016. Your participation is voluntary and you can withdraw at any time. You also have the right not to answer any question that make you feel uncomfortable.  
Do you have questions before we start?

**IF NO:** I would like to ask your permission to record our conversation. The only reason for this is to make sure I don't lose sight of any details of the conversation. After the interview ends, I will transcribe the discussion and remove all names or identification information from the transcripts, and erase the audio recording. Do you agree for me to record this conversation?

| Concept           | Themes and questions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <p><b>Introduction</b></p> <p><b>Q1.</b> If you were to think of three words summarizing your experience with the process that led to the vote and promulgation of the Law no. 15/2016, what would these words be?</p> <p><i>Prompt:</i> Why did you choose these words? Can you give me more details?</p> <p><u>Sub-question 1:</u> How were you involved in the development, support, and promotion of Law no. 15/2016?</p> <p><u>Sub-question 2:</u> Have you encountered any difficulties in this process? If so, what were the most difficult moments for you during the time you supported and promoted this law?</p> <p><i>Prompt:</i> Why? Can you give me more details?</p> <p><b>Q2.</b> From your point of view, what was the configuration of opinions in the Parliament before support campaign for the Law no. 15/2016 has started?</p> <p><i>Prompt:</i> For, opposing, undecided</p> <p><u>Sub-question 1:</u> How the opinions changed throughout the process?</p> <p><i>Prompt:</i> What mattered most? Individual discussions, negotiations with party leaders, a combination of both?</p> |
|                   | <p><b>Tema #1. Communication with policy/decision makers</b></p> <p><b>Q3.</b> Can you please describe the communication methods that you used to deliver information to policy makers regarding this policy?</p> <p><u>Sub-question 1:</u> Which of these methods do you think were most effective in transmitting information to policy makers?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Receptiveness     | <p><u>Sub-question 2:</u> When (i.e. at what time of the day/ what moments) did you approach policy makers? Why did you choose these moments?</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Attract attention | <p><u>Sub-question 3:</u> Have you ever developed (and used) personalized materials for policy-makers?</p> <p><i>Prompt:</i> personalized letters/emails</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Simplify message & Attract attention                                                                                                                                                                           | <p><u>Sub-question 4:</u> Policy makers have a busy daily schedule and their attention is divided in many directions. Are there any strategies that you might have used to make sure that the information you sent to policy makers is read/has the maximum possible impact?</p> <p><i>Prompt:</i> use of handouts, underling the main message of the text, highlighting specific paragraphs, use of images/graphs, use of the social math method when presenting numbers.</p> |
| Salience                                                                                                                                                                                                       | <p><u>Sub-question 5:</u> Have you used a specific person/opinion leader/organization to disseminate information regarding this policy? If so, how did you identify/select this person/organization? Have you had a particular reason to do this?</p> <p><u>Sub-question 6:</u> Thinking about your communication experience in this context, what would you change to the manner in which you communicated with policy makers on the topic of the Law no 15/2016?</p>         |
| <p><b>Q4.</b> What were the main ideas/arguments that you used when you communicated/discussed with policy makers to obtain their support for the law?</p> <p><i>Prompt:</i> Can you give me more details?</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Norms                                                                                                                                                                                                          | <p><u>Sub-question1:</u> During the discussions you had with policy makers, have you ever used the argument that other policy makers already expressed their support for the law?</p> <p>If so, have you ever given an absolute number of people who support the law? If so, how did decision makers reacted in this situation?</p>                                                                                                                                            |
| Affect                                                                                                                                                                                                         | <p><u>Sub-question 2:</u> How about appealing to the emotions of policy makers, did you use such a method to gain their support?</p> <p><i>Prompt:</i> Example – mentioning the health effects of second hand smoke on children.</p> <p><i>Prompt:</i> If so, can you tell me more about what you told them and how?</p>                                                                                                                                                       |

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**Theme #2. Narratives regarding the costs and benefits of voting the Law no. 15/2016**

|                    |                                                                                                                                                                                                             |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Costs and benefits | <p><b>Q5.</b> In the next few minutes I would like to talk about another subject. In your meetings with policy makers, have there ever been discussions about the costs and benefits of voting the law?</p> |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

*Prompt:* Can you give me more details? What type of costs and benefits?

Sub-question 1: How did you react (what did you say, what did you do) to what you heard from decision-makers?

*Prompt:* Have you tried to emphasize that benefits outweigh the costs? How did policy makers respond to your reaction?

Sub-question 2: Has ever been a discussion about the personal costs or benefits of decision makers and related to the voting of Law no. 15/2016?

Sub-question 3: When we talk about the costs and benefits related to the implementation of this law, it is almost impossible not to mention the tobacco industry and the HORECA industry. What was your experience in this regard?

*Prompt:* What information did you have about opponents (tobacco companies, lobby organizations)? Can you give me more details?

---

### **Theme #3. Narratives related to the support for the Law no. 15/2016**

Commitments **Q6.** We know the fact that in 2015 the civil, medical and academic society rallied under the “Romania Breaths” coalition to support the complete ban of smoking in public places. It would be very useful for me to find out if you made any efforts to obtain a public commitment for support of the law from policy makers?

*Prompt:* A public commitment of support could consist of signing a petition or making a public statement in support of the law.

Sub-question 1: If so, can you describe how you did this?

*Prompt:* Was there an approach that worked better than the others?

Sub-question 2: If no, why did not you try this approach?

Use the power of networks **Q7.** I mentioned the “Romania Breaths” coalition as a network created by the civil society to support the Law no. 18/2016. Was there such a network among the decision makers in the Parliament?

*Prompt:* When I say network I mean a group of individuals who supported the law and who have mutually supported each other to reach as many decision makers as possible.

Ego

**Q8.** As for the decision makers who voted the law, what do you think was the main reason that prompted them to do so?

*Prompt:* Do you think they voted the law due to possible electoral gains?

Sub-question 1: Research in the field of psychology suggests that we make decisions and act in ways that make us feel good about ourselves. How do you feel about this statement in relation to the reasons that prompted policy makers to vote the law?

**Q9.** So far we have been focusing on policy makers and how you interacted with them to get their support for the Law no. 15/2016? Could you tell me how the general public was perceived throughout this process?

*Prompt:* What information did you have about the public opinion?

Sub-question 1: Was there an effort to influence the public opinion to increase the pressure on the policy makers opposing the law?

---

**Closing question**

**Q10.** My list of questions ends here. Is there anything you would like to add to help me better understand your experience of supporting and promoting the Law no. 15/2016?

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## A2. Informed consent form used in the policy research

### Informed consent document\*

\*Note: the original document was developed and used in Romanian; below I provided the English translation of the original document.

|                               |                                                                                                                                                                                                     |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Title of the research project | Exploring the utilization of behavioral economics insights in the process of promoting, voting, and adopting public policies: Case study on the Law no. 15/2016 on banning smoking in public places |
| Coordinating institution      | Department of Public Health; Department of Political Sciences<br>College of Political, Administrative and Communication Sciences<br>Babes-Bolyai University                                         |
| Research team                 | Oana M. Blaga, PhD(c)<br>Prof. Univ. Gabriel Bădescu                                                                                                                                                |

### Introduction

You are invited to participate in a research project. Before deciding whether or not you want to be part of this study, it is important to understand what the purpose of the study is and what your participation will involve. Please read the following information carefully. You can also talk to others about this study if you want.

### What is the purpose of this research project?

This project is part Oana Blaga's doctoral thesis and is conducted under the guidance of Prov. Univ. Gabriel Bădescu from the Department of Political Science of FSPAC, Babeș-Bolyai University. The purpose of this research project is to explore the use of behavioral economics principles in decision-making and public policy promotion. To exemplify these principles, we have selected as a case study the Law no. 15/2016 regarding the modification and completion of the Law no. 349/2002 on the prevention and control of the effects of tobacco products. Behavioral economics is a science that combines concepts from economics and psychology to provide a better understanding of the decision-making process.

### Why have I been invited to participate in this research?

You have been invited, along with 8-10 other people, to participate in this research project because you have been identified as a key person in the process of supporting, promoting, voting or promulgating Law no. 15/2016.

**Do I have to participate in this research?**

No, it is up to you to decide whether or not you want to take part in this project. If you decide to participate, you can withdraw at any time from the study without providing further information.

**What will happen if I decide to participate in this research?**

If you decide to participate in this research project, we will ask you to:

- Read this informed consent form, confirm that you understand the purpose of the research project and agree to participate in the study.
- Participate in an interview about your experience and involvement in the process of supporting the Law no. 15/2016. With your agreement, the interview will be recorded audio.

**How long does it take to participate in this research project?**

Your participation in this research project will take between 30 and 50 minutes, depending on the duration of the discussion we will have during the interview.

**What are the risks associated with my participation in this research project?**

The potential risks associated with participation this project are minimal and of low severity. The probability of physical risks is low. Participants are not required to perform activities that could result in physical injury. The likelihood of psychological risks is also low. Other possible but unlikely risks include research data safety issues. We minimized these risks by anonymizing the data collection process and validating the data collection methodology by obtaining an Ethical Review from the Institutional Review Board - Public Health (IRB0007643, FWA00016890, IRB-PH Protocol # 2017-170110-001), approved by to the US Department of Health and Human Services (HHS).

**How will you respect my privacy?**

Your privacy and the privacy of data you provide will be kept within the limits of existing laws. We assure you that you will not be judged for any of the opinions you express during the interview. Also, only members of the research team will have access to the information you will provide during the interview. All audio recordings of the interviews will be deleted after the interviews will be transcribed verbatim. All transcripts and documents used and resulted during the research project will be kept for a period of three years after the completion of the project. Only members of the project team and members of the Institutional Review Board - Public Health will have access to these documents.

**What are the possible benefits of this study?**

By participating in this study, you will provide us with information that will help us understand the process of promoting, voting and promulgating the Law no. 15/2016. This information is useful from at least two perspectives: (1) because it will be an example of good practice for policymakers in Romania and other countries with a similar political system, and (2) because they will provide support for using the principles of behavioral economics on decision makers and policymakers. Until now, these principles have only been used on the general public by policy makers. The results of this research project have the potential to open a new research niche in the field of behavioral economics.

**Will I be financially rewarded for participating in this study?**

Participation in this study is voluntary and is not rewarded financially.

**Who can I contact if I have questions?**

We encourage you to ask us questions. If you have any questions or concerns about this research project, such as scientific questions, or questions about how to proceed during the study, please contact Oana Blaga at 7, Pandurilor Street, Post Code 400376, Cluj-Napoca, office 909, oana.blaga@publichealth.ro; phone 0749240017. This research project has obtained an ethical approval from the Institutional Review Board - Public Health (IRB0007643, FWA00016890, IRB-PH Protocol # 2017-170110- 001) from Cluj-Napoca, Romania, whose task is to ensure that the participants in the research study are protected against risks.

**Documenting participation in the study**

You are demonstrating your voluntary agreement to take part in this research project by participating in an interview in which we will discuss your experience and your involvement in the process of supporting the Law no. 15/2016.

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