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*Nudging to foster sustainable innovation within  
organizations: An exploratory theoretical/empirical study*

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# Abstract

Organizations face a rapidly changing environment demanding innovation during a climate crisis, accompanied with related policy changes and an ongoing transition towards an economy where sustainability is imperative. Thus, organizations need to be able to innovate taking social, economic and environmental sustainability into account, and to make use of opportunities associated with this transition. Cognitive and behavioral factors can both inhibit organizations from making this shift and facilitate it. Behavioral interventions such as nudging could be a relevant tool, but the literature on nudging within an organizational context is scarce, especially in regard to fostering sustainability, innovation and sustainable innovation. The objective of this thesis is to develop insights on how organizations could use nudging to foster sustainable innovation and provide a basis for further research and practical experimentation by organizations. The main research question “*How can organizations use nudging to foster sustainable innovation?*” is divided into two sub-research questions: 1. *What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?* 2. *What nudges can be used to address these biases in an organization?*. Our research is based on a critical realist philosophy and we adopt an exploratory theoretical/empirical literature-based research strategy with an abductive approach.. We conduct a multi-method qualitative study, including expert interviews, literature research and a qualitative questionnaire. The primary and secondary data is interpreted through a theoretical lens – through biases identified in literature as obstacles to sustainable innovation (sub-research question 1) and through nudge taxonomies (sub-research question 2). The primary data for both sub-research questions are separately subjected to a thematic analysis with a predominantly inductive approach. Primary and secondary data comparison is also part of the analysis, to highlight similarities and differences. Ultimately, we develop a hypothetical conceptual model where we visually map biases inhibiting sustainable innovation and appropriate nudges for addressing these. To answer the “*how*” of our main research question, we suggest an approach for organizations, emphasizing the need to understand the problem before implementing any nudge as a one-size-fits-all solution. In conclusion, this approach together with the hypothetical conceptual model provide a theoretically and empirically informed contribution to the aforementioned research gap. It creates a basis for further research and practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit.

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In our process, we reached out to behavioral consultancies and got a response from Scott Young from BVA Group who kindly provided us with Singler's (2018) book *Nudge management* which was an important contribution to our literature research. Furthermore, he connected us to his colleague Anne Charon who we would also like to thank for providing us with relevant literature.

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# 1 Introduction

## 1.1 Background and problem introduction

The present-day business climate is characterized by a rapidly changing environment, in which organizations need to innovate in order to survive. In addition, supposedly irrelevant factors, named SIFs by Richard Thaler in his book “Misbehaving” (2015), have contributed to distort people’s perception of the planet over time. In the corporate environment, profit has long ruled above all and we are now facing a climate crisis with planetary resources running out. With this situation, we are not only risking natural disasters destroying homes and lives, extinction of species and the future of coming generations and now even our own. In addition, the climate crisis poses a threat in terms of geopolitical issues since the scarcity of resources increase the competition for their use. The many negative consequences of the climate crisis have resulted in a growing number of policies and higher demands for sustainable business practices from customers and employees. These types of measures and market demand development will increasingly affect organizations. Thus, organizations need to ensure that they innovate while taking sustainability into account, in terms of people, profit and planet. Not only necessities, both sustainability and innovation harbors valuable business opportunities. The market opportunities linked to the UN Sustainable Development Goals are estimated to be at least \$12 trillion a year by 2030 (Better Business, Better World report, 2017). There are already many examples of how businesses are transforming their processes to attempt at capturing the value associated with this ongoing development. Fashion brands such as Patagonia, who has produced recycled polyester from plastic soda bottles since 1993, are now seeing an increasing number of industry followers. For example, the fashion company Diesel recently launched their “For Responsible Living” strategy, including the improvement of reuse and recycling rates across their operations and reducing their water footprint. A growing number of businesses are developing circular business practices, challenging the linear economy paradigm of take-make-dispose. Many companies struggle to innovate, although they know that it is imperative to their survival. Similarly, it is not news to businesses that there are effects of climate change to which they need to adapt and that there is financial value to be captured within sustainability or with innovating to develop sustainable solutions in the forms of processes, products or services. So,

why do organizations struggle with this when they know it is in their best interest? There are several challenges to the transition into a sustainable economy and changing people's behavior is one of them. One issue with human behavior is that we as people are biased by nature, which influences our cognition, our behavior and our decision-making. Since organizations are entities made up of people, any biases held by people within it will impact the organization. Organizations need to address behavior challenges in order to survive and thrive in the near and long-term future. In order to foster sustainable innovation, organizations need to address any cognitive and behavioral biases inhibiting this development.

## 1.2 Topic

Our topic for this thesis is nudging for sustainable innovation in organizations. On a more detailed level, we will investigate how nudging can be used to address cognitive and behavioral biases that hinder sustainable innovation. Our use of the term “*sustainable innovation*” refers to the process where sustainability considerations, in terms of people, profit and planet, are systematically integrated into the process of creating and implementing new ideas, methods, products or services related to a company's core business (Boons et al., 2013; Charter et al., 2008; Charter and Clark, 2007). In short, sustainable innovation is innovation where sustainability is integrated into the innovation process. Even though sustainable innovation can be pursued through several different paths, given the increasing value that behavioral insights are receiving within organizations (Christensen, 2019), we strongly believe this approach has great potential. Incorporating behavioral insights, specifically nudges, has opened the doors for organizations to a new management style: Nudge Management (Ebert & Freibichler, 2017). This new management style fully embraces nudging, by leveraging some defining characteristics of nudges, i.e. the fact that they are not intrusive as they do not force employees into making extensive changes to their working habits, and that they are easily scalable (Ebert & Freibichler, 2017).

To explore how behavioral insights are to be used to foster sustainable innovation, we therefore firstly identified the cognitive and behavioral biases affecting innovation and sustainability separately, and then focused on the overlapping ones, which are those affecting both. In light of our adopted definition of sustainable innovation, we make the assumption that biases that

affect both sustainability and innovation affect sustainable innovation. Secondly, we then proceeded into investigating what nudges can be used to address those biases.

### 1.3 Research objective

To develop insights on how organizations could use nudging to foster sustainable innovation and provide a basis for further research and practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit.

### 1.4 Research question

The main research question that this thesis will attempt to answer is the following:

*How can organizations use nudging to foster sustainable innovation?*

In order to answer the main research question, we formed two sub-research questions which are listed below. We will elaborate on the development of these sub-research questions in the methodology chapter.

- 1. What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?*
- 2. What nudges can be used to address these biases in an organization?*

## 2 Literature review

The goal of this section is to set the scene with relevant theories for our research, and to identify the research gap that we intend to fill. To begin with, we introduce the concept of sustainable innovation, followed by the innovation and sustainability theories instrumental as an appropriate theoretical background and starting point to answering our research question. Afterwards, behavioral economics is introduced, followed by an explanation of cognitive and behavioral biases. Finally, we explain nudge theory together with presenting research on nudge management, nudge management in relation to sustainable innovation, types of nudges and relevant nudge taxonomies used in this thesis.

### 2.1 The field of sustainable innovation

Over the past decade, the field of studying sustainable innovation has grown exponentially, which has improved our comprehension of the topic. Yet, the theoretical consensus on sustainable innovation is, according to many scholars, still missing in the literature (Adams et al., 2012; Boons and Lüdeke-Freund, 2013; Schiederig et al., 2012; Trifilova et al., 2013). A multitude of words have been used interchangeably with the term 'sustainable innovation'; eco-innovation, eco-friendly innovation, environmental innovation, environmentally sustainable innovation, green innovation, innovation driven by sustainability, innovation enhancing sustainability, innovation based on sustainability, and innovation geared towards sustainability (Adams et al., 2012; Arnold and Hockerts, 2011; Hansen et al., 2009). Sustainable innovation is discussed in relation to these terminologies, yet, it is argued that it goes beyond eco-innovation or green innovation because sustainable innovation integrates the social element (Boons et al., 2013; Schiederig et al., 2012). Specifically, Charter et al. (2007;2008) establish the following definition of sustainable innovation:

*“Sustainable innovation is a process where sustainability considerations (environmental, social, and financial) are integrated into company systems from idea generation through to*

*research and development (R&D) and commercialization. This applies to products, services and technologies, as well as to new business and organizational models”*

(Charter et al., 2008; Charter and Clark, 2007)

Clearly, sustainable innovation comprises much more than just mere attitude, as entailed in the quote. It comprises the embracing of sustainable practice throughout the organizational core strategy and operation.

Studies have focused primarily on the benefits that sustainable innovation can deliver, such as cost savings, new business opportunities, improved brand awareness and competitive advantages (Ketata, 2015; Nidumolu, 2009). However, sustainable innovation does not often result in immediate financial benefits, but its payoffs are usually realized in the long-term. Sustainable innovation is set to be more costly than the traditional kind of innovation, because it frequently requires investment in new technologies, beyond the current technical capabilities of an organization (Ketata, 2015). These factors combined, leave a lot of room for cognitive and behavioral biases to hinder sustainable innovation. These biases can be harmful both at an individual level (Kahneman, 2013), as well as within groups (Sunstein & Hastie, 2015). For the purpose of this thesis, it is important to include and analyze biases in both cases.

## 2.2 Sustainability theory

In this thesis, the concept of sustainability addresses the role of organizations and their opportunities of sustainably conducting their core business processes. There is no one theory dominating the field, and there is a pluralism of terms applied in research and practice (Van Marrewijk, 2003). However, corporate sustainability, corporate social responsibility, corporate citizenship, triple bottom line, and business ethics are the most frequently cited and used terms found in the literature. According to Wempe and Kaptein (2002) corporate sustainability (CS) is the umbrella concept of the above-mentioned terms and corporate social responsibility (CSR) is a particular sub-element of it. In the next two paragraphs two of the most prominent and relevant (for our thesis) theories regarding sustainability will be outlined. Namely the triple bottom line theory and the shared value theory.

## 2.2.1 The Triple Bottom Line

People, planet and profit comprises the 3 Ps, and represent the three pillars of any sustainability project (Figure 1). Said Ps are often considered to be cornerstones of sustainability work. The triple bottom line is a well-established description of corporate sustainability in both academia and business practice, as it evaluates corporate sustainability considering people, profit and planet (Archel, 2008; Fauzi, 2010).

The Triple Bottom Line is illustrated by these pillars. Munashinge (1992) presented three factors in the triple bottom line - the pillars of a sustainability project: economic performance, environmental performance and social performance.

To properly grasp the triple bottom line concept, it follows a brief description of each one of those pillars.

Sustainability		
P	P	P
e	r	l
o	o	a
p	f	n
i	i	e
e	t	t

Figure 1 (Source: created by the authors)

### 2.2.1.1 *Economic performance*

Economic sustainability can be described as the optimization of the stream of revenue while maintaining the stock of assets generating minimum income, and ideally increasing the stock. This is related to ensuring effective and optimal use of scarce resources. Nonetheless, it is difficult to decide what assets to preserve (natural, manufactured and human capital) and how to assess these assets (especially environmental resources) in each specific case. Using a resource beyond irreversibility might lead to uncertainty and potential catastrophic eventualities (Munashinge, 1992).

### 2.2.1.2 *Environmental performance*

Biological protection is essential to the health of biological and physical systems at local and global levels. The primary issue is biological diversity but all elements of the ecosystem, such as man-made environments including cities, should be included in the understanding of which structures to preserve. There is no optimal fixed condition to hold the systems in; the goal is rather to maintain the system's flexibility and dynamic potential to adjust. Ensuring therefore that the two systems coexist without compromising each other.

### 2.2.1.3 *Social performance*

Social performance entails that organizations need to conduct their operations in a socially responsible manner. In a global context, sustainability aims at maintaining the stability of social and cultural structures. Stability can be accomplished by ensuring equality, both within generations (e.g. poverty eradication) and between generations (including future generations' rights). To maintain this stability, it is important to learn about the sustainable practices of less dominant cultures and support cultural diversity in the world. The general principle of sustainability applied to the business environment is implied when considering corporate sustainability, corporate social responsibility or the triple bottom line are somewhat more concrete concepts that can be applied to an organization in a realistic way.

In order to explain the corporate sustainability at a more comprehensive level and understand the potential implication of cognitive and behavioral biases, an understanding of it with the aid of the different dimensions is needed. The three most frequently listed dimensions are social, environmental and economic - dimensions, which are defined together as the triple bottom line, or the popular 'three Ps' (People, Planet, Profit) (Archel et al., 2008; Fauzi et al., 2010). Aside from these three, however, the consideration of all related stakeholders in each area of dimension is crucially important. However, it is a complex topic and a difficult question to address. Therefore, stakeholders can and should be involved in the process of planning and implementing strategies (Albareda, 2007). Sometimes, the most visible and direct stakeholders may be identified by a business, but the measurement of effects on indirect or distant stakeholders is anything but trivial. The concept of time also plays an important role, as

corporate sustainability is intended to point out the importance of contemplating long-term consequences of current behavior in the corporate world. However, said corporate behavior is typically very short-term focused, making time important (Lozano, 2012). Finally, an emerging dimension to corporate sustainability are numbers. In order to make a case for it, businesses need to calculate their performances and results (Freidberg, 2013). Through KPIs, certifications and standards, corporations have been going after quantifiable eco-efficiency (Freidberg, 2013). It is again vital for the purpose of our thesis, to fully understand the different dimensions in which sustainability operates. This step is indeed necessary, to then understand what obstacles are in its way and consequently how to relieve them.

### 2.2.2 Shared value theory

Porter and Kramer (2011) introduced the concept of Shared Value. They identified that there is a widespread concern that business is a primary contributor to social, environmental and economic issues, and that corporations are prospering at the expense of society. The view on creating value is limited, as financial optimization is focused only in a short-term dimension, and the most significant consumer demands and factors that drive long-term performance appear to be lacking. Companies seem to ignore their customers' well-being, the exhaustion of essential resources for their business, as well as the feasibility of their main suppliers and the economic misery of the community they work and/or sell in (Porter and Kramer ,2011). Sustainability work has previously often been perceived as either a threat to the organization's bottom line or something that can improve the company's image, both to customers and employees at best. Shared value is a term that implies generating economic value in a way that, by addressing its needs and challenges, often generates value for society, which refers to the relation between social and economic development. It is not about sharing the produced value but about widening the pool of economic and social capital. Every company requires a prosperous community, not only to sell its goods or services but also to provide them with workers, raw materials, expertise, infrastructure and other public assets (Porter and Kramer, 2011).

## 2.3 Innovation theory

Our use of the term innovation is based on the definition by Damanpour (1991) and the OECD guidelines (OECD, 2019). Damanpour (1991) defines innovation as “the generation, development, and adoption of novel ideas” (Damanpour, 1991; p. 556). There are four types of innovation stated by OECD’s guidelines for the collection and interpretation of innovation data: product innovations, process innovations, organizational innovations and marketing innovations. Innovation can be incremental or radical (OECD, 2019). Incremental innovation is the improvement of any of the subjects to the four types of innovation, while radical innovation calls for the outcome to be something completely new to the organization, as well as to the world (Schumpeter, 1942). Ramirez and Arvidsson (2014) refer to radical innovation as the type of breakthroughs “that aim to change the game” (Ramirez and Arvidsson, 2014; p.381). In this thesis, we will not take into consideration the distinction between incremental and radical innovation since we do not deem it to be relevant for the topic. We are investigating the cognitive biases that inhibit innovation and thus, we are interested in innovation as a whole rather than a specific type of innovation. In this thesis, the term *innovation* refers to the process of creating and implementing new ideas, methods, products or services.

### 2.3.1 Organizational ambidexterity

The tension between flexibility and efficiency, often described as a dilemma of exploitation vs. exploration is widely covered in literature on innovation management. Exploitation and exploration foster different organizational capabilities, where exploitation fosters efficiency and exploration fosters flexibility, which is key for innovation and sustained success. The empirical evidence for this organizational ambidexterity (Duncan, 1976; March, 1991) being linked to better performance is robust across numerous studies according to O'Reilly and Tushman (2013). The authors note that this robustness holds in spite of these studies using different measurements of the ambidexterity, different levels of analysis and various outcome variables (O'Reilly and Tushman, 2013). Summarizing the empirical findings on the topic, O'Reilly and Tushman (2013) state that the literature suggests that ambidextrous management typically has a positive effect on performance in environments characterized by uncertainty in

terms of market development and technology. Thus, to successfully manage organizational ambidexterity is of an increasingly higher importance in the globalized and competitive business environment that organizations face today. However, managing ambidexterity is not a simple task. Managers have to ensure fit of strategy, products and services to current market conditions as well as prepare for a fit with future market conditions (Tushman and O'Reilly, 1996).

### 2.3.2 Dynamic capability theory

According to Dynamic capability theory, some firms thrive in changing environments since they have the ability to change their resources (Teece, Pisano, and Shuen, 1997; Eisenhardt and Martin, 2000). In the dynamic capability theory, there are various modes of resource alteration that can be employed to purposefully adapt an organization base or resources to a changing environment: leveraging existing resources, creating new resources, accessing external resources and releasing resources.

## 2.4 Behavioral economics

The theory of neoclassical economy has been dominant in research and on the incumbent market. It is based on the assumption of participating actors being fully rational and egoistic human beings, namely *Homo Economicus*, or *Econ*. The Econ always evaluates advantages and disadvantages and is able to make choices to achieve maximum gain, no matter the context (Sunstein and Thaler, 2008). One of the first steps towards a view from a standpoint of cognitive factors and decision-making playing a part, was taken by Herbert Simon (1955, 1957). Indeed, Simon's (1955, 1957) principle of bounded rationality is based on the idea that the observable truth of an individual's decision-making is constrained by limited information and cognitive capacity due to time constraints, resources, energy and memory, resulting in non-optimal outcomes that may breach invariant preferences (Simon, 1955, 1957; Mullainathan and Thaler, 2000; Kahneman and Tversky, 1974).

Kahneman and Tversky (1974) draw on this bounded rationality theory, to add two core ideas of intuition and knowledge availability in cognitive processes. Judgment and decisions can be made by intuitive, quick, automatic, gut-driven *System 1* thinking, versus *System 2* thinking which is slower, more logical, more deliberate, more effort-driven (Kahneman, 2003) and closer to the neoclassical idea of the Econ. The use of automatic, quicker system 1 thinking fuels the need for simpler and quicker access to knowledge, and due to patterns, and frequency of usage, some beliefs are considered more available than others. Individuals' desire for efficiency by using System 1 thinking, along with the fact that an individual's judgement and decision-making is often being restricted by limited knowledge and cognitive capacity, contributes to coping mechanisms being used to more effectively access information (Kahneman, 2003).

### 2.4.1 System 1 and System 2

System 1 acts in an automatic and quick way, and although it is fast and effortless, the outcomes of this decision mechanism are heavily affected by a great number of cognitive biases. On the other hand, where a matter requires more computing power, the human mind switches to a slower, more deliberate and structured thinking performed by System 2. (Kahneman, 2011). System 1 and System 2 do not exist as standalone entities: Kahneman's (2011) present the realization that they constantly interact with each other. Essentially, System 1 quickly and constantly comes up with short-term predictions and judgments that are usually quite accurate, even though they are affected by many biases. System 2 is then in charge of checking whether those judgments are correct (Kahneman, 2011). The homo economicus described in neoclassical economic theories can be identified as an individual exclusively acting under System 2 (Thaler, 2015). However, the slow and thoughtful thinking performed by System 2 is often compromised by the quick and biased thinking performed by System 1. Even though System 2 leads to more accurate and reliable outcomes, it also requires more energy. Engaging System 2 is often associated with the phrase "pay attention" (Kahneman, 2011), but since individuals' attention is known to be limited, System 1 will be favored in most situations. Ultimately, both System 1 and System 2 are designed to perform at their best in specific situations. In order to deeply understand their pitfalls and the complicated relationship between the two, this thesis will analyze System 1 and System 2 separately.

### 2.4.1.1 *System 1*

System 1 is characterized by being an automatic, unconscious, fast and effortless system that cannot be turned off (Kahneman, 2011). It constantly analyzes the environment, looking for familiar situations and previously known models, to identify potential threats and opportunities and thereafter draw quick judgments to steer us in the right direction. The decision-making situation just described is conducted in an involuntary way. “You cannot refrain from understanding simple sentences in your own language or from orienting to a loud unexpected sound, nor can you prevent yourself from knowing that  $2 + 2 = 4$  or from thinking of Paris when the capital of France is mentioned” (Kahneman, 2011, p. 24). In terms of mental resources, namely attention, its control is shared by the two systems: System 1 is always first in line to respond to outside stimulus, and thereafter it engages the voluntary System 2. However, since attention is a scarce resource, operating through System 1 is often the most efficient way to go: 45% of the decisions we make are performed by System 1 (Singler, 2018). Although these decisions are very “attention-efficient”, they are also affected by many biases, resulting in mistakes and other undesired outcomes.

### 2.4.1.2 *System 2*

System 2 is a slow, deliberate and conscious decision-making mechanism that requires thought and effort (Kahneman, 2011). As previously mentioned, it has two main tasks: to monitor System 1 and to perform deliberate and effortful assignments. Therefore, System 2 leans towards being rational and thoughtful, but that comes at a cost. Indeed, operating System 2 requires a lot of resources, both mental and physical. This ultimately means that it is not feasible to tackle all our daily challenges with System 2; firstly because of the limited resources of our brain and secondly because of the time it would take us to process all the relevant information and to evaluate all the possible outcomes (Simon, 1947, 1955)

## 2.5 Cognitive and behavioral biases

*Cognitive biases* refer to people's assessments being systematically skewed away from an objective perception of information (Johnson, Blumstein, Fowler & Haselton, 2013). Cognitive biases result from biological constraints of the human brain and evolutionary imperfect design, e.g. in modern life it might be more harmful than useful that our brain immediately insists that we get ready to run at the sight of a spider, but our ancestors survived because of this fight-or-flight reflex. Closely related to cognitive biases is *behavioral biases*, which refers to how humans behave and make decisions in a way that is characterized by bounded rationality (Simon, 1947, 1955).

## 2.6 Nudge theory

The concept of nudging comes from nudge theory, pioneered by Thaler and Sunstein (2008). Nudging is a tool aimed at influencing people's behavior, taking into account how people make decisions. Using nudging to affect decisions involves designing decision settings in various ways with the intention of improving people's behaviors. It does not interfere with the free will of individuals, or use financial incentives (Sunstein and Thaler, 2008). Nudging can extend the decision toolbox, and behavioral science can be used to improve the decision tools that we already have. Our understanding of what constitutes a nudge is based on the following definition:

*“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. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates.”*  
(Thaler and Sunstein, 2008, p.6)

Based on this definition by the field's pioneers Thaler and Sunstein, Reisch (2019) provides a slightly more elaborated and, in our opinion, more pedagogical definition of a nudge. For this thesis, we will refer to Reisch (2019) definition of a nudge, stating that it is:

*“A feature of the social environment that affects people’s choices without imposing coercion or any kind of material incentive (choice architecture) liberty-preserving approaches or stimuli that steer people in particular directions, but that also allow them to go their own way.”*  
(Reisch, 2019)

Nudging is based on the concept of Libertarian Paternalism. Although the concept may seem contradictory, as Thaler and Sunstein suggest, when correctly interpreted, it becomes clear that the two concepts can cohabit perfectly (Sunstein and Thaler, 2008). The libertarian element of the concept is the preserving of freedom of choice for individuals, who should be able to reject unwelcome nudging attempts if they wish to do so. The paternalistic aspect instead resides in the argument that it is reasonable to influence the actions of the individuals if it is in their own best interest. An example could be nudge people with the goal of making their life easier, better and healthier (Sunstein and Thaler, 2008).

Nudging is not only perceived favorably, and their implementation calls for ethical considerations. A common critique of nudging is that it manipulates people's decisions instead of upholding people's freedom of choice (Goodwin, 2012; Hansen & Jespersen, 2013). Instead of preserving individuals' choices and freedom, Hertwig (2006) argues that it exploits individual vulnerabilities to achieve a purpose, and moreover people are unaware of when they are subject to nudges. Hertwig (2016) also argues against the notion that people are too lazy to think about themselves, implied by nudging. He claims that, in the case of nudging employed by a government, people should be careful in believing naively that the state is always behaving in favor of its residents. However, the above concerns can be overcome by avoiding manipulation regarding nudging and its target by keeping a transparent and open approach and by establishing clear directions for it (Sunstein, 2016). Individuals' views on nudges rely on whether they are viewed as well-motivated and go accordingly with certain desires and beliefs that concern them (Reisch & Sunstein, 2019). In conclusion, an ethical, transparent approach to nudging is necessary if appropriate stakeholders are to build trust (Reisch, 2017). When people believe in a nudge's validity, and believe it favors most people's interests and desires, they are prone to support it. Policymakers should therefore conclude that contrary to academic or public critique, there is less opposition from individuals who explicitly represent them (Reisch, 2017).

## 2.6.1 Nudge taxonomies

In this thesis, selected taxonomies of nudges are used as a lens for interpretation and analysis in the literature research and in the thematic analysis. The selected taxonomies are the ten most important nudges outlined by Sunstein (2014), who is one of the pioneers of nudge theory, and a list of 93 evidence-based behavior change techniques (BCT's or nudges) (Marsden, 2016) from the BCT taxonomy version 1 (BCTTv1) (Michie et al., 2013). The BCT taxonomy has been developed over the course of three years by 400 international behavior change experts, experienced in investigating, designing, and/or implementing behavior change interventions.

A behavior change technique (BCT) is defined as “an observable, replicable, and irreducible component of an intervention designed to alter or redirect causal processes that regulate behavior; that is, a technique is proposed to be an “active ingredient” (e.g., feedback, self-monitoring, and reinforcement)” (Michie et al., 2013, p. 82), and the employed definition of a nudge in this thesis is “A feature of the social environment that affects people’s choices without imposing coercion or any kind of material incentive (choice architecture) liberty-preserving approaches or stimuli that steer people in particular directions, but that also allow them to go their own way.” (Reisch, 2019). Comparing Michie et. al’s (2013) definition of a BCT with Reisch’s (2019) definition of a nudge employed in this thesis, we conclude that the similarities and overlaps between BCT’s and nudge’s justifies an interchangeable use of the terms for the purpose of our exploratory research objective: *To develop insights on how organizations could use nudging to foster sustainable innovation and provide a basis for further research and practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit.* The choice to equate the terms BCT and nudges for our study can be further justified by the interchangeable use of the terms employed by psychologists in practice (Marsden, 2016). This being said, we note Vlaev et al’s (2016) distinction between BCT’s and nudges, stating that nudges are a type of BCT “that target the automatic decision processes” (Vlaev et al., 2016, p. 12). However, even though Vlaev et. al (2016) underline the focus of automatic process and “minimal conscious engagement” (Vlaev et. al, 2016, p. 6) in nudge theory, the authors also use a definition of nudges that doesn’t exclude conscious, reflective processes and which also admits the physical as well as social dimensions of decision

environments. All things considered, the nudges we have derived from our interviews and our literature research are aligned with the definition of a nudge employed in this thesis.

### 2.6.2 Nudge Management

Until now, most research and implementation of nudging has been conducted in public policy matters or in marketing and sales, directed towards consumers. However, in recent years, behavioral insights have received an increasing amount of attention in the organizational context (Christensen, 2019). Specifically, the use of nudges has been employed as a tool to improve management inside organizations, leading to coining a new term: “Nudge Management” (Ebert & Freibichler, 2017). Ebert & Freibichler’s (2017) paper explores how to increase knowledge worker productivity by drawing on behavioral and psychological studies and indeed by employing nudges. An example of this might be the use of defaults nudge, to improve meeting efficiency: the typical meeting usually lasts 60 minutes, if the default option were 30 minutes instead, could easily reduce meeting times by 5%, resulting in substantial costs reduction, specifically in big organizations (Ebert & Freibichler, 2017).

However, even though an increased adoption of Nudge Management among business professionals, (Güntner, Smith, Sperling, Dickson, 2018) there is still a prominent research gap, on how it can be instrumental to foster specific goals or specific behaviors, for instance sustainable innovation. Overall, in regard to nudge management, there currently seems to be a lot more use of nudges in practice than there is knowledge about it in research.

### 2.6.3 Nudge management and sustainable innovation

The literature on nudge management and sustainable innovation is scarce and scattered. In the initial semi-systematic search for our main research question, no relevant paper on nudging for sustainable innovation within an organizational context were found. This further highlights the gap in the literature that this thesis intends to fill. The papers that we did find in our systematic search on the topic concern nudging for health in the workplace (Chauhan, 2019; Srivastava, 2012; Van der Meiden et. al, 2019), gender diversity and gender equality (Atal et. al, 2019; Mantashian et al., 2019; Correll, 2017) and environmental sustainability (Baranova et. al, 2017; Wong-Parodi et. al, 2019; Ferrari et. al, 2019; Rosenkranz et. al, 2017; Chakravarty and Mishra,

2019). Additionally, nudging for innovation (Potts & Morrison, 2009; Anthony et. al, 2019; Erkut, 2016; Rigtering et. al, 2018) and more specifically for creativity (Leegard, 2019), ideation for sustainable business model innovation (Haag and Urban, 2019) and for effectuation skill development (Holtel and Heinen-Konschak, 2019). Interestingly enough, all of these papers are rather recent in time, confirming our notion that we are dealing with an emerging field. There is a lot of room left for exploring the topic.

In regard to relevant grey literature, BVA Group is a prominent behavioral consultancy and their CEO Eric Singler has written a book about nudging in an organizational context called “Nudge management” (Singler, 2018) and it actually touches on the use of nudging for both sustainability and innovation. However, the main focus of the book is on nudging for productivity, health and happiness in the workplace and the contribution regarding sustainability and innovation is surface-level and marginal. Porsche Consulting (2018) also published a report on generating an innovative atmosphere with the help of nudging.

### 2.6.4 Nudges fostering sustainability or innovation

Without specifying what biases are at play, Rigtering et. al (2018) studies how managerial framing affects intrapreneurship and finds that both framing and default can be effective nudges in increasing employee participation in intrapreneurial ideation. The authors compared the effects from automatically registering employees to an intrapreneurship challenge within an international consulting firm, compared to letting employees opt-in through self-registration. When using the opt-out default, the number of proposals submitted increased without reducing the quality of ideas. Rigtering et. al (2018) also find that by providing employees with examples of ideas, they saw a reduction in the novelty of ideas and the overall number of idea submissions. However, the usefulness of ideas turned out to be higher when examples were provided.

In their report on how to create an innovative working atmosphere Porsche Consulting (2018), presents the current working atmosphere as a risk to innovation. To redesign the working atmosphere towards fostering corporate innovation, Porsche Consulting (2018) suggests a number of nudges: the automatic suggestion of “walking meetings” in the digital calendars of

employees to improve systematic decision-making, creating a default of no notifications on electronic devices to improve focus, publishing employees' to-do lists to enforce a social norms nudge, encouraging interaction between different divisions through common employee areas (e.g. cafés) to improve teamwork and trust, replacing audio conferences with video conferences to untap the value of nonverbal communication, increase boldness and risk-taking through replacing sitting meetings with standing ones since standing up is a power pose, increasing diversity in perspectives through altering the physical office environment such as scents or equipment found in meeting rooms and nudging for mental breaks through scheduling 45-minute meetings instead of hour-long meetings. Potts and Morrison (2009) suggest a voucher program including creative and non-creative firms in order to “nudge” innovation, but do not propose any specific nudges. They base their work on listing common biases in human choice based on the work of Thaler and Sunstein (2008), but do not elaborate on which biases are more or less relevant as innovation inhibitors.

When it comes to sustainability in the people aspect, gender equality is a relevant issue. Mantashian et al. (2019) discuss the use of nudges to foster gender equality in the workplace. They state the gender equality issue of a US tech company, where staff performance got linked to gender stereotypes during the annual review, with 14% of women being criticized for being too aggressive and 8% of men were criticized for being “too soft”. By implementing an employee scorecard specifically focusing on work performance and business impact, these numbers dropped to 0% and 1% respectively in a year. This was a type of re-framing of the evaluation, leaving the individual out of the discussion and focusing on the task and business impact (Correll, 2017). Another example of framing to foster gender equality is the re-framing the question of availability for global mobility, opening employees up to a wider range of higher-order positions (Mantashian et al., 2019). Mantashian et. al (2019) state an example where re-framing this type of question showed an increase in 25% of women declaring that they were available for global positions.

Holtel and Heinen-Konschak (2019) match nudging interventions against effectuation principles, with the purpose of helping project managers root effectuation skills in their team(s). These principles are a way to uncertainty, which is relevant to the innovation process. Based on the literature on nudge theory and the two taxonomies of nudges employed in this thesis,

we identify and interpret the nudges proposed by Holtel and Heinen-Konschak (2019) as *incentive (outcome), use of social norms, defaults, salience of consequences and pre-commitment strategies*.

<b>Innovation:</b> Framing (Rigtering et. al, 2018); defaults, use of social norms (Rigtering et. al, 2018; Porsche Consulting, 2018; Holtel and Heinen-Konschak, 2019) incentive (outcome), salience of consequences and pre-commitment strategies (Holtel and Heinen-Konschak, 2019)
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<b>Sustainability:</b> Framing (Mantashian et al., 2019; Corell, 2017)
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*Overview of type of nudges identified as fostering sustainability and innovation respectively*

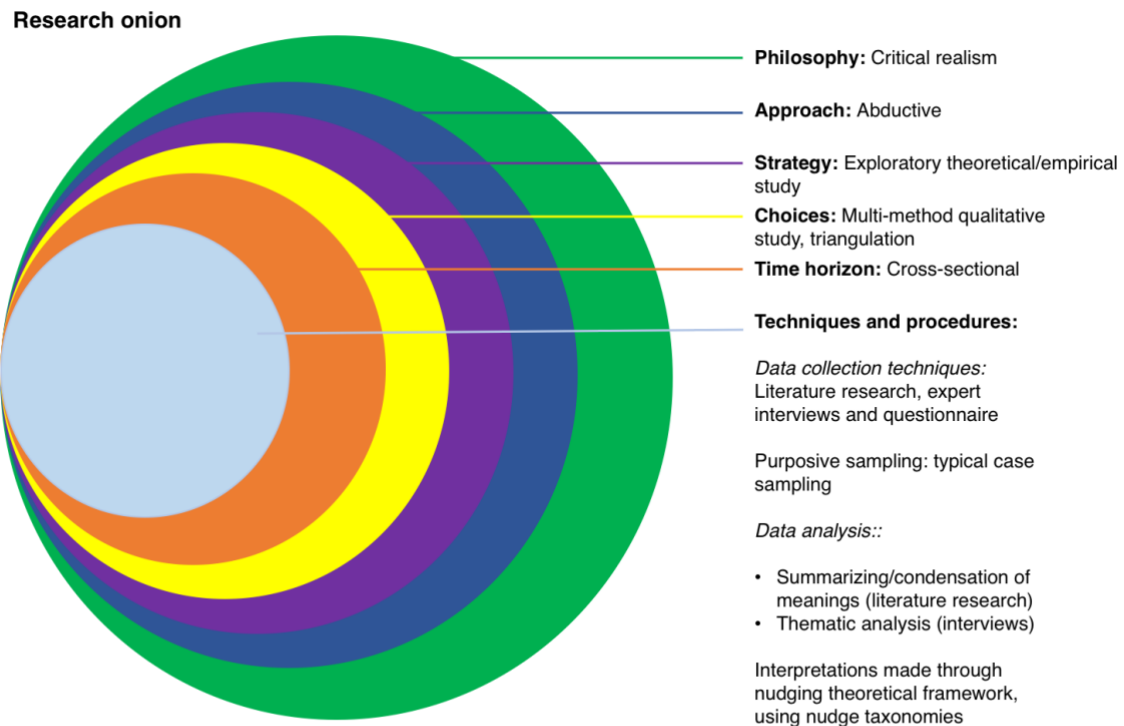
Among all these papers, they deal with either sustainability or innovation. None of the research we found suggest or investigate what types of nudges could be used by organizations to foster sustainable innovation, and this additionally highlights the research gap that we attempt to fill.

### 3 Methodology

To answer our main research question “*How can organizations use nudging to foster sustainable innovation?*”, we conducted exploratory research with a multi-method qualitative study. Due to scarce and scattered literature on the research topic, acknowledged through an initial protocol-driven, systematic literature search based on the main research question, we developed two research sub-questions:

1. *What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?*
2. *What nudges can be used to address these biases in an organizational context?*

Based on these research questions, we conducted an extensive literature research and interviewed experts relevant for informing the respective questions. For sub-research question 1, we also employed a qualitative questionnaire following the literature research informing that same question. The respondents to this questionnaire were professionals with experience in fostering sustainability, innovation and/or sustainable innovation within organizations. Through our use of literature research, expert interviews and a questionnaire, we employ method triangulation. Moreover, our use of both primary and secondary data enables us to employ data triangulation.



Source: © Mark Saunders, Philip Lewis and Adrian Thornhill 2008

## 3.1 Philosophy of science

### 3.1.1 Research philosophy: Ontology, epistemology and axiology

The philosophy on which we base our research is realism and, more specifically, critical realism. Our ontological view, our view of the nature of reality, is objective since we believe that reality exists in separation from human thoughts, beliefs, and knowledge of their existence. We are interested in identifying biases and nudges from the literature as they are presented, and not in understanding underlying meanings behind their existence. However, we believe that social conditioning affects how individuals interpret reality. This understanding means that our interview data is presented as interpreted by the author of the articles we review, by the respondents to our questionnaire and by our interviewee. All of this entails that we will conduct our research as critical realists. The epistemology behind our research, what we constitute as

acceptable knowledge, is that observable phenomena provide credible data and facts. In line with this epistemology, we focus on explaining the phenomena in question - biases and nudges - within a context: the organizational context. As critical realists, our position is that “what we experience are sensations...not the things directly” (Saunders et. al et. al, 2009, p. 115). We accept that biases and nudges exist independent of social actors, but that they are experienced through sensations that can deceive these actors. We argue that the social world is not static, but constantly changing. Regarding our axiological position, we realize that we are influenced - even biased - by our own experience, culture and upbringing and that this and our values will have some impact on the research we conduct. This influence plays into our interpretation of interviewee answers when we choose to interpret their descriptions of certain phenomena as certain biases or nudges if the descriptions fit the pre-defined description of these. Even though our ontological stance is that we believe there to be an objective reality, this reality cannot be directly observed and thus, we acknowledge that data is informative of reality but doesn't directly reflect it (William, 2018; Haigh et al., 2019). Followingly, there is a need for interpretation of data to access the underlying structures of it (Willig, 2012). We deem the interpretation of reality by others, presented in our data, to be acceptable knowledge. The same holds for our own interpretations of this data in the analysis.

### 3.1.2 Research approach

Our research is exploratory with descriptive elements. It is exploratory in the sense that it studies a relatively unstudied topic. Nieswiadomy (2008) supports the exploratory approach when an area of research is relatively unstudied. The main research question also fits the criteria of an exploratory research question, seeing that it asks “how” nudging can be used by organizations to foster sustainable innovation. This exploratory question allows us to get insights for further research and experimentation. Secondly, the sub-research questions that we form in order to answer our main research question follow a descriptive approach in the sense that it aims to answer “what is” type questions. The approach is suitable when the availability of existing information on a topic is limited, and our decision to use this approach is supported by Bickman and Rog (1998). We adopt an abductive approach for the purpose of this research. As opposed to deductive studies which either prioritize researcher- or theory-based meaning, and inductive studies prioritizing participant- or data-based meaning (Braun and Clarke, 2012),

we conducted a two-legged theoretical and empirical study where both theory and practice contribute to informing our research question. We employ a back-and-forth interaction between theoretical literature and empirical (qualitative) data in our analysis which is characteristic of abductive reasoning. Our approach is aligned with how Dubois and Gadde (2002) explain abductive studies. The authors claim that “In studies relying on abduction, the original framework is successively modified, partly as a result of unanticipated empirical findings, but also of theoretical insights gained during the process. This approach creates fruitful cross-fertilization where new combinations are developed through a mixture of established theoretical models and new concepts derived from the confrontation with reality.” (Dubois and Gadde, 2002, p.559). In addition, we deem an overall abductive approach to be appropriate for this thesis since it goes from data to theory (rather than the opposite) through employing a back-and-forth between theoretical and empirical data, using elements from both deductive and inductive approaches.

Our starting point has elements of a deductive approach in the sense that we tested, through the questionnaire, the hypothesis that the biases derived from our literature research (theory) are relevant in practice. Following that, we formed a priori codes based on theory, and thus employ deductive coding in the interviews informing sub-research question 1. The findings and analysis of the data collected for answering sub-research question 1 partly influence how we proceeded with part two of the data collection and the analysis. For sub-research question 2, we asked our interviewees open-ended questions on how they would use nudging to foster sustainable innovation within organizations and what nudges they would use. After asking those open and general questions, we moved onto systematically asking our interviewees open-ended questions on how they would address each of the biases which we had found to be relevant in the first part of the analysis. We coded these interviews with behavioral experts inductively, allowing the themes to emerge rather than pre-determining the codes.

### 3.1.3 Research strategy, choices and time horizon

Our research is a qualitative exploratory theoretical/empirical study (Ankersborg and Wrisberg, 2020). Our research inquiry is asked equally theoretically and empirically, through literature research and an interview study with qualitative semi-structured interviews. In

addition, we employ a qualitative questionnaire as a precursor to the initial interviews. Overall, our study is a multi-method qualitative study as we use more than one qualitative data collection technique and analyze our results with qualitative procedures (Tashakkori and Teddlie 2003). We employ triangulation of both data collection methods and data (Saunders et. al et. al, 2009). The choice of a qualitative approach is appropriate since we want to inform an emerging concept with the help of literature and those experiencing it in practice. This choice is supported by Vaismoradi et al. (2013) who states that “Qualitative approaches share a similar goal in that they seek to arrive at an understanding of a particular phenomenon from the perspective of those experiencing it.” (Vaismoradi et al. 2013, p. 2). The use of multiple methods characterizes methodological triangulation (Saunders et. al et. al, 2009), and regarding triangulation of data; we are using two or more independent sources of data: secondary data from an extensive body of literature, and primary data from a questionnaire and from interviews. The time horizon of our research is cross-sectional, as it is a “snapshot” taken at a particular time (Saunders et. al et. al, 2009, p. 155).

## 3.2 Data collection techniques

### 3.2.1 Literature research

For answering the theoretical wondering of our research, we started out with intending to conduct a semi-systematic literature review as a research method, since our research question was broad and we wanted the contribution of the literature to be to comprehensively uncover the state of knowledge of our topic (Snyder, 2019). We created a concept map and a search strategy for our main research question and defined search strings (Appendix 1). However, in spite of iterations of the search strings, the literature findings proved very scarce and a number of relevant research papers found elsewhere couldn't be encompassed by this semi-systematic search. Due to this and the observed lack of relevant literature on the topic, we decided to conduct literature research based on our two sub-research questions in order to be able to answer our main one. Each section of the literature research is guided by the respective two sub-research questions. We searched for papers in the databases presented in the table below

and used pre-defined inclusion/exclusion criteria (Appendix 1). We also followed references found in the papers which fit these criteria.

Sources for literature research
<p>Scientific publications</p> <p>Libsearch, EBSCO Business source complete, Google Scholar, ScienceDirect</p> <p>Grey literature:</p> <p>Search engines: Google, Ecosia</p> <p>Organizations and networks:</p> <p>The Behavioural insights team (BIT)</p> <p>OECD behavioural insights</p> <p>TEN European nudging network + their partners</p> <p>McKinsey</p> <p>Anne Charon and Scott Young at BVA Group</p>

Our initial concept map and semi-systematic search strategy informed us about the lack of literature on our topic, and its scattered nature. Due to our extensive literature search and theoretical analysis, we feel confident in that although the findings may not be comprehensive, we have managed to include sufficient relevant literature for the exploratory purpose of this thesis.

The aim of our search queries was to gather the current literature related to nudge theory and nudging as a concept, within an organizational context (not nudges by organizations directed towards consumers, or external nudges targeting the organization, i.e. behavioral public policy) when nudging was the intervention or topic explored in relation to affect the organization/management/employees. Specifically, we were interested in finding literature on organizational nudging related to sustainable innovation, but we wanted to cast a wide net in order to capture the majority of literature on nudging in an organizational context. The first part of the literature research concerning sub-research question 1 helped us to develop a theoretical proposition that there are certain biases which inhibit sustainable innovation in

organizations. Based on this, we created a questionnaire and conducted follow-up semi-structured interviews testing the relevance of those biases with professionals working within the field of sustainability, innovation and/or sustainable innovation. In addition to testing our literature findings, we asked open-ended questions seeking insights not derived from the literature. Subsequently, the second part of the literature research informing sub-research question 2, was influenced by what biases were identified in the first part. The second part of the literature search was focused on literature on nudges addressing the biases found in the first part, as well as literature on nudges fostering sustainability, innovation or sustainable innovation. The second part of the literature research laid the groundwork for formatting the semi-structured interviews with nudging practitioners.

### 3.2.2 Expert interviews and questionnaire

In our primary data collection, we start by addressing the first sub-research question “*What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?*” through insights from professionals who have experience being responsible for corporate sustainability, innovation or sustainable innovation. The initial insights are derived from a qualitative questionnaire, used to measure the relevance of biases as an obstacle to sustainable innovation. Relevance was assessed by if and how often the responding professionals experienced a certain bias as an obstacle to the mission of their work (fostering sustainability, innovation and/or innovation). We included questions asking the respondents about their experience with behavioral challenges and included a ranking of experienced relevance of obstacle biases based on our findings in the literature research. The questionnaire was sent to targeted respondents in our network and shared through LinkedIn in order for us to get an overview of the main behavioral obstacles to sustainability and innovation, and the intersection being sustainable innovation. For the targeted respondents sampled through purposive sampling, we then conducted semi-structured follow-up interviews to gain deeper insights and ensure a more accurate interpretation of the survey findings.

To inform the empirical wondering of our second sub-question “*What nudges can be used to address these biases in an organizational context?*”, we conducted qualitative semi-structured interviews with experts experienced with implementing nudges within organizations. These

experts included professionals experienced within organizational nudging or nudge management, either as consultants or implementing nudges in their own organizations.

### 3.2.3 Sampling

Our purpose of our study is exploratory, with research question(s) and an objective that do not require us to make statistical inference from the sample(s). With this in mind and guided by the decision-map of Saunders et. al (2009; p. 223), we chose to use non-probability sampling techniques (Saunders et. al, 2009). More specifically, we used a type of non-probability sampling called purposive sampling. This type of sampling is appropriate when working with very small samples (Saunders et. al, 2009) and when you choose cases that are particularly informative (Neuman 2005). For sub-research questions, we used a type of purposive sampling called typical case sampling, where the focus is to choose cases that illustrate a representative profile of the population of interest. sampling method appropriate considering that the respondents of our questionnaire and interviews (informing sub-research question 1) are all professionals with high-level responsibilities within the field of sustainability, innovation and/or sustainable innovation. Furthermore, the three respondents with which we conducted follow-up interviews all confirmed that their experience had overlaps between these areas.

To generate our sample(s), we sent out personal interview requests by e-mail to targeted professionals and experts both within and outside our respective personal and professional networks. Specifying the requirements ensuring purposive sampling, we also advertised our need for respondents through our respective networks on the professional social media platform LinkedIn, and had contacts there share our post with their network. In addition, we posted in a few behavioral economics groups on LinkedIn and Facebook.

### 3.2.4 Data for sub-research question 1

For our analysis related to sub-research question 1, we used primary data from a qualitative questionnaire with eight respondents and semi-structured interviews with three interviewees. The eight respondents of the questionnaire were all professionals within the field of sustainability, innovation and/or sustainable innovation. These respondents were gathered through directed requests to relevant candidates identified within our joint professional

network. We followed up the questionnaire with semi-structured interviews for three of the respondents: Simon Locke (Sustainable Design Innovation Manager), Raphaël Smals (Adviser sourcing, innovation & strategy) and Linda Lindberg (Expert in international law and sustainability, previously Head of CSR). A more extensive outline of their relevant professional experience can be found here (Appendix 2). The main aim of the questionnaire was to get an indication of whether the biases we had identified in the literature review were also experienced as inhibiting sustainability, innovation or sustainable innovation in practice. The main objective of the follow-up interviews was to gain an understanding of the interviewees' experience with these biases as an issue in their work. We also asked open-ended questions in order to find out whether they would collectively bring up any other biases as main obstacles to the mission. We coded these interviews using a priori (Saunders et. al et. al, 2009), or predetermined, codes based on the biases we had identified in literature (Appendix 4). Although using predetermined codes based on theory is characteristic of a deductive approach our coding process for sub-research question 2 also inductively allowed for some emergent codes based on the interviewees' responses (Braun and Clarke, 2012).

### 3.2.5 Data for sub-research question 2

For our analysis related to sub-research question 2, we used primary data from semi-structured interviews with three professionals experienced in implementing nudging in organizations: Samuel Salzer (Behavioral Strategist, Author & Keynote Speaker) Natalia Gómez Sicard (MSc Student in Behavior Change vid UCL, prev. Behavioral Science Consultant) and Tommy Lindström (Leader within Behavioral Design for digital transformation, employee engagement and customer loyalty.). Their respective profiles can be found in Appendix 3.

The main aim of the interviews was to get access to their experienced reality in order to gain their direct or indirect suggestions of nudges to address the biases identified in literature, or to explicitly foster sustainable innovation in an organizational context. By indirect suggestion, we mean any described solution that we could interpret into a type of nudge outlined by Sunstein (2014) or Michie et al. (2013). During the interviews, we began by asking open-ended questions, in an attempt to minimize the framing of our interviewees when trying to investigate our main research question. Followingly, we proceeded to systematically ask these behavioral

experts about behavioral solutions and nudges to addressing the biases we had identified when researching our sub-research question 1. We then coded these interviews using emergent coding (Braun and Clarke, 2012)., meaning that the codes emerged from the data and were determined on the base of their relevance for answering the main research question *How can organizations use nudging to foster sustainable innovation?* and sub-research question 2 *What nudges can be used to address these biases (sub-research question 1) in an organizational context?*. (Appendix 4). The codes, the inclusion/exclusion criteria for the codes and the resulting coded data is presented in (Appendix 4). The coded data is presented in a table together with the interpretation of the response based on the nudge taxonomies of Sunstein (2014) and Michie et al. (2013).

### 3.2.6 Transcription

In order to transcribe the interviews, we used the software otter.ai and manually adjusted the interviews to make sure they were comprehensible in written form (Appendix 2). We didn't alter any content in relation to its meaning but made alterations such as spelling and removing some incoherent speech or sounds such as hesitations, false-starts or cut-offs in speech.

## 3.3 Data quality

Even though our sample size is small, our interviewees are experts within their field (Appendix 3). In our research, we conduct two batches of interviews with three interviewees for each of our sub-research questions. We also use eight expert respondents for our questionnaire. The sample sizes for each of these data collection methods doesn't have to be an issue, since the purpose of the study isn't to produce generalizable findings. A small sample size is acceptable for exploratory qualitative research, and in particular when the interviewees are experts in the field about which they are interviewed. An issue for data quality and validity, however, could be the subjectivity and potential bias involved in the choice of what papers to include in the literature research, and further analyzed to varying degrees and other interpretations made in our analysis. The data could also be subject to biases from the interviews, seeing that the sample

is very small. Nonetheless, we tried to reduce bias in several ways by, for example, pre-defining coding rules in the thematic analysis in which we also independently coded the interviews.

## 3.4 Analysis methods

In the following section, we will outline the methods used to analyze the findings from the literature research, questionnaire and expert interviews informing the respective sub-research questions.

### 3.4.1 Theoretical analysis: Summarizing (condensation) of meanings and interpretation with framework approach

The literature research and the theoretical analyses of its findings provide an independent contribution to our main research question. As a base for answering sub-research question 1, we draw on cognitive and behavioral threats identified in innovation theories. For sustainability, we found a comprehensive study on biases inhibiting sustainability which this section is based on. From the identified cognitive and behavioral threats, we both identify stated biases involved but also conduct interpretation based on nudge theory and the nudge taxonomies used for this thesis (Sunstein, 2014; Michie et. al, 2013; Marsden, 2016) when no bias is directly stated. In the case when a bias is explicitly stated in the theory in question, we present those findings. The degree of interpretation in the theoretical analysis is rather low, since many biases were explicitly stated in the literature research, and the interpretations we made were very straight-forward, i.e., there was often low ambiguity of what type of bias is at play. The theoretical analysis related to sub-research question 2 focuses on identifying or interpreting nudges. For the literature research, the analysis is focused on summarizing (condensation) of meanings (Saunders et. al, 2009) in the literature, with a slight degree of interpretation based on nudge theory and nudge taxonomy. We are following Saunders et. al's (2009) guidelines of "When you use any sort of documentation it is helpful to produce a summary that, in addition to providing a list of the key points it contains... how it relates to your work and why it is significant." (Saunders et. al, 2009, p. 492).

### 3.4.2 Empirical analysis: Thematic analysis of expert interviews

The empirical analyses provide an independent contribution to our research question. To analyze our empirical qualitative data, we employ the method of thematic analysis. Thematic analysis is mainly described as “a method for identifying, analyzing and reporting patterns (themes) within data” (Braun & Clarke, 2006, p. 79). It involves searching for and identifying common themes extending within and across interviews. We chose to employ this analysis method since it was a flexible approach that allowed us to systematically analyze the themes in our primary data as well as relate it to theory. Our use of thematic analysis also fits with a critical realist approach (Smith, 2003) where we acknowledge that our primary data is based on people’s words which reflect their respective version of reality. Through a thematic analysis, we were able to produce interpretations of our interviewees’ respective reality. When we conducted our thematic analyses, we used the steps outline by Braun and Clarke (2006, 2012). Our thematic analysis has characteristics from both an inductive and deductive approach, but as stated by Braun and Clarke (2012), one of these approaches tends to predominate. In our case the inductive approach is dominating for the thematic analysis since we lean slightly towards prioritizing participant- or data-based meaning in the interviews and the coding of them. Leaning more towards an inductive rather than a deductive approach in the thematic analysis is also in line with the exploratory nature of this thesis, and an experiential orientation through which we aim to capture experience of- and perspectives from participants (Braun and Clarke, 2012). An overall inductive approach to thematic analysis is also well-aligned with a critical realist approach to research where a knowable world is assumed and the experiential approach is “. . . “giving voice” to experiences and meanings of that world, as reported in the data” (Braun and Clarke, 2012, p.3). In the coding of the interviews informing sub-research question 1, the deductive element is that we mainly coded the interview transcripts with predetermined codes based on the literature. The coding of interviews informing sub-research question 2 is inductive, with codes emerging from the data. Our reasoning for these choices is in line with the objective of the respective research questions. For the interviews related to the sub-research question 1, we aim to find if our theoretical findings are confirmed in practice. On the other hand, for our interviews related to sub-research question 2, an inductive approach is suitable since the aim is to uncover new information about what nudges can be used to foster sustainable innovation and also gain knowledge informing the overall research question: *How*

*can organizations use nudging to foster sustainable innovation?* The data from the interviews informing sub-research question 2 is then interpreted by us within the theoretical framework of nudge theory, more specifically through the nudges defined by Sunstein (2014) and Michie et al. (2013).

### 3.4.3 Primary and secondary data comparison

Since we aim to build an understanding based on both theory and practice in line with our research objective *To develop insights on how organizations could use nudging to foster sustainable innovation and provide a basis for further research and practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit*, we deemed it relevant to include primary and secondary data comparison as an analysis method. Through comparison of findings from the literature research and findings from our primary data collection, we were able to analyze the differences and overlaps between theory and practice, providing insights to our main research question.

## 3.5 Delimitations

### 3.5.1.1 Organizational size representation

Our inquiry for the first sub-research question is informed mainly by professionals having experience of fostering sustainability, innovation and/or innovation in larger organizations. For the questionnaire as a whole, the size of the organizations in which the respondents had held this responsibility varied from 0-10 to 250+ employees. However, the respondents who we conducted follow-up interviews responded in regard to their work in organizations with 250 employees and more. This creates a delimitation of organizational size for our study, meaning that the biases found to be relevant inhibitors of sustainable innovation might only be a finding illustrative for larger organizations.

### 3.5.1.2 *Selected nudge taxonomies*

By using a framework approach for interpretation in our analysis, applying the nudge taxonomies developed by Sunstein (2014) and Michie et. al (2013), we limit the interpretation to these frameworks.

## 3.6 Weaknesses of methodological choices

### 3.6.1.1 *Researcher bias*

A limitation with our methods is the biases and subjectivity coming with our level of interpretation in the analysis, and the interpretation and choice of papers in our literature research. We let our research questions guide our literature research and even though we employed pre-defined inclusion/exclusion criteria, these are rather broad, and our choice of included papers is not fully objective. This is a limitation to our research and might have cost us a comprehensive overview of the field. However, we did conduct an initial semi-systematic literature search with numerous iterations of search strings, and the results were very limited. Another risk of not forming a comprehensive view of the field, can be exemplified through that we found evidence for possession bias and the endowment effect being an obstacle specific to innovation, but we didn't find any evidence of possession bias inhibiting sustainability in organizations. Due to slight overlaps in the process of rolling out the questionnaire while finishing up the literature research, the bias was actually included in our questionnaire and ended up showing some relevance to the respondents. We subsequently decided to leave it out of the study since the coherency of our approach entailed that we should only move forward with investigating the biases that had support in literature as being inhibiting to both sustainability and innovation. However, the fact that our review was non-systematic and non-comprehensive might have been a cause for not finding support for the possession bias being an obstacle to fostering sustainability in organizations. As previously stated, bias and subjectivity are also likely to play a part in other stages of the research process, such as in conducting our interviewee our interpretation of interviewee answers in the thematic analysis and from the literature research in the theoretical analysis. The critical realist approach that we

have adopted acknowledges that we can only know reality through interpretation. In line with the critical realist approach which we have adopted in this research, we realize that the influence of our own experience, culture and upbringing and values will have impact on the research we conduct.

### 3.6.1.2 *Small sample size*

For both our sub-research questions, the latter one more closely related to the main research question, we use small, purposive sampling. In total, we conducted six expert interviews where each half of these informed two separate sub-research questions. Our chosen interviews represent illustrative cases for the population of interest but the validity and reliability in generalizing our empirical findings is low. Nonetheless, for an empirical inquiry researched within an exploratory study, a small sample size is acceptable since the objective is not to make generalizations or draw statistical inference. An advantage of our sample is that it consist of experts, which improves the validity of our research.

## 3.7 Strengths of methodological choices

There are several strengths to our methodological choices, one being the abductive back-and-forth between theory and practice as well as the choice to adopt multiple methods. The choice of multiple methods allows for triangulation of methods and data in answering our research questions. This triangulation corroborates our research findings (Saunders et. al, 2009). Our overall research approach was flexible, which is desired for the exploratory purpose of the study. This flexibility is also reflected in the use of thematic analysis. The strength of the thematic analysis is that it permits us to identify general themes in large amounts of text and interpret the data past personal experience. Another strength is using purposive sampling for our empirical data, and having experts contribute to answering the empirical inquiries of our research. There is also methodological strength in our use of the well-researched and expert-informed nudge taxonomies (Sunstein, 2014; Michie et. al, 2013) as frameworks in the analysis. Finally, our choice of developing two sub-research questions allowed us to

circumvent the issue with a scarce body of literature on nudging within an organizational context. Through this process, our research draws from an extensive amount of literature, including well-established sustainability and innovation theories.

## 4 Analysis part 1

In the first part of the analysis, the first sub research question will be addressed, namely;

*What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?*

### 4.1 Literature research and theoretical analysis

The focus of this thesis is on sustainable innovation, however, the literature on biases affecting sustainable innovation is scarce. Therefore, we start with identifying biases hindering sustainability and innovation respectively, and from that draw inference to the intersection being sustainable innovation. Once the biases affecting sustainability and innovation have been identified or interpreted and presented, biases affecting both categories will be noted.

#### 4.1.1 Biases inhibiting sustainability

After having clarified the concept of sustainability, to pursue the goal of this thesis, the following section will focus on the biases that pose a threat to sustainability. Mazutis and Eckardt (2017) identify four categories of biases that prevent an organization from being sustainable: perception biases, optimism biases, relevance biases, and volition biases.

##### 4.1.1.1 *Perception biases*

Perception biases, such as issue framing, availability bias, and heuristics, influence human vision of sustainability, and thus significantly affect the decision-making processes in organizations. In a matter like sustainability, that is quite abstract and hard to visualize and conceive, these kinds of biases have a great impact on influencing its perception. Perception biases originates from people's inability to comprehend circumstances and outcomes that they have not yet encountered, by refusing to recognize that there is an issue at all. Availability bias,

for instance, is found when a decision-maker makes a judgment on the probability that an instance will occur on the ease with which it is possible to recall similar instances or events, irrespective of the amount of times the event actually occurs (Tversky & Kahneman, 1981). Decision-makers in the next years, for example, may overestimate the likelihood of another global pandemic. This also implies that people may not be adequately willing to respond to a problem such as climate change, where concrete instances related to climate can be brought to mind to support the fact that such environmental changes are actually happening. In other words, people will not be able to intervene now as to avoid potential climate-related changes in the future, near or distant, because they perceive a small likelihood to future negative climate change impact on society and businesses (which is dependent on what they have witnessed so far and how extensively the problem has been covered). Nevertheless, research has also shown that exposure to extreme climate change events and/or media portrayals of it, are correlated with a rise in the awareness that global warming is happening (Marx et al. 2007; Thaler and Sunstein, 2008), which ultimately stem in people and organization into being more active on this matter.

Moving on, framing is a bias that helps to explain how people react differently and sometimes irrationally to a problem depending on how the problem is worded or depicted. Different formulations, such as sentence structure, open or closed questions, alternative order of answer, specific terminology such as gains or losses, can generate entirely different connections, emotions, and reactions to a given subject.

Consequently, gain / loss framing is an extremely important resource in the way we as individuals approach a problem. For example, given two options “if you use energy conservation methods, you will save \$350 per year; if you do not use energy conservation methods, you will lose \$350 per year”, where the latter loss structure has been shown to be much more successful in shifting individual behavior, even if the actual benefits are exactly the same (Thaler and Sunstein, 2008). Trailing back to the example of climate change, framing is why the perceived economic costs of adopting anti climate change strategies weigh more than the related economic returns.

Moreover, media depictions on climate change are frequently framed as remote in time and space, unclear in terms of the extent of the impacts, ambiguous in terms of the intensity of effects, and thus the likelihood and societal opinion on the impact of climate change continues to remain elusive (Spence, 2012). Climate change is also often framed as extremely nuanced and the conversations about strategies to tackle it are frequently based on technical solutions to limit emissions, mainly in the context of political debates and activities such as climate summits. Therefore, climate change has been largely portrayed as an “engineering” issue rather than a regular business problem (Spence, 2012). Discussions on climate change are often framed in a highly statistical form, requiring a lot of effort to visualize how large and how likely the effect would be for an organization. It has been noticed that there is a fairly common environmental illiteracy in regard to environmental problems, suggesting that this makes it difficult to grasp the correlation between lowering emissions by reducing energy consumption and climate change, with the consequence that the sense of urgency and determination for the issues are reduced (Hoffman and Henn, 2008). As a result, this theoretical frame does not provoke any connections with the proximity or the extent of the impacts of climate change. Far worse, the engineering / scientific frame produces an even greater psychological gap from those actually impacted (Spence, 2012). Therefore, current framing reduces the intensity of issues such as climate change, and thus are not perceived as strategic problems that demand corporate intervention. Perception biases alone can explain the enduring trend of climate change denial that effectively prevents the rational decision-making process by refusing to recognize climate change in the first place as an imminent problem. Clearly, the ways in which problems are phrased affects individuals, as well as businesses, which is why addressing how a topic is framed, has enormous upsides in influencing how it is thought about and perceived. One interesting example is the more recent adoption by activists of the term “climate crisis” in the place of “climate change”, to frame the cause as an emergency.

The last perception bias is the status quo bias. Individuals have an undeniable preference for the status quo, meaning to keep things as they are, which is less cognitively exhausting than accepting something different. When faced with evidence about the need to change our business strategies and operations to accommodate for sustainability measures, our system 1 affects heuristics kick-in and we are inclined to overstate the risks associated with new strategies or projects and overestimate the harms these might have to our organizations, often

highlighted in terms of costs. The negative responses individuals experience towards unwelcome change are limiting our understanding of the severity of the problems and preventing the more systematic exploration of alternatives by system 2 (Kahneman, 2013). A clear example of this bias would be the resistance towards ditching paper at the workplace; even though there are some viable alternatives, people might feel emotionally attached to printing, and therefore resist the shift to the greener option. Another example is related to social sustainability in organizations. It has been shown that diversity in hiring is partly hindered by the tendency of people to hire people alike themselves (Güntner et. al 2018). One of the reasons behind this tendency is likely to be the status quo bias, where people tend to prefer what or who is familiar to them (Güntner et. al 2018).

To aggravate the negative effect of these biases, is the fact that humans are highly averse to loss, and risk. Aversion of loss or risk implies a preference to avoid an option that involves the risk of loss, instead of seeking an equivalent gain (Kahneman and Tversky, 1980). Kahneman and Tversky (1980), with very basic experiments, first demonstrated the principle. The authors gave participants the ability to play a game of heads or tails to win or lose an equal number. On average, if the chances they could win or lose were the same (50%) people refused to participate. This bias occurs because when we lose or experience the risk of losing, as the unpleasant experiences, actual or presumed, we receive are greater than the positive emotions associated with winning. The pure hope of winning a sum of money is not enough to make us consider a 50/50 risk that we will fail the same number. It is not rational from a statistical standpoint, but from a human perspective it is natural. We are more impacted by a loss than we are pleased by an equal gain. As a consequence, we prefer to reject a gamble where there is no substantially higher chance of success than the likelihood of loss (Kahneman and Tversky, 1980). This ratio was evaluated at 2.5 by Kahneman and Tversky (1980). Therefore, there must be a potential reward of 250 for accepting a potential loss of 100.

### **4.1.1.2    *Optimism Biases***

Individuals are more often than not, over optimistic about the outcome of the planned actions as well as over-confident in their abilities to cope with the probability of adverse outcomes (Kahneman, 2013). There are a variety of advantages of these optimistic attitudes, such as maintaining self-esteem and helping us stay motivated in tough moments. The drawback of

over-optimism, however, is that we can misjudge the possibility of an event, and consequently overestimate our readiness to adapt and solve any related issues, especially in the business setting. This applies to climate change as well, whereby Optimism biases may hinder organizations' ability to develop and implement a wide array of solutions, to avoid and possibly adapt to climate change.

In addition, the confirmation bias tricks us into only seeking information that reinforce our current opinions (Kahneman, 2013), leading to a phenomenon described as group polarization. In its occurrence, people tend to move towards the extremes of the opinion spectrum, leading people to take very extreme stands (Sunstein, 2014). In other words, it means that people will not distribute normally but they follow a distribution rather skewed at the two extremes.

### 4.1.1.3 *Relevance biases*

Relevance biases affect our immediate understanding (through System 1) of the value of any given product or service, which also applies to sustainability initiatives. In the following section popular cognitive biases such as anchoring, temporal and hyperbolic discounting, and query theory, will be extensively analyzed with the goal of understanding how they influence organizations' view of the future. Consequently, they largely minimize and neglect the alarming implications of not incorporating sustainable practices in their operations. Just like the aforementioned categories of biases, relevance biases tend to decrease the urgency of sustainability matters, and thereby affect their process through System 2 (Kahneman, 2013).

The role of anchors and their priming effects can be explained as our involuntary tendency to make our decisions leaning towards a predefined point, in spite of how relevant they are (Kahneman, 2013). Anchoring is a well-known psychological process with impressively strong impact on decision results and merely proposing a starting point greatly affects how we tackle a problem. This bias is extremely amplified when decision-makers fail to adjust enough (Arvai, 2012). Anchoring with insufficient adjustment plays a crucial role in influencing decisions that involve quantitative data to be assessed or integrated. Our decisions are most strongly affected by those variables that arise in the first place, and we consequently disregard those that present themselves only at a later stage of the decision-making process (Kahneman, 2013).

Considering climate change, the impact of anchors is especially tricky. Global warming reporting is often communicated to people by media, by calculating global temperature levels increasing between 2 ° C and 5 ° C. As per the extent of increases encountered by most individuals over a year's time, 2 or even 5 degrees tend to be a relatively minor rise, and therefore the severity of the effects of climate change is decreased. These low anchors directly influence us unconsciously and keep us from automatically becoming worried about the implications of the potential magnitude and severity of global warming effects (Mazutis and Eckardt, 2017).

The relevance bias group also contains hyperbolic discounting of the future, e.g. the human propensity to overrate short-term outcomes in contrast with temporary distant ones. Climate change mitigation steps are often unappealing because they often entail drastic measures in fields, such as the strategy, operations and supply chains. This fact combined with higher costs and extra efforts lead to a compromise that some organizations are not willing to take. Additionally, such expenses will only get a return at a later stage, with drastically diminished and uncertain advantages (Weber, 2006). One factor of aversion to make the necessary long-term choices on sustainable business behavior, such as engaging in substitutes to fossil fuel, would be that the payback time is too far away. Hyperbolic and intertemporal discounting reduce the strength of climate change, and thus significantly distort the appraisal of sustainable alternatives for the organization.

Finally, query theory provides some clues into how assessments of climate change prevention and response alternatives are being affected. We find instant gratification more desirable rather than deferred gratification without taking into account potential repercussions of our present actions (Weber, 2006). Nowadays, there are only a handful of businesses that are giving up present gains for way fewer concrete objectives, such as preventing the disastrous consequences of climate change. The significant adverse implications associated with the real, present costs and compromises that organizations may have to undergo, could well motivate environmentally harmful consumer choices and behaviors. As the extent of possible climate change repercussions are uncertain, the temporal urgency is weak (Weber, 2006). Consequently, climate change interventions often fail in the cost vs benefit calculation.

#### 4.1.1.4 *Volition Biases*

The last group of biases differs from the previous three, because volition biases preclude people from viewing themselves as independent actors with power over their behavior. The shortage of motivation inhibits people to think and act as a justification to not engage in cognitive processes to make pragmatic decisions and behavior to eliminate unsustainable business activities. Popular cognitive biases at work are diffusion of responsibility, obedience to authority and professional bias (Linder, 1987; Hoffman, 2005).

Researches have shown that if we assume that others cause a specific resource to become scarce, then our consumption will eventually increase because we disregard our own individual responsibility for that good (Carvalho, 2010). The matter of common goods is no news to economists, as well as to companies operating under the incorrect concept of infinite resources that generates a free-rider result. Instead, people and the planet's health and well-being are perceived as responsibility of the government, the EU, the UN or any other actor in civil society. Hence, the locus of control for sustainable business practices tends to be weakened, as it is perceived as external to the managerial jurisdiction. For instance, despite the sense of transparency and obligation, companies have very little room to raise questions about the temporal urgency or relevance of climate change (Mazutis and Eckardt, 2017).

Analogously, obedience to authority, as well as its norms and standards, functions as dependence on its representatives, with the consequence that it is left to the authorities to address the issue on their own. Business guidelines and environmental laws hold companies focused on solely regulatory compliance instead of constructive sustainability objectives. Provided that current laws are still based on maximum tolerated damages, obedience to authority stimulates our automated system 1 mechanisms via social consent to achieve these objectives. It could be seen as deviant to do anything other than what is required by the regulations (Mazutis, 2014).

Last but not least, there is also the concern that implementing more extreme sustainability policies than those put in place by the regulations, will put a business at a competitive disadvantage. Mazutis and Eckardt (2017) argue that this mindset is a professional bias of the management profession. A professional bias defines a mindset that reduces one's field of view

by focusing on a particular profession's norms. Professional business practices that blindly emphasize the shareholder maximization principle, put financial goals against social and environmental implications and reduce the perceived relevance of climate change in corporate decision-making. Consequently, professional bias will limit strategic choice regarding sustainability problems by reinforcing the misconception that industry, culture, and the ecology are not all dependent on one another (Mazutis and Eckardt, 2017). Therefore, even though sustainability has been recognized as an organizational challenge and a wide variety of strategies have been developed and considered, when it comes down to taking the actual decision, professional bias can reduce the urgency of the problem and reduce the likelihood of sustainable action.

### 4.1.2 Biases inhibiting innovation

#### 4.1.2.1 *Derived from the theory of organizational ambidexterity*

There is an inherent contradiction of a cognitive nature between managing flexibility and efficiency at the same time. The underlying psychology of managing exploration (flexibility) and exploitation (efficiency) is characterized by the employment of competing cognitive agendas (Gilbert, 2006, Smith & Tushman, 2005). This is an organizational challenge since an organization lacking capabilities of being efficient will not survive in the short-run and one that is not flexible will not survive in the long-run. Humans need to employ knowledge structures to make sense of the world and the information presented to us (Lin and McDonough, 2014). Employing knowledge structures enables us to impose cognitive frames on our environment (Walsh, 1995). Smith and Tushman (2005) describe cognitive frames as “stable constructs that provide a lens that allows individuals to see and understand the situation” (p. 526). The decision-making and behavior of managers and employees within an organization is influenced by these cognitive frames, as well as cognitive processes (Walsh 1995). Cognitive processes can be described as routine methods of thinking about and responding to information (Weick et al. 1999). The heuristics developed in the process of sense-making provides simplifications of complex issues. These simplifications by heuristics employed in sense-making are both

essential and come with certain cognitive biases, determining the understanding of situations, decision-making and manner in which managers seek for information (Levinthal and March 1993, Walsh 1995). Why these biases are threatening to innovation in particular is because they are tilted towards exploitation and fostering efficiency to a larger extent than exploration (Smith and Tushman, 2005). Two cognitive biases that come into play are risk- and loss aversion. Investing resources in less risky existing products is favored over more expensive, risky innovation even though they are predicted to provide larger gains (Kahneman and Tversky 1979).

Another bias derived from the literature on organizational ambidexterity, posing a threat to innovation, is present bias. The notion of present bias as a threat to exploration (and consequently a threat to innovation) can be derived from the writings of Levinthal and March (1993), where they explore the limitations of organizational learning processes. The authors conclude three types of learning myopia constraining organizational intelligence, which results from commonly adopted organizational approaches to learning. The one linked to the present bias is *temporal myopia*, illustrating the tendency to prioritize the short-run over the long-run by, for instance, overinvesting in short-run projects. Secondly, *spatial myopia* is related to a self-centered/egocentric bias of favoring good outcomes in your immediate environment rather than farther away; e.g. favoring goals of your company rather than favoring society as a whole. Self-centered bias is also closely related to self-serving bias, which can be particularly destructive in situations where there are conflicts of interest (Bazerman and Watkins, 2004). This can be the case with organizational ambidexterity depending on the structural design of the organization in terms of incentives and roles. The third myopia presented by Levinthal and March (1993) is *failure myopia*, which is the tendency to favor the certainty of success over the risk of failure. Failure myopia is related to risk- and loss aversion bias.

Finally, in the quest of adjusting the balance between exploitation and exploration in the strive towards organizational ambidexterity, one needs to understand that people are biased towards consistency (Smith and Tushman, 2005). This can be related to the status quo bias (Singler, Simpson and Sunstein, n.d.). Weaved into the favorability of consistency is the epistemological belief of a unitary truth (Ford and Backoff 1988, Voorhees 1986). The concept of a unitary truth leads us to believe that faced with two opposite views, there is a conflict where one is

false and the other is true, and where which one is which needs to be resolved (Smith and Tushman, 2005).

#### *4.1.2.2 Derived from Dynamic capability theory*

In an empirical case study of the beer company Smith Corona, Daneels (2010) investigates why they ended up being liquidated in spite of employing the modes of resource alteration suggested by the dynamic capability theory. He attributes the failure to the notion of resource cognition, the element which is his contribution to the incumbent dynamic capability theory. Resource cognition is the mental map of a manager, determining whether she/he identifies the resources of the organization and how they understand the multiple modes of application of these resources (Daneels, 2010). Resource cognition can also be used to partially explain path-dependency in organizations, and the risk of ending up in a lock-in. Resource cognition particularly explains the type of lock-in that is cognitive, where managers do not even realize what they need to do to adapt to the changing environment.

#### *4.1.2.3 In relation to Path dependency*

Path-dependency is the notion that decisions in the past influence the ones made in the present, creating a self-reinforcing path of certain types of decisions being made. The path-dependency model by Sydow et. al (2009) outlines a three-phased process where an organization ends up in a state of inflexibility called a lock-in, which can be detrimental to a firm's ability to adapt to a changing environment. The three phases are, in chronological order, 'the pre-formation phase', 'the formation phase' and 'the lock-in phase'. These phases describe the process of when an organization goes from being inefficient albeit very flexible in an unpredictable situation, enjoying a vast number of available opportunities (pre-formation phase), to the final lock-in phase where the organization is set on a predictable strategic path that makes it efficient yet very inflexible. Accordingly, structure, strategies and competencies reinforced by each other. This inflexibility of the pre-formation phase is a threat to innovation, as it inhibits the ability to change - a particularly crucial ingredient in the recipe for survival and success in today's rapidly changing environment. Sydow et. al (2009) describes the different types of possible lock-ins as being resource-based, normative and/or cognitive. Due to the topic of this

thesis, we are going to focus on the type of lock-in that are cognitive. Sydow et. al (2009) states selective perception, blind spots and implicit theories amongst cognitive biases that can serve as self-reinforcing mechanisms leading to a cognitive lock-in. The psychological resistance of managers grows stronger against changing structure and strategies, as these reinforce one another (Henderson and Clark 1990, Kaplan et al. 2003, Tripsas and Gavetti 2000).

Beckman and Burton (2008) provide further evidence on path dependency through their studies on the evolution of top management teams. The authors find that the initial structures of the organization and certain conditions in the team, e.g. top manager background experience put constraints on organizational outcomes.

#### **4.1.2.4    *In relation to Inertia***

Path-dependency can also be linked to the concept of inertia constraining change in organizations. Collinson and Wilson (2006) study inertia through two in-depth studies on Japanese organizations and find that part of the reasons that innovation is inhibited is that embedded routines cause inertia. They define innovation as a ‘change in routine’ (Collinson and Wilson, 2006, p.1364) and explain that a recombination of existing routines is often required for innovation to happen. Similarly, Tripsas and Gavetti’s (2000) research inertia caused by managerial cognition. There is empirical evidence for the existence of inertial forces in established firms, making it difficult for them to adapt to changing environments. Tripsas and Gavetti (2000) attempt to understand the effect of capabilities and managerial cognition on the adaptive intelligence of firms. According to Tripsas and Gavetti, managers’ view of the world has an effect on the adaptive intelligence of the organization, since the managers direct the search process for appropriate strategies and opportunities that have to occur when environments change. They illustrate organizational inertia through a case study of Polaroid, and their inability to adapt to a changing market environment, even though they had the technological and economical resources available to do so. They attribute this failure to adapt to the cognitive inertia in top management, who were unable to change their “software-oriented view” of what Polaroid was supposed to be and do. Tripsas and Gavetti (2000) also emphasize the role of hierarchy in cognitive adaptability. They state that cognitive adaptability differed across hierarchical levels, and that Polaroid could possibly have avoided inertia if the

hierarchically lower-level digital imaging managers had been allowed to implement a “hardware-oriented” model sooner. In addition, the authors state that senior management and digital imaging managers were getting different signals from the market from which it is possible to assume that availability bias played a role in the cognitive adaptability of these two groups (Mazutis and Eckardt, 2017). Add a final sentence to tie it in with path-dependency.

In the searching process for appropriate strategies and opportunities in changing environments, individuals have a tendency to stop searching for opportunities prematurely (Cohen et. al (2019)., Cohen et. al (2019) define this tendency of *satisficing* as stopping search at a “good-enough” level, where only a minimal amount of additional research is likely to have produced a significantly more attractive solution. This tendency can be connected to path-dependency, where satisficing could serve as part of the self-reinforcing dynamics. Furthermore, satisficing can cause managers to stop search processes too early and not challenge their beliefs, which could lead to organizational inertia. Cohen et. al (2019) lay out the concept of satisficing to the concept of bounded rationality (Simon, 1947, 1955; Gavetti and Levinthal, 2000), meaning that individuals do not have complete information and are not necessarily aware of where their mental maps are lacking inaccuracy. In their multiple case study on entrepreneurs in accelerators, the authors present common cognitive biases that decision-making is systematically a victim of confirmation bias, availability bias and social proof (Tversky and Kahneman, 1974; Fiske and Taylor, 1991, Rao, Greve, and Davis, 2001).

### 4.1.2.5 *Summary of biases inhibiting innovation*

Drawing from the literature on organizational ambidexterity, we conclude that risk aversion, loss aversion, present bias and status quo bias are significant biases posing a threat to exploration and, thus, to innovation. Present bias can also be referred to as *present focus bias*, *hyperbolic discounting* or *immediacy effect* (Singler, 2018). In a report by Porsche Consulting (2018) on generating an innovative atmosphere, the immediacy effect is illustrated through the following explanation: “.. instincts cause people to act differently. People tend to assess the latest information available as being particularly important— immediacy takes precedence over importance.” (Singler, 2018; p. 17). Regarding inertia in the case of Polaroid (Tripsas and Gavetti, 2000), availability bias played an important role in inhibiting innovation. Availability

bias was also part of Cohen et. al's (2019) identified biases challenging entrepreneurs setting up new ventures, along with confirmation bias and social proof. In addition to the biases found through innovation theories, Singler (2018) brings up overconfidence bias and possession bias as obstacles to innovation. He describes that when an innovative project moves forward, the inhibiting effect of the overconfidence bias can "anesthetize and cause people to see a project in an excessively positive light" (Singler, 2018; p.240). Followingly, the possession bias is the tendency of people involved with such a project getting overly attached to it. By overly attached, we refer to Singler's (2018) description of the possession bias causing individuals to resist letting go of the project even if it is clearly heading towards failure. The possession bias is also closely related to the endowment effect, where Reb and Connolly (2007) show that the latter is induced by the former. Thaler (1980) explained the endowment effect as the tendency of people demanding a lot more payment for giving up an object than what they would be willing to pay to acquire it.

#### 4.1.3 Biases inhibiting sustainable innovation

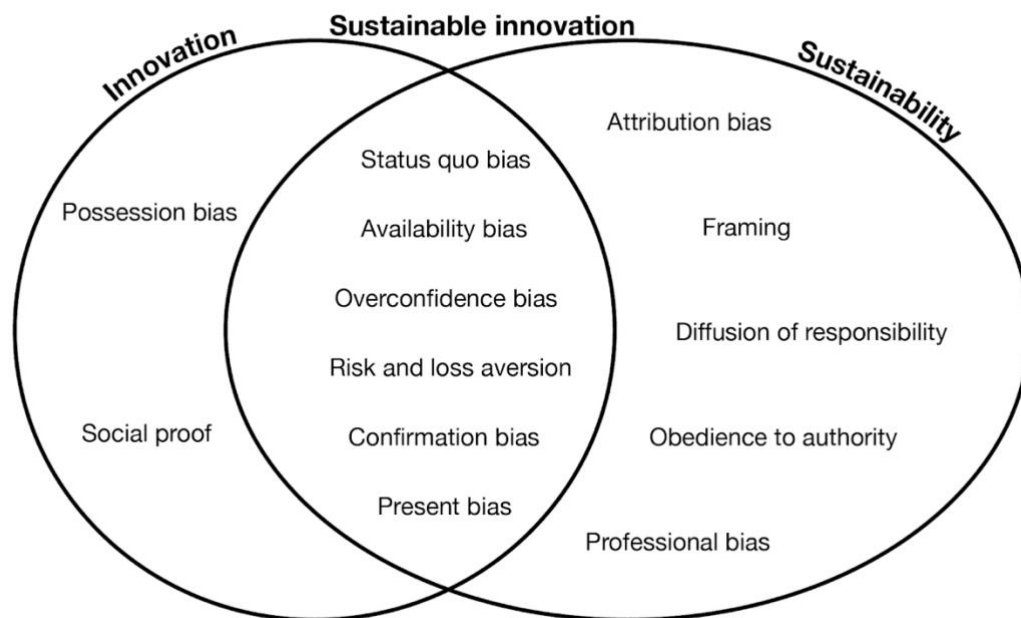


Figure 2 (Source: created by the authors)

## Definitions of the biases inhibiting sustainable innovation

Bias	Definition/explanation
Present bias (closely related to present focus bias, hyperbolic discounting, immediacy effect, and query theory.)	the tendency of people to prefer getting things now rather than later, as the desired result in the future is perceived less valuable than the present one.
Status quo bias	the tendency of people's preference for things staying as they are or sticking to previously made decisions.
Risk- and loss aversion	the tendency to prefer avoiding losses to acquiring equivalent gains.
Availability bias	the tendency of people to rely on immediate examples that come to their mind, weighing judgments towards recent information, when evaluating a topic or making a decision.
Overconfidence	the tendency to systematically overestimate our knowledge, the effort we put in or our abilities.
Confirmation bias	the tendency to search for or interpret information in a way that confirms one's already held beliefs or acquired information.

(Samuelson, & Zeckhauser, 1988; Hochma, 2020)

## 4.2 Questionnaire analysis and thematic analysis of expert interviews

The first step to analyze the empirical findings addressing the first sub-research question, is to go through the questionnaire results, specifically the part where we asked our participants how often they experience the biases identified in the literature review.

Each and every one of those were addressed individually, in interviews with professionals working within sustainable innovation, sustainability or innovation. By getting an indication of the relevance of these biases as obstacles in practice, we analyze the results from the questionnaire. We then analyze the interviews with the help of a thematic analysis and move on to a primary and secondary data comparison between literature and interviews, in order to form a comprehensive answer to the first sub research question.

### 4.2.1 Analysis of questionnaire findings

We rolled out a questionnaire (Appendix 5) and got responses from eight professionals working within the sustainability, innovation or sustainable innovation. The eight respondents all hold positions in which they are responsible for sustainability/and or innovation-related work in their own organization or through being a consultant for other organizations. The goal of conducting this questionnaire was to assess whether findings of the biases identified in the theoretical analysis findings as threatening to sustainable innovation, was reflected in practice. In the questionnaire, we also asked questions to get an indication of the experienced existence and severity of people's behavior as a challenge to their work. Following the questionnaire, we conducted semi-structured interviews where we asked our interviewees about their experience and real-life examples with the selected biases. From the interviewees' responses, we weighted how prominent each bias has been in their profession. When interpreting the responses, we also consider the context in which they were provided. In order to reduce our own biases in the interpretation of the codes, each of us interpreted them independently and then consolidated our findings.

### 4.2.1.1 *Relevance of behavior as a challenge to sustainable innovation*

When presented with a multiple-choice question about the main struggles of accomplishing the goal of fostering sustainable innovation, 75% of the respondents chose the alternative “People’s behavior”. The other choices were “Bureaucracy”, “Resources” and “Regulation”. In addition, 75% of the respondents agreed with the statement “It is a significant challenge” or “Yes, it is a very difficult challenge” when asked “Is it a challenge to get people within your organization to change their behavior in order to comply with initiatives that support the mission of your work?”. These results support the relevance of investigating behavioral challenges to fostering sustainable innovation in organizations.

### 4.2.1.2 *Biases relevance*

Through the questionnaire, the respondents reflect the literature review findings and that can be appreciated from the table (figure 3). Indeed, they have been asked how often in their role of fostering sustainable innovation, sustainability or innovation, they have experienced the biases identified as relevant in the literature.

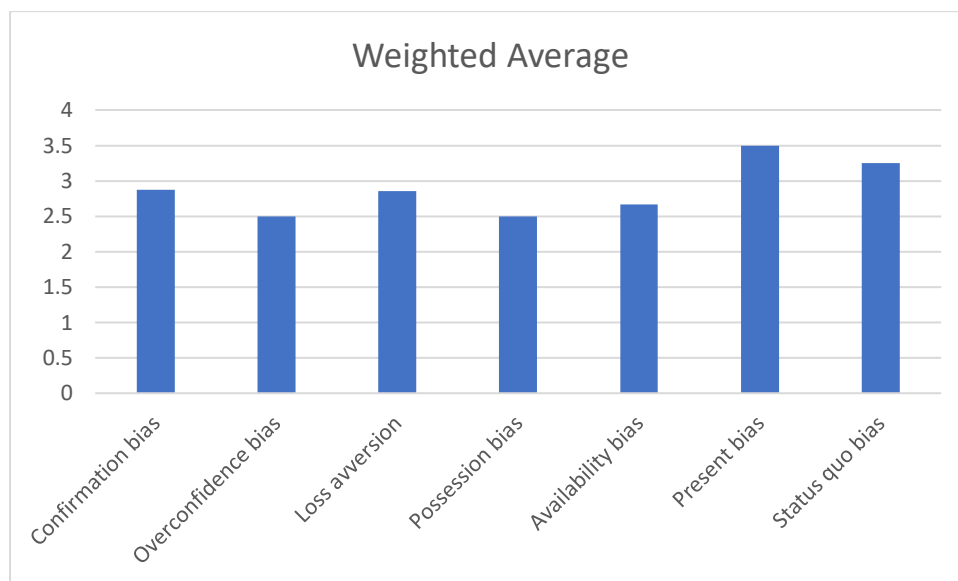


Figure 3

Where on the y-axis 0 means never and 4 means always, it can be seen that all the biases have been identified as obstacles to sustainable innovation. Particularly the present bias is recognized as the most common bias. The possession bias can be seen in the graph even though we didn't find any literature support for the possession bias inhibiting sustainability in organizations. The reason for the bias being included in the above table is that there was a slight overlap in the process of rolling out the questionnaire while finishing up the literature research. Going forward, we will leave it out of the study since our approach calls for moving forward with investigating the biases that has both theoretical (literature) and empirical (questionnaire) support for being inhibiting to both sustainability and innovation.

### 4.2.2 Thematic analysis of interviews

In the following section the findings from the first interview are to be presented and analyzed. Specifically it will attempt at answering the first sub-research question, that is “*What cognitive and behavioral biases are the main obstacles to sustainable innovation in organizations?*”. To do so, each bias will be separately analyzed: how the professionals have experienced it, with the aid of some real-life examples and if what they experience is in line with what the literature says about it, both in terms of quality and frequency.

#### 4.2.2.1 *Present bias*

As anticipated, our interviews indicate that the present bias represents one of the main behavioral biases to sustainable innovation. When asked about it, the common theme that quickly emerged was a heavily imbalance towards short-term thinking. All the interviewees expressed their concern regarding the risks related to this attitude. Indeed, by seeking only instant (or quarterly) gratifications and profits, the results are that innovation and sustainability projects are often put in second place. This is ultimately due to their nature: these kinds of projects rarely stem into immediate results, as those are expected to perform with a longer time period.

The present bias has been identified both in the innovation literature, in the organizational ambidexterity theory, and in the way sustainability is perceived (Levinthal and March, 1993; Weber, 2006). During the first batch of interviews, both of these concepts emerged.

Raphaël provided us with a very significant example of the role of the present bias, in the tension between exploration and exploitation. He was working in an organization experiencing a market shift, where their present main business was rapidly shrinking - a “dead end” according to him (R. Smals, personal communication, 2020). What happened was that they ended up spending a great amount of time and resources trying to “milk” that business until the last drop instead of shifting their focus on other side businesses they had, where the prospects were much brighter. But this was found out only in retrospect, even though the manager of that company was openly pro-innovation (coming from an R&D manager position), he failed to stay true to his nature, and ultimately let the present bias guide his actions towards seeking immediate profitability (R. Smals, personal communication, 2020).

In another example provided by Linda, in the field of sustainability, highlights even more the role that the present bias plays. In her own experience she has seen sustainability projects being treated as investments, entailing that when it was time to evaluate them, the return was a very important metric to be considered (L. Lindberg, personal communication, 2020). Moreover, the managers were really concerned about the timing of the return (L. Lindberg, personal communication, 2020). Especially within sustainability, these two aspects are very difficult to both estimate and measure, making it even more long term and therefore even more susceptible to the present bias.

### 4.2.2.2 *Status quo bias*

The status quo bias is another bias that has a very prominent role in the outcome of sustainable innovations within organizations. Just like people, organizations tend to oppose change, to embrace familiarity instead. This has emerged in the interviews both around the topic of innovation, as it threatens the exploration nature of organizations, and sustainability, as businesses often get stuck with non-sustainable business practices.

Picking up from the Raphaël’s example provided whilst discussing the present bias (R. Smals, personal communication, 2020), he also pointed out that the status quo has also played a significant role (R. Smals, personal communication, 2020). In the choice of sticking to the shrinking business instead of shifting to the more encouraging one, the preference for familiarity is also part of the explanation. Preference for familiarity both in terms of technology and in terms of suppliers: the aforementioned shift would have not only entailed moving on to

a different business with some other technology but would have also caused the termination of some decade-lasting relationships with some suppliers.

The resistance to change due to the status quo bias has also been recognized by Simon, with a slightly different angle. In addition to the technology and suppliers, he has also brought to our attention the fact that some industries, in his example the cosmetic industry, have well-established codes and conventions, and therefore challenging and breaking those is a very tough job (S. Locke, personal communication, 2020).

On the other hand, Raphaël has highlighted also the dual nature of this bias. During the course of his career he also consulted an organization where the status quo bias was acting in the opposite direction (R. Smals, personal communication, 2020). Innovation was deeply entrenched in this organization's culture, and in this instance the company was leaning too much towards exploration and neglecting the exploitation side. This phenomenon reached an extent to which the company was picking up so many new projects to "maintain the pace of innovation" and was not completing any.

### 4.2.2.3 *Risk- and loss aversion*

The literature has identified risk- and loss aversion as being a relevant obstacle specifically to innovation. The interviewees have clearly confirmed that.

Again, starting from Raphaël's example, it becomes clear how risk- and loss aversion contributed to the lack of innovation of the company operating in the shrinking market (R. Smals, personal communication, 2020). The potential gains coming from shifting to a more promising business were somehow evident, but partially due to this bias the managers failed to seize the opportunity and stuck to the original business.

Building on top of this, Simon highlights another crucial aspect related to innovation. When developing a new product, more often than not, to achieve the highest reward whilst undertaking the least amount of risk, the safe choice is indeed just to reiterate the already successful products (S. Locke, personal communication, 2020). And even when there is the chance to be a first mover and to be a leader in the market, innovation is once again weighted down by risk (S. Locke, personal communication, 2020). In his experience, when there was an attempt to undergo these kinds of projects, they were quickly shut down for a less risky option, with the simple question "Who else is doing this?". This, according to him, was a clear sign of

a risk-averse culture that was indeed preventing the company he is working for, to innovate and strive as much as it could be (S. Locke, personal communication, 2020).

### 4.2.2.4 *Availability bias*

The availability bias is very much present whenever a judgement is being made, in the form of overvaluing easily recallable information (Tversky & Kahneman, 1981). This phenomenon is greatly amplified in the matter of sustainable innovation, as both sustainability and innovation decisions are heavily affected by it.

The most blatant field experience of this was provided to us by Linda when she told us about a specific manager in the company she was working. What happened was that every time this person went on a trip and came across a sign of climate change, like the snow disappearing from his usual skiing destination, he would return and act like the company had to become a “green company” (L. Lindberg, personal communication, 2020). This is also a clear example of how biases can also potentially be exploited, and benefit our cause, the next section of the analysis will exhaustively consider this instance.

Moving on to the innovation side, beside a relevant example in the field of risk management, Raphaël brought to us his experience in fostering innovation inside an organization. To do so, he was pushing for the management to meet up on a weekly basis to discuss the direction in which the company was going (R. Smals, personal communication, 2020). He quickly learned that he also needed a well-defined process, as without it the meetings were driven completely by the availability bias. Indeed, the managers would get together, without a clear purpose, in Raphaël's own words “It was like meetings were a purpose in itself: you put people together and then stuff happens” (R. Smals, personal communication, 2020). They did not seem to have a concrete image of where they needed to go. What happened was that they would just let the operational matter take over the meeting, completely neglecting the company's innovation needs.

### 4.2.2.5 *Overconfidence bias*

The overconfidence bias has come up multiple times during the course of the interviews, especially on the innovation side. This has played a significant role in the aforementioned

Raphaël's example, where the company was failing to realize it was operating in a dwindling industry. The management when confronted with the harsh truth that their core business might not be the same in a few years, they would just disregard the facts and stay confident (R. Smals, personal communication, 2020). The management was completely lacking any sense of urgency (R. Smals, personal communication, 2020). Contributing to this aspect, there is also the confirmation bias, that will be talked about in the next paragraph.

In the matter of sustainability instead, what has arisen in the interviews is that the overconfidence bias often leads organizations into thinking that they are doing enough. Linda describes this phenomenon as a mere "checking the box" (L. Lindberg, personal communication, 2020), where companies do just enough to get away for it, but at the same time consider themselves in the frontline of being sustainable.

### 4.2.2.6 *Confirmation bias*

In addition to dictating how individuals and organizations interpret sustainability facts and climate change factors, the confirmation bias is also responsible for a well-known phenomenon among innovation experts: inertia and path-dependency. In organizations, this bias is furthermore amplified, and it also causes them to take extreme stands, causing groups polarization.

As mentioned in the previous paragraph, the confirmation bias contributed to keeping the management from recognizing the urgency of the situation. What happened was that the management would disregard, or not weigh in, information about the business decline, and instead emphasize in every possible way, every bit of positive or neutral news.

Alternatively, Simon described experiencing this bias as a "tire kicking exercise", similar to what you would experience when buying a used car: you would basically try to pick out all the visible faults to try to bring the price down (S. Locke, personal communication, 2020). In the organization context, the management would basically walk in every meeting and basically try to bring down the value of whatever innovation was brought to the table, bring argument to the table to reinforce their previously taken stand (S. Locke, personal communication, 2020).

In the context of sustainability instead, Linda's input shed some light on the fact that the confirmation bias can also act in a different way, compared to the aforementioned one. The individuals she was working with were affected by this bias, and were basically interpreting all

the sustainability initiatives that the firm was doing as a signal that it was doing enough, and therefore nothing else was required to be done (L. Lindberg, personal communication, 2020). Concretely people were bringing up arguments like throwing out the garbage in the right way, to feel proud and to therefore not undergo any other projects.

To summarize, it has emerged from the interviews how the biases identified during the literature research play a significant role in hindering sustainable innovation

Furthermore, our interviews supported the assumption that biases affecting sustainability and innovation respectively also influence sustainable innovation. When the interviewees were explicitly asked if they sensed a difference in biases affecting sustainability or innovation, the answers were negative. An illustrative answer is one from Raphaël, who have experience from working in both fields. He noted that to stimulate one or the other, he would use the same approach. Comparing the similarities between sustainability and innovation, he stated that both fields concern change, affects every part of the organization and can never be compartmentalized in one separate part of it. He stated that both innovation and sustainability are “. . . fairly abstract and difficult to operationalize.” (R. Smals, personal communication, 2020), and elaborated as follows.

*“You know, when have you innovated successfully? When have you been successfully sustainable? It's a moving target. So yeah, that's why I think they are very comparable, particularly because it's spread out throughout the organization. I think today, sustainability is very much what 50 years ago was innovation. I see a lot of parallels in the way we talk about it, the way we all want it.”* (R. Smals, personal communication, 2020)

## 5 Analysis part 2

In the second part of the analysis, the second sub research question will be addressed, that is:

*What nudges can be used to address these biases in an organization?*

### 5.1 Theoretical analysis of literature research

#### 5.1.1 Present bias

(present focus bias, hyperbolic discounting or immediacy effect, query theory)

*Nudges to address present bias:* immediate feedback (priming nudge)

The present bias could be addressed through *immediate feedback* mechanisms (Mazutis and Eckhardt, 2017), such as displaying the cost of running an air-conditioner during a heatwave (Thaler and Sunstein, 2008). This type of priming nudge increases the salience of the long-term effects of keeping the air-conditioner running, in this case regarding costs. Singler's (2018) suggestion on how to deal with the negative effects of the present bias is similar; to make positive long-term consequences tangible and visible in the day-to-day. Feedback is a nudge of good use "in situations where the decision context does not provide strong signals in terms of long-term negative effects of a choice or behavior." (Network for Business Sustainability, 2012, p. 60). In this context, feedback can help address the hyperbolic discounting, which takes place when individuals are influenced by the present bias.

#### 5.1.2 Status quo bias

*Nudges to address status quo bias:* defaults, commitment devices, feedback, framing/reframing

In a systematic review by the Network for Business Sustainability (2012), the authors identify decision-support techniques for sustainable decision-making in businesses. They divide the techniques into active- and passive decision-support. Nudges are included in the passive decision-support techniques identified. By passive, the authors refer to “low-stakes decisions which are small, frequent and quick decisions usually made at the individual level.” (Network for Business Sustainability, 2012; p.40). The nudges brought up as supportive towards sustainable development in businesses are *defaults, commitment devices and feedback*. The passive decision-support techniques, including nudges, can be used to address numerous biases but status quo biases and (hyperbolic) discounting are specifically mentioned as targets by the Network for Business Sustainability (2012). As described in this systematic review, the defaults and commitment devices tend to be used in situations where a sustainable option is overlooked due to immediate costs, immediate negative aspects or the decision-maker’s current emotional state. This situation is related to inertia and the status quo bias.

Mazutis and Eckhardt (2017) also argue for defaults as a way to combat inertia and the status quo bias, stating that they could be more carefully chosen by the organization. The authors refer to Shu and Bazerman (2012) who explore cognitive barriers to decision-making on an individual level. Shu and Bazerman emphasize the power of defaults as a nudge to address the status quo bias (Johnson and Goldstein, 2003; Madrian and Shea, 2001). They recommend organizations to use greener options as defaults to take advantage of people’s preference to avoid choosing.

Harker (2017) finds that resistance to change can be counteracted through using framing as a nudge. An implicitly perceived status quo amongst employees can be overruled by an explicitly stated reference point. In her paper, the author exemplifies this with the attempt to increase the adoption rate of telework within a company. One group is presented the option of telework 1-2 days a week, together with explicit information that telework is the status quo. The control group is presented the option of telework with no additional information. The adoption rate of telework increased in the case where the choice was framed with an explicit reference point that telework was the status quo, even though traditional work was the implicitly perceived status quo amongst employees.

### 5.1.3 Risk- and loss aversion

*Nudges:* Use of social norms, Framing/re-framing

Anthony et. al (2019) identify interventions aimed at neutralizing factors that inhibit innovation in organizations. The identified “BEAN interventions” (p.94) are aimed at counteracting stifling day-to-day routines and habits that block innovation. BEAN stands for behavior enablers, artifacts and nudges. They employ a broad definition of innovation as “something different that create value” (Anthony et. al, 2019; p.94), which can pertain to anything from scientific discoveries, the development of products, as well as everyday improvements. According to the authors, BEANs should be fun, simple and trackable in order to be effective in driving innovation. Anthony et. al (2019) take the example of Spotify’s “fail wall” (p. 97) as a counteracting tool to the fear of failure. Failure is conducive to innovation, so fostering a culture where failure is socially accepted is essential for innovation to happen. The authors illustrate how Spotify attempted to foster this acceptance and even glorification of failure. Through an implementation of a whiteboard dedicated to publicly celebrating failures, Spotify encouraged employees to write down failures on post-its and stick them on the wall. Fear of failure is closely related to the risk- and loss aversion bias, since taking a risk on an innovative project can come with great gains failing might cause the risk-taker to lose social status and acceptance from colleagues if failure is not socially accepted. Anthony et. al (2019) exemplification of Spotify’s fail wall shows how the employment of a social norms nudges can counteract the fear of failure, through addressing the risk- and loss aversion bias. Singler (2018) also brings up the fear of failure in conjunction with risk- and loss aversion as a threat to innovation. He refers to individual’s fear of failure being driven by the fear of losing self-confidence. In addition, the author highlights the importance of companies to strongly convey to their employees that failure is accepted and even celebrated, in order to address this bias. Singler (2018) takes the example of Google co-founder Larry Page nudging innovation through framing failure in a positive way by “shining a light on the person responsible” (p.235). Followingly, Singler (2018) suggests framing failure as a tool for learning and an essential part of the innovation process. In a report by the organizations Rare and The Behavioral Insights Team (2019), framing is suggested as a nudge to promote environmental conservation. They propose framing decisions by harnessing the risk- and loss aversion. For example, businesses

might be steered away from gifting wildlife products or breaching fishing regulations if they are subject to a campaign highlighting the reputation risk from offending the receiver or potential consequences of losing fishing rights.

Considering sustainable development within business, Wong-Parodi et. al (2019) study behavioral strategies for energy conservation in an organizational setting. They find that the use of social norms feedback appears to be an effective nudge “where there are neither financial savings at-stake nor intrinsic motivation to conserve.” (Wong-Parodi et. Al, 2019; p.1). Participants in their study significantly reduced their energy use when their energy consumption was shared openly with peers.

### 5.1.4 Availability bias

*Nudges to address availability bias:* salience of consequences, reminders, disclosure and transparency

Thaler and Sunstein (2008) discuss how to address the availability bias in decision-making both private and public contexts, and state that nudging back judgments towards true probabilities is important. They describe related counteracting nudges as “A good way to increase people’s fear of a bad outcome is to remind them of a related incident in which things went wrong; a good way to increase people’s confidence is to remind them of a similar situation in which everything worked out for the best.” (Thaler and Sunstein, 2008; p.26). This quote describes a use of a reminder as a nudge; a priming nudge aimed at adjusting for the downward distorted judgment already imposed by the availability bias. Related to sustainability, priming is a category of interventions within nudging that can be used to nudge employees in an organization towards more sustainable decision-making (Mazutis and Eckhardt, 2017). One example of a priming nudge brought up by the authors is to increase the salience of environment-related consequences by addressing the topics of climate change in conjunction with the occurrence of a surprising weather event. Also related to salience of consequences as a nudge, Klotz (2011) suggests that better energy decisions are made during meetings held in net-zero-energy buildings. Another type of nudge listed by Mazutis and Eckhardt (2017) as an intervention against availability bias in corporations, is disclosure requirements such as, for

example, sustainability labelling. Disclosure requirements have been shown to have a correlation with significant reductions of emissions (Thaler and Sunstein, 2008). Disclosure and transparency is a nudging tool in which information is made accessible, comprehensible and simplified (Sunstein, 2014).

### 5.1.5 Overconfidence bias

*Nudges:* disclosure and transparency (Singler, 2018)

Singler (2018) states that a limited number of indicators to assess business projects or evaluate how a firm is meeting certain goals, are essential to get clear insight and address the overconfidence bias. The implementation of such indicators is a type of disclosure and transparency nudge which displays the objective standing of a business or a project in relation to the desired goals.

### 5.1.6 Confirmation bias

*Nudges:* precommitment strategies (Singler, 2018)

System 2 can perform better if it starts to question System 1's assessment (Kahneman, 2011). Since confirmation bias is a slippery slope where the use of System 1 tends to reinforce currently held beliefs, a systematic objective assessment of new information, and consideration of alternatives, is needed to address this bias (Soll and Klayman 2004; Fung, 2013). For example, *precommitment strategies* to commit to developing a habit to question yourself, or to include a devil's advocate in organizational teams (Singler, 2018).

### 5.1.7 Nudges for sustainable innovation: Overview

Table 1

Bias	Definition/explanation	Countering nudges
Present bias (closely related to present focus bias, hyperbolic discounting, immediacy effect, and query theory.)	The tendency of people to prefer getting things now rather than later, as the desired result in the future is perceived less valuable than the present one.	<b>Immediate feedback</b> (Mazutis and Eckhardt, 2017; Thaler and Sunstein, 2008; Singler, 2018; Network for Business Sustainability, 2012)
Status quo bias	The tendency of people's preference for things staying as they are, or sticking to previously made decisions.	<b>Defaults</b> (Mazutis and Eckhardt, 2017; Shu and Bazerman, 2012; Johnson and Goldstein, 2003; Madrian and Shea, 2001; Network for Business Sustainability, 2012) <b>Feedback on outcome(s) of behavior</b> (Network for Business Sustainability, 2012) <b>Framing</b> (Harker, 2017) <b>Pre-commitment strategies</b> (Network for Business Sustainability, 2012)
Risk- and loss aversion	The tendency to prefer avoiding losses to acquiring equivalent gains.	<b>Use of social norms</b> (Anthony et. al, 2019; Wong-Parodi et. al 2019); <b>Framing</b> (Singler, 2018)

Availability bias	The tendency of people to rely on immediate examples that come to their mind, weighing judgments towards recent information, when evaluating a topic or making a decision.	<b>Salience of consequences, Disclosure and transparency</b> (Mazutis and Eckhardt, 2017); <b>Reminders</b> (Thaler and Sunstein, 2008)
Overconfidence	The tendency to systematically overestimate our knowledge, the effort we put-in or our abilities.	<b>Disclosure and transparency</b> (Singler, 2018)
Confirmation bias	The tendency to search for or interpret information in a way that confirms one's already held beliefs or acquired information	<b>Precommitment strategies</b> (Singler, 2018)

(Samuelson, & Zeckhauser, 1988; Hochma, 2020)

## 5.2 Thematic analysis of interviews

To address the second sub-research question, we analyze our interviewees' answers and identify nudges from their mentioned solutions to issues related to each of the previously identified biases, as well as compare these nudges with findings from our literature review. The identified nudges can be a direct recommendation of nudge or our interpreted description of their knowledge and experience of how bias-issue can be- or was resolved in their experience.

We conducted semi-structured interviews where we started by asking our interviewees open-ended questions on how to use nudging to foster sustainability, innovation or sustainable innovation respectively. Subsequently, we moved on to asking our interviewees how they would, based on their knowledge and experience, address each of the biases we identified in our literature review as obstacles to sustainable innovation.

From the interviewees' responses, we identified the nudges at play to address the bias in question, or nudges relevant for fostering sustainability, innovation or sustainable innovation. In some cases, the interviewees would outright recommend a nudge. For the most part, we interpret the interviewees' responses on solutions into nudges. When interpreting the responses, we also consider the context in which they were provided. In order to reduce our own biases in the interpretation of the codes, each of us interpreted them independently and then consolidated our findings. Description of the nudges below can be found in table 5.

Table 2

<b>Bias</b>	<b>Identified nudges at play</b>
Present bias	<b>Salience of consequences</b> <b>Use of social norms</b> <b>Prompts/cues</b> <b>Demonstration of the behavior</b> <b>Imaginary reward</b> <b>Defaults</b> <b>Disclosure and transparency</b> <b>Feedback on outcome(s) of behavior</b> <b>Immediate feedback</b>
Status quo bias	<b>Disclosure and transparency</b> <b>Framing/reframing</b> <b>Imaginary reward)</b> <b>Use of social norms</b> <b>Restructuring the social environment</b>
Risk- and loss aversion	<b>Future punishment</b> <b>Anticipated regret</b> <b>Social support (unspecified)</b> <b>Social support (practical)</b> <b>Social support (emotional)</b> <b>Use of social norms</b> <b>Comparative imagining of future outcomes</b> <b>Framing/reframing</b>

	<b>Identity associated with changed behavior</b>
Availability bias	<b>Restructuring the social environment</b> <b>Exposure</b> <b>Precommitment strategies</b>
Overconfidence bias	<b>Disclosure and transparency</b> <b>Discrepancy between current behavior and goal</b> <b>Re-attribution</b> <b>Information about antecedents</b> <b>Demonstration of the behavior</b>
Confirmation bias	<b>Precommitment strategies</b> <b>Disclosure and transparency</b> <b>Exposure</b> <b>Re-attribution</b> <b>Framing/reframing</b>

Source: Michie et. al, 2013; Marsden, 2016; Sunstein, 2014

### 5.2.1 Nudging to address present bias

To address present bias, the responses by our interviewees were interpreted as Salience of consequences, Use of social norms, Prompts/cues, Demonstration of the behavior, Imaginary reward, Defaults, Disclosure and transparency, Feedback on outcome(s) of behavior and Immediate feedback.

In our literature review, the nudge identified as relevant to address present bias was immediate feedback as a type of nudge priming through increasing the salience of long-term effects of a behavior. In the BCT taxonomy, salience of consequences is defined as a nudging intervention on its own, characterized by the use of “methods specifically designed to emphasize the consequences of performing the behavior with the aim of making them more memorable” (Marsden, 2016). Immediate feedback is one of those methods. In line with Singler’s (2018) suggestion to make positive long-term consequences tangible and visible in the day-to-day in order to address the present bias, one of our interviewees suggested to move “later” to “now” to actually make people experience what that “later” would be. (T. Lindström, personal communication, 2020).

The literature states that feedback particularly is of good use “in situations where the decision context does not provide strong signals in terms of long-term negative effects of a choice or behavior” (Network for Business Sustainability, 2012, p. 60 ). These types of situations can be identified in our interviewees’ examples of projects stretching over a longer period of time, or deciding whether to have part of your salary put into your pension fund. The link between the literature and our practitioner’s responses was clearly reflected in the case of the former example with projects, where Samuel emphasized the importance of giving feedback to “make people feel like they’re having some form of positive things happening at the moment” (S. Salzer, personal communication, 2020). In the case of the pension fund example, the nudges defaults and disclosure and transparency become apparent as useful tools to counteract the present bias. Particularly interesting with the example described by Tommy, based on the writings of Thaler and Sunstein (2008), is the description of the tactic to let part of the salary increase go into the pension fund so that “it doesn’t hurt them (the employees)” right now. You could argue that this choice is a way of also addressing risk- and loss aversion, since it avoids giving out money and then taking it back. However, the interviewee’s answer indicating the intentional avoidance of having employees get “hurt” in the present moment is what relates it to addressing the present bias. The “hurt” in the example of pension funds is avoided through the use of the default of having a percentage of salary increases going straight to the employee’s pension fund. By also helping employees visualize what saving will result in, the nudges imaginary reward and disclosure and transparency is at play. Finally, the nudges use of social norms, prompts/cues and demonstration of the behavior is interpreted from Tommy’s example of avoiding the procrastination of booking a trip together with others. Present bias can be addressed by introducing social or environmental stimulus to cue the behavior of actually making the booking. In his example, the prompt/cue is the intentional meeting up with those involved in the future trip in the present or as soon as possible. By everyone, or most of the people, in the group booking his or her ticket at that time, the individual is subject to influence of social norms. The nudge called demonstration of the behavior is used by those in the group who then books his or her own ticket in front of the others, encouraging them to imitate the same behavior.

### 5.2.2 Nudging to address status quo bias

To address status quo bias, the responses by our interviewees were interpreted as disclosure and transparency, framing/reframing, imaginary reward, use of social norms and restructuring the social environment.

In the literature, the nudges identified as relevant to address the status quo bias were defaults, commitment devices (e.g. precommitment strategies), feedback and framing/reframing. The only nudge overlapping between the literature and our interviews, was framing/reframing. Harker's (2017) case shows that resistance to change was more effectively combatted through explicitly stating that the desired behavior (telework) was the status quo than through the alternative of presenting the option of the behavior without making that explicit statement. In an example of framing from our interviewees, the framing concerned the suggestion to employees to start considering their work in terms of problems rather than seeing their work through the lens of their specific professional role. This conducive reduced attachment between the individual and his or her role was facilitated by restructuring the social environment. In her work with an insurance company, Natalia facilitated cooperative work by creating multidisciplinary groups where the focus was framed from the different roles of the participants to what problem they had in front of them. Our interviewee Samuel meant that status quo bias is closely linked to the challenge of forming habits and suggested use of social proof nudges if generating change is a challenge merely because of people preferring familiarity. Another interesting observation from our interviews was the perspective of Tommy, taking the approach that people actually are often not resistant to change, but that they actually want to change if they see that there is something in it for them. He emphasized the importance of understanding what holds people back from changing and what drives people. He also states that there are various emotional drivers involved in why it can be hard for people to change, and these drivers can be very complicated to completely understand. This underlines an important aspect of the implementation of nudges. It is a tool, and not an all-encompassing solution. A nudge will not help management of an organization to better understand their employees on the level of what drives them emotionally.

### 5.2.3 Nudging to address risk- and loss aversion

When asked about how to use nudging to address risk- and loss aversion, our interviewees brought up solutions related to the nudging interventions *anticipated regret* and *future*

*punishment, use of social norms, framing/reframing and identity associated with changed behavior. Additional nudges interpreted from the responses to how to address risk- and loss aversion was social support (unspecified), social support (emotional) and social support (practical).*

In the literature, the nudges uncovered as relevant to address risk- and loss aversion were use of social norms and framing/reframing. Singler (2018) and Anthony et. al (2019) suggest risk- and loss aversion be counteracted by reframing failure as something to be celebrated and accepted, either by a Spotify-like “fail wall” (Anthony et. al, 2019, p. 97), or by publicly glorifying people who fail and framing failure as a tool for learning (Singler, 2018). Our interviewees’ approach to address risk- and loss aversion was instead to leverage risk- and loss aversion and to use fear of failure or loss as a driving force for change.

*“What I do is that I developed a very, very strong loss aversion when I sell solutions to companies... When I talk about a problem with a CEO for example, and that CEO says that “yes I agree with you that the Danish market is up this much, and it’s great how can we fetch this opportunity”. Then I slowly try to turn him round around and make the person see that it’s not an opportunity, it’s a risk of losing an opportunity. Because it’s much stronger to make people feel that they’re losing something there.” (T. Lindström, personal communication, 2020)*

In the scenario illustrated by this quote, our interviewee induces the CEOs expectations of future regret about not taking part of the benefits of a positive market development. The same interviewee also specifically commented on how loss aversion could be powerful to address in order to foster environmental sustainability.

*“If we talk about the environment, I think it’s perfect to address loss aversion. We are losing the beautiful environment that we were born in, or that we used to have. . .” (T. Lindström, personal communication, 2020)*

This quote on addressing loss aversion illustrates the nudge of future punishment, where fear is aroused with the threat of unwanted behavior leading to the removal of the reward of being able to experience beautiful nature. The interview described that the effect of describing what would be lost in these terms is strong. The powerful effect could be strengthened by the

emotional aspect of appealing to the fear of losing the beauty of nature that many people have been growing up with and have a relationship with. This tactic is aligned with the framing by harnessing the risk- and loss aversion, suggested in the report by the Rare and The Behavioral Insights Team (2019). The report showcases an example of nudging where reputation risk or risk of having rights removed is highlighted in a campaign as a way to steer businesses a certain way. In this case, the fear of a business would be the failure of losing a good reputation. Another of our interviewees gave an example of a solution leveraging risk- and loss aversion by involving the nudges of anticipated regret and future punishment. When describing her work with an insurance company in Colombia, helping them to create more cooperative type of working, our interviewee said the following regarding the solution for them to overcome risk- and loss aversion.

*“... when they saw that other companies that had more innovative ways of doing things and like, going up in sales, they just saw that the need was created. They just felt that they needed to do it.”* (N.G. Sicard, personal communication, 2020)

As in the study of Wong-Parodi et. al (2019), where information regarding energy consumption information at work was openly shared among colleagues, sales revenue is also public information peer companies can take part of. However, a difference between this example and the study of Wong-Parodi et. al (2019) is that the financial incentive is clear in the case of the interviewee's example above, while the study showed that energy savings were achieved without financial incentives. Within the example showcased in the quote about the insurance company, the relevance of nudging by the use of social norms is also emphasized. This nudge suggestion is aligned with the literature. Another issue with the risk- and loss aversion in the case of the Colombian insurance company, was that it was a company with strong associations to tradition. In Colombia, tradition is very important, and it was part of the company's brand value amongst consumers and potential employees. By changing their way of working, the company risked losing this association with tradition and potentially also losing brand value, consumers and employees. So, the way risk- and loss aversion was addressed in this case can be translated into the nudges of *framing/re-framing* and *Identity associated with changed behavior*.

*“... for them having these types of traditional associations and familiarity was very important. And so proposing this different type of way of working, it demanded a different way to define themselves.”* (N.G. Sicard, personal communication, 2020)

The company needed to construct a new identity since their incumbent one was strongly defined by tradition. Framing/reframing was then the tool to help re-frame the management's and employees' view of the company and how things should be done. The need for this re-framing can be illustrated by the quote below.

*“... once you propose a different way of work, actually, you're also proposing a different way to see things and to break tradition a little bit to get rid of tradition a little bit.”* (N.G. Sicard, personal communication, 2020)

Finally, when answering how to address risk- and loss aversion, Samuel emphasized the importance of instilling trust in people and helping people manage the inherent uncertainty of risk- and loss aversion being present in peoples' minds.

*“One of the hardest things when you try to do innovation is dealing with uncertainty in some ways in terms of being open to being wrong and having bad ideas, and all those things have a lot of trust.”* (S. Salzer, personal communication, 2020)

The nudges at play, interpreted from Samuel's answer on how to address the risk- and loss aversion, was social support (unspecified, emotional and practical).

### 5.2.4 Nudging to address availability bias

When we asked our interviewees about how to address availability bias, only one of them mentioned solutions to this and recognized that it was a big issue for innovation processes. Amongst the other two, Tommy stated that he hadn't experienced availability bias as a problem for organizations while Natalia recognized that it was an issue. The solutions brought forward by Samuel were interpreted as the nudges *restructuring the social environment, exposure and precommitment strategies*.

In the literature, the nudges identified as relevant to address the availability bias as a problem in organizations were salience of consequences, reminders and disclosure and transparency. Samuel proposed regularly gathering multidisciplinary groups of people with different backgrounds and everyday contexts as a way to address the availability bias, since people in those groups are likely to be subject to different availability biases. Furthermore, by making this a common occurrence and to have different people mixed up every time, both the nudge of restructuring the social environment and exposure will be employed. The former nudge is the changing of the social environment to, in this case, avoid judgments made in a group of people with similar availability biases. This means that any distortion of judgments imposed by the availability bias (Thaler and Sunstein, 2008) could be adjusted within groups because of the diverse composition of individuals. Compared to the literature, the answer from our interviewee suggests that the adjustment of judgment is made in-between individuals and not within the cognitive landscape of the individual him/herself as in the case with reminders (Thaler and Sunstein, 2008). The latter one is characterized by people systematically being confronted with any potentially feared stimulus (e.g. being uncomfortable when people disagree with your view) and hopefully develop an increased openness to new perspectives. Another nudge interpreted from our interviewee's response is precommitment strategies. This type of nudge was interpreted from Samuel's quote below regarding the innovation process and, more specifically, idea generation.

*“It is really important as well to like to manage the innovation process in a way where one person is not really going to directly influence too many people in the beginning. So it's really good to have some like silent brainstorming, for example, where everyone writes down ideas, and then you first share them with small groups and then maybe afterwards, share them with the bigger groups, and so on so that you try to avoid one person setting kind of a very clear thing to think about, and then everyone's gonna think about that.”*

### 5.2.5 Nudging to address overconfidence bias

To address the overconfidence bias, the responses by our interviewees were interpreted as disclosure and transparency, discrepancy between current behavior and goal, re-attribution, information about antecedents and demonstration of the behavior.

In the literature, the nudges identified as relevant to address the overconfidence bias were disclosure and transparency. Singler's (2018) recommends counteracting this bias through the implementation of a limited number of indicators to regularly monitor and evaluate how a firm is meeting its desired goals. This disclosure and transparency nudge displays the firm's standing in an objective manner and is aligned with the nudge interpreted from our interviewee Tommy's approach to addressing this bias.

*"When I talk to, for example, a management team or an HR department, they usually say that they got it all under control.... What I do is start to ask questions and peel off a layer of, what you would say, not that effective decisions. Or just address the unanswered questions. I think that's the way of doing it. In the end, they understand that we have a problem."* (T. Lindström, personal communication, 2020)

The above quote exemplifies a way of using disclosure and transparency as a nudge, not through monitoring or directly providing or showing alignment with result indicators but instead creating awareness through asking questions. Even though Tommy comes into the situation, perhaps immediately identifying that the overconfidence bias is an issue, the nudge of disclosure and transparency implemented in this way allows the management or HR team to realize it for themselves. This practice of drawing attention to the discrepancy between current behavior and set goals also illustrates the nudge discrepancy between current behavior and goal. In the process of doing this, Tommy also employs the nudge of re-attribution, meaning that he elicits the perceived causes of the current behavior(s) within the organization and suggests alternative explanations to the management team.

*"I might say that it takes up to a couple of months to reach a vision and common core values that actually drive behavior towards our common goal. It takes a long time, you don't do that at a half-day kickoff. I think that knowledge can fight that bias, to show people that they don't really understand..."*

From Tommy providing this alternative explanation, we also interpret that the nudge information about antecedents is at play since what he does is to provide the organization with information about certain factors (situations, events, emotions, cognitions) that will predict the

resulting performance of behavior. From our interview with Natalia, the nudge of demonstration of behavior was interpreted as relevant. When her client company tried to encourage more cooperative work, the success was partly contributed to the fact that people in the marketing department were open to this new way of working and started using it. They were able to recognize that their own judgment was sometimes limited and welcomed opinions from employees with other specializations.

*“Statisticians and mathematicians were kind of like that. Like they have the numbers so they knew more”* (N.G. Sicard, personal communication, 2020)

As illustrated in this quote, other departments than the marketing one were more resistant to adopting the new way of working and seemingly more affected by the overconfidence bias. However, this resistance could be loosened up, and the bias addressed, by the marketing department leading by example and demonstrating the desired behavior.

### 5.2.6 Nudging to address confirmation bias

To address the confirmation bias, the responses by our interviewees were interpreted as precommitment strategies, disclosure and transparency, exposure, framing/reframing and re-attribution.

In the literature, the nudge identified as relevant to address the confirmation bias was precommitment strategies. Singler (2018) suggests the development of a habit to question yourself and to include a devil’s advocate in organizational teams. Tommy’s example that relate to precommitment strategies within organizations is illustrated below.

*“. . . management teams tend to develop the same view of the organizations . . . One way to handle this, is that everyone has to put down on a paper, their view of a particular issue, or anything, before the meeting. That's where you will get away from, at least from some confirmation bias, from other people in the same room.”* (T. Lindström, personal communication, 2020)

Committing to a view before a meeting, which is then put down on paper for the team to go through together, allows for employing systematic objective assessment of new information and consideration of the alternatives (Soll and Klayman 2004; Fung, 2013). In addition to precommitment strategies, our interviews responses regarding confirmation bias revealed the relevance of the nudges disclosure and transparency, exposure, framing/reframing and re-attribution.

*“ . . . they were aware of the gaps that they had. And therefore, they looked for different explanations for different topics, even though it was like it showed the opposite of what they thought in the first place, and actually that was understood as a positive thing because they were more excited to learn than to confirm, and I think that that kind of mindset helped them a lot.”* (N.G. Sicard, personal communication, 2020)

In this example, precommitment strategies are at play as well since the organization Natalia worked with had intentionally decided to look for explanations and information contradicting their own views. On top of that, being aware of the gaps that they had played a role and this awareness could be achieved through the use of disclosure and transparency. Furthermore, a reason the confirmation bias can be so strong is that it feels good to have your thoughts, opinions and views confirmed (Sunstein and Thaler, 2008). Thus, there is very often some level of fear or discomfort involved when trying to counteract it and expose yourself to information contradicting your own views. In the case of Natalia's client company, they reduced the effect of this feared stimulus by the use of the nudge exposure. Exposure essentially means the systematic confrontation with a feared stimulus, which in turn reduces its effect in a later encounter. Re-attribution was at play in the sense that the organization decided to elicit their perceived causes or explanations of certain behaviors, and then suggested different explanations to themselves by first searching for them. Finally, we interpreted framing/reframing from the fact that the organization managed to develop a mindset of viewing contradiction to their views as learning and something positive as opposed to being wrong and other negative attributes.

## 6 Summary of analysis findings

### 6.1 Analysis findings

All biases identified in the semi-systematic literature review were confirmed to be relevant inhibitors of fostering sustainability, innovation and/or sustainable innovation within organizations, by eight professional respondents. Present bias was the most often experienced bias, and status quo the second most frequently experienced one. In the responses to the questionnaire, the professionals also confirmed that behavioral challenges are relevant obstacles to fostering sustainable innovation within an organizational context. 75% of the respondents even deemed it to be a significant, or very difficult, challenge.

Overall, all the nudges identified in our literature review as helpful for fostering sustainable innovation, either directly or through the proxy of addressing (a) certain bias (es) were reflected in our interpretations of our interviewees' responses listed in the BCT taxonomy (Michie et al., 2013) and by Sunstein (2014). There were overlaps between findings from the literature review and the interviews for almost each bias, meaning that one or more types of nudges were suggested as a way to address the same bias (illustrated as a colored line in the visual mapping (Figure 4) of findings above). The only exception was for the availability bias where literature suggests the use of priming w. salience and disclosure and transparency while our expert interviews instead suggest the nudges restructuring the social environment, exposure and precommitment strategies. We were able to identify a greater number of nudges when interpreting our interviews than in our literature review.

From our interviews with behavioral practitioners, we found that their way of conducting work differs from the more structural and anatomical way of addressing biases seen in the literature and, followingly, our literature review (Table 4). In practice, experts seemingly don't take the approach of addressing specific biases in their work. Our nudging interviewees were also adamant about the fact that nudging is just one of the tools in their toolbox and never a "one-size-fits-all" solution. Their main recommendation for the use of nudging in an organizational context, was to make sure you understand the particular problem before designing any type of

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behavioral solution to address it. They also emphasized the need of rewarding behavioral outcomes, and forming and reversing habits, since behaviors need to be reinforced in order to achieve long-term change. The nudges we interpreted from their general recommendation on reinforcing behavior can be seen in the table below (Table 3).

Table 3

<b>Nudging interventions derived from general recommendations</b>
<b>Problem Solving</b> – <i>Analyze, or prompt the person to analyze, factors influencing the behavior and generate or select strategies that include overcoming barriers and/or increasing facilitator</i>
<b>Habit formation</b> – <i>Prompt rehearsal and repetition of the behavior in the same context repeatedly so that the context elicits the behavior</i>
<b>Habit reversal</b> – <i>Prompt rehearsal and repetition of an alternative behavior to replace an unwanted habitual behavior</i>
<b>Reward (outcome)</b> – <i>Arrange for the delivery of a reward if and only if there has been effort and/or progress in achieving the behavioral outcome (includes ‘Positive reinforcement’)</i>

Table 4

<b>Bias</b>	<b>Nudges derived from literature</b>	<b>Nudges derived from interviews</b>
Present bias	Immediate feedback	Salience of consequences Use of social norms Prompts/cues Demonstration of the behavior – Imaginary reward Defaults Disclosure and transparency Feedback on outcome(s) of behavior – Immediate feedback
Status quo bias	Defaults	Disclosure and transparency

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	Feedback on outcome(s) of behavior Framing Pre-commitment strategies	Framing/reframing Imaginary reward Use of social norms Restructuring the social environment
Risk- and loss aversion	Use of social norms Framing/re-framing	Future punishment Anticipated regret Social support (unspecified) Social support (practical) Social support (emotional) Use of social norms Comparative imagining of future outcomes Framing/reframing Identity associated with changed behavior
Availability bias	Salience of consequences, Disclosure and transparency Reminders	Restructuring the social environment Exposure Precommitment strategies
Overconfidence	Disclosure and transparency	Disclosure and transparency Discrepancy between current behavior and goal Re-attribution Information about antecedents Demonstration of the behavior
Confirmation bias	Precommitment strategies	Precommitment strategies Disclosure and transparency Exposure Re-attribution Framing/reframing

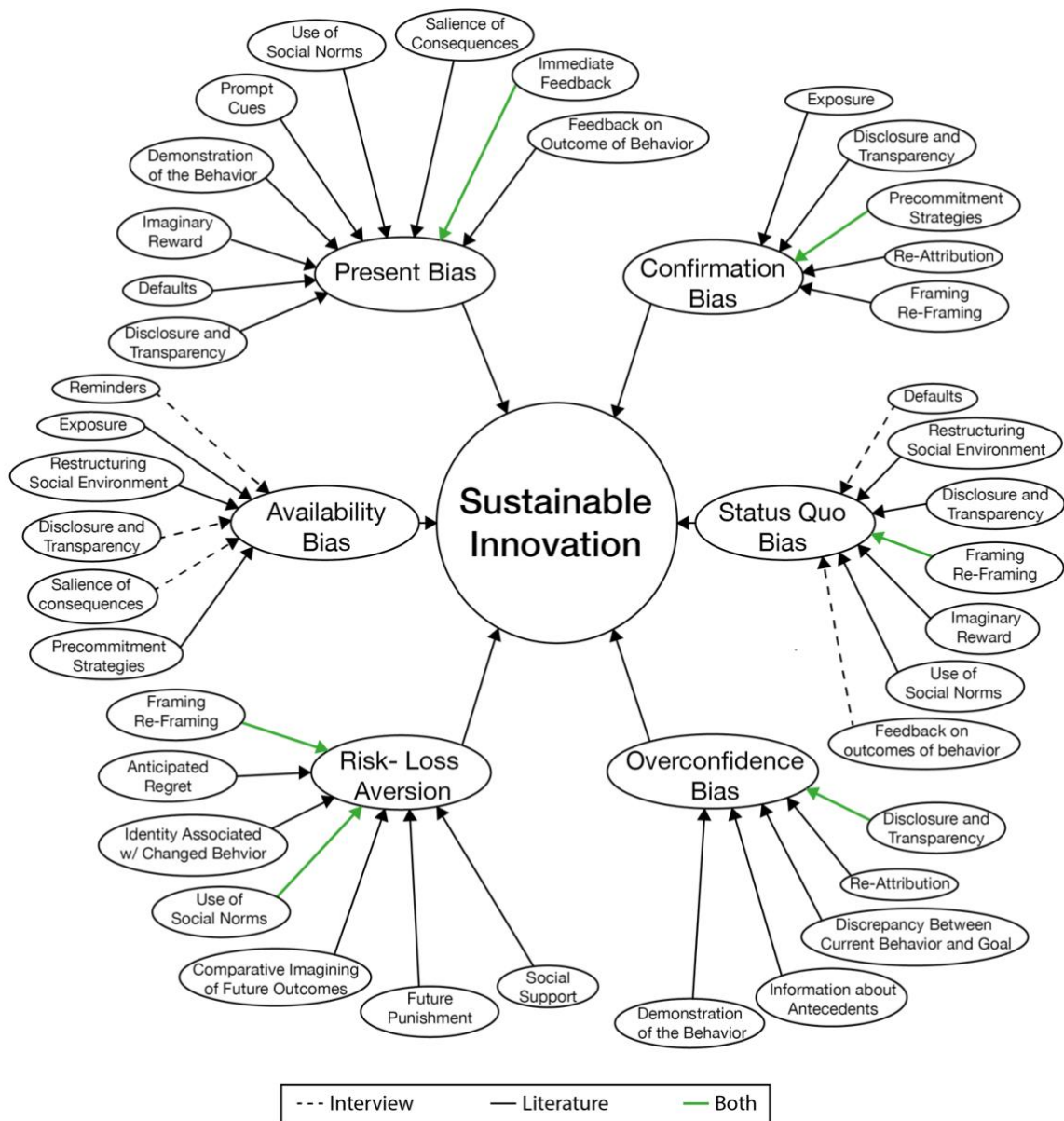


Figure 4 (Source: created by the authors)

### *Hypothetical conceptual model: Organizational nudging approach for sustainable innovation*

In the table and figure above, we outline the biases that our research shows inhibit sustainable innovation, together with appropriate nudges to address these biases. The arrows link each nudge with the bias that is being addressed, and moving towards the center of the map, each bias is connected to sustainable innovation. This map is built on knowledge from both theory and practice: the solid line indicates it comes from the literature, the dashed line indicates it comes from the interviews and the green line indicates instead knowledge overlapping between the literature and the interviews. Below,

in table 5, there is a description of each nudge and what biases our study shows it could be helpful in addressing.

## 6.2 Describing the nudges

Table 5

Anticipated regret	“Induce or raise awareness of expectations of future regret about performance of the unwanted behavior.” (Marsden, 2016;, para. 12)
Comparative imagining of future outcomes	“Prompt or advise the imagining and comparing of future outcomes of changed versus unchanged behavior.” (Marsden, 2016;, para. 16)
Defaults	Introduce pre-set courses of action that take effect if nothing is specified by the decision maker.
Demonstration of the behavior	“Provide an observable sample of the performance of the behavior, directly in person or indirectly e.g. via film, pictures, for the person to aspire to or imitate.” (Marsden, 2016; para. 13)
Disclosure and transparency	Disclose behavior outcomes and make them transparent by e.g. visualization.
Discrepancy between current behavior and goal	“Draw attention to discrepancies between a person’s current behavior (in and the person’s previously set goals.” (Marsden, 2016; para. 8)
Exposure	“Provide systematic confrontation with a feared stimulus to reduce the response to a later encounter.” (Marsden, 2016; para. 14)
Feedback on outcome(s) of behavior	“Monitor and provide feedback on the outcome of performance of the behavior.” (Marsden, 2016; para. 9)
Framing/reframing	“Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about

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	performing the behavior (includes ‘Cognitive structuring’).” (Marsden, 2016; para. 20)
Future punishment	“Inform that future punishment or removal of reward will be a consequence of performance of an unwanted behavior (may include fear arousal) (includes ‘Threat’).” (Marsden, 2016; para. 17)
Identity associated with changed behavior	“Advise the person to construct a new self- identity as someone who ‘used to engage with the unwanted behavior’.” (Marsden, 2016; para. 20)
Imaginary reward	“Advise to imagine performing the wanted behavior in a real-life situation followed by imagining a pleasant consequence (includes ‘Covert conditioning’).” (Marsden, 2016; para. 23)
Immediate feedback	Provide immediate feedback to a certain behavior.
Information about antecedents	“Provide information about antecedents (e.g. social and environmental situations and events, emotions, cognitions) that reliably predict performance of the behavior.” (Marsden, 2016; para. 11)
Pre-commitment strategies	(Have) people commit to a certain course of action.
Prompts/cues	“Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behavior.” (Marsden, 2016; para. 14)
Re-attribution	“Elicit perceived causes of behavior and suggest alternative explanations.” (Marsden, 2016; para. 11)
Reminders	Provide a reminder to perform the behavior.
Restructuring the social environment	“Change, or advise to change the social environment in order to facilitate performance of the wanted behavior or create barriers to the unwanted behavior ((other than prompts/cues, rewards and punishments.” (Marsden, 2016; para. 19)
Salience of consequences	“Use methods specifically designed to emphasize the consequences of performing the behavior with the aim of making them more memorable.” (Marsden, 2016; para. 12)

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Social support (emotional)	“Advise on, arrange, or provide emotional social support for performance of the behavior.” (Marsden, 2016; para. 10)
Social support (practical)	“Advise on, arrange, or provide practical help for performance of the behavior.” (Marsden, 2016; para. 10)
Social support (unspecified)	“Advise on, arrange or provide social support or non- contingent praise or reward for performance of the behavior.” (Marsden, 2016; para. 10)
Use of social norms	Emphasize what most people do.

Sources: Marsden (2016); Sunstein (2014)

## 7 Discussion

Previous research has shown that nudging can be an effective tool to change peoples' behavior, without limiting their freedom of choice (Thaler and Sunstein, 2008). Nudges has mostly been researched and implemented in the public sphere or targeting consumers. However, the use of nudging for organizational purposes has grown increasingly popular in recent years, both in practice and in academic literature. This is reflected in the research by Ebert & Freibichler (2017) who showed that “nudge management” can be used to improve organizational productivity and in research on organizational nudging used to foster employee health (Chauhan, 2019; Srivastava, 2012; Van der Meiden et. al, 2019), gender diversity and gender equality (Atal et. al, 2019; Mantashian et al., 2019; Correll, 2017) and environmentally sustainable behavior (Baranova et. al, 2017; Wong-Parodi et. al, 2019; Ferrari et. al, 2019; Rosenkranz et. al, 2017; Chakravarty and Mishra, 2019). There is also some research on organizational nudging for innovation (Potts & Morrison, 2009; Anthony et. al, 2019; Erkut, 2016; Rigtering et. al, 2018), for creativity (Leegard, 2019), ideation for sustainable business model innovation (Haag and Urban, 2019) and for effectuation skill development (Holtel and Heinen-Konschak, 2019). Grey literature such as Singler's book on nudge management (2018) and the report on innovative atmosphere by Porsche Consulting (2018) further adds to the body of literature on organization nudging. However, the literature on nudging in an organizational context is still relatively scarce, and especially lacking in knowledge about how nudging can be used by organizations to foster sustainable innovation. We wanted to contribute to filling this knowledge gap.

### 7.1 Assessing the validity of our findings

We managed to achieve our research objective of gaining a better understanding of how organizations could use nudging to foster sustainable innovation, by identifying the main biases that inhibit sustainable innovation, the nudges that are could be used to address them and letting theory and practice provide us with further valuable insights for nudging within an organizational context. Drawing on the strengths and weaknesses of our methodological choice already discussed in the method chapter, we will discuss the validity of our findings. We used

a questionnaire to measure the relevance of biases as an obstacle to sustainable innovation. Relevance was assessed by if and how often the responding professionals experienced the proposed bias as an obstacle to the mission of their work (fostering sustainability, innovation and/or innovation). Our interviews regarding biases was conducted in order to further investigate the relevance of the biases as a threat to sustainable innovation and to test how the biases proposed by theory fit with the interviewees' real-life descriptions of the behavioural issues they had experienced. Finally, from the interviews, we wanted to find out whether the inference we had made from the intersection between sustainability and innovation to sustainable innovation was arguably justifiable for the purpose of this thesis. In our interviews informing the second sub-research question, we aimed to gain insights on organizational nudging from experts, and to find what nudges could be suitable to foster sustainable innovation. By conducting a thematic analysis of these interviews, we were able to reveal themes in the data and interpret the answers with the lens of valid nudge taxonomies (Sunstein, 2014; Michie et. al, 2013). Our literature research informing both sub-research questions, was conducted and analyzed in order to answer our research question from a theoretical perspective. Overall, our data collection methods measured what we intended them to measure. Thus, in terms of internal validity, we deem our findings to be valid since our data collection methods measured what they were intended to measure. In terms of content validity, we also believe that our questions used in the questionnaire and the interviews provide adequate coverage in informing our research question(s). However, we cannot ensure predictive validity, due to our small sample and lack of experimentation and research conducted on each of the nudges that we identified in this study. In regard to construct validity, the degree to which we can confidently make inferences from this study is relatively low since our sample is small and we subjectively conduct interpretation at several stages in the paper. However, the fact that our sample consist of experts within their fields increases this type of validity of our findings. Additionally, so does the fact that we employ triangulation of both data and methods. Using two or more independent sources of data (triangulation) further improves the validity of our findings (Saunders et. al et al., 2009). We recognize that our topic was broad and that our results are not conclusive. However, both of these characteristics are acceptable and even normal for qualitative exploratory studies. It lays the groundwork for further experimentation and explanatory work.

## 7.2 Addressing specific biases and limitations with nudging

To address specific biases was somewhat critiqued by our interviewees with experience in nudging implementation, with the main argument that this is not how they approach their work. The interviewees highlighted that their work usually is more focused on developing a clear idea of a problem, and not consciously based on identifying and addressing specific biases at a time. Tommy stated that “. . . you can't start to address all biases just randomly because there are so many biases that you can address. So, you need to have some idea of what this specific problem is of that particular person or group of people . . . I think that the scientists are finding new biases all the time in their research. So, the number of biases may not be infinite, but it's quite great that number so that's why it doesn't help if you just randomly try to apply them. Because there are so many.” Samuel took the example of the overconfidence bias and says that “. . . what was interesting was like people can also be under confident, right? You can both overcome them and then you can be opposite. You'd have some people saying, like, "I would never be able to do this" So that's why it's interesting.” (S. Salzer, personal communication, 2020). Indeed, these are interesting insights and further urges anyone attempting to work with behavioral interventions to ensure they try to understand the targeted problems case-by-case.

Even though our interviewees critiqued the approach of addressing specific biases, they often described certain biases at play when talking about nudging. For example, Samuel talked about nudging for idea generation and explained how people often get over-attached to ideas, which is in line with Singler's (2018) explanation of the over-attachment to projects generated by the possession bias. Samuel emphasized the importance of separating people from ideas in the beginning of the process in order to avoid this over-attachment and related irrational subjectivity. So, even though our interviewees critiqued the approach of addressing specific biases, this is a clear case when the described problem and related solution aimed at fostering innovation illustrated a specific bias at play: the possession bias. They emphasized the importance of thoroughly understanding the problem before jumping on to a solution when working with behavioral issues. They recognize nudging as one of the tools available in their work, but that it is never a “one-size-fits-all” solution to any problem or in any situation. When

Tommy talked about the way some behavioral consultancies work to implement nudging in organizations “. . . It's starting on the wrong end. They start with a solution. They start with, we can help you with nudging.” (T. Lindström, personal communication, 2020). He also states that the power of a nudge is determined by the situation and problem that one implements it in and for. Furthermore, Samuel explains that he doesn't “. . . really think about nudges” in his work (S. Salzer, personal communication, 2020). All the interviews also expressed a concern for nudging only influencing temporary behavior change, and emphasized the importance of reinforcing behavior and creating habits in order to create long-term change.

In light of this criticism, we argue that certain biases are more relevant in certain contexts than in others. We don't claim our findings of biases inhibiting sustainable innovation to be exhaustive, but we do claim that we have valid grounds for stating that they are relevant obstacles to sustainable innovation. Addressing specific biases was a way for us to circumvent the lack of literature on nudges fostering sustainable innovation and to be able to answer our research question. We also drew the biases from established innovation theories and previous research on biases inhibiting sustainability. Overall, we believe the main takeaway from the interview critique of addressing specific biases and recommendations regarding nudge implementation, is for implementors to adopt a mindset which aims to thoroughly understand a behavioral issue and then ways to address it, rather than targeting specific biases or believing a nudge can be a “one size fits all” solution.

### 7.3 Addressing effects of scarce and scattered literature

Seeing that the literature on biases and nudging is so vast and scattered across different fields and in grey literature, we cannot ensure that our literature research is comprehensive. Several factors could be attributed to why we identified more nudges through our interviews than in our literature research. One reason could be the lack of literature of nudging within an organizational context, and even a greater lack of literature context-relevant to nudging for sustainable innovation. Another is the scattered nature of the literature due to the fact that nudging is a concept that is closely related to the field of psychology and has been researched embedded in various disciplines such as public health and public policy. For our sub-research question 2, we only looked at papers who specifically employed nudge theory, and there are

likely other papers where nudge-like interventions have been explored but which we didn't access in our search.

We recognize that our subjectivity and potential biases might have affected the literature research, interpretation and analysis. However, for our semi-systematic review we followed a structured process and used inclusion/exclusion criteria. In our thematic analysis, we coded the interviews independently and proceeded with independent interpretations in line with our adopted nudge taxonomies. With these means, we limited the influence of our personal values and biases. Subsequently, another limitation of our work is the small sample but the fact that we used purposive sampling and interviewed experts weighs up for this limitation. Additionally, our ability to find interviews was restricted by the currently ongoing global pandemic.

### 7.4 The global pandemic of Covid-19

The period of writing our thesis was definitely affected by extenuating circumstances with the global pandemic of Covid-19. We started out with a completely different approach than the one we ended up doing. From the start of the year, we had been in touch with a contact at an organization in Italy in order to conduct in-depth interviews and potentially some small-scale experiment. When the global pandemic hit, especially early on and very forceful in Italy, things understandably was put on hold at once and communication halted. This forced us to immediately redesign our approach and find new interviewees for our study, which was not a simple task in the current global climate.

### 7.5 Further research

We highly encourage further research and experimentation on the topic of nudging within organizations/organizational nudging/nudge management. For example, we would like to suggest inquiries into the (relative) effectiveness of certain nudges, challenges in implementing them for sustainable innovation, and research into the effects on long-term behavior in an organizational context. Ethics of nudging is also an important consideration when

implementing nudging, so we would suggest this factor to be included in research more closely related to implementation of nudges within an organizational context. Additionally, in regard to the biases identified as obstacles to sustainable innovation, there is value in researching if this holds true for smaller organizations, since one delimitation of our methodological choices was that the respondents we interviewed for sub-research question 1 were from larger organizations. Additionally, we would also suggest this study be complemented with further research employing a larger sample size in order to enable statistical inference and generalizability. Since sustainable innovation is a broad topic, we would also propose experiments with a clear focus under this umbrella term. The more studies out there, the better chance for enabling future systematic reviews of evidence on the topic. We used the type of nudges listed by Sunstein (2014) and Michie et. al (2013) in our research, and we propose that any research building on ours do the same, for comparison reasons. This would be helpful in order to ensure comprehensive studies on nudging interventions, and to facilitate the evaluation of the state of knowledge.

## 8 Conclusion

We conducted this research in order to explore how organizations can use nudging to foster sustainable innovation. Our research objective was to develop insights on how organizations could use nudging to foster sustainable innovation and provide a basis for further research and practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit. We managed to achieve this objective, through providing a hypothetical conceptual model based on theory and expert knowledge from practitioners. It outlines the findings of appropriate nudges to foster sustainable innovation in organizations, through addressing biases that inhibit it. These findings are presented visually (Figure 4). As revealed by its name, the model is hypothetical and needs testing in further research to ensure predictive- and construct validity and reliability on top of internal- and content validity. However, the triangulation employed by using different data and methods as well as the purposive sampling are factors that improve the validity and reliability of our findings.

So, to answer our research question, *how can organizations use nudging to foster sustainable innovation?*, this research suggests the following approach:

1. Start from scratch by making an attempt to thoroughly understand the cognitive and behavioral issues inhibiting sustainable innovation in the organization. Identify any biases at play.
2. After having identified the relevant issues and related biases, compare them with the biases identified in our hypothetical model and see if they align or help explain the experienced issue.
3. If the biases identified within the organization align with any of the biases presented in the hypothetical model, use guides for nudge implementation (OECD 2019, Singler, 2018) to experiment with implementing one or more of the nudges suggested to address them.

At the heart of this process is the notion that cognition and behavior is complex, thus, understanding the problem at hand is of great importance. As our expert interviews informed us, no nudge is a one-size-fits-all, and there are ethical considerations to take into account when implementing nudging. Our hypothetical model serves as one of many relevant tools for organizations setting out to foster sustainable innovation.

In line with our research objective, we have provided a basis for further research and for practical experimentation by organizations aiming to foster innovation that is sustainable for people, planet and profit. When implementing nudges in organizations, it is important that practitioners focus on behavioral problem-solving rather than test any of our suggested nudges without understanding the issue that they are dealing with. If they can see problems related to the biases we present in this thesis, we have provided them with theory- and practice-informed ideas of potentially helpful nudges to address these. In addition, to reinforcing behavior is critical in order to foster long-term change of behavior, which we indeed hope would be the aspiration of organizations aiming to foster sustainable innovation. The most important limitation of our study is the small empirical sample size and the scarcity and scattered nature of literature on the topic. These limitations limit the inference that can be drawn from the study overall and from the small empirical sample size, and our literature research has potentially left out relevant research. Ironically, our own biases is another important limitation of the study. We made interpretations we have made in several stages of the study, and our subjectivity has influenced the analysis and the literature research. However, we deemed this approach practically necessary due to the scarcity and scattered nature of the research on the topic. The biased influence of researchers' experiences and values impacting the research is also accepted in the critical realist approach (Saunders et. al, 2009, p.119). In addition, the interpretations we made were based on pre-defines definitions and taxonomies of biases or nudges and in line with the philosophy of critical realism, we deem the interpretation of reality by others, presented in our data, to be acceptable knowledge. The same holds for our own interpretations of this data in the analysis.

The strengths making this study significant is that it builds on theory and practice and triangulates data and methods in order to answer the main research question. The takeaway is not only the ingredient list of relevant biases and nudges to conduct further research and

experiments on. In addition, there are plenty of insights that can be derived from our appendices. For example, it is possible for anyone to conduct their own analysis of our interviews or re-interpret our codes. As previously stated, there is a significant lack of literature on nudging within organizational context, especially in regard to sustainable innovation. Our study is unprecedented as it provides an overview of biases inhibiting sustainable innovation in an organizational context and suggest nudges to address them based on academic research and behavioral expert knowledge. Our hope is that our ingredient lists and insights can enable academic research and organizational experimentation, and further the knowledge on how to use nudging to foster sustainable innovation within an organizational context. We have presented the main findings relevant to answer our research question on “*How can organizations use nudging to foster sustainable innovation?*”, and our answer to this question is two-fold. First, organizations can investigate what biases inhibit sustainable innovation in their organization. In this first step, the identification and descriptions of biases presented in this thesis as common threats to sustainable innovation can serve a supporting function. Secondly, based on what biases they recognize as obstacles within their organization, they can experiment with implementing the appropriate nudges suggested in this thesis in order to address them and foster sustainable innovation. In any type of nudge implementation, it is important to evaluate the effects. Helpful guides that organizations can use for nudge implementation include the OECD BASIC framework (OECD, 2019) and steps outlined in Nudge management (Singler, 2018).

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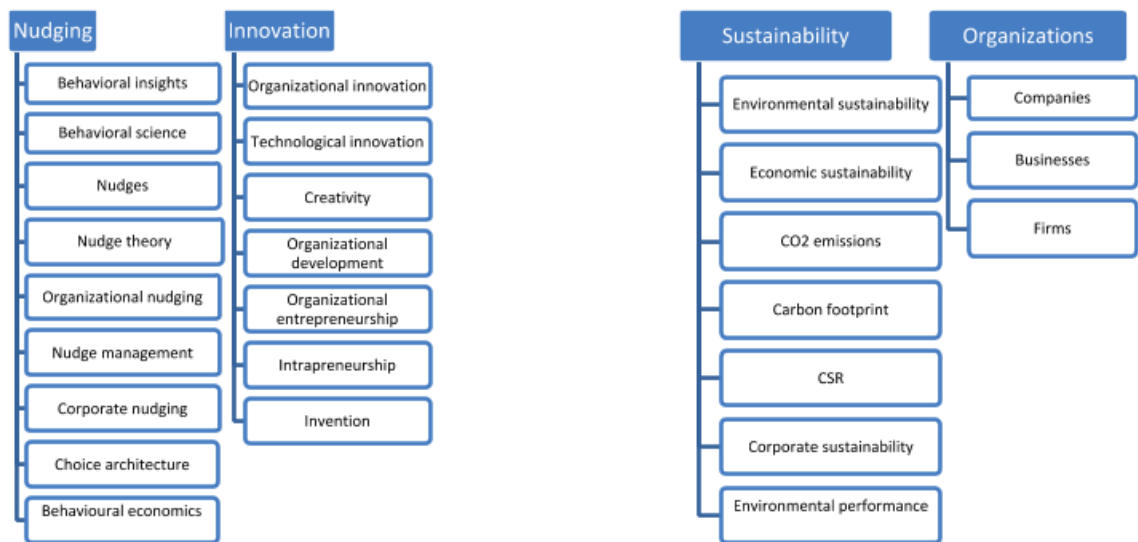
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# 10 Appendix

## 10.1 Appendix 1: Concept map and search diary

Research question: How can organizations use nudging to foster sustainable innovation?



<b>Research question:</b>	How can organizations use nudging to foster sustainable innovation?
<b>Places to search for information:</b>	Libsearch: <a href="https://primo.kb.dk/primo-explore/search?vid=CBS&amp;lang=en_US">https://primo.kb.dk/primo-explore/search?vid=CBS&amp;lang=en_US</a> Business source complete: <a href="http://web.a.ebscohost.com/ehost/search/basic?vid=0&amp;sid=cc51186f-9b27-40be-80b3-39ce99bc8750%40sessionmgr4006">http://web.a.ebscohost.com/ehost/search/basic?vid=0&amp;sid=cc51186f-9b27-40be-80b3-39ce99bc8750%40sessionmgr4006</a> ScienceDirect: <a href="https://www.sciencedirect.com/">https://www.sciencedirect.com/</a> Google <a href="https://google.com">https://google.com</a>
<b>Inclusion/exclusion criteria (both for semi-systematic review and for subsequent literature research for sub-research question 2)</b>	Include: Papers that include/mention nudging/nudge theory/behavioral insights/behavioral science as a concept, within an organizational context (not external nudges), when nudging is the intervention or topic explored in relation to affect the organization/management/employees in the purpose of fostering sustainability, innovation and/or sustainable innovation. Exclude: Items not handling the concept outlined in the inclusion criteria above, Policy- or consumer focused, governmental nudges, when the effect of nudging on research is explored.

Search terms	Database	Date	No. of results	Comments (e.g. potential limits)

## APPENDIX

nudg* management	EBSCO	30/01/20	38	Lots of medical and marketing papers.
“nudg* management”	EBSCO	28/01/20	4	
("nudg* management" or nudg* or "Behavio#r* insights" or "Behavio#r* economi*" or "choice architecture") <b>and</b> organi#ation or business or company or corporation	EBSCO	30/01/20	7797	Only went through the first 100 results
"nudg* management" or nudg* or "Behavio#r* insights" or "Behavio#r* economi*" or "choice architecture" <b>and</b> organi#ation or business or company or corporation <b>and</b> innovation or creativi* or invention sustainab*or green or climate or esg or environmental <b>not</b> food or pension or marketing or health	EBSCO	30/01/20	1255	
nudg* management	LibSearch	28/01/20	49	Search term in “subject”.
nudg* <b>or</b> behavio#ral insights <b>or</b> behavio#ral science <b>or</b> behavi#ral economics <b>or</b> choice architecture <b>or</b> nudge theory <b>or</b> organi#ational nudg* <b>or</b> nudge management <b>or</b> corporate nudg*	LibSearch	29/01/20	106	
"nudg* management" or “organi#ational nudg*”	LibSearch	30/01/20	10	
nudge management	ScienceDirect	04/02/20	108	Limited to relevant publications out of the listed ones: <i>Business Horizons</i> (35 results) and <i>Journal of Economic Behavior &amp; Organization</i> (34 results) <i>Ecological economics</i> (39)
(“nudge theory” OR “nudging” OR “nudge management” OR “behavioural economics” OR	ScienceDirect	04/02/20	82	Limited to following publication titles: “Journal of Cleaner Production” (18) “Long Range Planning” (13) “Journal of Business Research” (11)

## APPENDIX

"behavioural science") AND (organization OR business OR company) AND (employees OR workers) AND (innovation OR creativity)				"Business Horizons" (11) "Organizational Dynamics" (9) "Technological Forecasting and Social Change" (8) "Procedia - Social and Behavioral Sciences" (6) "Journal of Business Venturing" (5)
nudge AND (organization or business or company) AND (employees OR workers) AND (sustainability OR environment)	ScienceDirect	04/02/20	99	Limited to following publication titles: "Journal of Cleaner Production (28)" "Business Horizons" (20) "Journal of Business Research" (14) "Long Range Planning" (13) "Technological Forecasting and Social Change" (9) "Journal of Business Venturing" (7) "Organizational Dynamics" (6)
"nudges within organizations" OR "nudging employees" OR "nudging workers" OR "nudges in business" OR "nudges in the workplace" OR "nudging as a management tool" OR "nudges as a lever in business" OR "nudging as a competitive advantage"	ScienceDirect	04/02/20	35	
"nudge management" OR "nudge theory"	ScienceDirect	07/02/20	93	Narrowed search between year 2011-2020.
("choice architecture" AND ("change management" OR "innovation management"))	LibSearch	12/02/20	36	
<b>Included papers from semi-systematic search</b>				
<p>Legaard, J. F. (2019). Nudges for creativity: Integrating elements from play in work environments. Proceedings of ISPIM Conferences, 1–10. Retrieved from <a href="http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=139830665&amp;login.asp&amp;site=ehost-live&amp;scope=site">http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=139830665&amp;login.asp&amp;site=ehost-live&amp;scope=site</a></p> <p>Anthony, S. D., Cobban, P., Nair, R., &amp; Painchaud, N. (2019). Breaking Down the Barriers to Innovation. Harvard Business Review, 97(6), 92–101. Retrieved from <a href="http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=139017615&amp;login.asp&amp;site=ehost-live&amp;scope=site">http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=139017615&amp;login.asp&amp;site=ehost-live&amp;scope=site</a></p> <p>Chauhan, V. S. (2019). The Healthy Workplace Nudge. Indian Journal of Industrial Relations, 55(2), 369–372. Retrieved from <a href="http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=141330343&amp;login.asp&amp;site=ehost-live&amp;scope=site">http://search.ebscohost.com/login.aspx?direct=true&amp;db=bth&amp;AN=141330343&amp;login.asp&amp;site=ehost-live&amp;scope=site</a></p> <p>Van der Meiden, I., Kok, H., &amp; Van der Velde, G. (2019). Nudging physical activity in offices. Journal of Facilities Management, 17(4), 317–330. <a href="https://doi.org/10.1108/JFM-10-2018-0063">https://doi.org/10.1108/JFM-10-2018-0063</a></p> <p>Wong-Parodi, G., Krishnamurti, T., Gluck, J., &amp; Agarwal, Y. (2019). Encouraging energy conservation at work: A field study testing social norm feedback and awareness of monitoring. Energy Policy, 130, 197–205. <a href="https://doi.org/10.1016/j.enpol.2019.03.028">https://doi.org/10.1016/j.enpol.2019.03.028</a></p>				

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### **Inclusion/exclusion sub-research question 1:**

**Include:** Items discussing, analyzing or presenting biases related to sustainability and/or innovation in an organizational context + biases derived from well-established sustainability or innovation theories

**Exclude:** Items discussing, analyzing or presenting biases related to sustainability and/or innovation outside of an organizational context

## 10.2 Appendix 2: Transcriptions with coding

### 10.2.1 Raphaël Smals

**Samuel Salzer 0:03**

So yeah, it's definitely a big question to unpack. I think there's like components here. So the scope is only within like for using Nudging, as a specific thing, right?

**Frida Ella Viola Lindqvist 0:21**

Yeah, that's I mean, the the, what we were interested in knowing is mostly like nudging as a tool to counteract these biases that we've identified.

**Samuel Salzer 0:30**

I think this is maybe interesting for you to have as part of this as kind of a limitation of Nudging itself in that, you know, nudging in itself is the idea is that you have small things that are going to be easy to avoid, but in some ways you're going to influence people's decision making for the better. They're only going to make usually relatively minor changes that like a small nudge was usually something like a smaller thing. Obviously we're having, like ultimate purpose is very impactful examples where I can take one little nudge can be like super influential, but mostly that's been like with certain case the use of defaults. It's very rare that we have like this kind of golden opportunities to like, where people make it one decision that's gonna be very influential for what to do. But let's talk about innovation that's more about continuous work and prospects, not just about one decision that's going to be deciding everything. It's like for saving or ... it's kind of a continuous thing. So I think I'll be interesting to consider something like probably look at HUMU and iNudge, which are trying to do this. Have you seen them?

**Frida Ella Viola Lindqvist 2:05**

Yeah. Can please, like develop a little bit like what do you think we can take from that?

**Samuel Salzer 2:18**

Sure. So what they both plan to do is fit to create messaging that's gonna, like reach people at the right moment or the right person in the right moment, in the right place kind of thing. Where you have this like some like a Pareto Principle, and that's that people are promoted. And not because of the skill sets, kind of, they will use in the work as a monitor, but for the skills they use in order to have. Like, a lot of managers or leaders that are really good, maybe they were really good at sales. And so they became a sales manager. But they weren't, they were perhaps not a good manager. And so for example, like HUMU tried to get can like nudge these people to become better managers by kind of like saying like, "Hey, you know, people really value being praised or getting continuous feedback" so there's a lot of people, like 90% managers are pretty shitty as managers, for example. And HUMU and iNudge have a similar idea that they want to give some good kind of nudge, into some message to say like, "Hey, you send an email right now and tell your colleagues this or maybe ask them this question", for example. So that's a behavior right. And, and I think they can definitely be used in terms of the innovation process. One of the hardest things when you try to do innovation is dealing with uncertainty in some ways in terms of like, being open to being wrong and having bad ideas, and all those things have a lot of trust. Honestly, yeah. So if you can, you know, find ways to support managers and build trust, for example, that's a very important thing. I think in terms of what they do well is that they don't lie around this assumption that we can train people one time to be really good at x scale. Like most training schemes today, we're like, okay, we're gonna have a one day training session on feedback and communication. And then assuming that people will, like, take this on board, and then be great at giving feedback and communication from the moment, but actually, it's like, it's like building habits, like it's building something to take some time to really become good at so just because, you know, intellectually it's gonna look good on presale, you have to be really good.

**Frida Ella Viola Lindqvist 4:46**

Yeah. So basically, like, the exploratory nature of the paper is like going through an extensive literature review on the innovation theories and sustainability theories, and from there, what the behavioural issues are like what biases are involved that inhibit, like the progress within these areas. So, you say like, for example, people being a little bit uncomfortable with uncertainty and then, like, we looked into this thing with path dependency, so that there's like a, you can maybe call that some kind of consistency bias with you know, like people making one decision after another is like you're reinforcing it, like reinforcing mechanism. So we like extracted from all of that literature, like all of these biases. And then our question is basically like, can you use nudging in some way to foster sustainable innovation within organisations. So it might not be the only tool but like in your experience, have you had an assignment for example working with an organisation where you have implemented nudging or for example, some other behavioural design tool with the aim of somehow promoting sustainable innovation?

**Sandro Daniele 6:25**

Or also just sustainability or innovation, like either one of those.

**Samuel Salzer 6:35**

A lot of my colleagues are more like creating innovation rather than training people in how to innovate, if that makes sense.

**Frida Ella Viola Lindqvist 6:46**

I think you broke up with what was the beginning of what you said there I didn't really hear.

**Samuel Salzer 6:55**

I would say that I'm most of the time, I work for products where I'm actively innovating. So I'm working with the company to innovate, like to create a product, or improve a service, or maybe something like that, rather than train them or or improve their internal innovation and stuff. Like that's more like a meta version of that, I guess. Okay. So I would say, Yeah, I don't know if that makes sense.

**Frida Ella Viola Lindqvist 7:27**

I think it does. So maybe in that sense, it would be interesting to hear from you, in those kinds of assignments or like that work, and what biases have you experienced in those processes. And is it only an innovation process or is it somehow directly related to sustainability as well?

**Samuel Salzer 7:48**

So I think a better definition of sustainability in terms of maybe not environmental sustainability, but I work on only projects that have something like making people healthier, happier, or something like that. So in terms of the question of biases. Some of the stuff is pretty obvious. I think it will be interesting for you to kind of look into maybe it becomes like, "super forecasting"?

**Frida Ella Viola Lindqvist 8:35**

"Super forecasting"? No, what is this?

**Samuel Salzer 8:40**

Okay. So, Philip Tetlock is like a very famous researcher in effective forecasting, and so on. And one of the most common things where it's very hard with innovation projects is that obviously people underestimate the time it takes to do things. Yeah. And so It's called, like the planning fallacy, or it's just like one simple word, but it combines a lot of things. I think. So, in that part definition, if you're in editing, you're doing something that hasn't been done before. Even as processes have been established, you're still creating things. And it's very hard to predict. How long is this going to take to do what it's going to require? And, and what's the impact going to be from the end. So most of the time, people are very bad at making predictions for those kinds of things. Like, how long is it gonna take to make this product? Or what the impact can be from this innovation, for example? Yeah. And they're mostly very bad at having these kinds of feedback loops, where they kind of keep track of their predictions or like their assumptions directly. It's very easy for them to like, this is a product when you say, okay, it's going to take six months to do this. At six months maybe about 30 % progress is made. And then they realise well, there's gonna be another six months at least. And then maybe at nine months, then like "this is gonna be really hard to like to know if this kind of like ever work" well, now we have a little bit like sunk cost fallacy. We're like, well, we spent nine months on this already, we better like keep on fencing. So, what people often forget is like, their initial prediction, like they're really bad at keeping track of initial predictions and learning from them. I think that's, that's something that I have somewhat helped teams with. Because that can be a very important part of the innovation process in terms of how to make sure that... because it's always to lose morale as well, if you have flawed predictions and then you don't reach the milestones. You just fed up and then we're getting stressed and worried and all that. Yeah, I think that's a big one.

**Frida Ella Viola Lindqvist 11:02**

How do you work to help them with that?

**Samuel Salzer 11:08**

Sure, there's a couple of things you can do. So one is just training people a little more in the process of, of just keeping track of the predictions. And so like, it's like, I don't know if you heard a Bayesian thinking, yeah. So instead of saying like, okay, "when is this project be completed?" Say put estimates like what do you think okay, well, we are like certain that it's going to be completed in this time. And maybe even like, I would say, more so maybe not the whole project but a phase of the project, because then you can learn from them roughly. And so you put some like, Bayesian predictions, where you say like well can we are like certain percentage that is going to be like three months until this, or like maybe a few weeks even if you have a little bit of a theory of when this is going to be completed, and then we can keep track of this over time - people are going to get happy and feel much much better. So I think that's one of the most important things is like train people a little bit on the basic stuff, in terms of making this get more nuanced predictions where it's not like it's gonna work or not work, like how certain are you that it's gonna work out what is your confidence and then keeping track of that and updating those those beliefs. Right?

**Sandro Daniele 12:43**

This is very interesting, because like this relates a lot with a bias that we identified "the overconfidence bias", that we found both in the literature related to innovation and sustainability. And we also identified this bias in the interviews we did when we interviewed experts in innovation and sustainability, so it's very promising that you also experienced this. And yeah, but would it be okay if we tell you some other biases that we identified? And you tell us if you experienced those and if you actually had found some ways, some nudges to counteract those, would it be okay?

**Samuel Salzer 13:31**

Of course, I guess the one thing with overconfidence bias is, so one of them, maybe the problems with biases sometimes, like there's so many of them, right? And a lot of them are not per se like based on the most rigorous research. And so, what was interesting was like people can also be under confident, right? You can both overcome them and then you can be opposite. Like you. You'd have some people saying, like, "I would never be able to do this" So that's why it's interesting. I don't know if you've looked into this kind of, like, when people are overconfident and when people are underconfident.

**Frida Ella Viola Lindqvist 14:10**

We had a point where we found it interesting with status quo bias being sometimes an obstacle to innovation. But it was interesting in an interview where we talked to someone who basically, he described it as in their work with innovation, he had been in different companies and in one company, the status quo was to always run to the new thing and not complete anything. So that was the status quo there. So I guess that's more of a general category and it's not so much the opposite as under- and overconfidence, but still..

**Samuel Salzer 14:50**

Yeah, I have a friend who did this.. it's not empirical research.. but he does a lot of these really nice, more practical experiments and setups where, he wrote an article in the New York Times, he did a really large sampling of people who are underconfident or overconfident. And then he kind of looked at what are the similarities between like, what are people overconfident about and when are people going to be under confident. I'll send it to you to read about it more. I think underconfidence might be an even bigger issue. So one of the main things like, people are under confident things that they don't normally do. And so, for example, people are overconfident in, for example, kissing and driving and underconfident in dancing and saving the human race from destruction.

**Sandro Daniele 16:23**

Or a pandemic.

**Samuel Salzer 16:25**

Right! So, you know, something you do every day, you're gonna assume that you're probably at least above average. Most people maybe like don't dance that often or something, yeah, especially beyond their like young 20s so the thing that they're really bad dancers but pretty much everyone is a bad dancer, like that's the first thing like when I start dancing, that's the first thing I noticed, like everyone's really shitty at the beginning, right. And so the same thing with innovation, if you do innovation work, especially if you're in our organisation hasn't done alot of that before. You just have the assumption that I'm really bad at coming up with ideas like I'm really bad at working with new things like, yeah, it's just it's kind of because I haven't done it before. So they kind of have this false belief.

**Frida Ella Viola Lindqvist 17:10**

Yeah. Interesting. We're gonna read that, definitely. Was it a contact of yours that has written it?

**Samuel Salzer 17:17**

Yes, that's a friend.

**Frida Ella Viola Lindqvist 17:21**

Cool. Let's see. But okay, should we should we try to do it..

**Samuel Salzer 17:26**

Let's do it - rapidfire!.

**Sandro Daniele 17:34**

So the first one is the present bias. So, yeah, it's the tendency of people to prefer getting things now rather than later.

**Samuel Salzer 17:50**

Well, that's one of the main, main, main biases like everyone is super affected by in most situations. So in that regard, yes. I don't know if it's particularly very relevant in innovation work. But definitely we like immediate gratification, all of us. So I guess, to some part. Sure.

**Sandro Daniele 18:16**

Yeah. And have you had the chance to try to counteract this bias with some kind of nudging?

**Samuel Salzer 18:23**

I think it's more like in terms of the term bias, it's probably more that you have to instil a sense of... that's with innovation, like the hard things that you're gonna get, the exciting things can happen so far ahead. Whatever that

is, if you're working on something like it's gonna take time to get there. And so you might like to pick shortcuts and so on. To avoid having a long spread, so probably basic stuff like providing people with positive feedback is really important in terms of that we will get a sense of getting progress.

**Frida Ella Viola Lindqvist** 19:17

What did you say here? Secondly, because it was breaking up a little bit yeah.

**Samuel Salzer** 19:54

I just came back yesterday in Stockholm and I noticed that the wifi is a little bit slower.

**Sandro Daniele** 19:59

The whole world is connected, right?

**Samuel Salzer** 20:05

Just saying, like present bias, one way to look at it, is like you have this need for feeling some form of present sense of fulfillment. And you can achieve that through other means, like, for example, finishing a project or, like give feedback or you can find other ways to kind of make people feel like they're having some form of positive things happening in a moment.

**Frida Ella Viola Lindqvist** 20:34

Okay, and then the next one would be then what we talked about the status quo bias. And so, yeah, which I maybe don't have to explain further, but how much have you experienced that in your work and how have you counteracted that in any way?

**Samuel Salzer** 20:56

Well, this is kind of like the classical thing. Probably the issue with the status quo. Usually one of the main things you will use is some social proof, or something like that to change that. I think. Yeah, or depends on how you define the status quo bias. Because you can also blame it on habits. So that's one part, like a large part, of my work is like actually changing habits. But yeah, so let's define a little bit the status quo bias. Like this idea of doing things like you've done before, or if you think about it, more like almost habits as well.

**Frida Ella Viola Lindqvist** 21:55

If it helps, we did define it as the tendency of people's preference from things staying as they are, or sticking to a decision previously made. And so like because of familiarity reasons, basically.

**Samuel Salzer** 22:08

Yeah. Okay. So that was a little bit less about habits, but this component it's very hard to not connect those two. I have nothing on top of mind where it's such a big issue. This is a really big topic. So you can look at it so many ways. I'm thinking of like 10 different versions of it. So it's hard to give you a quick answer.

**Frida Ella Viola Lindqvist** 22:33

No, it's fine. If you mean, you said before, like social proof as perhaps one. But um, if you don't like to think of anything on top of your mind, we can go back to later or skip it. And the next one was

**Sandro Daniele** 22:49

An even bigger topic, risk of loss aversion, we found this as being very prominent in the topic of innovation and sustainability. So do you have any?

**Samuel Salzer** 23:04

What have you heard so far about that? Or what have you come across?

**Sandro Daniele** 23:10

Sorry, what?

**Samuel Salzer** 23:12

I'm just curious, like you said, it's a big topic. I'm sure that whatever you come across so far,

**Frida Ella Viola Lindqvist** 23:17

Basically, when we have interviewed people in sustainability and innovation, they just mentioned it like, both before we asked, they've described that, without us saying the term and then when we've also asked, they like further elaborated on it. So it's just like very apparent that it is an issue or that they experience that it is an issue at least.

**Samuel Salzer** 23:44

I can definitely imagine it to be. I don't know if it's absolutely purely to innovation's interests. But it's a big thing in general, when you're trying to do any project, but yeah, with the loss aversion, I think one of the main things you're trying to do is just to support people into a little more trust and being able to kind of... Can you hear me?

**Frida Ella Viola Lindqvist** 24:20

Yeah. It's a little bit breaking up but yeah.

**Samuel Salzer** 24:26

Provide people with a sense of trust and feeling more comfortable with just being in uncertainty. And that kind of, yeah, that component of, of loss aversion is always going to be there, so it's more helping people managing that.

**Sandro Daniele 24:50**

And the next one that we found, is the availability bias. So, have you experienced this and how did you manage to overcome it?

**Samuel Salzer 25:04**

Yeah, this is a big problem in innovation. And, and so that's why it can be useful to have a multidisciplinary kind of mix of groups and people. So bringing people with different backgrounds perspectives, and so they will naturally have been exposed to different things and different things. And so they're, they're a little bit different in there. And then it is really important as well to like to manage the innovation process in a way where one person is not really going to directly influence too many people in the beginning. So it's like really good to have some like silent brainstorming, for example, where everyone writes down ideas, and then you first share them with small groups and then maybe afterwards, share them with the bigger groups, and so on so that you kind of like, try to avoid one person setting kind of a very clear thing to think about, and then everyone's gonna think about that.

**Frida Ella Viola Lindqvist 26:10**

And so and the next one we talked a little bit about before. So we can actually jump from that one and go to the confirmation bias. Yeah. So you know, the tendency to search for or interpret information that is in accordance to what you already believe.

**Samuel Salzer 26:33**

And that's probably one of those like, probably the most famous bias. But anyway, yeah, I think confirmation bias is in you. What are the effective ways to use to manage that? Some of these things that I'm not really planning, like, I don't set up a plan. It's like, Okay, I'm gonna make sure that I'm gonna avoid this. There is so much of this thinking that I just do without having a big list all the time.

**Sandro Daniele 27:13**

We also get a lot of "it depends" because obviously it depends from the situation to situation, but since we're writing a thesis, we need to try to be a bit systematic and...

**Samuel Salzer 27:24**

Of course. Some things with confirmation bias.. nothing, nothing comes to mind as a good example.

**Sandro Daniele 27:44**

It's okay we can just move on.

**Samuel Salzer 27:52**

I just have a thought as well that is distracting me but. Yeah, but let's skip this one.

**Frida Ella Viola Lindqvist 28:27**

Okay, so the last one in the list here is, if you have experienced in the process that you've been working with, is the possession bias or the endowment effect. Overvalue can be an idea, strategy product, whatever.

**Samuel Salzer 28:44**

Yeah, I think one of the most important things you want to establish is you want to separate ideas from people. And that's a very important thing that you're trying to like to manage in the beginning. Where does the product come up? So just because I say an idea is not my idea right? And if you're very good in the beginning to kind of manage this kind of idea, we're thinking where people can come up with this but they don't have to perceive that they have to defend that. I notice that people are not really used to doing that a lot of times. It's usually very common like, you know, people are like "this is my idea, I gotta protect it" but I try to find ways very early to kind of diffuse some of this thinking. And so you are ultimately trying to create..., because of this, I think innovation comes into this like it's like the will, managing people like, to get a sense of feeling well valued and smart and intelligent and those things. It's always like you're almost like you would manage a group of people, always trying to make people feel like they're not stupid, and they are like, always going to be loved and like, valued. So that's kind of what we're trying to do here as well. And you're trying to separate that. And say that "no idea is a bad idea", but it is kind of a basic cliché, in the beginning. But then as well is like, I'm very actively trying to in a team, one person or group of people are very rejective for a certain part of the solution or something like that. So I'm actively trying to diffuse that from the start and to keep them from competing too much. And I think there is no easy way to just stop doing that. It's like, that's not like something I do regularly, because it's so easy to get very attached to something, even though it's doesn't matter. The hardest thing is to... the later you're go into a project the harder it is to make pivots and changes. Yeah. And so that's something you should have to be aware of, even after halfway haven't left us wanting to change. So this is really making a difference in colour of something, like the logo or whatever that is.

**Frida Ella Viola Lindqvist 31:27**

And this way of detaching ideas from people from the start, like how concretely, how do you do that?

**Samuel Salzer 31:45**

It can be different scenarios. In idea generation, I would, first of all, try to make it so that people can like generate ideas and then they can put it into a pot. Like a combination, and then those ideas get very quickly intertwined and evolve and combine with others. Initially, you will have everyone sitting in a group of like 10 people, you'll do a silent brainstorm. And then you say that they need to share that with one other person. And then they may combine their ideas, and then you have those two people share with a group of five and so on and then all ideas are mixed, refined and improve and like no one remembers which ideas where whose and so that's one way of doing it. Instead of having like, Okay, everyone has to present initially like "this is my idea". And that's usually when you see like a no go around the table. Everyone has to tell the best ideas. And that's the most usual thing to see, but that's a really shitty way of doing it, we're doing this because then people are very practical. They don't have like, they have to come up with, like, very strong arguments, even they have a really bad idea for something.

**Frida Ella Viola Lindqvist 33:11**

It gets personal maybe, yeah.

**Samuel Salzer 33:14**

But it was an example of it.

**Frida Ella Viola Lindqvist 33:16**

No, but it's interesting to hear. Did you have any other there?

**Sandro Daniele 33:21**

We went through it all.

**Frida Ella Viola Lindqvist 33:24**

Maybe just in general, like knowing what we're writing about, at least in a broader sense. Um, is there anything from your experience that you could tell us like could be valuable in the sense of using nudges? Like, using not just to foster sustainable innovation, sustainability or innovation or both? And what can I say, is there any wisdom you would like to share with us?

**Samuel Salzer 34:00**

Yeah. So I would say I am usually very open with how I see myself and my work. I also wrote a book like nudging practice. I obviously like it, and it is a big part of what I'm doing. But I would say a lot of my work, I don't really think it is nudges, I think it is more solutions to problems. And so maybe those solutions are behaviorally informed and informed by behavior and maybe implemented using behavioral science techniques and so on. But I don't really think about nudges, and that's a little hard because you write about nudges in academics, and they are very defined to a certain type you know, certain thing right? So I would think about it from the perspective of something that is usually overlooked in nudges, and what is really true for something, is that anything that we're trying to do is usually to try to change habits in order to change long term behaviour. And nudges usually are aimed at one behaviour shift like at one time. And for long-term, with habits, there are like context dependent cues, so like triggers or something combined with a kind of an immediate sense of positive reinforcement. Do these words make sense. I don't know if this is a little academic. One way you can look at nudges, that most people don't look at nudges, but I think could be more interesting is like "Ok, what behaviors do we want to trigger?", so the nudges come at the right time to trigger the right behaviours, but also "what behaviors do we want to reinforce?". Could you do nudges as well as a system that when people do the "right thing", it is reinforced. Having messages or ways of prompting or supporting or, or helping people with both activating the behavior and to reinforce the behaviour.

**Frida Ella Viola Lindqvist 36:52**

Okay. And you wouldn't say, just to clarify, would you say that nudges can be used as well like also activate behaviour in one instance but also if you use them, like in a lot of instances, wouldn't you say that can also help reinforce behaviours over a longer period or?

**Samuel Salzer 37:21**

Well depends. So it's a little bit similar.. I can clarify what I really mean: So for example, let's say you have a partner and you live together and let's say you're sloppy with putting the dish in the dishwasher or even put in that organisational setting like you have a cafeteria some people are bad at putting the the coffee cups in the dishwasher. And so a prompt would be or like a nudge, in this scenario, will be saying like "Nine out of ten people in the office plus the coffee cup in the dishwasher. Don't be the douchebag that doesn't" for example, they'll be prompt. But that wouldn't reinforce the behaviour that would just prompt the behaviour. So once they are putting the coffee cup in the dishwasher, if it is then something like, like you have like a "ping!" signal that says "you're such an awesome person and you make this office so much better. Thank you for your wonderful contribution." Something like that, then that will reinforce that.

**Frida Ella Viola Lindqvist 38:33**

Okay, I see what you mean. Okay. Nice. But this was super helpful for us to talk to you. Very nice that you took the time. And so, we're basically gonna transcribe the interview. Can we use your name? As an interviewee and is there anything you want to anonymise?

**Samuel Salzer** 39:02

I think it should be fine, as long as before you publish anything that I get to take a look at it!

**Frida Ella Viola Lindqvist** 39:07

Definitely.

**Samuel Salzer** 39:28

Yes. Thank you very much!

**Sandro Daniele** 39:30

Have a nice day.

**Frida Ella Viola Lindqvist** 39:31

Bye. Bye.

## 10.2.2 Simon Locke

**Simon Locke** 0:00

When we have done interviews before if companies are mentioned something it's possible to just anonymize it. Okay, good to see. Let's see would be great for you if you could have you know the survey we sent? If you could have that just in front of you. So it would be helpful if you find it otherwise you can send the link again.

Okay. Yeah, cool. The survey monkey. I've actually wait. So I've completed it, so I didn't go into it. So I can't get up again.

Okay. We could also, we could also read it too, though. Yeah. If it works for you.

Yeah, sure.

**Frida Ella Viola Lindqvist** 1:30

Yeah. We had one question, just a brief one to start with. And we asked what the main struggles were in, in your line of work and we gave you some options like bureaucracy, regulations, behaviour. And there you didn't pick people's behaviour as one of them. But later in question five, you mentioned that it is a significant challenge to like to have changed people's behaviours. Is there anything you Can you explain why you did not choose people's behaviour as one of the main challenges?

**Simon Locke** 2:05

Other than probably rushing it? No. So I have no defence there. So no, I think, you know, maybe we'll touch on it. But sometimes perhaps depending on the actual situation that the challenges can be, can be different, but I think I probably focus more on perhaps more the bureaucracy kind of challenges as the first kind of hurdle to get over and then as you go through the process, people's behaviour because sometimes he can't even start a project or an idea off because you don't really get the sign to get the budget or whatever. So, yeah, yeah. Okay.

**Frida Ella Viola Lindqvist** 2:48

I just wanted to get a brief like feel on that one. And, and then, as you saw, we listed a bunch of different biases and explain them. So, I would actually like to just go through them with you and just hear your interpretation of it when you answered and also like a short motivation while you answered what you did. And also if you have any examples, is that clear?

**Simon Locke** 3:20

Yeah. Okay.

**Frida Ella Viola Lindqvist** 3:22

So first it was the present bias or hyperbolic discounting. And the explanation, what we wrote there, was the tendency to choose a smaller present reward, rather than waiting for a larger future reward in a trade off situation. So for example, choosing to eat one cookie now, rather than waiting to eat five cookies later. And you answered "often" on that one. How do you interpret that bias and why did you answer "often"?

**Simon Locke** 3:57

Okay, so obviously, I'm talking about what I see at the body shop. So a little secret very different than other other companies but I think it's a maybe it's more more generalised terms of human nature but I think we demonstrate a lot in terms of volatile behaviour of someone has maybe a quite a good idea or you try something a little different, but it's maybe a little bit different. And then that works really well. So then we just mask and roll that out rather than actually perhaps taking the time... So one example that's given. And you will have to learn about some of these answers as I'll be quite specific. And you know, I don't particularly get fired at the moment. If you take on the store design, I'm not sure if you've been to the store at Oxford Street, but that's a one off design. The idea is we have a desire trying something new. And then we didn't really assess how that was performing feedback, maybe make subtle adjustments and try different things. What tends to happen is you launch that because we've done this many times, you get a lot of bars, a lot of interests, customers like it footfall goes up really high, because it's so different. And then make a decision that actually, we know we're not gonna do the trialing or we're just

going to run that out. And then you suddenly hit a three month or six month period, or even longer where that initial interest from from customers declines because it was new, but actually, it's, it's it wasn't very young. It wasn't a substantial change. Maybe it was just very top level. And the experience wasn't that great in terms of and so suddenly you realise you're in a situation where we've committed to rolling something out. So I think we have a tendency here that is something seems to work We really roll out really quickly. It loves go.

**Frida Ella Viola Lindqvist 6:04**

Okay, yeah, that's a good point. Like you rather than waiting and actually figuring out what's the best solution for the future? or?

**Simon Locke 6:13**

Yeah, and I think it's a maybe it just goes to the whole mindset being a retailer that I find it very hard to get anyone just to wait and to research more and to reflect, I think, now is a classic example of that because I was reading some, some articles that which we'll get about how you can use this as an opportunity to really really develop a stronger business or more relevant business going forward. But human nature when you face a crisis, you can have you know, you go into panic mode, and you're so you, you rush around to try and be as busy as possible. You're trying to do more to keep yourself almost kind of occupied. And we're exactly in that mode now that suddenly anything slightly longer term, although that wasn't going to deliver perhaps a financial reward almost immediately, it's all pretty much being put on hold. And we're absolutely fried every resource in short term survival or auto rushing out massively ranges of other hand gels as well, because that's the big issue. But will it be an issue next year either? No, but yeah, so there's lots of examples of that currently.

**Frida Ella Viola Lindqvist 7:34**

Yeah. Okay. So the next bias if you want to take that, yeah,

**Sandro Daniele 7:39**

Sure. The next bias would be the confirmation bias. We describe it as being the tendency to search for interpret favour and recall information in a way that confirms or strengthens one's prior personal beliefs or hypotheses. People display this bias when they gather or remember information selectively or when they interpret it in a biased way. And we gave the example of a small downfall in a project being interpreted as a failure by those who are skeptics from the start.

**Frida Ella Viola Lindqvist 8:19**

And you said often on that one. So if you just have an example for us for that one.

**Simon Locke 8:28**

I'm going to mention a group that I've just joined, called diplomatic rebels. They're actually actually based in Denmark. So it's come out of the Lego future lab week. It's called. It's worth checking it out. I'll send you a link to their to their website. Let me talk about the fact that actually, their focus is really around trying to help innovation ideas and they talk about the fact that actually, there's some basic principles you have to accept. And one of those is the fact that the majority of people will hate your idea to start off with any kind of have to get used to that, I think, and that tends to be a case you see, again, in lots of big businesses that you have an idea, everyone has an opinion, every department, maybe it's just a case of having Second of all, they feel that their value, they will give their opinion. And I describe it as a bit like a tire kicking exercise, when someone's going to buy like a new car, you walk around the car, and try and get the price down. You just pick out all the faults that you can see. And it seems very much a case of mindset that when you have a new idea, everyone's looking for the faults with that and that if something perhaps hasn't worked out, as you originally planned it people will go about what I told him was not a good idea. I said, Yeah, and that happens a lot. So again, give it a try. classic example of that, that the the instal refill programme. We have the refurb machine in that store in London. We were really pushed to roll that out too quickly. And we said fine, we'll give you a working prototype, but it's a prototype. So with that comes risk. It may not perform that well it may break down, it may have some issues. And it's had issues as we could have predicted and since then we've gone through a process where everyone's going to go around and say well, why isn't it working? Was it Oh no. And so lots of people look for kind of the negative aspects when you try to do something different, things are gonna go wrong and you should that should be part of the process. And I'm part of the development of this. I think we're not alone with that everyone I speak to who work in similar roles to me they have the same issue.

**Frida Ella Viola Lindqvist 10:57**

Yeah. Have you seen a similar situation with a positive confirmation bias? You know, when someone has a positive idea of something and then chooses or like unconsciously chooses to, to take in information that reinforces that positive idea of it?

**Simon Locke 11:20**

Yeah, you see you say a lot in that sense. So perhaps in terms of our leadership team, we'll be having conversations around. An example could be kind of material do we use to make up buttons perhaps. And they may have a predetermined type of material in mind, so they will go off and find any source they can to prove that what they're

saying is the right choice. Whereas you may come back and say actually, you know, that research you found that's unknown that's been published by the, the aluminium lobby society or something so with the full stickiness Say that rather than looking to some real kind of balanced research also it's very hierarchical. So again, I've said in many meetings where most of what we do at the body shop in terms of products and experience is determined by our brand director. If you have inserted before Leah now I've sat in meetings where people won't say a word until he speaks. And he if he says he likes it, everyone joins in and says, yes, they like it. If he doesn't like it, people will say, Oh, no, I agree. The exception for me which is probably why we were always saved

**Sandro Daniele** 12:42

That's very interesting.

**Frida Ella Viola Lindqvist** 12:45

Okay. So the next one would be something called the overconfidence bias. So, basically the tendency to have more confidence than you should give them the objective parameters of a situation. These can be ability value, opinion and beliefs. For example believing that you're doing more than neighbours slash competitor in terms of sustainability. And you said also often on that one, you have an idea or a comment or example on that one.

**Simon Locke** 13:14

Yeah, it kind of taps into with my background in sustainability rather than innovation where people will develop a sustainability strategy, largely based on what their competitors are doing. So, either take a supermarket chain, the UK, Tesco, one of our supermarkets, they will set themselves a carbon reduction target and I will say we're going to cut our carbon by 40%. Their rival Sainsbury's will then come along and say, well, we're going to do a programme or we're going to cut by 50%. So it's not calculated based on what they need to do what they should do or not calculated on a specific end goal of what they want to hit in ten years time. It's more focused on as long as we look better than our competitor. That's what we've talked about in terms of incremental improvements, but, you know, there's no specific calculation as to why they've set that target. There's no clear and golden sight, it just makes them look better. And again, I hear meetings all the time where we say our packaging is better than upper bounds packaging and stuff. And it's, it's based on perception rather than fact. But yeah, I think it goes back to how we are as humans, you know, you kind of compare yourself to other people and I guess people like lots of things are better with others.

**Sandro Daniele** 14:47

Okay. The next bias is the loss aversion bias. And it is the tendency of people to prefer avoiding losses to acquire equivalent gains and when fear of losing causes stronger psychological reaction than the prospect of gaining something. So for instance, it is better to not lose \$5 than to find \$5. And you reply often as well. If you have some examples.

**Simon Locke** 15:21

Yeah, this is a big one for me in my role currently because, you know. If you think about it like a risk and reward chart, and if you accept perhaps in the risk, the lower the pay the lower the potential reward, but it has a fairly high success rate. So it could just be either you just have a new product variant or change in the colour or something. But then you have the more big potential game changes where you could be the first breath to do something or to be seen as the leader, but also the high risk potentially the high costs, potentially you don't really know what you're going to do, how you are going to deliver it. So again, high risk, high reward. And as a business, it is incredibly hard to get back in for any projects like that, because one of the first questions you will get asked when you present ideas are: who else is doing it? And for me in a negative context, in the sense of, if no one else is doing it, then it's clearly a bad idea, and the business case. So you know, one of the examples of that was when we signed up to the loop project by terracycle. So this is their online shopping platform where you buy your normal kind of consumer products delivered to you. They collected, reused and then refilled. We had the opportunity to go into that trouble, and we managed it but the challenge we have was fact that not many of our brands are doing it. Not many competitors of ours were actually participating in it. And there was no clear business case because it was being run as a trial. So there was no previous data where you could acknowledge performance. And that was one of the hardest things I've ever done in terms of getting signed off for a project because you know that this project isn't going to make money for the business, but it could develop into opportunities that could in the long term. So I think the best example of that, yeah.

**Frida Ella Viola Lindqvist** 17:33

Yes, that's very interesting. The next one that we have is the possession bias or the endowment effect. So the tendency of people valuing an object that they own or a strategy or an idea that they came up with, higher than they would if it had belonged to someone else. So for example, it could be expressed through a resistance to pivot from one's own original business idea. And you said sometimes. So that was a bit lower than some of the other answers. Do you have a reasoning for that?

**Simon Locke** 18:07

Yeah, it's not like I see it that much. I think, collectively, we work well. And so our operand structure is that it's split down into different categories of products. So you have fragrances separate categories, Bath and Body gifts etc. And generally they'll work well together. And yeah, I don't really see too many examples where, you know, people are really pushing just their ideas or go back to it. I think. There's always that little bit of it that was my idea kind of thing. But I think in a large business, sometimes it's really hard to know where did that idea start? Because it could have been a conversation someone had to grow up over a coffee that suddenly I think in your head so actually, who really does kind of own the idea but some I don't think I will post this out. I don't see that.

**Frida Ella Viola Lindqvist** 19:05

And between departments like for grants versus another product, do you see any kind of pushing for your own department? Even though it doesn't make sense objectively, have you seen that?

**Simon Locke** 19:20

Not too much. The only criticism you can see is that perhaps they will just focus on their products and not perhaps see the benefits of how we could link to other products. So they're just purely developed. I think it's more of an issue between brands and brands that are new, so say Natura I think we may be a little though we had that idea. Perhaps saying the Natura. Well, there's a couple examples where Natura have definitely used some ideas that came from The Body Shop that we were able to actually do what happened then it's easy to sit back Sometimes when actually that was that was the Body Shop idea there, but it's not a big issue.

**Frida Ella Viola Lindqvist** 20:05

Okay. Okay. So the next one

**Sandro Daniele** 20:09

Would be the status quo bias. So basically, it's the preference for familiarity. It is evident that when people preferred things to say the same way, the same by doing nothing inertia, or by sticking with a decision made previously, even when all these small transition costs are involved, and the importance of the decision is great for, for example, keeping the same newspaper subscription throughout the years even though there is no strong preference for the content compared to equivalent option to which a switch would be cheap and simple. So you replied often, and do you have on top of your mind some examples?

**Simon Locke** 20:56

Yeah, I think you know, looking at the nature of our own business there's kind of established codes within beauty cosmetics particularly around how products are packaged or marketed and sold and to do something that kind of breaks that kind of established code is a challenge. And so I think what we tend to do quite a lot and lots of brands do is, if you launch a product and it does well then you just try and come up with as many variants as you can. So it'd be the limited edition this and different things that you learn because it's fairly safe because it's based on a cool product that you know works well. So there's a lack of, I guess, desire or interest to really challenge or change too much. And again, we set up your supplier base again if you take packaging because suppliers who invested hundreds of thousands of pounds into their products on their production line It's not in their interest to change that too often because, you know, it's a huge investment so people can tend to be a little resistant to change, for those are the factors.

**Frida Ella Viola Lindqvist** 22:14

Okay, and the last bias is the availability bias. So that's basically the tendency to assess the likelihood of an event occurring based on the ease with which related instances or occurrences can be brought to mind, regardless of the number of times this event have actually occurred. So for example, believing that the likelihood of terrorist attacks is higher if you ask someone right after the occurrence of one or for example, in this case, maybe today if someone has the flu, that you would immediately think that that's Corona because you hear a lot about it. What do you said sometimes on that one, so not as much as the other ones but what would you say is an example from your work

**Simon Locke** 23:00

I put "sometimes" because I don't see it that much. I'm just trying to think of it. I don't think I don't think we're particularly good at predicting potential changes or planning for, for change. Maybe one example we invested heavily last year into the software we use now the Microsoft Teams and other software to develop a kind of working arrangement and to make us far more agile as a workforce at the time people really question the whole. Why are we spending so much money on this because it is a significant investment. You could argue now that it was one of the best investments that we made because we have a really good ability to continue working, which I think even if we're about a year ago, we would have really struggled.

**Frida Ella Viola Lindqvist** 24:13

That's fine.

So basically, between all of these biases, do you see a difference in the prevalence and intensity of them in individual decision making and behaviour versus in group settings?

**Simon Locke** 24:33

I think because when you're a business that is a corporate business, you could have fairly easy to adopt that kind of corporate behaviour, a mindset. And so I think there's there's a few people that are trying to offer different opinions or views, but it's really hard because you can then go and against the mainstream and you don't want to be someone that's negative or critical the business so you again this this whole thing of diplomatic rebels talk about the whole thing of the process you have to go through the fact that you have to kind of do and he touched on before gentleman can nudge us along. Sure sharing your idea and not getting too upset when people come back and say I don't like it but to keep reference it and also you kind of have to hand over we talked about in terms of whose idea you have to kind of accept that to get like up and running. I have to accept, for example, that for a project to get signed off. I had to kind of sow the seed quite often was only an owl or his team. And then eventually he'll turn around and meet and so I had this great idea we're going to do X and he said anything. Where does this come from? No idea but it's that kind of that's how it works. That's the reality of it. If you say we'll do this, we'll do that, then it's not gonna get off the ground, you really have to sow the seed, get everyone on board and go through that, that they cannot process. So to get anything different to actually happen.

**Frida Ella Viola Lindqvist 26:18**

Yeah, make sense. And so also between all of these biases, if you would summarise the biases that are the greatest obstacles to sustainable innovation, in your own words, what would you say?

**Simon Locke 26:37**

Risk averse is probably the key one for me. And again, I think the situation we're in is probably only gonna make that worse, because suddenly the budgets that you thought you had you haven't got, so when perhaps, we do get through this, it can be harder to, you know, to get some of those more risky projects up and running because you know, the business will be high, it's very easy to when you've gone through a situation like this that then become really kind of insular. It's all about survival rather than, like I mentioned earlier conventionally rather than perhaps think, okay, is this an opportunity to really change the business and we should stop sending a number of products or just only focus on on this or we should have to have a massive expansion in line and close tools or whatever, I think we will go much more into a more insular protective, let's just do what we know process. So yeah, I think risk is probably one of the key ones against that whole challenge of unlocking the resources in terms of resource of teams and people and money to go over a project that There we go, how it's gonna work out there on the flip side we do take some risk, in the sense of if we have a deadline to launch a product. We will also pull up on that date because we built a whole event around it time to instal the promotion. So they may accept the product isn't perfect. So in some respects, it's weird because chances are that it's a little while ago that I was describing the business being really risk averse. And they'll say no, no, it's not because they work in the mall or regulatory issues and so on. So yeah, we don't always all the products aren't the same registered properly, they haven't gone through all the the essence is instant balanced, that I think we're really risk averse because of what I do. So say, I think we do take risks. So it's interesting.

**Frida Ella Viola Lindqvist 28:46**

Now that's true. There's a bit of relative innocence, maybe, depending on where you're at. Does, does it at all relate for you? The risk aversion to the loss aversion and the Status Quo bias for example and the present bias that we talked about, are they related in your mind?

**Simon Locke 29:07**

Yeah it's I think the body shop, we have a risk averse culture. And so because of that, everything kind of cascades from that and then again like I said, well if he does go wrong, I wouldn't say there's a huge latent culture but it can feel a little light, that so people are aware you know, I guess sticking their head up and kill up ideas or, or lead them on time because we can call if this goes wrong, this can be like so there is a real tendency blob, but I think it comes from that whole risk. I think maybe if there's a big projects that failed, but it was okay. That was really a lot. Though. Someone was telling me that there was a company in the UK, who gives out an award for the best failure every year. It's not a deliberate failure, but it's someone who had a really good idea and didn't work out. Because again, they're worried that if they, if they don't come support and encourage that, then people won't come forward of ideas. That's a really, really cool approach. And I'm not aware of any companies that would still do that.

**Frida Ella Viola Lindqvist 30:22**

I think there was I don't know who was Yahoo or something like in the past, it was someone who as CEO, who really did not carry an idea through, it was a good idea, but it really was a big failure cost the business so much money. But then, like the board rewarded her or something, just because of the failure. I have to look up the story. It's pretty interesting woman, but I didn't manage to remember the details, which makes it less interesting. I'll send it to you. So last question would be for us to just know if there's a difference in the biases experienced in your work between when you only work with sustainability and with sustainable innovation. What do you see the differences being?

**Simon Locke 31:13**

Not a huge difference. I think that there's not even one. Put two sustainability teams that are a little distance from the business and the corp and how you drive in value for the business. But I think that was an issue a lot of years ago, I think people now are realising the importance of sustainability and how your brand has to be relevant because consumers are switching from brands that aren't subject to chemicals and patches and to testing don't we understand how business works, I'd be in a meeting before where I was called to have too much of a purist, you know, and you have to kind of accept we're in the real world here and you have to accept who's in the business so it's, it's good to have come up with its purist ideals but reality that you can't always do that. I think that was a criticism, maybe that was in the sustainability team, now because I'm more embedded in the business, I think it's more around perhaps a bias. Like what have you actually launched? How successful has it been to look at the banditry aspects of the road? Most of the work I do, slightly bizarrely the majority, I'm not meant to actually finish any projects. My duties is to come up with a longer term ideas, but maybe more radical, and then it can perhaps gets watered down a little but then you hand it over to the business to then develop a long shot. So I think sometimes maybe it's a challenge to assess how successful you are being because in reality, you haven't delivered anything, if that makes sense.

**Frida Ella Viola Lindqvist** 32:59

Okay. All right. Yeah, so there's not a clear evaluation maybe?

**Simon Locke** 33:04

No, but like I said in the short term that's changing, but the majority of my projects I've been working on a wall parks now will be paused, we can't do it. And I'm being called in to help with will disclose more kind of business as usual, short term projects. But I understand because now you have to know, the businesses, obviously. But many are really concerned about the situation and its long term survival.

**Frida Ella Viola Lindqvist** 33:35

That was all of our questions, and it's really nice that you were willing to answer we really, really appreciate in this time as well. So we might actually have something in the end to hand in, which would be great. And it said that we couldn't meet each other in London at this time. But hopefully some other time in the future. We'll also send you the findings in the end.

**Simon Locke** 35:52

It'd be good to see that. Yeah.

Thank you so much. Take care. Have a good day.

## 10.2.3 Linda Lindberg

**Frida Ella Viola Lindqvist** 1:21

Okay, so, basically, first, in a question in the survey, you answer that people's behavior is a challenge in your mission of working towards sustainability. And there were a few options and like regulations and stuff, and you send people's behavior, one of the important challenges. Can you elaborate on why you think it's a challenge?

**Linda Lindberg** 1:48

Well, I think also when I started, this wasn't an area. It's growing very quickly. The fact that sustainability is normally a part of many company's core business, but when I say started doing this, a lot of people when talking about it didn't even know what it was. And when I started at Bambora, and I was talking to the CFO about it, I mean, I really had to explain from the basics, what is sustainability? Why do we need it? Why would I work with this? And I think after that it was more of a "nice to have", and if there is time over and if we have any money that we don't know what to do with basically. So I think that was the biggest challenge at that point, which has changed very, very much. I think, just following me, then I know, a lot of different laws and everything. From the start, that was absolutely the situation. nobody really knew even what it was and there was not time for it.

**Frida Ella Viola Lindqvist** 2:49

Okay. So like maybe a little bit of a lack of awareness.

**Linda Lindberg** 2:53

Yes, absolutely.

**Frida Ella Viola Lindqvist** 2:55

Okay. And so, we basically are the main like chunk of the interview is like, we'll go through the biases and your answers to that, like how, how frequent you think they were, and then just, we'd like you for each one just to tell us how, like, how you interpreted and why you answered what you answered. And hopefully if you have any good ones, if you have examples of them, of like when it has happened for you in real life, so if you want to present the first one,

**Sandro Daniele** 3:24

yeah, so the first bias was the present bias and hyperbolic discounting. So it's basically the tendency to choose a smaller present reward, rather than waiting for a larger future reward, in a trade off situation, for instance, choosing to eat one cookie now, rather than waiting to eat five cookies later. And you answered often to this bias.

**Linda Lindberg 3:55**

I have to think about more practical advice because it is what I just said. Yeah. As I meant, I mean, you would always get the answer so many times when I had discussions with management was that we would do this at a later point, when there's more money or more interest. And there was more interest when the legal... because we were such a big company, so there were some things that we couldn't compromise on. So then it made it easier, as you can understand, even then it was I mean, to be frank, when we were sitting in the meetings, they would say, what do we have to do to not get into trouble? And I have so many suggestions somebody thinks that I know would be that employees were very engaged in everything from equality, to some policies that people didn't really know if we had and we didn't, so I think it was just more of a time matter and an economic or financial matter, that we didn't have.

**Frida Ella Viola Lindqvist 5:15**

because one thing with the present bias also is this like immediacy effect of wanting to do things that gives a payoff right away. Would you say that that's basically what you just said? Is that an example of that as well to doing stuff that you get an immediate reward for?

**Linda Lindberg 5:38**

Yes, I guess, but I will say more a lack of things. And because they don't really get an reward from it, but of course, it is a financial reward because that's always especially in that kind of business because they had a very short time. When they have their discussions, I think with Nordic he wanted to get financial rewards very, very quickly and present them. And when you talk about sustainability, I think most people would agree that it's about a long term investment. Most people would agree that it is a very clear financial gain as well. I mean, before, there were so many people that ended their employment as well at Bambora. Many people were lacking things like values, and what do we want more than this, and that things started, like an ambition that we wanted to have something more than just a financial gain. And we were actually a group that we believed in things that we could use these restraints and all our talents for something good while making business. But that when they couldn't see a financial once a financial gain, what is the word for it?

**Sandro Daniele 6:55**

Incentive?

**Linda Lindberg 6:56**

Yeah, exactly. If you can't see right away, then it was very, very hard to make management agree that we could spend any time or having employees involved in it.

**Frida Ella Viola Lindqvist 7:07**

Do you think it was affected by the fact that it was owned by Nordic capital? And that kind of business or?

**Linda Lindberg 7:14**

Yes, no, I, even though I think there were some things like Emma that I was mentioning. She's very involved. And she had education and there were a lot of things that like courses that they wanted us to take, that all employees were asked to take part of. That is, of course, also very difficult if you don't have management being involved, and saying that it's important that they're, you know, that they will follow up somehow. It's just not done. And that wasn't about corruption. I remember there was something about climate goals, and it was about corruption and things like that. But it was very difficult to have people if you don't have management following it up and making that something that they will have in their talks weekly somehow, then it's just not done.

**Frida Ella Viola Lindqvist 8:16**

So the next bias was the confirmation bias. So the tendency to search for and interpret favorably and recall information in a way that confirms or strengthens one's prior personal beliefs, or hypothesis. People display this bias when they gather or remember information selectively, or when they interpreted in a biased way. So for example, a small downfall, the project being interpreted as a failure by those who were skeptics from the start. That's an example of it and you reply that this is something that often is a challenge to your work. Do you have an example of when you've seen an example of the confirmation bias?

**Linda Lindberg 9:00**

Sorry, I'm reading things at the same time. Is there no way that you can send this at the same time?

**Frida Ella Viola Lindqvist 9:48**

I sent them to you in the LinkedIn chat. So currently, we're the confirmation bias.

**Linda Lindberg 10:44**

Why is it that I have a little bit of a hard time understanding this?

**Frida Ella Viola Lindqvist 10:48**

Okay, I can just say it in an easier way to explain it might be like confirmation bias when, like if I believe that a company has good intentions, I'm more likely to interpret their information that they send out in a favorable way. Because I'm biased to confirm what you already think. So it's the same as if you meet a new person that you like, then you're more likely to, if you hear something good about them, you're more likely to take in that information and recall it then when you hear something bad about them.

**Sandro Daniele** 11:28

Now, we're also talking about climate change. If I strongly believe that climate change is happening, like every time, there's some weird weather event, like maybe late snow or something like that, I would interpret that event like to confirm my belief on climate change.

**Linda Lindberg** 11:50

So basically, I'm sorry, I think I've been doing too many things, same time. I should have read all these things again, before meeting you know,

**Frida Ella Viola Lindqvist** 12:00

If you don't have, like, a clear example that you think of we don't I mean, we can go on to the next one.

**Linda Lindberg** 12:06

Because Yeah, I can send you even more clear answers afterwards if you want.

**Frida Ella Viola Lindqvist** 12:10

Yeah, if you want them could be helpful as well. Yeah. If you think of something.

**Linda Lindberg** 12:13

Yeah, I can do that.

**Frida Ella Viola Lindqvist** 12:16

Nice. Um, so we'll take the next one. And that's like the overconfidence bias, which basically is that you have more confidence in a situation and then you should give them the objectivity of the situation. So for example, maybe thinking that you do more within sustainability than you objectively do as a company. So for example, believing that you are doing more than a competitor does. Is there anything like that example? You said sometimes, so it wasn't a very strong one. It seemed like but do you have an example of it?

**Linda Lindberg** 12:57

Well, they think we were very happy or not. management was very happy when there was goodwill being done. There was one thing when Doctors without borders were given money around Christmas, for example. That was very clear. So then I think it was a little bit like checking the box, if you understand what I mean. Yeah, yeah. So those things are very clear. And also, there was a project when I was trying to get some people from the suburbs being... because there are people who don't might not have what you need in order to get full employment, but they can still come in and just work. And if we have people, especially within being programmers, you know, they can just be like a right hand and show them what to do. And that was also I think, many people and employment was very happy when this happened, because it's such a clear effect. You see what they've been doing. And also I would say everything you remember Päivi?

**Frida Ella Viola Lindqvist** 14:04

Yeah.

**Linda Lindberg** 14:05

I was doing many things about, like being a green company. And I mean when we were renting our office was such a it was a very good was a corner down very good things. For everything about electricity going off naturally.

We were trying to at least, like not just throwing away our garbage in an irresponsible way and everything. So those things were things that people would bring up and feel very proud of, because you could see it very clearly like, right in front.

**Frida Ella Viola Lindqvist** 14:39

Do you think that sometimes took away from the fact that like if you maybe didn't do enough in certain sustainability areas, or do you think it? I mean, do you think it took away from that like, in the sense that "Oh, we're so confident and feel good about this project. So we don't realize we are lacking in these areas of sustainability".

**Linda Lindberg** 15:04

Well, I am, as I said, also, when you have the meetings with management, I think it very easily becomes a check in the box, which I noticed also is why I've said no to some jobs that have been offered. Yeah. I think that in some businesses, it is very much like that. They know what they have to do in order to not get into trouble. But they don't really want to do anything more. They don't want to use their products in order to actually contribute or to do more than people would stand. I mean, there are absolutely fantastic companies who are, but it's so much more.

**Sandro Daniele** 15:44

Just complying to the regulation, nothing more. Right.

**Linda Lindberg** 15:48

Exactly. Yeah. And as I said, you do a little check in the box and you think about what our employees are going to be able to see right away. And what are the legalities. I was working very much with the legal aspect, and just making sure we have all the policies, but also the policy like the general one, which you don't really need to have the one just saying what are our values? What do we want to work towards? What about equality? You know, those things were, like, basically impossible to get through. Yeah.

**Frida Ella Viola Lindqvist** 16:19

When you tried to implement those things, did you meet a lot of resistance? Was it hard to get like the employees? So not only management, like, but how to get employees to comply with certain of those things?

**Linda Lindberg** 16:32

No, I would say employees are very passionate and very interested, okay. Even in a way where they say I want to work with you, is there any way that I can also work like maybe 20% or help you with this or, and they might not be interested. I mean, the difficult thing I would say also with this area is that it's so broad. I mean, you're supposed to work with everything from environment to equality, so you have to work with the.. As I said, I was working so much with policies. Of course, that's like a legal aspect, which I'm not an expert in. So writing these policies in the correct way is not something I can do when you're talking about corruption, or you're talking about, you know, even exactly who we can work with, where the limit is, but in some areas, but then when you talk about how do we want to work with being different or, like I've experienced, I think most women have experienced if there is a situation with somebody being mistreated, or feeling, you know, not when equality isn't really working. Or environment, as I said, is something that a lot of people are very engaged in and want to work with. Yeah. And I've lost my thread but you understand, there's so many different areas and people are engaged in different things. So when I had my little workshops, people often said, "Oh, this is an area I want to work with", but of course, they don't have the time. If management don't say, you know, we will support this and you can take, you know, a few hours, maybe a month at least.

**Frida Ella Viola Lindqvist** 18:13

Yeah. And then something called the loss aversion bias. So, basically the tendency of people to, prefer avoiding losses, and even though there's a big gain to be made, they're kind of scared of the losses. And so, like in a good example, is that some people think that it's better to not lose \$5 than to find \$5. If you get the sense of it, and you said often, do you have an example of you experiencing that or no,

**Linda Lindberg** 18:54

I should have read all these questions again, of course, there are good examples.

**Frida Ella Viola Lindqvist** 19:15

But like people, even sometimes, you know, like, refrain from getting in the race even because you're so afraid to lose basically.

**Linda Lindberg** 19:22

Hmm. Well, I would say everything about financial gain when you can't really see how this will.. Just before when I went on maternity leave it was, a lot of customers were starting to call and to say that if before, you know before, we're going to have this deal being set, we want to know exactly how you work with it. Okay. And then of course, it was very clear that also management was starting to get like, well, how is this policy working and how do we do this, and so then all of a sudden, you could see that they started to get some interest. But before this, they only wanted to avoid it as much as possible. And we know, we were trying because there were so many of our customers and other companies that we were just partners with that had a very strong, strong engagement within these questions. But I think when they're when it was difficult to see financial gain straightaway and how this couldn't be described, it just was very difficult. And I mean, I was looking actually at, when I ended, I was sending a very long description of everything I had started, that's just all I can say. And that's what I read just like five minutes before we started this meeting. You know, it's like 11 pages of things that weren't finished, but they had been started. But that was just like, it was impossible to get them through, even though many people said oh, this is fantastic, this will be so much fun but it's just not for our time. Now this is not possible. And in management different people in management would say, yes, of course, this is something I would do, but it's just not gonna happen. So later on maybe perhaps we can do it, but...

**Frida Ella Viola Lindqvist** 21:23

It sounds like a bit of a short-term thinking.

**Linda Lindberg** 21:26

Yeah, absolutely. So they told me they, most of them in management, believed in it and they were so happy when I had separate meetings with them. They could even book it by themselves because they want to hear it and they want to feel like they are a part of it. But I do think when you can't see straight financial gain right away it's very difficult to get into. So these are very clear answers I'm hearing for myself but um..

**Frida Ella Viola Lindqvist** 21:49

They are I mean, this is how it is, I mean biases and it's all psychology. So it's hard to get a yes or no answer. We can jump into the status quo bias maybe.

**Sandro Daniele** 22:06

Yeah, it would be the preference for familiarity. And it's basically that it is evident when people prefer things to stay the same by doing nothing, or by sticking with decisions made previously, even when only small transition costs are involved, and the importance of the decision is great. And yeah, and we gave the example of keeping the same newspaper subscription throughout the years, even though there is no strong preference for the content, compared to an equivalent option to which a switch will be cheap and simple.

**Frida Ella Viola Lindqvist** 22:46

So basically just like sticking with something because of familiarity. Even if there's a better option.

**Sandro Daniele** 22:52

Resistance to change.

**Linda Lindberg** 22:59

Well, I would say that in that case, it was also working with HR or working with people who are passionate about these questions usually, and the team was very passionate. But also there it was very difficult because they had basically given up on these things being able to show financial gain or just like how can we show management that this had any positive effect on the company in two months. Like there was a number that could be shown. And I had a lot of ideas and a lot of suggestions on how we could work, especially with equality. But it was there was just no interest and a lot of the management there would just say, no, it's impossible. It's just not gonna be harder.

**Frida Ella Viola Lindqvist** 23:52

Sorry, even HR admin as HR basically said no,

**Linda Lindberg** 23:57

Absolutely. No, I would say HR was one of the things that made me mostly just say, this is just not fun anymore, because I always thought that we could work as a team together. If there was somebody who would be interested, it would be HR.

**Frida Ella Viola Lindqvist** 24:13

I can imagine. Especially when it comes to equality and things like that.

**Linda Lindberg** 24:21

Yeah. But if they say that, no, there's no interest in the others working for this, we're just not going to have our focus on that, let's just put our efforts into other areas. Then it makes it feel like but then who is going to put their effort there's not gonna be one or the other.

**Frida Ella Viola Lindqvist** 24:43

So the last two biases, if you have a brief comment on them, is the possession bias, which is the tendency of people to value an idea or strategy higher if it's their own. And second is availability bias, which is basically when you assess the likelihood of an event higher when it just happened. So for example, now with Corona, it would be like, someone seems sick, and you're like, oh, there must be Corona, because it's on top of your mind. So those two availability and the possession bias. Do you have an example of those?

**Linda Lindberg** 25:49

Or maybe, I don't know exactly, if I understood it. But I know there was some very strong engagement from one person in management, just when he had seen something very clearly from a trip that he went on, that made him super passionate about, like we have to be a green company. I think it was somehow that he saw that there was snow disappearing from a mountain that he was always traveling in. So that became very clear. It was a very one day to another or a week from another. And he's actually the person who took over when I left. And I don't know what happened within this area. But it was, it was like we have to change. This is fantastic. All the things that you've been trying to do. And it became so clear for me. So that was absolutely interesting. And also, as I said, when the customers started to write and to call and ask, you know, we can't have this being done if we can't see the policies and the way you work with it, and there were some in management as well or one person who started to read a lot into it, and just get an interest because he started to understand I think. So when it comes up front and you see the consequences, and you understand what it's about, most people do have an interest. And I guess that's why women usually are interested in equality because we know what it is.

**Frida Ella Viola Lindqvist** 27:14

That's a very good example of the availability bias. I think when he, one week from another, saw something and then it's like top of mind. I think it's a good example. And so if you want to take this one, it's basically a yes or no question.

**Sandro Daniele** 27:29

Yeah. So do you see a difference in the prevalence or in intensity of these biases in individual behavior? Versus in a group setting?

**Frida Ella Viola Lindqvist** 27:44

Yes.

**Sandro Daniele** 27:46

Okay. Can you elaborate a little bit?

**Linda Lindberg** 27:51

It's much, much easier to get people engaged when you're sitting having a conversation.

**Frida Ella Viola Lindqvist** 28:04

Yeah, we've already talked about it because you had the service about behavioral obstacles in general, you wrote short term rather than long term thinking. And you wrote neglect, and you wrote that people sometimes associate sustainability as a conflict to profit. And I think we've talked about all of those. But maybe just when it comes to the one that you said, neglect. Could you elaborate a bit on that? Just if you have anything to add?

**Linda Lindberg** 28:42

I think many people think it's, I would say first, the problem is that it sounds very... what is the "flummigt" in English?

**Frida Ella Viola Lindqvist** 28:54

I'm trying to find a good one, but I'll translate it to Sandro.

**Linda Lindberg** 29:00

That's just not like what is sustainability?

**Sandro Daniele** 29:03

Maybe abstract?

**Frida Ella Viola Lindqvist** 29:05

Maybe soft knowledge.

**Linda Lindberg** 29:06

Okay, and it's nice to have, it's like okay, but what are the clear facts? Like what exactly is going to end in? Like when you work with financial solutions, like payment solutions? It's like, what is sustainability for us? Okay, sure. Well, we know we have good offices when the lights go off when you walk out of the toilet, you know, we do our part. And you know, people are nice to each other, everybody's happy. And then when I was implementing things like a whistleblowing system, most people were like, what is this? This is not a police office. Why do we need police officers? This is not dangerous and why can we talk to each other Linda, you're just being you know... you're making things worse than they are in starting conflicts. But then I think today is going to be something that it's or it sounds like this is going to be a legal requirement for many companies. And I think, when I think more and more, it's going to be a very encouraging thing. I think, especially now in Corona time, most companies and most people are actually understanding that it's going to be values are going to, and the young generation are going to be just interested in working within these companies. And being able to tell having a whistleblowing system, you know, if there's a problem, what is the big loss? We had some errands coming in very quickly afterwards. So I think then, they understood that this may not be might not be such a bad suggestion.

**Frida Ella Viola Lindqvist** 30:53

And so and then the last question is: would you say, because since we're looking at sustainability and innovation, and the main topic will be sustainable innovation, would you say that in your role that you've been engaged with sustainable innovation? So basically like just innovation when sustainability considerations are involved, so people profit planet?

**Linda Lindberg** 31:16

I think in my first role before I was working with Bambora. Because we were trying to find payments for organizations and NGOs. I mean, we were working with payment solutions. And there the CFO was very... that was the core thing when he hired me. He said, okay, you were very good, you've been working with so many NGOs and working in different countries, so maybe we can just make this work together. You know, and still make some money because I can, you know, I can take some payment every time there is a transaction. And it's fantastic. And I think this is the way that most companies should work. Instead of just giving money every month, like a percentage and don't say, you know, this whole thinking of checking a box. It's a fantastic thing if you know that this is what we're good at, why can't we use that thing? That talent or whatever? Or why do you know, just like making everybody go at the same time? Yeah. So we would say that's something that is very, very encouraging, and it's so much fun to work with, because it's, it's like at the core of the business and making sustainability something that is just like, as important to us. You know, I think it really needs to come up also, more and more into management. So that it feels like not just like a check in the box, but that it is something that goes through and that it's a part of, maybe also making money for the company or something that they can see very clearly this is making profit somehow.

**Frida Ella Viola Lindqvist** 32:21

Yeah, it sounds in general, would you agree with the interpretation that in general, it sounds a lot like you've been in a situation where they see where they don't really see sustainability as an opportunity, but more as a hygienic factor?

**Linda Lindberg** 33:06

Yes. Also as I said, I mean, my first employment was more the opposite. We said, this is what we're good at, how can we use it to make the world better? Which is much, much more encouragement, both with people working with sustainability and just having a dialogue with everybody as a company. As working with sustainability, you get to have a very close relationship with everybody in the company, which is much more fun, and I think you will have more interesting people working with sustainability, and more happy people.

**Frida Ella Viola Lindqvist** 33:46

But it's also so funny. Personally, I remember when you had the role of Bambora. I remember talking to you and it felt newer at that time. I mean you actually created that role. In a sense, basically, for yourself. But also, by the way, I saw that you had worked for just another. I saw that you had worked for peace works before.

**Linda Lindberg** 34:11

Yeah, I didn't work. No, I just, yeah.

**Frida Ella Viola Lindqvist** 34:16

It's kind of interesting, because I just have like, I have one really old family friend and one of my childhood friends who are like, everyone has been involved there. So I was like, Oh, I didn't know that.

**Linda Lindberg** 34:28

You can do it while you study also.

**Frida Ella Viola Lindqvist** 34:30

It's fun to see. But that's, we have everything we need. So nice of you.

**Sandro Daniele** 34:37

Thank you for taking the time.

**Linda Lindberg** 34:42

Absolutely. I'm happy. It's becoming more and more interesting for people and more and more, you know, studying it. And I think the last question that you had is very good. Because that is a very interesting thing, you know, how can you make these things just like, come together. And I think it's something that's needed within not all areas. But you know, the companies that are really making good karma, you know, when you try to find a way where you can make money at the same time as you're making the world better. Yeah, something absolutely fantastic. And I think it is so much more fun to work with sustainability, if you're working with that. And not just being like a police officer walking around telling everybody what not to do and what we have to do.

**Frida Ella Viola Lindqvist** 35:34

Yeah, I think it goes out a lot. Maybe the motivation for like, why starting the company as well? Yes, it can be hard to change. If you didn't start from there. It might be hard to change.

**Linda Lindberg** 35:46

And if you don't have somebody in management, I think if you just have a CFO or somebody else who just says this has to be in our core business, so let's try to find new solutions or new ways where we work with this, and to be known for this, like we want to be like Google or some other companies where this is something that we talk about a lot. It's coming, I think. In a few years.

**Frida Ella Viola Lindqvist** 36:14

Okay. We'll gather everything transcribe it. Is there anything you want us to anonymize? Or how do you feel about that?

**Linda Lindberg** 36:22

Okay.

**Frida Ella Viola Lindqvist** 36:23

And then we can if you want, later on, we can send you some of our findings.

**Frida Ella Viola Lindqvist** 36:43

Please do.

**Frida Ella Viola Lindqvist** 36:48

Thank you so much.

**Sandro Daniele** 36:49

Thank you.

**Linda Lindberg** 36:51

Good luck. Thank you. Bye bye.

## 10.2.4 Natalia Gòmez Sicard

**Frida Ella Viola Lindqvist** 0:01

Thank you very much. So maybe to start if that's okay with you, if you can just introduce a little bit about like your background in like behavioural design and be with economics in general. It would be very interesting to hear.

**Natalia Gòmez Sicard** 0:14

Of course, I'm a psychologist and I worked in behavioural sciences for seven years now. Before coming to do my master's, I worked in a consultancy firm and we basically based our research and our problem solving suggestions on behavioural sciences and we worked in different topics, or different fields and different companies.

**Frida Ella Viola Lindqvist** 0:41

What was that in England or Columbia?

**Natalia Gòmez Sicard** 0:44

Columbia.

**Frida Ella Viola Lindqvist** 0:48

Was it a general consultancy management or was it specifically for like behavioural sciences?

**Natalia Gòmez Sicard** 0:56

It was specifically based in behavioural sciences and we had different branches, one of them was in marketing and the other one was in more social related issues. I was in both.

**Frida Ella Viola Lindqvist** 1:07

Okay. Interesting. And so, let's see then. Did you have a lot of project or how did you work with the type of nudging that we're interested in? So, you know, like, more directed towards employees and managers like within organisations, to what extent and how did you work with that?

**Natalia Gòmez Sicard** 1:32

Okay, so I talked about two different projects, right? Yeah. Which I participated in, maybe employed a little bit of nudging. So one of them was with an insurance company. And what they wanted is that they wanted to change the way they worked. So at the beginning, they work in silos, like different departments, and each department was in charge of different issues. And what they want to do was to create more cooperative type of work in which they instead of working by silos or departments, they worked by problems or topics or issues. And so, what we did was design like persuasive campaign within the company itself needed to convince the workers or not convinced, like persuade workers, about identifying alternative ways of working or changing from traditional ways to more cooperative ways of working within the company. So, we had a friend workshops with them and showed them within these workshops, the type of results that they could have while working by projects and not by size.

**Frida Ella Viola Lindqvist** 2:50

In this like persuasive campaign, in like behavioural sciences terms, what would you say? Like what biases were you working with them? What nudges would you pick out from that like what could you identify in them?

**Natalia Gòmez Sicard** 3:08

We found for example, barriers in the identity of the workers themselves. For example, if they are statisticians, they will only be focusing on statistics and they have nothing to do with, for example, the behaviour of insurance buyers. So, when we try to actually try to break those barriers by putting together for example, statisticians and product developers, and researchers and marketing, they started to discuss the different problems. Well, they found out the benefits were higher compared to the way that the work before it's not exactly maybe nudging, like maybe not the exact concept or definition of nudging as is defined by the book. But it was a way to change behaviour within the company.

**Sandro Daniele** 4:10

Yeah. That's very interesting.

**Frida Ella Viola Lindqvist** 4:12

How did it go? In the end? Did you? Was it successful? And do you know anything? Long term?

**Natalia Gòmez Sicard** 4:19

Yeah, it was successful. They started within the marketing department first. So within the marketing departments, there were all different divisions and they just started to work together communication, marketing and product design and fidelity. Consumer fidelity. They started to identify main problems and they decided to each week, schedule a meeting to find different ways to solve a problem. Okay.

**Frida Ella Viola Lindqvist** 4:54

It's interesting.

**Natalia Gòmez Sicard** 4:56

And well, that's one project. The other project that I told you about was with the public transportation system. So that project wasn't? Well, it wasn't specifically designed for people within the company, but for the users of the public transportation system. And so I don't know if that will be useful.

**Frida Ella Viola Lindqvist 5:22**

I think it would be interesting to know from that project, even if it was designed mainly for the users, it would be interesting to hear, like the part of it that also affected the employees. If you could explain a bit on that.

**Natalia Gòmez Sicard 5:39**

Yeah, of course. So the public transportation system was founded in 2000. And they hadn't had a research about who the consumer was and what type of buyers they have actually, and the acceptance rate is very low. It's about, so for you to have any idea, about 40% and acceptance rates here in London are around 80%. So they were really bad.

**Frida Ella Viola Lindqvist 6:12**

Just because I don't know. What do you mean by acceptance rate?

**Natalia Gòmez Sicard 6:16**

Like satisfaction rates. So what we did was kind of a behavioural diagnosis of the users trying to identify different patterns and profiles. And to understand the different reasons why some people didn't like the system that much and what could have been done in order to improve that to improve the whole experience. So we analysed different features from the public transportation system by itself. We track the whole customer journey, and we identify barriers in each step. we analysed the signals in the system. And we found for example, they were very confusing, actually Bogota transportation system is a very difficult system compared to other systems in other parts of the world. And that was creating like high rates, high levels of anxiety, which was modifying behaviour within the system. So high anxiety levels were strictly linked with for example, aggression levels within the system and then social behaviour. And those anxiety levels were provoked by the system itself. So by being difficult to understand and by not delivering what they were promising, so the buzzer sometimes takes too long to arrive. So there were some things related to signals, some things related to how the system worked by itself, and how, for example, the different workers from the public transportation system really needed or interacted with the users. For that we actually suggested some nudging strategies related to, for example, introducing different types of signals within the system to modify behaviour, either to reduce anxiety levels and to promote pro social behaviour. That for the users that when presenting this project to the public transportation system as it was the first time that they saw a diagnosis like this, help it help them think about understanding behaviour in a different way, rather than only just implementing satisfaction questionnaires. Well, they weren't able to identify the behaviour when it was more than that, and there were different types of ways to measure behaviour rather than a questionnaire because conduct a questionnaire is actually very limited.

**Frida Ella Viola Lindqvist 8:58**

Yeah. Was there any like nudging recommendations for the employees working within the system as well?

**Natalia Gòmez Sicard 9:10**

More than nudging for them? They were able to be aware of how important these types of strategies are because they were actually nudging the users, but they didn't know about that. And they weren't designed with that purpose.

**Frida Ella Viola Lindqvist 9:27**

Okay. I See.

**Natalia Gòmez Sicard 9:31**

So yeah, it was more like a meta analysis of what they weren't doing, because the public transportation system by itself had not had nudges. Yeah, but they were not designed to modify behaviour in a certain way.

**Frida Ella Viola Lindqvist 9:46**

Okay, I see. Is there any kind of like, report publicly or something on this that we can look into?

**Natalia Gòmez Sicard 9:56**

Unfortunately, not.

**Frida Ella Viola Lindqvist 10:10**

Is there anything in your experience like biases and nudges regarding sustainability and innovation? So like, and like most likely sustainable innovation, do you have anything that you would that you think of that you have worked with when I say that?

**Natalia Gòmez Sicard 10:29**

What do you mean?

**Frida Ella Viola Lindqvist 10:31**

Have you like, because the thing is we're investigating, we have looked at things that are, like biases that hinder sustainability and innovation, as biases that can be obstacles sometimes for sustainable innovation is like where we ended up. It would be interesting to know also, if you have worked somehow with nudging, that with the aim of promoting sustainability or innovation or sustainable innovation. Is there anything you have experience of

through the work or like maybe through your studies? Because you right now you're at UCL, right? Yeah. And is there anything about that that rings a bell that you have worked with?

**Natalia Gòmez Sicard 11:16**

About biases? One of the main barriers that I found while working in the consulting firm, maybe it wasn't related exactly with sustainability. But when mentioning the use of nudging, there's still, there's still a negative association with it. Like a video manipulation strategy. And so people don't like to talk about it that much because they think that it's ethically wrong.

**Frida Ella Viola Lindqvist 11:50**

What do people say about like, because the argument, you know, one of the arguments in the Thaler Sunstein book, like you know that all there already are nudges. in place, basically, do people not agree with that? or?

**Natalia Gòmez Sicard 12:06**

Yeah, but the fact that you create a nudge for a specific purpose like that, that partly intention is people's more resistant. What is creating more resistance from people? Yeah, I think and I think it's actually related to fear, like people don't like to feel out of control of their own decisions, but rather depending on what other people are trying to induce.

**Frida Ella Viola Lindqvist 12:38**

That makes sense. For example, like Now, during your time at UCL? Do you talk about anything like sustainability or innovation or nudging being used in those fields?

**Natalia Gòmez Sicard 13:10**

Yes, actually there was a research project about improving or increasing recycling at the university. Okay. Um, yeah. And for example, have you seen the bins? Yeah, for recycling. Some of them are colour coded. And they have different icons and they have different specifications of which type of garbage should be deposited in every hole. I haven't read that in any research, but in my experience, and what I saw what I did it was it was actually very difficult.

**Frida Ella Viola Lindqvist 13:52**

Okay.

**Natalia Gòmez Sicard 13:53**

I actually think recycling is a topic that needs a lot of further research. Because I don't think there's enough clarity about how it works. And actually some of the bins, like were divided with the within the top, but you could see that everything went into the same bag. So it doesn't make any sense. And therefore, there's no reason for you to actually like follow instructions. I think the most common is using the nudging right now is energy consumption. So for example, using different types of letters, or people to let them know how much energy have they consumed compared with their neighbours or compared with know, the city or the neighbourhood or the country. I think that there's still a gap under theory in the literature because different studies have found that, for example strategies, comparing consumption in within the neighbourhood could be better than, like contrasts or differences within the country, but there's no reason for that, like people actually don't know why. Having those types of letters when you compare certain types of information work and why they don't sometimes, so I think, like behavioural sciences have been applied to a lot of different sustainability problems, but I think there's still there's still a lot of gaps in the literature to identify what are the mechanisms behind decision making.

**Frida Ella Viola Lindqvist 15:57**

Yeah. Actually, when we through the literature and different things on this, we kind of found some literature, from that we basically summarised some of the biases that are like present and are inhibiting sustainable innovation. So, just by hearing the biases, if you could just tell us if you have specifically worked with trying to counteract these kinds of biases. So for example, and the prison bias, if you would relate that to your experience with behavioural sciences, and like, preferably like within the organisation, contexts. Did you in any way work with counteracting the present bias there? So, basically that yeah, that people prefer getting things like now rather than later in a nutshell.

**Natalia Gòmez Sicard 17:19**

Yes, but actually that was how they are rated like how the effectiveness of each department is graded. So, they are rated depending on how many projects they produce in a certain amount of time. And working with groups not in silos may sometimes make the projects take longer. And therefore they prefer to work as before because the way to measure their effectiveness was based on working as a silo. Like working by silos and not by problems.

**Unknown Speaker 17:59**

In the solution that you created? And what part of that solution would you say is the one that counteracts that kind of bias? That people want, you know, to do shorter projects, so they get the reward faster. So what part of your solution do you think addresses that problem?

**Natalia Gòmez Sicard 18:38**

I think I actually think that the solution had some limitations because it required a transformation of the company itself, like how they measured their own impacts. And well, that was more like a long term aim that we didn't get to work.

**Frida Ella Viola Lindqvist 19:04**

So basically you didn't get them to change the metrics at the time. But that was definitely a problem. Is that correct?

**Natalia Gòmez Sicard 19:18**

Okay.

**Frida Ella Viola Lindqvist 19:20**

And also then that the fact that people the status quo bias that people just prefer to do things, sticking with things as they are, because of familiarity or sticking to a decision that they previously had made, and is there anything in the problems that you saw there that that could be related to the status quo bias? And what part of your solution do you think addressed that?

**Natalia Gòmez Sicard 19:49**

Yeah. So when I mentioned the identity, part I kind of was referring to something related to that. So for example, statisticians thought that they shouldn't be caring about marketing, for example, and how to sell a product, because it wasn't their job. And actually, it was kind of scary for them to think about that because they didn't feel comfortable working with those types of topics. And so the way to address them was creating these working groups like cooperative work. And by sharing ideas and experiences, they were able to solve problems together. So actually cooperative work help to reduce that resistance from them.

**Frida Ella Viola Lindqvist 20:46**

Okay. And then also, the other ones I would say is, for example, like, associated with the problem if there was if you could say that like risk and loss aversion. So basically like to prefer avoiding losses than, like gaining equivalent or even higher gains. Did you see that kind of aversion from the participants as part of the problem? And how did your solution address that?

**Natalia Gòmez Sicard 21:17**

Can you repeat the question?

**Frida Ella Viola Lindqvist 21:18**

So just like in this silo working and with all that that entailed, did you see amongst the employees any kind of risk aversion and loss aversion? So that they basically they would prefer to avoid the loss of something, even if, like, if the risk that they would take by maybe doing things in the new way, even if that would promise higher gains? Did you see that in any way, like people being risk averse and loss averse?

**Natalia Gòmez Sicard 21:53**

Yes, so, I think this is a trend, maybe in Colombia and it happens here as well but here In Europe, I mean, but in Colombia tradition is very important. So once you propose a different way of work, actually, you're also proposing a different way to see things and to break tradition a little bit to get rid of tradition a little bit. And this insurance company was one of the first that was founded in Colombia. So for them having these types of traditional associations and familiarity was very important. And so proposing this different type of work of working their way of working, it demanded a different way to define themselves. In one sense, they will lose something because they will lose some kind of association perceived by the people and the consumers. And it was kind of trying to change the whole image of the company.

**Frida Ella Viola Lindqvist 22:58**

And the solution to that, did you do anything to counteract that in the solution?

**Natalia Gòmez Sicard 23:06**

Yes or No, actually, when they saw that other companies that had more innovative ways of doing things and like, going up in sales, they just saw that the need was created. They just felt that they needed to do it.

**Frida Ella Viola Lindqvist 23:22**

Yeah. Okay. And that's actually kind of interesting because one thing just as a little nugget of information for you, maybe in the literature, we found a lot of biases in literature that was an inhibiting to sustainability and innovation and sustainable innovation in the end. And one of the nudges that according to literature could be relevant to counteract this is actually the use of social norms, which is kind of interesting because that's basically a little bit of what you just said about, you know, seeing what other companies are doing. So then maybe it's fine for us to do it as well. That's kind of interesting to hear. Yeah, actually, yeah. And so then there are three more like biases that we saw. So if you just can hear them and then you can say what part of your solution like you think address that, if there's anything you think is relevant for them. So for example, the availability bias, so, the tendency of people to rely on immediate examples that come to their mind, weighing judgments towards recent information when evaluating a topic or making a decision.

**Natalia Gòmez Sicard 24:46**

Can you repeat the definition of the bias?

**Frida Ella Viola Lindqvist** 24:50

So basically, the tendency of people to rely on immediate examples that come to their mind and weighing judgement towards recent information when evaluating a topic or making a decision. So for example, if we would be talking and if there had just been like now there has been the corona epidemic. And if I'm sick right now, if I would cough Sandro might believe that I had Corona. And because that's on the top of his mind.

**Natalia Gómez Sicard** 25:40

Okay, well, I don't know if this is related to that, please let me know if it's not. So as they had like this traditional way of working and traditional way of seeing the whole insurance world in the same way they saw consumers, so they try to explain the behaviour in a very rational way, in a very traditional and rational way. So, every time they had a sales decrease in a specific kind of product, their explanation was related more to rational decision making process from the consumers rather than taking into account other types of processes from the behavioural sciences unconscious processes such as emotional processes. And therefore, it was sometimes a barrier. Yeah, and the bias of understanding the problem.

**Frida Ella Viola Lindqvist** 26:41

And then the next one is overconfidence. So, the tendency for people to systematically overestimate their knowledge or the amount of effort they put in or their abilities. So basically overestimating. Yeah, basically, if I would be like, I do more for this thesis than Sandro. Even though that's not the case, so kind of overconfidence, that doesn't really have confidence that doesn't align with reality.

**Natalia Gómez Sicard** 27:14

Actually dependent on the department and the area. Statisticians and mathematicians were kind of like that. Like they have the numbers so they knew more. But the marketing department actually, that was one of the advantages with them because they were open to hear other options for their ideas. And they were able to identify that their own judgment sometimes was limited, and they needed the participation, somebody else with a different type of knowledge. So actually, that helped. Actually, that explains why the marketing department was the one the first one to use a different type of work and why other departments were more resistant.

**Frida Ella Viola Lindqvist** 28:06

And in the end you said this working in silos in the end did the marketing people work with the statisticians as well? Or was it breaking silos within the departments are also in between?

**Natalia Gómez Sicard** 28:24

They weren't able to work with the ones that they couldn't persuade. There were some people who just thought that it was a waste of time and that that it wouldn't work. So they were able to work with some of the people from other departments because one of the main issues is that this new strategy was proposed by the department but it wasn't a new strategy for the whole company. So that meant that they had to do an additional kind of work other than the one that they were being asked to.

**Frida Ella Viola Lindqvist** 29:01

Okay. And so the last bias would be the confirmation bias. So basically the tendency to search for or interpret information in a way that confirms what you already believe or what information you have. So, did you see anything of that? And what part of the solution would you say address that?

**Natalia Gómez Sicard** 29:21

I think that then was also an advantage for this company, and it was that they were able, they were aware of the gaps that they had. And therefore, they looked for different explanations for different topics, even though it was like it showed the opposite of what they thought in the first place, and actually that was understood as a positive thing because they were more excited to learn than to confirm, and I think that that kind of mindset helped them a lot.

**Frida Ella Viola Lindqvist** 30:06

Okay. Yeah. And the last one, do you want to take that?

**Sandro Daniele** 30:14

The possession bias. So basically the tendency of people to overvaluing something when they own it. Yeah, like without giving the object its own value. Like, if I have it, I valued it more. Have you experienced this bias in any way?

**Natalia Gómez Sicard** 30:46

Does it have to be like a physical object? Or could it be like for example, reputation?

**Sandro Daniele** 30:51

Yeah, it could also be that absolutely can.

**Frida Ella Viola Lindqvist** 30:53

It can be like a feeling of ownership. So also ideas or strategies or..

**Sandro Daniele** 30:57

Yeah, you might actually not own it like physically but just think about owning.

**Natalia Gómez Sicard 31:11**

Yeah I know what you mean, but I don't know if it applies in the example. Because I think that reputation was the thing that this company values the most. In Colombia sometimes reputation is related to a very conservative perspective of the world. And so are there other points of views that are not that conservative that are not seen as valuable and even like something that could jeopardise the reputation but I don't know if that's what you need to be through later related to what you're talking about.

**Frida Ella Viola Lindqvist 31:58**

Maybe the employees that you work with did you feel that they had like a possession over things that they owned in their role? You said they were working in silos?

**Natalia Gómez Sicard 32:11**

Yeah. Well, if you're bringing that terms, actually one of the main barriers that we found is that people felt that working cooperatively would for example, make other people do your job. And yeah, like that is that is kind of a threat for you. Because if there's something that's doing what you're supposed to do, that's yours...

**Frida Ella Viola Lindqvist 32:39**

Yeah, that makes sense. But then how did you overcome that obstacles? Like how did you overcome that they felt like that? Well,

**Natalia Gómez Sicard 32:49**

Through experience, they found out that actually they didn't overlap. And it wasn't that the other person was doing what you're doing but they were complementing what you were doing and actually making your job easier. It was not about competition, but cooperation.

**Sandro Daniele 35:11**

But thank you very, very much for your time.

**Natalia Gómez Sicard 35:39**

My pleasure. I hope it was useful. It was actually because in the beginning, I didn't I wasn't sure if it was useful because we, we, we'd weren't using nudges in the beginning with that purpose. And at the end, we realised that we're doing it without using them in the beginning. So yeah, Like, I didn't know if it was useful for you.

**Frida Ella Viola Lindqvist 36:03**

No, but I think I think in the end, the thing is also when we've been trying to talk to people, it's like, even if there are a lot of people working with nudging, it's it's not a super developed field. Especially not in terms of sustainability and innovation like specific nudging towards them. So we're just going to analyse what we have and what we find and see what knowledge we can bring from that.

**Natalia Gómez Sicard 36:34**

I think that in marketing, it is more clear but in sustainability, it hasn't been very pure yet. So yeah, I think that learning from the marketing experience and then trying to adapt it to other types of fields, I think it's very useful. I think that marketing itself has developed a lot of different ways of understanding human behaviour, but they have been used sometimes in a very good way.

## 10.2.5 Tommy Lindström

**Frida Ella Viola Lindqvist 0:00**

Just to give you a brief summary for me, and we're writing about nudging for sustainable innovation, and we're nudging it, we're talking about nudging for, like within organisations, so for employees and manager. I remembered when we met a few years ago, I remember us mostly talking about nudging for like marketing and sales at that point. But now when I looked at your LinkedIn and you have experience in like organisational nudging as well if I'm correct.

**Tommy Lindström 0:37**

Yes, I do behavioral design where nudging is one of the methods that we use.

**Frida Ella Viola Lindqvist 0:47**

Yeah, it's gonna be very interesting as long as these behavioural design methods have been implemented within organisations, that will be interesting for us.

**Tommy Lindström 1:01**

All right. Yes.

**Frida Ella Viola Lindqvist 1:03**

Okay, amazing. And so, basically, what we have done, how we have structured it a bit, is that we have been talking to professionals working within sustainability and innovation. And in certain cases, people explicitly working

with sustainable innovation and trying to identify from that and from literature, common behavioural biases, that are obstacles to like development within these areas. So that's what we've been doing. And then as this in this next step, were wanting to talk to nudging and behavioural design experts as yourselves. And just to hear a little bit about how you have worked with nudging within organisations and behavioral design within organisations and also If you have specifically worked with it to foster sustainability, innovation for sustainable innovation, does that make sense?

**Tommy Lindström**2:11

It does, but you might be disappointed because we worked in improving organisational performance not specifically within... Did you hear what I said?

**Frida Ella Viola Lindqvist** 2:35

No I didn't you broke actually.

**Tommy Lindström**2:41

We are kind of involved in discussing, among other things, how to improve performance of organisations and how to make people do what they want to do. And of course you can if you want them to behave in an environmentally friendly way. It's the same. It's the same method.

**Frida Ella Viola Lindqvist** 3:25

Okay. Yeah. So I mean, that's all interesting to us. And also, because it's, it's both about sustainability but also innovation. And also, I mean, everything that concerns affecting employees or managers within organisations, in some way is interesting to just hear your experience with, it's just that on a sub level, it's especially interesting for us to hear about these environmental projects and if you have worked with innovation as well in some way.

**Tommy Lindström**3:57

Okay, yes.

**Frida Ella Viola Lindqvist** 3:59

Okay, so if you could maybe just tell us a little bit on, like what kind of tools you have used in those kind of projects, that would be very interesting for us to hear.

**Tommy Lindström**4:14

I'd say that culture is the strongest tool to make people do what you want them to do. Then we have added some nudging in some cases. Priming is another method, as well as actually design and then I don't mean to define only from a good looking design point of view, but sometimes you can get rid of a behaviour by just changing something in the environment. Let's say that you want to take the stairs instead of the elevator. First you put up, what you call nudging, like a sign by the elevator to say that 90 percent of people working in this building take the stairs. That will nudge some people not to go there. You can use priming and that will somehow make that person develop a node or inject a node in the brain of the person beforehand. That makes that person feel very healthy, want to take care of the body, wants to appear well trained or something like that, and that you can do beforehand. Which in turn, will give us the result that when they reach the elevator, some of them will take the stairs. Designwise you could just hide the elevator behind a screen or something, so people find it hard to actually see where it is. And if you want to use culture, you develop a culture that we don't take elevators, you always take the stairs, not the elevator is not an option. Only if you are ill or something. It's one way of describing differences between those different methods as I said culture is the absolute strongest method because people behave the way you want them to without actually understanding that themselves. They just do.

**Frida Ella Viola Lindqvist** 7:18

So, in the project you worked with like for example, who what which have concerned the environment, like what tool did you use for that project and how did that work out? Do you have an example of that?

**Tommy Lindström**7:34

I don't have any. We haven't done a specific environmental project. We have to resolve organisational problems, organisations that engage all the employees, make them drive towards the common goal, for example.

**Frida Ella Viola Lindqvist** 8:04

So the thing when we went through, and when we went through the literature and talked to some professionals in sustainability and innovation, and we identified some common biases. So if I, if I list them and you just let me know if you want me to explain them further, and then maybe if you can just let us know if there's any kind of nudging tools or behavioural design tools that you would use in your experience that would be effective in counteracting these types of biases, Would that work for you?

**Tommy Lindström**8:39

Please, go ahead.

**Frida Ella Viola Lindqvist** 8:40

Yeah, so for example, we identified that an obstacle can be the present bias. So the tendency of people to prefer getting things now rather than later. And is there any kind of tool that you have used in your experience that has helped to counteract this bias?

**Tommy Lindström**9:03

All you can... I haven't used it, but what you can do is to move "later" to "now" to actually make people experience what "later" would be and also make "now" cost of your later. Let's say.. concert! They can open an arena. Yeah, they have a great problem selling tickets now. Because the purchase is usually done like a week or two before that makes it very conservative or liberal enough to understand how many people will later arrive. They want people to purchase their tickets six months earlier, but people don't want to purchase six months advance because the uncertainty is too big. So then you need to handle the uncertainty. And one way of doing that... For example, let's say that you receive .... if you actually plan this together right now, when you're all together and tell me we have something in common to look forward to.

**Frida Ella Viola Lindqvist** 11:03

Hello. I was just gonna say it's breaking up a lot so it's a bit hard to hear you. Would it be possible to maybe talk a little bit later if you get home or something because I feel it very hard to hear you.

**Tommy Lindström**11:20

Can you hear me now?

**Frida Ella Viola Lindqvist** 11:23

It's much better now.

**Tommy Lindström**11:33

What you can do is to sell a ticket but you don't pay for it. You'd like to pay 99 kroner for the right to purchase a ticket later on. So, if you decide not to go, then you will reduce the risk. But this takes me to what we believe is the most important thing about the behavioral design, that is the .... because when I read behavioral design and nudging .....

**Frida Ella Viola Lindqvist** 12:21

I'm sorry, you said that the most important thing with behavioural design was?

**Tommy Lindström**12:28

I will give you a call in two minutes.

**Frida Ella Viola Lindqvist** 12:31

Okay, perfect. Thank you. Talk to you soon. Bye.

**Tommy Lindström**12:41

Hello again.

**Frida Ella Viola Lindqvist** 12:46

I hear you much better now. Thank you.

**Tommy Lindström**12:48

Great. Where were we? I think I said something about something to be the most important part of working with behaviour design, nudging whatever.

**Frida Ella Viola Lindqvist** 13:01

Yes.

**Tommy Lindström**13:03

And that is to start on the other end, than most people do. Most people start trying to come up with a solution to a problem. But that's where they go wrong. Because if you don't understand why people do what they do, and not the way you want them to, then it won't be very effective to try to apply some type of solution that you've heard or seen somewhere else. Of course, you can try. But the thing is that at least when you work with organisations, the cost of applying the wrong method, it's also a great risk of people being pissed off. They feel that the management is coming up with their cultural stuff, with their nudging stuff and come on. Stop doing that. So you have a risk of a negative side of doing the wrong things. So, the first thing that we say is that, first of all, spend quite a lot of time on defining the problem, and understand the impact of it. And it's always about the person, one or a number of people that are doing something you don't want them to do and understand what the impact is of that behaviour. Who is affected by the cost of it, when, how, where, when, and so on, so forth. So we spend a lot of time on that part, to understand the problem deeply. And what happens is that usually when a customer tells us that we have a problem with this, after we define the problem, the problem is somewhere else, what they started to talk about, are just its symptoms. So that's the first step. The second step is to understand whose behaviour we want to change. And you may think that "well, the people that are doing something wrong - change their behaviour". Sometimes it's better to actually change the behaviour of someone else. For example, if they have a very strong role model, then change the behaviour of the role model and the person's behavior that you want to get changed will come along. And further, usually we don't have we don't have enough funds for resources to change, or people everyone that we'd like to change, so instead we pick out a specific group that we can afford to change. And expand from there. Okay, so that's the second step to understand whose behavior we want to change. And the third step is what I talked about before, why are they behaving the way they are behaving? What are the underlying forces? Are there any type of mental processes which are heuristic are we talking shortcuts in the

decision models, or are we talking other psychological issues that can be for example, how to identify them and still understand why they do what they do. And then after that, we understand the problem, we understand whose behavior we want to change, and then to understand why they're doing what they are doing, their behavior. Then we can look at which would be the best method here? Yeah, because sometimes it's better to use nudging, for example, because it might be a problem that is not that big, and it's easier to change, or we don't have that much money or something. In other occasions, we might want to do something that have a greater impact on a number of people and then we use culture. So it's very situation specific, what method to use and it depends on the situation depends on resources you have to receive. Does this helps you to understand how we do behavioral design and nudging?

**Frida Ella Viola Lindqvist 18:06**

Yeah, it definitely does. I think especially what you said was interesting about the structure of it, because when you say, for example, about understanding the problem, and you mentioned also some, like mental processes that can be like behind the reason sometimes behind why people do what they do, the like the structure for our thesis, when we have identified some cognitive and behavioural biases, then that can contribute to being an obstacle for sustainable innovation within companies. It would be interesting for us to just, as you said before, you started talking about the concert thing with Globen and the New Year thing as a response to when I mentioned the present bias as being one of the obstacles that we have identified in our research. It would just be interesting, it would be very valuable for us if you could just give, if we go through, like the list of biases, and if you could use give, if you have any, like concrete examples, such as the globe and example, as of how you think,

**Tommy Lindström 19:19**

For the record, the Globen example was just an example that I made up, so it's not a customer of ours.

**Frida Ella Viola Lindqvist 19:29**

But it's still, I mean, of course, the greatest thing would be if there was a customer, but it would still be interesting to hear, because you have expertise, it would be interesting to hear your opinion on even examples that have been outside of your work. Just what you said there, for against the present bias - would that be the example that you would give or what kind of example would you say, would work as a tool to counteract that bias. And of course, this is simplified. But just if you can give us any examples.

**Tommy Lindström 20:07**

The bias that we tend to kind of take what happens here now more serious than what happens in the future?

**Frida Ella Viola Lindqvist 20:20**

Just what tool you think would be most effective to counteract that bias.

**Tommy Lindström 20:28**

It depends on why they're doing what they're doing. So, in that case I mentioned, that they felt a great risk because it was a risk of purchasing the tickets that early. But on other occasions, it may be, for example, Thaler writes a lot about it, in his book "Nudge", a lot about insurance and pension funds. In that case, it's not about risk to the same extent. It's more about not being able to visualise the future. And also about not wanting to lose out on the economy you get today. And the solution he then proposed is to help people to visualise what it would look like if they save this amount of money per month, and also connected to their salary. So, a specific percentage of their salary increase when it goes straight to a pension fund or their pension plan, which means that it doesn't hurt them. So that's the example he mentioned. Again, you need to have a look at why they are behaving the way they behave, to understand a specific nudging technique, or whatever you call it, or I would rather say what sciences you want to address. Because you can't start to address all biases just randomly because there are so many biases that you can address. So you need to have some idea of what this specific problem is of that particular person or group of people.

**Frida Ella Viola Lindqvist 22:39**

Yeah.

**Tommy Lindström 22:40**

I'm writing a book about biases right now and I will have come up with about at least over 100 biases. I think that the scientists are finding new biases all the time in their research. So the number of biases may not be infinite, but it's quite great that number so that's why it doesn't help if you just randomly try to apply them. Because there are so many.

**Frida Ella Viola Lindqvist 23:28**

Yeah. That's very interesting. Also later when your book is published, we would love to read it, I think, if we can find it somewhere but of course there are so many biases that could be addressed. It's just that for us, what we have done, what we've just gone through, we've based our works from theories on innovation and sustainability and from there read up on what seemed to be the main biases that inhibit progress within these areas within organisations. So it's just interesting to us to know that like, considering these biases that we have identified in this case, and although it's definitely not the full picture, it's just interesting now when you describe both the

insurance Thaler example and also the Globen example, that's interesting for us to just hear an idea from you what you think could be a solution to this.

**Tommy Lindström**24:35

I can recommend a quite good book, but it's rather heavy. But if you want to understand what actually happens in the brain, when we're talking about biases and psychological aspects of the behaviour. It's Robert Spakolsy's, and the name is "Behave". And well, it's, it's quite heavy. I've been reading it for a number of months now. But I find it extremely interesting because it goes beyond just understanding a bias. It also tells you what part of the brain is connected with different biases and different behaviour. And that way you can start to understand what you're actually, what you actually can play with. What reactions you can create by addressing different parts of the brain.

**Frida Ella Viola Lindqvist** 25:36

What was the book called again?

**Tommy Lindström**25:39

Behave by Robert Spakolsy.

**Frida Ella Viola Lindqvist** 25:44

Okay, we will definitely look that up. That sounds very interesting.

**Sandro Daniele** 25:50

Because as for now we read thoroughly, "Thinking fast and slow" by Kahneman.

**Frida Ella Viola Lindqvist** 26:00

And yeah, and "Nudge" by Thaler and different literature.

**Tommy Lindström**26:09

Yeah, they are all good books.

**Frida Ella Viola Lindqvist** 26:13

Do you have any input on if you would be in an organisation where you experience that the employees or managers suffered from some kind of status quo bias when basically they tend to prefer things as they are because of familiarity, even when the switching costs are relatively low, how would you like in your profession, how would you tackle such an issue?

**Tommy Lindström**26:44

Well, first of all I would take the opposite perspective of what HR consultants and departments say. They usually say "people don't want to change because they prefer security. They suffer from status quo bias". And I say that everyone wants to change IF they see that it will benefit them. The whole life is about change. You're born, then you then you look forward to going to school, great change. You become a teenager and you look forward to running a car and to purchase alcohol. Then you look forward to new change to find a partner, after you look for new change in the form of getting a family, babies and your life is all about change and you look forward to change all the time. So with that in mind, if you can make those that you want to change, see that there is something in it for them, then it will be easy to make a change. But on the other hand, if management stands up and says "well, we need to think about the environment, so from now on, you are going to take off your shoes here and you got to reduce your salary by 2% because they got to give it to some someone who's going to help doing this project or whatever". Of course people will resist this change. Well, we need to understand what drives people. And what holds them back from changing.

**Frida Ella Viola Lindqvist** 28:42

That's a good point. What would you say about that there's an example, I think it's Thaler's, of someone having the same newspaper subscription for so long. And then he gives an explanation of a status quo bias, and even though that the new subscription might be even better, in terms of low switching costs, and the content might even be better but the person sticks to the initial newspaper subscription because of familiarity and because of the status quo bias. In that case, there's no one giving them orders, as you just said, with the management issue, if someone would tell them to take off your shoes and all of that. If there was a problem like that, or if you wanted to somehow affect that kind of behaviour, what would you do?

**Tommy Lindström**29:35

Well I'm paying Tele2 25 crowns a month for a service. I've been doing this for three years. The last two years, I haven't used it. But it's not big enough money for me to actually pick up the phone and call them. So the benefit isn't big enough. So of course, there is a status quo bias that holds you back. I prioritise, doing other stuff. I think it's boring to call them I know that. Okay, there's a switch for taking some time to go through and blah blah blah. And maybe 15 minutes of our time. I'm lazy and they just go by it. But if we were talking like a thousand times a month then I would do it straight away. So it's all about how much you can benefit or how much it hurts you doing things. But now we're talking about money. There are so many other emotional drivers that affect this, usually affect change. And here it's simple, but when it comes to other things, other drivers might be involved that even myself I'm not even aware of.

**Sandro Daniele** 31:12

So in your experience, like the status quo bias only affect people when the stakes are very low.

**Tommy Lindström**31:25

When it's not worthwhile, and when they don't see it. When you don't see then it doesn't exist. It's nothing in mind. And that is one of the main problems with environment. You don't see how we affect the environment. There are probably more problems but the ones that come to my mind is that you don't see the effect and the effect is very often far away in time and what you do doesn't really affect environment as a single person. But when everyone will do the same, then it makes a huge impact on the environment.

**Sandro Daniele** 32:24

And that also brings us to another bias that we found being very relevant for our research. That is the availability bias.

**Tommy Lindström**32:34

Yes.

**Frida Ella Viola Lindqvist** 32:35

Yeah. How would you as a professional counteract that bias in an organisation?

**Tommy Lindström**32:42

For example, take Corona. When the news started to come up about Corona nothing happened until we had the outbreak in Italy. Then everything happened overnight, but no one knew anything more about the risk or anything. They only reacted to what that virus had become. It had become part of their life or could you say, at least Europe, and it sounds like it's almost home. As long as it was in China, alright, it only knew something happened. But then at one point in time, it just reached Italy and then people didn't know any more about it. Anyhow, it was only what some journalists wrote about it. You got a reaction based on that. Wrong or right, I'm not saying that was wrong or it was right, but that's what happened. And you will see, one year from now or one year and a half, looking back, you will see that some people or some organisation or government overreacted in one way or another. And usually, because of availability bias, they draw to big conclusions based on limited data. And here comes another bias, the action bias. The human brain gets dopamine from doing things. If we can take off the tasks from our task list, it feels good. And politicians as well. If they can show the voters that we've done a lot of things, looking at one to 10 items and take them off, they will look more powerful that they can actually take care of them and so on and so forth. Still, the problem with action bias is that you are not promoted within a management team, for example, for running deep analyses between the management meetings, you're usually only promoted if you show that I'm able to pick up a lot of things from my to do list.

**Frida Ella Viola Lindqvist** 36:44

Yeah.

**Tommy Lindström**36:48

And that has to do with Corona as well. Because politicians want to show that, "hey, I'm the guy or woman I can be very powerful and we need to do something". There are a lot of forces around biases that are operating in our life right now.

**Frida Ella Viola Lindqvist** 37:09

Yeah, there definitely are. I think it's a very good example of what's happening currently. And I would say just for your sake, because we have a lot of time, but just for your sake..

**Tommy Lindström**37:26

It's ok for me because I'm in the office.

**Frida Ella Viola Lindqvist** 37:29

Oh, great. As long as it's fine with you, then we're very happy because we have a few more biases on the list that we'd just like to ask you, what kind of what you would do if you came into an organisation that had experience that experienced this kind of bias. So the next one would be risk and loss aversion. So basically, the tendency to prefer avoiding losses to acquiring equivalent gains is the loss aversion and, I mean, risk aversion is rather self explanatory. But how if you came into an organisation when this was a major issue? How would you tackle that in your profession?

**Tommy Lindström**38:18

Usually I do the opposite. What I do is that I developed a very, very strong loss aversion when I sell solutions to companies. That's my trade. So that's what I'm really good. I don't think I don't really know how to reduce that. The opposite of loss aversion is to think "what you can get aversion" that you focus on, right, "you can get that "but I don't know how that would help, since loss aversion version is extremely strong for making people do what you want them to do. I would rather use it. When I talk about a problem with a CEO for example, and that CEO says that "yes I agree with you that the Danish market is up this much, and it's great how can we fetch this opportunity". Then I slowly try to turn him round around and make the person see that it's not an opportunity, it's a risk of losing an opportunity. Because it's much stronger to make people feel that they're losing something there.

**Frida Ella Viola Lindqvist** 1:20

Yeah, I see. So, rather using the loss aversion bias in order to, to use some kind of behavioural design or a nudge, depending on what you would, what techniques you would employ in this case, but I get it.

**Tommy Lindström**1:39

If we talk about the environment, I think it's perfect to address loss aversion. We are losing the beautiful environment that we were born in, or that we used to have, and we are getting something that is.. and then you can just describe what that stuff is. And that is strong. I think that this is the major reason for people to actually start and fight what is going on- that we are actually destroying the future. People that are young or people that are... if you're born with a lot of pollution you don't know what you're locked in really, because that's what you know, you don't know anything else. But now during the Corona crisis there are barely any cars on the street than before they experience it right. It could be so much better. I can breathe, then they would stop and ponder about: I don't want to lose this. And they will start to think about the environment to a greater extent than when they were just used to pollution is the normal state of being.

**Sandro Daniele** 3:16

Yeah, this makes a lot of sense. So basically you're suggesting, like turn it in our favour instead of counteracting it?

**Tommy Lindström**3:32

Of course it can be. I haven't experienced that being a problem in organisations, availability bias being a problem but of course it could be if you cling to the past too much.

**Frida Ella Viola Lindqvist** 3:57

So what would you say about your experience of trying to address the overconfidence bias.

**Tommy Lindström**4:11

Well, I do that all the time. Because I'm an expert within my field and when I talk to, for example, to a management team, an HR department, they usually say that they got it all under control. We have our strategies, we have our culture, we have our core values and so on. What I do is start to ask questions and peel off a layer of, what you would say, not that effective decisions. Or just address the unanswered questions. I think that's the way of doing it. In the end, they understand that we have a problem. "We didn't realise that we thought we had it all under control because we set up this vision and these core values during our last meet up". And then I might say that it takes up to a couple of months to reach a vision and common core values that actually drive behaviour towards our common goal. It takes a long time, you don't do that at a half-day kickoff. I think that knowledge can fight that bias, to show people that they don't really understand.. And of course there are always people that, I don't know in which book I read about it, there was a research about it, and found that those people that are more prone to the overconfidence bias, are people that are slightly stupid because they don't really know how stupid they are. And then it's easier to say "I knew everything". People that are extremely clever, with cleverness and research, on your own or academically or whatever, you understand that your knowledge is extremely limited. And there's so much to learn out there.

**Frida Ella Viola Lindqvist** 7:24

That's, that's very true. It's interesting also that you mean just as a side note for you to may be interesting to know. It's interesting, when you talk about knowledge being important to kind of address this kind of bias and also to ask a lot of questions and unearth unanswered questions. It's kind of interesting just because when we have been looking at getting an overview of the nudges proposed in literature as a ways to address these biases, we did find from this book by Eric Singler called "Nudge management" we found that he wrote a lot about that, and disclosure and transparency, which from at least what I interpret from your answer is very aligned with that.

**Tommy Lindström**8:14

Exactly.

**Frida Ella Viola Lindqvist** 8:21

Just an interesting side note. So the next bias that we identified was the confirmation bias. So the tendency to search for or interpret information in a way that confirms one's already held beliefs or the information that you've acquired. Have you encountered that in your work and how have you worked with trying to address that?

**Tommy Lindström**8:49

I address that pretty much all the time! For instance, when I read the paper, I forced myself to read opinions that contradicted mine. If I see something that is very left wing, then I say to myself, I have to read it. Because otherwise I will only be driven by my confirmation bias. And it is nice to be driven by confirmation bias because I get confirmed all the time. But I don't develop, I don't question myself. That's a way to handle it within myself. In organisations, one way of handling it, I don't know where this comes from, but it turns up in management group, there is a tendency that ,it's not only because the confirmation bias is about group pressure and other other things, but management teams tend to develop the same view of the organisations, what they are doing. One way to handle this, is that everyone has to put down on a paper, their view of a particular issue, or anything, before the meeting. That's where you will get away from, at least from some confirmation bias, from other people in the

same room. It's about offering a different perspective to people. But it's difficult for some people, they just get afraid. Tell a religious person that is deeply religious, "what you've been through all your life, maybe you should try something else."

**Frida Ella Viola Lindqvist** 11:13

Yeah.

**Tommy Lindström** 11:14

It can be very hard to make people change their mind. It's much easier for me to work with people that have the same view as I do. But it's not aspiring and developing.

**Sandro Daniele** 11:36

Are you familiar with the concept of group polarisation?

**Tommy Lindström** 11:44

What exactly are you thinking about?

**Sandro Daniele** 11:46

Yeah, is basically like when confirmation bias pushes people to get to take a position that are extreme. The latest Cass Sunstein's book was about it. People get addicted to information that confirms their prior beliefs. So Facebook basically pushes content that only confirms your previous position. And this is known as a group polarisation, because it polarises people to just be at the extremes of the spectrum. So, if you look into it, the latest Sunstein book was about it and how to prevent that with some new algorithms from Facebook. But that's very interesting.

**Frida Ella Viola Lindqvist** 12:51

Yeah, I think it's also a little bit like the filter bubble.

**Tommy Lindström** 13:04

Yeah, that can create quite extreme environments. Because everybody is heading to the same direction all the time, they would end up somewhere extreme in the end.

**Sandro Daniele** 13:18

Yeah, that's exactly it.

**Frida Ella Viola Lindqvist** 13:23

So about the last bias on our list here, would be the possession bias or the endowment effect if you're familiar with it. So a person over valuing something, when it's their own, when they own it. So you can like it can be an idea or strategy or anything. Regarding off it's subjective value. So how are your experiences with that?

**Tommy Lindström** 13:57

I haven't really worked with it professionally, when I was young, I used to buy and sell cars. And I think it came to play then, when people felt that their car was.. they overvalued their car a lot. Because they would probably not buy it themselves. Of course they wanted as much money as possible. I don't know how biased they were or if they just wanted the money. But I think a good example is when I had some clothes in the attic, and then suddenly they were gone. I think someone stole them from me or something. And I hadn't used those clothes for a number of years, but suddenly they were very precious to me. And I realised I missed them. I thought I could see the logic, but still I couldn't get rid of that feeling... really strange. Come on. You haven't been using it for two years. I definitely don't need that. But I did miss them a lot. But I think one way of handling all these biases is to understand how they work. And run through the feelings with logic. Understand that this is how you're supposed to feel. That feeling takes you in that direction you want to.

**Frida Ella Viola Lindqvist** 15:57

Yeah. Okay.

**Tommy Lindström** 16:06

I have a bit of a fun story about consistency bias. Do you know what that is?

**Frida Ella Viola Lindqvist** 16:19

No, not really.

**Tommy Lindström** 16:21

Okay. Let me try to picture it for you. I was going to the business school of Oslo to give a speech, and I took a flight there, came out and we had to take a taxi. Like 30 metres away, there was this guy that wasn't born in this country. And what came to mind then was wondering how well he can find his way. Here in Oslo. But then I shoved that feeling away and come one! You can't be Xenophobic, just go to the taxi. So I went to the taxi and I had the address on my mobile, and showed it to him and I said: "Could you take me to the business school of Oslo, please? And I showed the address and he said yes, without looking at it. And he said. Okay, great. And then I thought that the car looked a bit scabby on the outside and I went in, and then after they had used some duct tape to pull things together inside the car, okay. Sloppiest cars i've been sitting in my life but then it was like, I've made a number of decisions here. The first one was that I didn't want to appear to myself as racist. And then this is the consistent bias, when you make a decision in a specific direction, you tend to stick with it. But anyway, I went into the car, and he started to drive and this place was supposed to be like five minutes away. And I didn't have

much time because my speech, I was on stage like an hour off the flight landing. I asked him, "Do you know where we are? Is it far?" And he said, and he muffles, so I understood that he didn't. We didn't really know where we were. But then he said he started smiling and we got to a building. To be sure that we were at the right place, I told him to please stay there, I need to ask someone, because I want to be sure that we are at the right place. So I asked some students if I was at the Oslo business school. And I wasn't. I didn't come late but it was a very close call. But the thing was that one way of breaking this, is to when you feel that I need to make a decision on, leaving the car or staying, that is when... this was my first decision, and I knew all the information I had, without the prior decisions I've made, what choice would I then make. And without the prior decisions I had made, I would certainly step out to the car because it didn't look safe and he didn't look like a good taxi driver to me.

**Frida Ella Viola Lindqvist 20:38**

So do you basically mean also that the solution to break the consistency bias is to disregard your previously made decisions? Is that what you're saying?

**Tommy Lindström 20:50**

Yeah, exactly!

**Frida Ella Viola Lindqvist 21:01**

It was interesting when you say that, maybe it's unrelated, but when you think of the economical concept, like, completely different, like field, but when you talk about sunk cost, it's basically to realising that, you know, the cost of your previous decisions should just not be regarded in the current calculation. It's very similar, isn't it?

**Frida Ella Viola Lindqvist 21:28**

Yes.

**Tommy Lindström 21:28**

Exactly! You are absolutely right! The interesting thing about these biases, is that when I use them, I try to use as many as I can, within the same context, because then it becomes so powerful. It's like pushing the environment the same direction, from different angles. You can also see how things played out in the past. For example, do you remember the Concord? The airplane?

**Tommy Lindström 22:20**

Basically, that was a disaster from the beginning, it was a political decision because Europe wanted to have something to play up against Russia and the Americans. The thing was that it was a political decision. People that made the decision, they wouldn't be responsible for what happened when they develop like 10 years later. Yeah, and they have all these biases, like right now we've made this decision now we need to keep it going and... if you look at it you can apply like 10 different biases on the whole process and why they let that plane fly. But it crashed. I think it's crashed into a building complex in France.

**Frida Ella Viola Lindqvist 23:39**

I cannot say that I remember that.

**Tommy Lindström 24:03**

Anyhow it was an economic disaster, they never recovered the money, but still they just kept on going.

**Frida Ella Viola Lindqvist 24:12**

Yeah, yeah. But would you say then because of that, and also the story you told about like consistency bias, would you say that just the awareness of it existing and like the awareness of, like trying to disregard your previous decisions, whether you're an individual or if you're in an organisation, do you think that the awareness itself can be enough to address the problem or what other things do you think can be used to solve such a problem? Do you have any ideas?

**Tommy Lindström 24:50**

Well, nothing will happen if you're not aware of what is happening. Why people are acting the way they act. If I'm in a meeting, I can see that now we are experiencing this bias, now this other, and so on and so forth. And then I can choose to either raise the issue because I think it's important for the result or outcome of the meeting. But if I don't understand what is going on, I can't do anything. I just go along and then end up somewhere that's a consequence of all these different biases.

**Frida Ella Viola Lindqvist 25:34**

Yeah. So awareness for sure.

**Tommy Lindström 25:54**

They kind of made this area quite popular to come on people. I've been researching on for a very, very long time. So it's nothing new really what they did they put a name on it: nudging. But nudging to me is just what he chooses to do to make people go left or right. So nudging for me is just to push people in one or the other direction. It's not to actually change a behavior like you can do with culture.

**Frida Ella Viola Lindqvist 26:43**

I see. So you would say that for you it's more like one time solution rather than like a long term or is that what you're saying? Or?

**Tommy Lindström**26:57

No, I think it can be a long term solution. But it's not that strong. But it depends on what situation and what problem you wanna solve. For some problems it can be the perfect match. In other situations... I know that there's a company that they get customers and they say that they will help companies to include organisation nudging. And I would say, that's the wrong way of doing it. They can make some, some smaller impact. But when we're talking business and improving how people behave at the workplace, and so on and so forth. It's not starting them on the wrong end. They start with a solution. They start with, we can help you with nudging. We never help people with nudging, priming or culture, we have people solving problems. And that's where we start and then we end up somewhere. Okay? We think that now we have enough information about the problem. Who wants to change the behaviour? And why did they do it? Then we can suggest a good method.

**Frida Ella Viola Lindqvist** 28:37

Thank you so much, that's really valuable to hear, your thoughts on all of this because. This is such a big topic and also psychologically wise, it's been studied for so long. And so, I mean, there's a lot of things to take into account, but it was really valuable to just get your input on these different biases and some ideas of what you have done and how you think about it in your work. And it's interesting also that you mentioned the consistency bias because even though I didn't know the exact word, but it does go along a lot with the concept of path dependency, in innovation theory, as I understand it, so and we have written about that and, like, that's our, like, that's our starting point that innovation theories.

**Tommy Lindström**29:30

And when writing a thesis or a paper you get a lot of confirmation bias. That's why we read a lot of books trying to find sources that we could refer to. We only wanted to find sources that actually deported our theory or our thesis. Confirmation bias is extremely confusing.

**Frida Ella Viola Lindqvist** 30:12

Yeah. Yeah, you're right. Even though we're writing about biases, we're also gonna experience a lot of biases of ourselves and everything as it is when you're doing research, and adress them in our limitations and discussions. And who knows, maybe that turns out to be the most interesting part.

**Tommy Lindström**30:36

Maybe!

**Frida Ella Viola Lindqvist** 30:37

But Tommy thank you so much for your time. It was really, really helpful that we got to talk to you.

**Tommy Lindström**30:49

I hope you get something useful out of this. I started to talk a lot, but I get excited about these topics.

**Sandro Daniele** 31:00

We are very excited about it as well.

**Tommy Lindström**31:04

Yeah, it's a very interesting area and you can learn a lot about, not only company and environment, but also about yourself and how you act in your relationships. I think it's very interesting.

**Frida Ella Viola Lindqvist** 31:46

Thank you so much and just Is it okay if we use your name and your current company in the when we like, now, like when we quote and just say that we have interviewed you and the thesis is there anything you've talked about that you would like us to anonymize or anything like that?

**Tommy Lindström**32:06

Yeah. Good luck.

**Sandro Daniele** 32:13

Thank you.

**Frida Ella Viola Lindqvist** 32:14

Have a great day. Bye. Thank you.

**Tommy Lindström**32:16

Thanks. Bye

## 10.2.6 Samuel Salzer

**Samuel Salzer** 0:03

So yeah, it's definitely a big question to unpack. I think there's like components here. So the scope is only within like for using Nudging, as a specific thing, right?

**Frida Ella Viola Lindqvist** 0:21

Yeah, that's I mean, the the, what we were interested in knowing is mostly like nudging as a tool to counteract these biases that we've identified.

**Samuel Salzer 0:30**

I think this is maybe interesting for you to have as part of this as kind of a limitation of Nudging itself in that, you know, nudging in itself is the idea is that you have small things that are going to be easy to avoid, but in some ways you're going to influence people's decision making for the better. They're only going to make usually relatively minor changes that like a small nudge was usually something like a smaller thing. Obviously we're having, like ultimate purpose is very impactful examples where I can take one little nudge can be like super influential, but mostly that's been like with certain case the use of defaults. It's very rare that we have like this kind of golden opportunities to like, where people make it one decision that's gonna be very influential for what to do. But let's talk about innovation that's more about continuous work and prospects, not just about one decision that's going to be deciding everything. It's like for saving or ... it's kind of a continuous thing. So I think I'll be interesting to consider something like probably look at HUMU and iNudge, which are trying to do this. Have you seen them?

**Frida Ella Viola Lindqvist 2:05**

Yeah. Can please, like develop a little bit like what do you think we can take from that?

**Samuel Salzer 2:18**

Sure. So what they both plan to do is fit to create messaging that's gonna, like reach people at the right moment or the right person in the right moment, in the right place kind of thing. Where you have this like some like a Pareto Principle, and that's that people are promoted. And not because of the skill sets, kind of, they will use in the work as a monitor, but for the skills they use in order to have. Like, a lot of managers or leaders that are really good, maybe they were really good at sales. And so they became a sales manager. But they weren't, they were perhaps not a good manager. And so for example, like HUMU tried to get can like nudge these people to become better managers by kind of like saying like, "Hey, you know, people really value being praised or getting continuous feedback" so there's a lot of people, like 90% managers are pretty shitty as managers, for example. And HUMU and iNudge have a similar idea that they want to give some good kind of nudge, into some message to say like, "Hey, you send an email right now and tell your colleagues this or maybe ask them this question", for example. So that's a behavior right. And, and I think they can definitely be used in terms of the innovation process. One of the hardest things when you try to do innovation is dealing with uncertainty in some ways in terms of like, being open to being wrong and having bad ideas, and all those things have a lot of trust. Honestly, yeah. So if you can, you know, find ways to support managers and build trust, for example, that's a very important thing. I think in terms of what they do well is that they don't lie around this assumption that we can train people one time to be really good at x scale. Like most training schemes today, we're like, okay, we're gonna have a one day training session on feedback and communication. And then assuming that people will, like, take this on board, and then be great at giving feedback and communication from the moment, but actually, it's like, it's like building habits, like it's building something to take some time to really become good at so just because, you know, intellectually it's gonna look good on presale, you have to be really good.

**Frida Ella Viola Lindqvist 4:46**

Yeah. So basically, like, the exploratory nature of the paper is like going through an extensive literature review on the innovation theories and sustainability theories, and from there, what the behavioural issues are like what biases are involved that inhibit, like the progress within these areas. So, you say like, for example, people being a little bit uncomfortable with uncertainty and then, like, we looked into this thing with path dependency, so that there's like a, you can maybe call that some kind of consistency bias with you know, like people making one decision after another is like you're reinforcing it, like reinforcing mechanism. So we like extracted from all of that literature, like all of these biases. And then our question is basically like, can you use nudging in some way to foster sustainable innovation within organisations. So it might not be the only tool but like in your experience, have you had an assignment for example working with an organisation where you have implemented nudging or for example, some other behavioural design tool with the aim of somehow promoting sustainable innovation?

**Sandro Daniele 6:25**

Or also just sustainability or innovation, like either one of those.

**Samuel Salzer 6:35**

A lot of my colleagues are more like creating innovation rather than training people in how to innovate, if that makes sense.

**Frida Ella Viola Lindqvist 6:46**

I think you broke up with what was the beginning of what you said there I didn't really hear.

**Samuel Salzer 6:55**

I would say that I'm most of the time, I work for products where I'm actively innovating. So I'm working with the company to innovate, like to create a product, or improve a service, or maybe something like that, rather than train

them or or improve their internal innovation and stuff. Like that's more like a meta version of that, I guess. Okay. So I would say, Yeah, I don't know if that makes sense.

**Frida Ella Viola Lindqvist** 7:27

I think it does. So maybe in that sense, it would be interesting to hear from you, in those kinds of assignments or like that work, and what biases have you experienced in those processes. And is it only an innovation process or is it somehow directly related to sustainability as well?

**Samuel Salzer** 7:48

So I think a better definition of sustainability in terms of maybe not environmental sustainability, but I work on only projects that have something like making people healthier, happier, or something like that. So in terms of the question of biases. Some of the stuff is pretty obvious. I think it will be interesting for you to kind of look into maybe it becomes like, "super forecasting"?

**Frida Ella Viola Lindqvist** 8:35

"Super forecasting"? No, what is this?

**Samuel Salzer** 8:40

Okay. So, Philip Tetlock is like a very famous researcher in effective forecasting, and so on. And one of the most common things where it's very hard with innovation projects is that obviously people underestimate the time it takes to do things. Yeah. And so It's called, like the planning fallacy, or it's just like one simple word, but it combines a lot of things. I think. So, in that part definition, if you're in editing, you're doing something that hasn't been done before. Even as processes have been established, you're still creating things. And it's very hard to predict. How long is this going to take to do what it's going to require? And, and what's the impact going to be from the end. So most of the time, people are very bad at making predictions for those kinds of things. Like, how long is it gonna take to make this product? Or what the impact can be from this innovation, for example? Yeah. And they're mostly very bad at having these kinds of feedback loops, where they kind of keep track of their predictions or like their assumptions directly. It's very easy for them to like, this is a product when you say, okay, it's going to take six months to do this. At six months maybe about 30 % progress is made. And then they realise well, there's gonna be another six months at least. And then maybe at nine months, then like "this is gonna be really hard to like to know if this kind of like ever work" well, now we have a little bit like sunk cost fallacy. We're like, well, we spent nine months on this already, we better like keep on fencing. So, what people often forget is like, their initial prediction, like they're really bad at keeping track of initial predictions and learning from them. I think that's, that's something that I have somewhat helped teams with. Because that can be a very important part of the innovation process in terms of how to make sure that... because it's always to lose morale as well, if you have flawed predictions and then you don't reach the milestones. You just fed up and then we're getting stressed and worried and all that. Yeah, I think that's a big one.

**Frida Ella Viola Lindqvist** 11:02

How do you work to help them with that?

**Samuel Salzer** 11:08

Sure, there's a couple of things you can do. So one is just training people a little more in the process of, of just keeping track of the predictions. And so like, it's like, I don't know if you heard a Bayesian thinking, yeah. So instead of saying like, okay, "when is this project be completed?" Say put estimates like what do you think okay, well, we are like certain that it's going to be completed in this time. And maybe even like, I would say, more so maybe not the whole project but a phase of the project, because then you can learn from them roughly. And so you put some like, Bayesian predictions, where you say like well can we are like certain percentage that is going to be like three months until this, or like maybe a few weeks even if you have a little bit of a theory of when this is going to be completed, and then we can keep track of this over time - people are going to get happy and feel much much better. So I think that's one of the most important things is like train people a little bit on the basic stuff, in terms of making this get more nuanced predictions where it's not like it's gonna work or not work, like how certain are you that it's gonna work out what is your confidence and then keeping track of that and updating those those beliefs. Right?

**Sandro Daniele** 12:43

This is very interesting, because like this relates a lot with a bias that we identified "the overconfidence bias", that we found both in the literature related to innovation and sustainability. And we also identified this bias in the interviews we did when we interviewed experts in innovation and sustainability, so it's very promising that you also experienced this. And yeah, but would it be okay if we tell you some other biases that we identified? And you tell us if you experienced those and if you actually had found some ways, some nudges to counteract those, would it be okay?

**Samuel Salzer** 13:31

Of course, I guess the one thing with overconfidence bias is, so one of them, maybe the problems with biases sometimes, like there's so many of them, right? And a lot of them are not per se like based on the most rigorous

research. And so, what was interesting was like people can also be under confident, right? You can both overcome them and then you can be opposite. Like you. You'd have some people saying, like, "I would never be able to do this" So that's why it's interesting. I don't know if you've looked into this kind of, like, when people are overconfident and when people are underconfident.

**Frida Ella Viola Lindqvist** 14:10

We had a point where we found it interesting with status quo bias being sometimes an obstacle to innovation. But it was interesting in an interview where we talked to someone who basically, he described it as in their work with innovation, he had been in different companies and in one company, the status quo was to always run to the new thing and not complete anything. So that was the status quo there. So I guess that's more of a general category and it's not so much the opposite as under- and overconfidence, but still..

**Samuel Salzer** 14:50

Yeah, I have a friend who did this.. it's not empirical research.. but he does a lot of these really nice, more practical experiments and setups where, he wrote an article in the New York Times, he did a really large sampling of people who are underconfident or overconfident. And then he kind of looked at what are the similarities between like, what are people overconfident about and when are people going to be under confident. I'll send it to you to read about it more. I think underconfidence might be an even bigger issue. So one of the main things like, people are under confident things that they don't normally do. And so, for example, people are overconfident in, for example, kissing and driving and underconfident in dancing and saving the human race from destruction.

**Sandro Daniele** 16:23

Or a pandemic.

**Samuel Salzer** 16:25

Right! So, you know, something you do every day, you're gonna assume that you're probably at least above average. Most people maybe like don't dance that often or something, yeah, especially beyond their like young 20s so the thing that they're really bad dancers but pretty much everyone is a bad dancer, like that's the first thing like when I start dancing, that's the first thing I noticed, like everyone's really shitty at the beginning, right. And so the same thing with innovation, if you do innovation work, especially if you're in our organisation hasn't done alot of that before. You just have the assumption that I'm really bad at coming up with ideas like I'm really bad at working with new things like, yeah, it's just it's kind of because I haven't done it before. So they kind of have this false belief.

**Frida Ella Viola Lindqvist** 17:10

Yeah. Interesting. We're gonna read that, definitely. Was it a contact of yours that has written it?

**Samuel Salzer** 17:17

Yes, that's a friend.

**Frida Ella Viola Lindqvist** 17:21

Cool. Let's see. But okay, should we should we try to do it..

**Samuel Salzer** 17:26

Let's do it - rapidfire!.

**Sandro Daniele** 17:34

So the first one is the present bias. So, yeah, it's the tendency of people to prefer getting things now rather than later.

**Samuel Salzer** 17:50

Well, that's one of the main, main, main biases like everyone is super affected by in most situations. So in that regard, yes. I don't know if it's particularly very relevant in innovation work. But definitely we like immediate gratification, all of us. So I guess, to some part. Sure.

**Sandro Daniele** 18:16

Yeah. And have you had the chance to try to counteract this bias with some kind of nudging?

**Samuel Salzer** 18:23

I think it's more like in terms of the term bias, it's probably more that you have to instil a sense of... that's with innovation, like the hard things that you're gonna get, the exciting things can happen so far ahead. Whatever that is, if you're working on something like it's gonna take time to get there. And so you might like to pick shortcuts and so on. To avoid having a long spread, so probably basic stuff like providing people with positive feedback is really important in terms of that we will get a sense of getting progress.

**Frida Ella Viola Lindqvist** 19:17

What did you say here? Secondly, because it was breaking up a little bit yeah.

**Samuel Salzer** 19:54

I just came back yesterday in Stockholm and I noticed that the wifi is a little bit slower.

**Sandro Daniele** 19:59

The whole world is connected, right?

**Samuel Salzer 20:05**

Just saying, like present bias, one way to look at it, is like you have this need for feeling some form of present sense of fulfillment. And you can achieve that through other means, like, for example, finishing a project or, like give feedback or you can find other ways to kind of make people feel like they're having some form of positive things happening in a moment.

**Frida Ella Viola Lindqvist 20:34**

Okay, and then the next one would be then what we talked about the status quo bias. And so, yeah, which I maybe don't have to explain further, but how much have you experienced that in your work and how have you counteracted that in any way?

**Samuel Salzer 20:56**

Well, this is kind of like the classical thing. Probably the issue with the status quo. Usually one of the main things you will use is some social proof, or something like that to change that. I think. Yeah, or depends on how you define the status quo bias. Because you can also blame it on habits. So that's one part, like a large part, of my work is like actually changing habits. But yeah, so let's define a little bit the status quo bias. Like this idea of doing things like you've done before, or if you think about it, more like almost habits as well.

**Frida Ella Viola Lindqvist 21:55**

If it helps, we did define it as the tendency of people's preference from things staying as they are, or sticking to a decision previously made. And so like because of familiarity reasons, basically.

**Samuel Salzer 22:08**

Yeah. Okay. So that was a little bit less about habits, but this component it's very hard to not connect those two. I have nothing on top of mind where it's such a big issue. This is a really big topic. So you can look at it so many ways. I'm thinking of like 10 different versions of it. So it's hard to give you a quick answer.

**Frida Ella Viola Lindqvist 22:33**

No, it's fine. If you mean, you said before, like social proof as perhaps one. But um, if you don't like to think of anything on top of your mind, we can go back to later or skip it. And the next one was

**Sandro Daniele 22:49**

An even bigger topic, risk of loss aversion, we found this as being very prominent in the topic of innovation and sustainability. So do you have any?

**Samuel Salzer 23:04**

What have you heard so far about that? Or what have you come across?

**Sandro Daniele 23:10**

Sorry, what?

**Samuel Salzer 23:12**

I'm just curious, like you said, it's a big topic. I'm sure that whatever you come across so far,

**Frida Ella Viola Lindqvist 23:17**

Basically, when we have interviewed people in sustainability and innovation, they just mentioned it like, both before we asked, they've described that, without us saying the term and then when we've also asked, they like further elaborated on it. So it's just like very apparent that it is an issue or that they experience that it is an issue at least.

**Samuel Salzer 23:44**

I can definitely imagine it to be. I don't know if it's absolutely purely to innovation's interests. But it's a big thing in general, when you're trying to do any project, but yeah, with the loss aversion, I think one of the main things you're trying to do is just to support people into a little more trust and being able to kind of... Can you hear me?

**Frida Ella Viola Lindqvist 24:20**

Yeah. It's a little bit breaking up but yeah.

**Samuel Salzer 24:26**

Provide people with a sense of trust and feeling more comfortable with just being in uncertainty. And that kind of, yeah, that component of, of loss aversion is always going to be there, so it's more helping people managing that.

**Sandro Daniele 24:50**

And the next one that we found, is the availability bias. So, have you experienced this and how did you manage to overcome it?

**Samuel Salzer 25:04**

Yeah, this is a big problem in innovation. And, and so that's why it can be useful to have a multidisciplinary kind of mix of groups and people. So bringing people with different backgrounds perspectives, and so they will naturally have been exposed to different things and different things. And so they're, they're a little bit different in there. And then it is really important as well to like to manage the innovation process in a way where one person is not really going to directly influence too many people in the beginning. So it's like really good to have some

like silent brainstorming, for example, where everyone writes down ideas, and then you first share them with small groups and then maybe afterwards, share them with the bigger groups, and so on so that you kind of like, try to avoid one person setting kind of a very clear thing to think about, and then everyone's gonna think about that.

**Frida Ella Viola Lindqvist 26:10**

And so and the next one we talked a little bit about before. So we can actually jump from that one and go to the confirmation bias. Yeah. So you know, the tendency to search for or interpret information that is in accordance to what you already believe.

**Samuel Salzer 26:33**

And that's probably one of those like, probably the most famous bias. But anyway, yeah, I think confirmation bias is in you. What are the effective ways to use to manage that? Some of these things that I'm not really planning, like, I don't set up a plan. It's like, Okay, I'm gonna make sure that I'm gonna avoid this. There is so much of this thinking that I just do without having a big list all the time.

**Sandro Daniele 27:13**

We also get a lot of "it depends" because obviously it depends from the situation to situation, but since we're writing a thesis, we need to try to be a bit systematic and...

**Samuel Salzer 27:24**

Of course. Some things with confirmation bias.. nothing, nothing comes to mind as a good example.

**Sandro Daniele 27:44**

It's okay we can just move on.

**Samuel Salzer 27:52**

I just have a thought as well that is distracting me but. Yeah, but let's skip this one.

**Frida Ella Viola Lindqvist 28:27**

Okay, so the last one in the list here is, if you have experienced in the process that you've been working with, is the possession bias or the endowment effect. Overvalue can be an idea, strategy product, whatever.

**Samuel Salzer 28:44**

Yeah, I think one of the most important things you want to establish is you want to separate ideas from people. And that's a very important thing that you're trying to like to manage in the beginning. Where does the product come up? So just because I say an idea is not my idea right? And if you're very good in the beginning to kind of manage this kind of idea, we're thinking where people can come up with this but they don't have to perceive that they have to defend that. I notice that people are not really used to doing that a lot of times. It's usually very common like, you know, people are like "this is my idea, I gotta protect it" but I try to find ways very early to kind of diffuse some of this thinking. And so you are ultimately trying to create..., because of this, I think innovation comes into this like it's like the will, managing people like, to get a sense of feeling well valued and smart and intelligent and those things. It's always like you're almost like you would manage a group of people, always trying to make people feel like they're not stupid, and they are like, always going to be loved and like, valued. So that's kind of what we're trying to do here as well. And you're trying to separate that. And say that "no idea is a bad idea", but it is kind of a basic cliché, in the beginning. But then as well is like, I'm very actively trying to in a team, one person or group of people are very rejective for a certain part of the solution or something like that. So I'm actively trying to diffuse that from the start and to keep them from competing too much. And I think there is no easy way to just stop doing that. It's like, that's not like something I do regularly, because it's so easy to get very attached to something, even though it's doesn't matter. The hardest thing is to... the later you're go into a project the harder it is to make pivots and changes. Yeah. And so that's something you should have to be aware of, even after halfway haven't left us wanting to change. So this is really making a difference in colour of something, like the logo or whatever that is.

**Frida Ella Viola Lindqvist 31:27**

And this way of detaching ideas from people from the start, like how concretely, how do you do that?

**Samuel Salzer 31:45**

It can be different scenarios. In idea generation, I would, first of all, try to make it so that people can like generate ideas and then they can put it into a pot. Like a combination, and then those ideas get very quickly intertwined and evolve and combine with others. Initially, you will have everyone sitting in a group of like 10 people, you'll do a silent brainstorm. And then you say that they need to share that with one other person. And then they may combine their ideas, and then you have those two people share with a group of five and so on and then all ideas are mixed, refined and improve and like no one remembers which ideas where whose and so that's one way of doing it. Instead of having like, Okay, everyone has to present initially like "this is my idea". And that's usually when you see like a no go around the table. Everyone has to tell the best ideas. And that's the most usual thing to see, but that's a really shitty way of doing it, we're doing this because then people are very practical. They don't have like, they have to come up with, like, very strong arguments, even they have a really bad idea for something.

**Frida Ella Viola Lindqvist** 33:11

It gets personal maybe, yeah.

**Samuel Salzer** 33:14

But it was an example of it.

**Frida Ella Viola Lindqvist** 33:16

No, but it's interesting to hear. Did you have any other there?

**Sandro Daniele** 33:21

We went through it all.

**Frida Ella Viola Lindqvist** 33:24

Maybe just in general, like knowing what we're writing about, at least in a broader sense. Um, is there anything from your experience that you could tell us like could be valuable in the sense of using nudges? Like, using not just to foster sustainable innovation, sustainability or innovation or both? And what can I say, is there any wisdom you would like to share with us?

**Samuel Salzer** 34:00

Yeah. So I would say I am usually very open with how I see myself and my work. I also wrote a book like nudging practice. I obviously like it, and it is a big part of what I'm doing. But I would say a lot of my work, I don't really think it is nudges, I think it is more solutions to problems. And so maybe those solutions are behaviorally informed and informed by behavior and maybe implemented using behavioral science techniques and so on. But I don't really think about nudges, and that's a little hard because you write about nudges in academics, and they are very defined to a certain type you know, certain thing right? So I would think about it from the perspective of something that is usually overlooked in nudges, and what is really true for something, is that anything that we're trying to do is usually to try to change habits in order to change long term behaviour. And nudges usually are aimed at one behaviour shift like at one time. And for long-term, with habits, there are like context dependent cues, so like triggers or something combined with a kind of an immediate sense of positive reinforcement. Do these words make sense. I don't know if this is a little academic. One way you can look at nudges, that most people don't look at nudges, but I think could be more interesting is like "Ok, what behaviors do we want to trigger?", so the nudges come at the right time to trigger the right behaviours, but also "what behaviors do we want to reinforce?". Could you do nudges as well as a system that when people do the "right thing", it is reinforced. Having messages or ways of prompting or supporting or, or helping people with both activating the behavior and to reinforce the behaviour.

**Frida Ella Viola Lindqvist** 36:52

Okay. And you wouldn't say, just to clarify, would you say that nudges can be used as well like also activate behaviour in one instance but also if you use them, like in a lot of instances, wouldn't you say that can also help reinforce behaviours over a longer period or?

**Samuel Salzer** 37:21

Well depends. So it's a little bit similar.. I can clarify what I really mean: So for example, let's say you have a partner and you live together and let's say you're sloppy with putting the dish in the dishwasher or even put in that organisational setting like you have a cafeteria some people are bad at putting the the coffee cups in the dishwasher. And so a prompt would be or like a nudge, in this scenario, will be saying like "Nine out of ten people in the office plus the coffee cup in the dishwasher. Don't be the douchebag that doesn't" for example, they'll be prompt. But that wouldn't reinforce the behaviour that would just prompt the behaviour. So once they are putting the coffee cup in the dishwasher, if it is then something like, like you have like a "ping!" signal that says "you're such an awesome person and you make this office so much better. Thank you for your wonderful contribution." Something like that, then that will reinforce that.

**Frida Ella Viola Lindqvist** 38:33

Okay, I see what you mean. Okay. Nice. But this was super helpful for us to talk to you. Very nice that you took the time. And so, we're basically gonna transcribe the interview. Can we use your name? As an interviewee and is there anything you want to anonymise?

**Samuel Salzer** 39:02

I think it should be fine, as long as before you publish anything that I get to take a look at it!

**Frida Ella Viola Lindqvist** 39:07

Definitely.

**Samuel Salzer** 39:28

Yes. Thank you very much!

**Sandro Daniele** 39:30

Have a nice day.

**Frida Ella Viola Lindqvist** 39:31

Bye. Bye.



## 10.3 Appendix 3: Interviewee profiles

### 10.3.1 Interviewees for sub-research question 1

#### **Professionals responsible for fostering sustainability, innovation and/or sustainable innovation**

Raphaël Smals

Adviser sourcing, innovation & strategy at ViCIS Innovation Consulting

- PhD Researcher in Innovation Management and Researcher innovation projects for Agentschap NL at Radboud University
- Consultant at ViCSIS innovation consulting
- Supply Chain Risk Management Analyst

Simon Locke

Sustainable Design Innovation Manager at The Body Shop

- Sustainable Design Innovation Manager at The Body Shop
- International Environmental Sustainability Manager at The Body Shop
- International Environmental Manager at The Body Shop
- Finance Manager at The Body Shop

Linda Lindberg

Expert in international law and sustainability. Worked with companies, NGOs and the public sector in finding innovative solutions for reaching our common SDGs.

- Head of CSR and sustainability at Bambora
- Project manager "mobile payment solutions for charity organizations" at Bambora
- Member of the board at Refugee Relief

### 10.3.2 Interviewees for sub-research question 2

#### **Behavioral experts with experience in implementing nudges within organizations**

Tommy Lindström

Leader within Behavioural Design for digital transformation, employee engagement and customer loyalty.

- Business owner at BOOM: PROFITABLE BEHAVIOR DESIGN for digital transformation, employee engagement and customer loyalty. You'll find Adecco, Pfizer, Fabergé and hundreds of more companies on our customer list.
- Leading the network Behavioural design at Stockholm Chamber of Commerce
- Lecturer and blogger, IHM Business School

Samuel Salzer

Behavioral Strategist, Author & Keynote Speaker (Freelance)

- Book author: "Nudging in practice - How organizations can make it easy to do the right thing"
- Provide consulting and public speaking services on how to create user-centered and habit-forming digital products and services using behavioral design.
- Chief Behavioural Office at Nordic Wellth

Natalia Gómez Sicard

- MSc Student in Behaviour Change vid UCL
- Behavioural Science Consultant in Colombia, worked with an insurance company and with the public transportation system

## 10.4 Appendix 4: Coding

### 10.4.1 Coding interviews for sub-research question 1

- Present bias
- Status quo bias
- Risk- and loss aversion
- Availability bias
- Overconfidence bias
- Confirmation bias
- Possession bias/endowment effect
- Comment new “themes”/emergent codes when interviewee describes another bias or bias-like phenomena
- Behavior issues but clearly not a bias
- Solutions
- Difference in relevance of biases for sustainability vs innovation

Bias	Interviewee	Coded quotes
Present bias	Raphaël	<p>“...the market is shifting. And that means that from an operations viewpoint, their present business is and it was at that time, basically a dead end street, but the dead end was, you know, miles away still, but you need to prepare for that moment. But I noticed a lot of focus within the company, particularly the part where I was, which was in the supply chain side, on just managing operations and managing profitability as well as they could. Under these constraints of pretty low margins, specifically on some consumables, and of course, a shrinking market altogether. So I think that bias was definitely very, very present. Maybe that's also why you picked it out, but I think I put a very high score on that.”</p> <p>“These were bi weekly meetings, if I recall, and we had these VPS at the table. It was very difficult to get them to the table. So, when we had them for two or three hours together, you could say that was a scarce resource and we could only spend that once every two weeks. So we needed to put to the table what was the most valuable at that point. And you saw that, of course, the agenda is also formed based on their own input. It's not so much that we said let's not discuss the future innovation, but let's focus just on the operational issues. They just did a lot of work in the operational issues and kind of quasi forgot about the innovation issues.”</p> <p>“We should just try and make money with the stuff that we have.”</p> <p>”But you saw very, very big pressure to focus on parts of the market that were basically dead, but there was still some revenue being made. And then you know, trying to milk that as well as they could. And I think they put a lot of emphasis on that relative to the gains that they could get. So we spent quite a lot of time on, for example, figuring out if we could merge a factory for toner, you know, laser printer, if we could merge two factories: one of the supplier and one for COMPANY 1. Because we saw this volume shrinking, we kind of decided like okay, two factories is going to be too much on one continent. We need to sort of scale down. It's going to be either yours or ours or something together. And we spent a lot of time working that out. And we could have spent that time also focusing on an other supplier who is in inkjet inks and this is actually a second world where there's growth and figuring out how are we gonna innovate together with them and make the best use of their potential, but we kind of completely left that to a subsidiary company in Canada, who already had that relationship anyway. So there was a very odd focus. And again, you see that it relates to the present bias. And so it's all clustered together.”</p> <p>”In isolated moments, there was actually a choice being made. And I do recall that we had this vice president of procurement. In principle, he was very pro-innovation because he was previously an R&amp;D manager. But when it came to organizing these meetings,</p>

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		<p>he was also the guy who would say, now let's focus for a bit on the toner thing, because that's very concrete and very specific. And we need to make decisions on that because we don't have that much time left. So you did see the trade off there but it was an isolated cases. And for the rest, it was more of a gradual thing. Together, we showed that there was emergent behavior you could say."</p>
	Simon	<p>"Like you rather than waiting and actually figuring out what's the best solution for the future? or?"</p> <p>Simon Locke 6:13 Yeah, and I think it's a maybe it just goes to the whole mindset being a retailer that I find it very hard to get anyone just to wait and to research more and to reflect,"</p> <p>"But human nature when you face a crisis, you can have you know, you go into panic mode, and you're so you, you rush around to try and be as busy as possible. You're trying to do more to keep yourself almost kind of occupied. And we're exactly in that mode now that suddenly anything slightly longer term, although that wasn't going to deliver perhaps a financial reward almost immediately, it's all pretty much being put on hold. And we're absolutely fried every resource in short term survival or auto rushing out massively ranges of other hand gels as well, because that's the big issue. But will it be an issue next year either?"</p> <p>"Most of the work I do, slightly bizarrely the majority, I'm not meant to actually finish any projects. My duties is to come up with a longer term ideas, but maybe more radical, and then it can perhaps gets watered down a little but then you hand it over to the business to then develop a long shot. So I think sometimes maybe it's a challenge to assess how successful you are being because in reality, you haven't delivered anything, if that makes sense."</p> <p>"No, but like I said in the short term that's changing, but the majority of my projects I've been working on a wall parks now will be paused, we can't do it. And I'm being called in to help with will disclose more kind of business as usual, short term projects. But I understand because now you have to know, the businesses, obviously. But many are really concerned about the situation and its long term survival."</p>
	Linda	<p>"And because they don't really get an reward from it, but of course, it is a financial reward because that's always especially in that kind of business because they had a very short time. When they have their discussions, I think with Nordic he wanted to get financial rewards very, very quickly and present them. And when you talk about sustainability, I think most people would agree that it's about a long term investment."</p> <p>"And that was also I think, many people and employment was very happy when this happened, because it's such a clear effect. You see what they've been doing."</p> <p>"But also there it was very difficult because they had basically given up on these things being able to show financial gain or just like how can we show management that this had any positive effect on the company in two months."</p> <p>"And we were actually a group that we believed in things that we could use these restraints and all our talents for something good while making business. But that when they couldn't see a financial.....incentive right away, then it was very, very hard to make management agree that we could spend any time or having employees involved in it."</p> <p>"And we know, we were trying because there were so many of our customers and other companies that we were just partners with that had a very strong, strong engagement within these questions. But I think when they're when it was difficult to see financial gain straightaway and how this couldn't be described, it just was very difficult."</p> <p>"So they told me they, most of them in management, believed in it and they were so happy when I had separate meetings with them. They could even book it by themselves because they want to hear it and they want to feel like they are a part of it. But I do think when you can't see straight financial gain right away it's very very difficult to get into."</p> <p>"But also there it was very difficult because they had basically given up on these things being able to show financial gain or just like how can we show management that this had any positive effect on the company in two months."</p>
Status quo bias	Raphaël	<p>"...one of the companies that are pretty much stuck with the things they've been doing all along and it's very difficult to escape from that. I'm not sure if that is out of a preference for familiarity. That's certainly not something that people would actually say. I suspect it definitely is the case with some people. If you know a lot about the chemistry</p>

		<p>of toner for a laser printer, and then all of a sudden inkjet becomes very important - it's completely different technology.”</p> <p>“So in that sense, they will always draw towards familiarity and maybe that enforces the status quo. I also saw in a relationship with crucial suppliers that it was very difficult to have people make choices. So, they wanted to do the best thing for everybody. They never wanted to mess up a relationship with a supplier, obviously also for business purposes because if you're dependent on them it's kind of a risk. But also because of, you know, I think just psychological reasons. You know "Don't rock the boat. That was definitely present.”</p> <p>”There was all kinds of people who said all the time, "We need to change this and improve that" and one of the fundamental problems that they had is that nothing was ever done. They invented something and then they just refused to finish it because there was new stuff to do. So you do see differences between places.”</p> <p>”Would you say that there could also be maybe a bias for that familiarity (of being innovative)?</p> <p>Raphaël Smals 22:35 Yeah, I completely understand you. So at a meta level, basically, I think you're right.”</p> <p>”I was talking to a former colleague of that company, right? It was COMPANY 2. We used to work there together. He was also procurement, by the way. And he told that anecdote of not being able to finish things and I said "Yeah, I recognize that". And I said "What about the quality department that we once tried?". He said it was a complete failure. At some point they tried to install a department that was aimed at finishing stuff. They engineered the machine and we should finish that and improve the quality and make it consistent. And everybody said "Yeah, that sounds like a good idea". Because R&amp;D thought "Ah, that's great! So now we don't have to finish it because those guys are going to do it for us". And then of course, at the moment that the quality department said "Yeah, well, we need some resources for that". They were squashed, right, they were just pushed basically out of the organization. "You, you get back in your corner. You don't touch us. We need to make speed". It was a lot of emphasis on "We need to maintain this pace of innovation". I've actually witnessed people saying, when this quality department was created, because I worked there at that moment and people said to me "Look, don't try that. It's complete nonsense. We should not be doing that. That's not the way we make money. We should make new things. Quality is just not important". Of course, my former colleague said "It's very good we didn't make airplanes".”</p> <p>”And a couple of years after that, when I long had left that organization, I figured out maybe I was doing a project and during that this was the organization that did not want to commit to quality. So you can imagine how they felt about systematically analyzing supply chain risks. "What? I mean, we need to push out the next product" so they were not very interested in that.”</p>
	Simon	<p>“..actually, there's some basic principles you have to accept. And one of those is the fact that the majority of people will hate your idea to start off with any kind of have to get used to that”</p> <p>“And so lots of people look for kind of the negative aspects when you try to do something different”</p> <p>“ there's kind of established codes within beauty cosmetics particularly around how products are packaged or marketed and sold and to do something that kind of breaks that kind of established code is a challenge... So it'd be the limited edition this and different things that you learn because it's fairly safe because it's based on a cool product that you know works well. So there's a lack of, I guess, desire or interest to really challenge or change too much. And again, we set up your supplier base again if you take packaging because suppliers who invested hundreds of thousands of pounds into their products on their production line It's not in their interest to change that too often because, you know, it's a huge investment so people can tend to be a little resistant to change, for those are the factors.”</p> <p>“It's all about survival rather than, like I mentioned earlier conventionally rather than perhaps think, okay, is this an opportunity to really change the business and we should stop sending a number of products or just only focus on on this or we should have to</p>

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		<p>have a massive expansion in line and close tools or whatever, I think we will go much more into a more insular protective, let's just do what we know process.”</p> <p>”So there's a lack of, I guess, desire or interest to really challenge or change too much.”</p>
	Linda	<p>“From the start, that was absolutely the situation. nobody really knew even what it was and there was not time for it.”</p> <p>“..you would always get the answer so many times when I had discussions with management was that we would do this at a later point, when there's more money or more interest.”</p>
Risk and loss aversion	Raphaël	<p>“you saw very, very big pressure to focus on parts of the market that were basically dead, but there was still some revenue being made. And then you know, trying to milk that as well as they could. And I think they put a lot of emphasis on that relative to the gains that they could get. So we spent quite a lot of time on, for example, figuring out if we could merge a factory for toner, you know, laser printer, if we could merge two factories: one of the supplier and one for COMPANY 1. Because we saw this volume shrinking, we kind of decided like okay, two factories is going to be too much on one continent. We need to sort of scale down. It's going to be either yours or ours or something together. And we spent a lot of time working that out. And we could have spent that time also focusing on an other supplier who is in inkjet inks and this is actually a second world where there's growth and figuring out how are we gonna innovate together with them and make the best use of their potential, but we kind of completely left that to a subsidiary company in Canada, who already had that relationship anyway. So there was a very odd focus.”</p>
	Simon	<p>“So it could just be either you just have a new product variant or change in the colour or something. But then you have the more big potential game changes where you could be the first breath to do something or to be seen as the leader, but also the high risk potentially the high costs, potentially you don't really know what you're going to do, how you are going to deliver it. So again, high risk, high reward. And as a business, it is incredibly hard to get back in for any projects like that, because one of the first questions you will get asked when you present ideas are: who else is doing it? And for me in a negative context, in the sense of, if no one else is doing it, then it's clearly a bad idea, and the business case. So you know, one of the examples of that was when we signed up to the loop project by terracycle. So this is their online shopping platform where you buy your normal kind of consumer products delivered to you. They collected, reused and then refilled. We had the opportunity to go into that trouble, and we managed it but the challenge we have was fact that not many of our brands are doing it. Not many competitors of ours were actually participating in it. And there was no clear business case because it was being run as a trial. So there was no previous data where you could acknowledge performance. And that was one of the hardest things I've ever done in terms of getting signed off for a project because you know that this project isn't going to make money for the business, but it could develop into opportunities that could in the long term.”</p> <p>“I think risk is probably one of the key ones against that whole challenge of unlocking the resources in terms of resource of teams and people and money to go over a project that There we go, how it's gonna work out there on the flip side we do take some risk, in the sense of if we have a deadline to launch a product. ”</p> <p>“Yeah it's I think the body shop, we have a risk averse culture. And so because of that, everything kind of cascades from that and then again like I said, well if he does go wrong, I wouldn't say there's a huge latent culture but it can feel a little light, that so people are aware you know, I guess sticking their head up and kill up ideas or, or lead them on time because we can call if this goes wrong, this can be like so there is a real tendency blob, but I think it comes from that whole risk.”</p> <p>“So it'd be the limited edition this and different things that you learn because it's fairly safe because it's based on a cool product that you know works well.”</p> <p>“And again, we set up your supplier base again if you take packaging because suppliers who invested hundreds of thousands of pounds into their products on their production</p>

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		<p>line It's not in their interest to change that too often because, you know, it's a huge investment so people can tend to be a little resistant to change, for those are the factors."</p> <p>"And so I think there's there's a few people that are trying to offer different opinions or views, but it's really hard because you can then go and against the mainstream and you don't want to be someone that's negative or critical the business"</p> <p>"Risk averse is probably the key one for me"</p>
	Linda	<p>"And there was more interest when the legal... because we were such a big company, so there were some things that we couldn't compromise on. So then it made it easier, as you can understand, even then it was I mean, to be frank, when we were sitting in the meetings, they would say, what do we have to do to not get into trouble?"</p>
Availability bias	Raphaël	<p>"So, when we had them for two or three hours together, you could say that was a scarce resource and we could only spend that once every two weeks. So we needed to put to the table what was the most valuable at that point. And you saw that, of course, the agenda is also formed based on their own input. It's not so much that we said let's not discuss the future innovation, but let's focus just on the operational issues. They just did a lot of work in the operational issues and kind of quasi forgot about the innovation issues."</p> <p>"If you work in R&amp;D, that's your bread and butter, that's the world you live in. That's what you see. So that takes up a lot of space in your head. And all the other things are pushed automatically to the side, so they also seem less important."</p> <p>"And at some point there was an audit by one of the customers, it was Samsung. And so these South Koreans were sitting at a table and on the agenda was, so how do you manage your supply chain risks? So I was called into that meeting room together with one of the procurement managers, not the one I was talking about before, but a colleague of him. And basically - another anecdote - they asked "So, how do you manage risks"? and this manager before we went into the meeting room said "Well, you know, let me do the talking as the senior". It was also kind of cultural characteristically so I said "Sure, you know, fine". So he did the talking and I expected him to start explaining what we're doing in terms of systematically identifying risks and then trying to estimate their magnitude and identifying things, how to manage that. What he did instead was pick on the first example that he remembered, which was the supplier burning down, I think, or it could have been the flooded one. And he started explaining how that was not a problem at all because there were competitors of them that they also knew about, and they basically stepped in. Competitor is not really good word. It's more of a competitor colleague. So basically he made an argument "You know the supply chain fixed itself". I think it was an availability bias thing, because instead of understanding the question of these Korean guys about "How do you systematically deal with this?" he just picked the first example that he thought of and said "Well, this is how we do things". And I thought "Well, yeah, if we do a very poor job and cannot prevent anything then we have to do it that way"."</p> <p>"They essentially asked me to create a process for them to help them manage their structural supply chain risks. And the reason why they wanted that also had to do with availability bias, because they had had issues of a supplier basically burning down and one getting submerged in water. And of course, that created all kinds of disruptions in their supply chain and the customers didn't like that."</p> <p>"It was really incredible how poorly these people understood how you do things. Right? It completely surprised me how ineffective they in general were in managing meetings. It was like meetings were a purpose in itself. You put people together and then stuff happens, you know."</p> <p>"They did not seem to have any kind of concrete image of where do we need to go. They did market projections and they thought about how it's going to develop and they looked outside and If I asked the question "So where are you going to be in 10 years?" "I don't know, I probably have a different car", you know, it was at that level and that was so different from the other company (COMPANY 2). I really learned that there. They did know where they wanted to go. They were very explicit on it on all fronts. They knew technologically, they knew financially, they knew in terms of HR, they knew in terms</p>

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		<p>of the supply chain, they knew exactly where they wanted to go, what they wanted to achieve? And maybe they were sometimes divided on that because the supply chain people maybe sometimes saw the supply network a little differently from the R&amp;D people. So there were conflicts about that, but they have visions for that future."</p> <p>"It also comes with the territory because that way of thinking is very much embedded in the semiconductor industry which they are in. It's not they who made it up. I mean, if you look at Intel, they make computer chips, right? You know the company. They know ten years in advance what kind of computer chips we will have in 2030 because they planned them. They know what kind of technology they need to make that happen, right? It's not so much a vision as it's basically they're planning it. It just happens to have a timescale of multiple years. And of course, as a supplier to that industry, COMPANY 2 had the fashionable technology, okay, by 2020, we need to do what is now I think two and a half nanometers: "We need to make an imaging system that can do two and a half nanometers. How are we going to solve that?"."</p>
	Simon	<p>" we invested heavily last year into the software we use now the Microsoft Teams and other software to develop a kind of working arrangement and to make us far more agile as a workforce at the time people really question the whole. Why are we spending so much money on this because it is a significant investment. You could argue now that it was one of the best investments that we made because we have a really good ability to continue working, which I think even if we're about a year ago, we would have really struggled."</p>
	Linda	<p>"But I know there was some very strong engagement from one person in management, just when he had seen something very clearly from a trip that he went on, that made him super passionate about, like we have to be a green company. I think it was somehow that he saw that there was snow disappearing from a mountain that he was always traveling in. So that became very clear. It was a very one day to another or a week from another. And he's actually the person who took over when I left. And I don't know what happened within this area. But it was, it was like we have to change. This is fantastic. All the things that you've been trying to do. And it became so clear for me. So that was absolutely interesting. And also, as I said, when the customers started to write and to call and ask, you know, we can't have this being done if we can't see the policies and the way you work with it, and there were some in management as well or one person who started to read a lot into it, and just get an interest because he started to understand I think. So when it comes up front and you see the consequences, and you understand what it's about, most people do have an interest. And I guess that's why women usually are interested in equality because we know what it is."</p>
Overconfidence bias	Raphaël	<p>"It's also very difficult to get these people to understand, you know. I kept asking them the question, basically "Okay, very nice what you're doing here guys, but what are you gonna do when we go paperless?" And they were all kind of like "Nah, we still consume much more paper than we did last year, you know, it's still a rising business." And at the same time, you see, it's actually a dwindling industry. So there was this sense of urgency, I would connect it with that, that was completely lacking, at least with some people."</p> <p>"It was an R&amp;D intensive organization okay, so with a very powerful department that was very big as well. They always had these programs running of new equipment and very exciting technologies and the same thing that happened over and over and over is that very early on in the technology assessment, they said, well, this is a promising technology. Let's look at the market. And then market projections were made and they were like, oh, wow, this is gonna be a major hit. And it never materialized. Literally never. So at some point, you know, if you saw those market projections, then you saw people in your organization actually say "Oh there goes the fairy tales again", you know, they all got kind of "This is too good to be true". So that was definitely present in part of the company."</p> <p>"It was really incredible how poorly these people understood how you do things. Right? It completely surprised me how ineffective they in general were in managing meetings. It was like meetings were a purpose in itself. You put people together and then stuff happens, you know."</p> <p>"The other ones, maybe on general knowledge I would say you know, if I look at the overconfidence bias that very much makes me think of the notion of groupthink. I was talking about these market projections that didn't work. And one of the mechanisms that people explained about it was that essentially, you had R&amp;D, they came up with the technology. And said "Wow that's promising, we think that this has market potential" and then it went to the business unit and then they said "Well, okay, that's an interesting market projection, actually, it's a good story. Let's put 20% on top of that". And it went</p>

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		to sales and they said "Oh, but we can sell anything. This is gonna be a winner! Let's put 50% on top of that early market projection!". Before you know it, one tiny thing has grown into an elephant size and that was something that happened all the time there. So I think it was an overconfidence bias compounded for multiple individuals, and there you get a problem if you don't check that."
	Simon	"So, either take a supermarket chain, the UK, Tesco, one of our supermarkets, they will set themselves a carbon reduction target and I will say we're going to cut our carbon by 40%. Their rival Sainsbury's will then come along and say, well, we're going to do a programme or we're going to cut by 50%. So it's not calculated based on what they need to do what they should do or not calculated on a specific end goal of what they want to hit in ten years time. It's more focused on as long as we look better than our competitor. That's what we've talked about in terms of incremental improvements, but, you know, there's no specific calculation as to why they've set that target. There's no clear and golden sight, it just makes them look better. And again, I hear meetings all the time where we say our packaging is better than upper bounds packaging and stuff. And it's, it's based on perception rather than fact."
	Linda	"...when you have the meetings with management, I think it very easily becomes a check in the box," "And as I said, you do a little check in the box and you think about what our employees are going to be able to see right away. And what are the legalities. I was working very much with the legal aspect, and just making sure we have all the policies"
Confirmation bias	Raphaël	"You know, that one I think in general is just...I didn't give a very specific answer on that one. At least, don't attach too much value to it. I would put it that way. You know, I recognize the confirmation bias because we're all humans,"  "you also saw because it was such a pattern, other people started to respond to that, by basically pulling to the other end and saying, well, all this innovation, it's all empty promises. So why do we bother?"  "I think people tend to sort of emphasize what they know about and they also recognize what's so valuable about it." "the selection process tended towards the more conservative people because there was just not much success in making innovations work or doing very wild things."
	Simon	"They will give their opinion. And I describe it as a bit like a tire kicking exercise, when someone's going to buy like a new car, you walk around the car, and try and get the price down. You just pick out all the faults that you can see. And it seems very much a case of mindset that when you have a new idea, everyone's looking for the faults with that and that if something perhaps hasn't worked out, as you originally planned it people will go about what I told him was not a good idea." "So perhaps in terms of our leadership team, we'll be having conversations around. An example could be kind of material do we use to make up buttons perhaps. And they may have a predetermined type of material in mind, so they will go off and find any source they can to prove that what they're saying is the right choice"
	Linda	"We were trying to at least, like not just throwing away our garbage in an irresponsible way and everything. So those things were things that people would bring up and feel very proud of, because you could see it very clearly like, right in front."
Possession bias	Raphaël	"Those meetings involve people from operations, from supply chain, from R&D and also from the business units. So basically the entire value chain of the company. And obviously, the entire thought was to bring together those interests, because we knew they had these interests and basically self-interest. And we needed to balance that."  "Evidently, yeah. I mean, that was the essence of that work in a sense because the aim of .. so let's get those meetings again, right, because they're nice and concrete. Those meetings involve people from operations, from supply chain, from R&D and also from the business units. So basically the entire value chain of the company. And obviously, the entire thought was to bring together those interests, because we knew they had these interests and basically self-interest."

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		<p>“And it's the same thing if you're work in R&amp;D, if something touches R&amp;D, that is more painful than if it hits supply chain. I mean, we had to reorganize at some point due to cost pressure. I don't think a lot of people at R&amp;D were very concerned about the procurement personnel that we had to let go. It was not their people.”</p> <p>“I think people tend to sort of emphasize what they know about and they also recognize what's so valuable about it.”</p>
	Simon	<p>“..in lots of big businesses that you have an idea, everyone has an opinion, every department, maybe it's just a case of having Second of all, they feel that their value”</p> <p>”There's always that little bit of it that was my idea kind of thing. But I think in a large business, sometimes it's really hard to know where did that idea start?”</p> <p>“The only criticism you can see is that perhaps they will just focus on their products and not perhaps see the benefits of how we could link to other products. ”</p>
Other biases	Simon	<p>“So I think we have a tendency here that is something seems to work We really roll out really quickly.” (action bias)</p> <p>“Say that rather than looking to some real kind of balanced research also it's very hierarchical. So again, I've said in many meetings where most of what we do at the body shop in terms of products and experience is determined by our brand director. If you have inserted before Leah now I've sat in meetings where people won't say a word until he speaks. And he if he says he likes it, everyone joins in and says, yes, they like it. If he doesn't like it, people will say, Oh, no, I agree.” (authority bias)</p>
Behavior issues different from biases	Raphaël	<p>“So at least they could make consistent arrangements with suppliers because they always have this issue of, you know, one person in the organization saying this and another person saying that, and then the supplier's basically saying "Well, I don't know what to believe. You guys are saying so many things at the same time”</p> <p>“They did not seem to have any kind of concrete image of where do we need to go. They did market projections and they thought about how it's going to develop and they looked outside and If I asked the question "So where are you going to be in 10 years?" "I don't know, I probably have a different car", you know, it was at that level and that was so different from from the other company (COMPANY 2). I really learned that there. They did know where they wanted to go. They were very explicit on it on all fronts. They knew technologically, they knew financially, they knew in terms of HR, they knew in terms of the supply chain, they knew exactly where they wanted to go, what they wanted to achieve? And maybe they were sometimes divided on that because the supply chain people maybe sometimes saw the supply network a little differently from the R&amp;D people. So there were conflicts about that, but they have visions for that future.”</p>
	Simon	
	Linda	<p>“we would do this at a later point, when there's more money or more interest. And there was more interest when the legal... because we were such a big company, so there were some things that we couldn't compromise on”</p> <p>“But it was there was just no interest and a lot of the management there would just say, no, it's impossible. It's just not gonna be harder.”</p> <p>“we know we have good offices when the lights go off when you walk out of the toilet, you know, we do our part. And you know, people are nice to each other, everybody's happy. And then when I was implementing things like a whistleblowing system, most people were like, what is this? This is not a police office. Why do we need police officers? This is not dangerous and why can we talk to each other Linda, you're just being you know... you're making things worse than they are in starting conflicts.”</p>
Difference between sustainability and innovation	Raphaël	<p>“it's the same thing as far as I'm concerned. Because you asked in a survey about innovation and sustainability and the way I see it is that, for example, from my position at this COMPANY 1 where I had to stimulate innovation, it might just as well have been stimulating sustainability. It would have been exactly the same approach. I would have made the template a little differently. To focus more on what are the people and the planet and profit aspects of this supplier relationship instead of the technology aspect. The same approach would have applied and we would have run into the same things with one difference. It's that at this company, both of the companies I talked about, innovation is something you don't have to make a case for that there. You know, if you</p>

		<p>say innovation, everybody says "Yes, we want!". If you say sustainability, and I actually had it happen when I was doing the supply chain risk project at COMPANY 2, where of course they also run into the issues of "Okay, so how about things like child labor or adverse labor conditions in the supply chain? We source stuff from China. Do we know what the working conditions out there?". And essentially, it was almost literally said to me "Look, that happens deep in our supply chain. That's up to our suppliers to manage that. We're gonna we're not gonna worry about everything". This was ten years ago, okay. Twelve years ago. I don't think they would say the same thing today. But in the world of 2008, you could get away with that."</p> <p>"It's about change. It's about something that affects every part of the organization. It's something that you can never compartmentalize in a separate part of the organization. I also think it's fairly abstract and difficult to operationalize. You know, when have you innovated successfully? When have you been successfully sustainable? It's a moving target. So yeah, that's why I think are very comparable, particularly because it's spread out throughout the organization. And I think today, sustainability is very much what 50 years ago was innovation. I see a lot of parallels in the way we talk about it, the way we all want it. The interesting question is, of course, what's going to happen 15 years from now, because then we have something else."</p>
	Simon	<p>"...it kind of taps into with my background in sustainability rather than innovation (overconfidence bias) where people will develop a sustainability strategy, largely based on what their competitors are doing."</p> <p>"Not a huge difference. I think that there's not even one."</p>
	Linda	
Solutions	Raphaël	<p>"And I created sort of, an executive meeting platform of people within the organization in order to align them on all kinds of topics that are related to suppliers...So that was part of my job. And so for that platform, we instigated meetings, we brought issues to the table and I put very much focus on the innovation-related issues"</p> <p>"And we needed to balance that. And we tried to do that by making it explicit. If you have to actually explain to people that you find your own priorities more important than those of other people, I think that sometimes also, by making it so visible, maybe you can reduce that effect or reduce that bias a little bit. So, inherently that was the logic behind making those alignment meetings."</p> <p>"I was talking about the awareness of bias and obviously if you work in academia, you basically see that essentially everybody is very much aware of what kind of bias can play a role at any stage in the process. It doesn't mean that the bias isn't there but everybody's aware of it. That also means that their decision making is different. Interestingly it's not necessarily better. It's probably slower. I mean, you can think of bias also as something that is as a heuristic, right? It can be useful. It helps us to navigate quickly."</p> <p>"I explicitly tried to break that pattern and stimulated them to come up with challenges related to future opportunities and technological developments, that way trying to essentially create more space in their mental worlds for these issues".</p> <p>"So the way those meetings work, and these are the same meetings I just talked about, right? So scarce resource, bi-weekly, sometimes even less, a few hours with these VPs and SVPs. My job was essentially to - I was kind of a secretary. I placed myself in that position so I decided that we needed those meetings and I explained that to my boss. He was the owner of the project and well, long story short, I put myself in a place of secretary in order to sort of set a guiding example. Because my job was only temporary. I was there to put it in place and then I had to transfer it. So I just wanted to show them "Look, this is how I think you should be doing it". You know "Follow my lead!". So, I was on the background mostly because during those meetings I did not discuss the content, you know, that was up to those managers to make decisions on. I was just there to help to bring the content to the table and to facilitate the decision-making process. And I, of course, was also involved in identifying what kind of decisions have to be made"</p> <p>"And I was like "If you don't structure this, nothing is gonna happen, nothing is gonna change. So you need the structure". I tried to bring a structure - essentially you can say that was the first nudge. By setting the stage. Then in doing so, we needed to get the right content to the table and to prioritize the decisions to be made. And this was pretty much top down management (type of) companies. So these SVPs they relied very much on their people to collect all the intelligence. I tapped into that structure and I basically made sure that all the people contributed to those meetings. Those were generally for example, managers or project managers and R&amp;D for certain developments or certain</p>

		<p>supplies. I provided them with templates on how to collect information systematically on, for example, a supplier relation. And also I assisted them in filling that content, you know, "this is how you could interpret it", "this is the kind of questions you need to ask". And in drafting that stuff, I placed a very high emphasis on the future because I had the impression that they were very interested and very much engaged in storytelling about the past, "How come we are where we are today?". They were not very actively looking towards the future or trying to actually make a concrete picture of what the future could look like..Be aware of the world around you. Try to figure out what it's gonna look like".</p> <p>"Remember the Kondratieff long waves?</p> <p>Frida Ella Viola Lindqvist 40:07 Yes.</p> <p>Raphaël Smals 40:18 That was basically that story. I also asked them "What is the next long wave?". Maybe not in general but for this supplier relationship. "What is the future going to bring? And how are you going to get there?". I placed a lot of emphasis on that in the hope that that would constitute the content that they would bring to that table where decisions could be made and that the focus would drift away from the question, "Should we do your toner factory or ours?" towards the future of inkjet: "What kind of decision-making do we need in terms of matching the right kind of delivery technology, consumables and markets?". So there was kind of an attempt in you know, creating a framework and then hoping that people will actually try to stick within that framework. That worked to an extent but these were you know, grown-up people. They were not dreamers. They were certainly not visionaries.</p> <p>"</p> <p>"Yeah, that was the difficult part and I'm not sure if that worked, to be honest. When I left after sometime - after that from time to time I still talk to the project owner there and I understand that they didn't really manage to make it stick. So it was very difficult. It was just basically one guy yelling that they should be doing this and I think that was not enough. The project owner very much agreed with me, but he was kind of chaotic. So he could not fulfill that role of being the secretary and you need to follow up that role and they just didn't want to commit resources to that. I mean, that's also up to them to decide where they want to go. I did not discuss the content with them at that meeting table, I was not the guy saying, look, "Should we be thinking about/should we be going in that direction?". I had those ideas. I mean, I saw all these technologies passing by, I saw markets, I saw initiatives that they sort of ignored that I found very, very interesting. But I kind of prevented saying too much about that. But I witnessed it, I recorded it, and that was the basis on which I made all those templates. I thought, well, I need to nudge them a little bit in that direction. So in terms of nudging, I had a goal in mind. And there was just two things I could do: I could say, "Well, you should be doing this" and I knew for sure they're not going to do it. Or I could try to help them reach the same conclusion which in the end, they didn't and maybe that's a good thing because maybe my conclusion was not the right one. Right? So I think that is also the usefulness of nudging. You nudge people into a certain direction, but if you nudge them instead of telling them where to go, you still enable them to do it flexibly to take into account the situation that they're in. That makes it very powerful."</p> <p>"That when you ask somebody individually that bias is definitely going to be in their answers. But if you force them to actually confront the group, then all of a sudden it looks completely differently."</p>
	Simon	<p>"I have to accept, for example, that for a project to get signed off. I had to kind of sow the seed quite often was only an owl or his team. And then eventually he'll turn around and meet and so I had this great idea we're going to do X and he said anything. Where does this come from? No idea but it's that kind of that's how it works. That's the reality of it. If you say we'll do this, we'll do that, then it's not gonna get off the ground, you really have to sow the seed, get everyone on board and go through that, that they cannot process. So to get anything different to actually happen."</p> <p>"Someone was telling me that there was a company in the UK, who gives out an award for the best failure every year. It's not a deliberate failure, but it's someone who had a really good idea and didn't work out. Because again, they're worried that if they, if they</p>

		don't come support and encourage that, then people won't come forward of ideas. That's a really, really cool approach. And I'm not aware of any companies that would still do that."
	Linda	<p>"And also, there was a project when I was trying to get some people from the suburbs being... because there are people who don't might not have what you need in order to get full employment, but they can still come in and just work. And if we have people, especially within being programmers, you know, they can just be like a right hand and show them. And that was also I think, many people and employment was very happy when this happened, because it's such a clear effect. You see what they've been doing."</p> <p>"We were trying to at least, like not just throwing away our garbage in an irresponsible way and everything. So those things were things that people would bring up and feel very proud of, because you could see it very clearly like, right in front."</p> <p>"..making sustainability something that is just like, as important to us. You know, I think it really needs to come up also, more and more into management. So that it feels like not just like a check in the box, but that it is something that goes through and that it's a part of, maybe also making money for the company or something that they can see very clearly this is making profit somehow."</p>

## 10.4.2 Coding interviews for sub-research question 2

Aim of interviews and guide for the coding:

We are interviewing these people to investigate sub-research question no. 2: What nudges can be used to address these biases in an organizational context? We answer this by 1. Finding out what these experts say about nudging for sustainable innovation in general (or sustainability and/or innovation) 2. Indirectly answer our question by finding out what tools they would use to counteract the biases we have identified as inhibiting for sustainable innovation.

### Coding rules

Include: concrete behavioral solutions of how the identified biases can be addressed within an organizational context, from the practitioners' knowledge and experience implementing nudging interventions + suggestions of nudging interventions to foster sustainable innovation unrelated to any specific bias. Also, we include other interviewee insights related to the biases, and related to fostering sustainable innovation in an organizational context, that could inform implementation of nudging interventions.

Exclude: examples/solutions brought up outside a organizational context, i.e. if customer-facing

### Codes/themes

#### Solutions addressing Present bias

- Insights informing solutions related to Present bias

#### Solutions addressing Status quo bias

- Insights informing solutions related to Status quo bias

#### Solutions addressing Risk- and loss aversion

- Insights informing solutions related to Risk- and loss aversion

#### Solutions addressing Availability bias

- Insights informing solutions related to Availability bias

#### Solutions addressing Overconfidence bias

- Insights informing solutions related to Overconfidence bias

#### Solutions addressing Confirmation bias

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- Insights informing solutions related to Confirmation bias

### Solutions addressing Possession bias/endowment effect

- Insights informing solutions related to Possession bias/endowment effect

### Other solutions where addressed bias is unmentioned

- Insights informing the use of suggested nudge

### Other solutions where new bias is addressed

- Insights informing solution related to the addressed bias

### Recommendations

### Critique/limitations of nudging or addressing specific biases

Bias	Interviewee	How bias could be addressed*	Identified nudges** at play	Insights informing nudging interventions
Present bias (closely related to present focus bias, hyperbolic discounting, immediacy effect, and query theory.)	Tommy	<p>move "later" to "now" to actually make people experience what "later" would be</p> <p>plan this together right now, when you're all together and tell me we have something in common to look forward to.</p> <p>help people to visualise what it would look like if they save this amount of money per month, and also connected to their salary. So, a specific percentage of their salary increase when it goes straight to a pension fund or their pension plan, which means that it doesn't hurt them.</p>	<p>Salience of consequences – Use methods specifically designed to emphasise the consequences of performing the behaviour with the aim of making them more memorable</p> <p>Use of social norms - emphasize what most people do</p> <p>Prompts/cues – Introduce or define environmental or social stimulus with the purpose of prompting or cueing the behavior.</p> <p>Demonstration of the behavior – Provide an observable sample of the performance of the behaviour, directly in person or indirectly e.g. via film, pictures, for the person to aspire to or imitate</p>	<p>(regarding what nudge to use) It depends on why they're doing what they're doing. → if present bias is a result of being risk-averse or not being able to visualize the future</p>

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			<p>Imaginary reward – Advise to imagine performing the wanted behavior in a real-life situation followed by imagining a pleasant consequence (includes ‘Covert conditioning’)</p> <p>Defaults</p> <p>Disclosure and transparency</p>	
	Samuel	<p>basic stuff like providing people with positive feedback is really important in terms of that we will get a sense of getting progress.</p> <p>finishing a project or, like give feedback or you can find other ways to kind of make people feel like they're having some form of positive things happening at the moment.</p>	<p>Feedback on outcome(s) of behavior – Monitor and provide feedback on the outcome of performance of the behavior</p> <p>Immediate feedback</p>	<p>I don't know if it's particularly very relevant in innovation work. But definitely we like immediate gratification, all of us. So I guess, to some part. Sure.</p> <p>present bias, one way to look at it, is like you have this need for feeling some form of present sense of fulfillment.</p>
	Natalia	N/A	N/A	<p>how they are rated like how the effectiveness of each department is graded. So, they are rated depending on how many projects they produce in a certain amount of time. And working with groups not in silos may sometimes make the projects take longer. And therefore they prefer to work as before because the way to measure their effectiveness was based on working as a silo. Like working by silos and not by problems.</p>
Status quo bias	Tommy	<p>if you can make those that you want to change, see that there is something in it for them, then it will be easy to make a change.</p> <p>(the status quo bias affect people) When it's not worthwhile, and when they don't see it. When you don't see then it doesn't exist. It's nothing in mind. And that is one of the main problems with environment.</p> <p>You don't see how we affect the environment....you don't see the effect and the effect is very often far away in time and what you do doesn't really affect environment as a single person. But when everyone will do the same, then it makes a huge impact on the environment.</p>	<p>Disclosure and transparency</p> <p>Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about performing the behavior (includes ‘Cognitive structuring’)</p> <p>Imaginary reward – Advise to imagine performing the wanted behavior in a real-life situation followed by imagining a pleasant consequence (includes ‘Covert conditioning’)</p>	<p>I would take the opposite perspective of what HR consultants and departments say. They usually say “people don't want to change because they prefer security. They suffer from status quo bias”. And I say that everyone wants to change IF they see that it will benefit them. The whole life is about change.</p> <p>we need to understand what drives people. And what holds them back from changing.</p> <p>it's all about how much you can benefit or how much it hurts you doing things. But now we're talking about money. There are so many other emotional drivers that affect this, usually affect change. And here it's simple, but when it comes to other things, other</p>

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				drivers might be involved that even myself I'm not even aware of.
	Samuel	Usually one of the main things you will use is some social proof, or something like that to change that.	Use of social norms - emphasize what most people do	depends on how you define the status quo bias. Because you can also blame it on habits. Let's define a little bit the status quo bias. Like this idea of doing things like you've done before, or if you think about it, more like almost habits as well. It's very hard to not connect those two.
	Natalia	the way to address them was creating these working groups like cooperative work. And by sharing ideas and experiences, they were able to solve problems together. So actually cooperative work help to reduce that resistance from them.	Restructuring the social environment – Change, or advise to change the social environment in order to facilitate performance of the wanted behavior or create barriers to the unwanted behavior ((other than prompts/cues, rewards and punishments)  Framing/re-framing - Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about performing the behavior (includes ‘Cognitive structuring’)	statisticians thought that they shouldn't be caring about marketing, for example, and how to sell a product, because it wasn't their job. And actually, it was kind of scary for them to think about that because they didn't feel comfortable working with those types of topics.
Risk- and loss aversion	Tommy	Usually I do the opposite. What I do is that I developed a very, very strong loss aversion when I sell solutions to companies...I don't think I don't really know how to reduce that....I would rather use it. When I talk about a problem with a CEO for example, and that CEO says that “yes I agree with you that the Danish market is up this much, and it's great how can we fetch this opportunity”. Then I slowly try to turn him round around and make the person see that it's not an opportunity, it's a risk of losing an opportunity. Because it's much stronger to make people feel that they're losing something there.  If we talk about the environment, I think it's perfect to address loss aversion. We are losing the beautiful environment that we were born in, or that we used to have, and we are getting something that is.. and then you	Future punishment – Inform that future punishment or removal of reward will be a consequence of performance of an unwanted behavior (may include fear arousal) (includes ‘Threat’)  Anticipated regret – Induce or raise awareness of expectations of future regret about performance of the unwanted behavior	

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		can just describe what that stuff is. And that is strong.		
	Samuel	<p>one of the main things you're trying to do is just to support people into a little more trust</p> <p>Provide people with a sense of trust and feeling more comfortable with just being in uncertainty. And that kind of, yeah, that component of, of loss aversion is always going to be there, so it's more helping people managing that.</p> <p>One of the hardest things when you try to do innovation is dealing with uncertainty in some ways in terms of like, being open to being wrong and having bad ideas, and all those things have a lot of trust.</p>	<p>Social support (unspecified) – Advise on, arrange or provide social support or non-contingent praise or reward for performance of the behavior.</p> <p>Social support (practical) – Advise on, arrange, or provide practical help for performance of the behavior.</p> <p>Social support (emotional) – Advise on, arrange, or provide emotional social support for performance of the behavior</p>	
	Natalia	<p>actually, when they saw that other companies that had more innovative ways of doing things and like, going up in sales, they just saw that the need was created. They just felt that they needed to do it.</p> <p>in Colombia tradition is very important. So once you propose a different way of work, actually, you're also proposing a different way to see things and to break tradition a little bit to get rid of tradition a little bit. And this insurance company was one of the first that was founded in Colombia. So for them having these types of traditional associations and familiarity was very important. And so proposing this different type of way of working, it demanded a different way to define themselves.</p>	<p>Use of social norms - emphasizing what most people do</p> <p>Anticipated regret – Induce or raise awareness of expectations of future regret about performance of the unwanted behavior</p> <p>Future punishment – Inform that future punishment or removal of reward will be a consequence of performance of an unwanted behavior (may include fear arousal) (includes 'Threat')</p> <p>Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about performing the behavior (includes 'Cognitive structuring')</p> <p>Identity associated with changed behavior – Advise the person to construct a new self-identity as someone who 'used to engage with the unwanted behavior'</p>	<p>in one sense, they will lose something because they will lose some kind of association perceived by the people and the consumers. And it was kind of trying to change the whole image of the company.</p>

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Availability bias	Tommy	N/A	N/A	<p>usually, because of availability bias, they draw to big conclusions based on limited data. And here comes another bias, the action bias. The human brain gets dopamine from doing things. If we can take off the tasks from our task list, it feels good.....Still, the problem with action bias is that you are not promoted within a management team, for example, for running deep analyses between the management meetings, you're usually only promoted if you show that I'm able to pick up a lot of things from my to do list.</p> <p>I haven't experienced that (availability bias) being a problem in organisations...but of course it could be if you cling to the past too much.</p>
	Samuel	<p>it can be useful to have a multidisciplinary kind of mix of groups and people. So bringing people with different backgrounds perspectives, and so they will naturally have been exposed to different things.</p> <p>it is really important as well to like to manage the innovation process in a way where one person is not really going to directly influence too many people in the beginning. So it's really good to have some like silent brainstorming, for example, where everyone writes down ideas, and then you first share them with small groups and then maybe afterwards, share them with the bigger groups, and so on so that you try to avoid one person setting kind of a very clear thing to think about, and then everyone's gonna think about that.</p>	<p>Restructuring the social environment – Change, or advise to change the social environment in order to facilitate performance of the wanted behavior or create barriers to the unwanted behavior ((other than prompts/cues, rewards and punishments)</p> <p>Exposure – Provide systematic confrontation with a feared stimulus to reduce the response to a later encounter</p> <p>Precommitment strategies - people commit to a certain course of action.</p>	<p>this is a big problem in innovation.</p>
	Natalia	N/A	N/A	<p>they had like this traditional way of working and traditional way of seeing the whole insurance world in the same way they saw consumers, so they try to explain the behaviour in a very rational way, in a very traditional and rational way. So, every time they had a sales decrease in a specific kind of product, their explanation was related more to rational decision making process from the consumers rather than taking into account other types of processes from the behavioural sciences unconscious processes such as</p>

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				emotional processes. And therefore, it was sometimes a barrier.
Overconfidence bias	Tommy	when I talk to, for example, a management team or an HR department, they usually say that they got it all under control. We have our strategies, we have our culture, we have our core values and so on. What I do is start to ask questions and peel off a layer of, what you would say, not that effective decisions. Or just address the unanswered questions. I think that's the way of doing it. In the end, they understand that we have a problem. "We didn't realise that we thought we had it all under control because we set up this vision and these core values during our last meet up". And then I might say that it takes up to a couple of months to reach a vision and common core values that actually drive behaviour towards our common goal. It takes a long time, you don't do that at a half-day kickoff. I think that knowledge can fight that bias, to show people that they don't really understand..	<p>Disclosure and transparency</p> <p>Discrepancy between current behavior and goal – Draw attention to discrepancies between a person's current behavior (in and the person's previously set goals</p> <p>Re-attribution – Elicit perceived causes of behavior and suggest alternative explanations</p> <p>Information about antecedents – Provide information about antecedents (e.g. social and environmental situations and events, emotions, cognitions) that reliably predict performance of the behaviour</p>	
	Samuel	N/A	N/A	<p>one of the main things like, people are under confident things that they don't normally do. And so, for example, people are overconfident in, for example, kissing and driving and underconfident in dancing and saving the human race from destruction.</p> <p>So, you know, something you do every day, you're gonna assume that you're probably at least above average</p> <p>And so the same thing with innovation, if you do innovation work, especially if you're in our organisation hasn't done alot of that before. You just have the assumption that I'm really bad at coming up with ideas like I'm really bad at working with new things like, yeah, it's just it's kind of because I haven't done it before. So they kind of have this false belief.</p>
	Natalia	the marketing department actually, that was one of the advantages with them because they were open to hear other options for their ideas. And they were able to identify that their own judgment sometimes was	Demonstration of the behavior – Provide an observable sample of the performance of the behaviour, directly in person or indirectly e.g. via film, pictures, for the	Actually dependent on the department and the area. Statisticians and mathematicians were kind of like that. Like they have the numbers so they knew more.

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		limited, and they needed the participation, somebody else with a different type of knowledge. So actually, that helped. Actually, that explains why the marketing department was the one the first one to use a different type of work and why other departments were more resistant.	person to aspire to or imitate	
Confirmation bias	Tommy	<p>For instance, when I read the paper, I forced myself to read opinions that contradicted mine. If I see something that is very left wing, then I say to myself, I have to read it. Because otherwise I will only be driven by my confirmation bias.</p> <p>In organisations....it's not only because the confirmation bias is about group pressure and other other things...management teams tend to develop the same view of the organisations, what they are doing. One way to handle this, is that everyone has to put down on a paper, their view of a particular issue, or anything, before the meeting. That's where you will get away from, at least from some confirmation bias, from other people in the same room. It's about offering a different perspective to people.</p>	Precommitment strategies - people commit to a certain course of action.	it's difficult for some people, they just get afraid. Tell a religious person that is deeply religious, "what you've been through all your life, maybe you should try something else
	Samuel	N/A		
	Natalia	they were aware of the gaps that they had. And therefore, they looked for different explanations for different topics, even though it was like it showed the opposite of what they thought in the first place, and actually that was understood as a positive thing because they were more excited to learn than to confirm, and I think that that kind of mindset helped them a lot.	<p>Disclosure and transparency</p> <p>Exposure – Provide systematic confrontation with a feared stimulus to reduce the response to a later encounter</p> <p>Re-attribution – Elicit perceived causes of behavior and suggest alternative explanations</p> <p>Precommitment strategies - people commit to a certain course of action.</p> <p>Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or</p>	

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			emotions about performing the behavior (includes 'Cognitive structuring')	
Possession bias/endowment effect	Samuel	<p>one of the most important things you want to establish is you want to separate ideas from people. And that's a very important thing that you're trying to like to manage in the beginning.</p> <p>you are ultimately trying to create...managing people like, to get a sense of feeling well valued and smart and intelligent and those things.</p> <p>And say that "no idea is a bad idea".... in the beginning.</p> <p>In idea generation, I would, first of all, try to make it so that people can like generate ideas and then they can put it into a pot. Like a combination, and then those ideas get very quickly intertwined and evolve and combine with others. Initially, you will have everyone sitting in a group of like 10 people, you'll do a silent brainstorm. And then you say that they need to share that with one other person. And then they may combine their ideas, and then you have those two people share with a group of five and so on and then all ideas are mixed, refined and improve and like no one remembers which ideas where whose and so that's one way of doing it.</p>	<p>Social support (emotional) – Advise on, arrange, or provide emotional social support for performance of the behavior</p> <p>Information about others' approval – Provide information about what other people think about the behavior.</p> <p>Restructuring the social environment – Change, or advise to change the social environment in order to facilitate performance of the wanted behavior or create barriers to the unwanted behavior ((other than prompts/cues, rewards and punishments)</p> <p>Precommitment strategies - people committing to a certain course of action.</p>	<p>So just because I say an idea is not my idea right? And if you're very good in the beginning to kind of manage this kind of idea, we're thinking where people can come up with this but they don't have to perceive that they have to defend that.</p> <p>It's usually very common like, you know, people are like "this is my idea, I gotta protect it" but I try to find ways very early to kind of diffuse some of this thinking.</p> <p>always trying to make people feel like they're not stupid, and they are like, always going to be loved and like, valued. So that's kind of what we're trying to do here as well.</p> <p>one person or group of people are very rejective for a certain part of the solution or something like that. So I'm actively trying to diffuse that from the start and to keep them from competing too much.</p> <p>the later you're go into a project the harder it is to make pivots and changes.</p> <p>If everyone has to present initially like "this is my idea". And that's usually when you see like a no go around the table. Everyone has to tell the best ideas. And that's the most usual thing to see, but that's a really shitty way of doing it</p>
	Natalia	<p>Through experience, they found out that actually they didn't overlap. And it wasn't that the other person was doing what you're doing but they were complementing what you were doing and actually making your job easier. It was not about competition, but cooperation.</p>	<p>Exposure – Provide systematic confrontation with a feared stimulus to reduce the response to a later encounter</p> <p>Reward (outcome) – Arrange for the delivery of a reward if and only if there has been effort and/or progress in achieving the behavioral outcome (includes 'Positive reinforcement')</p>	<p>I think that reputation was the thing that this company values the most. In Colombia sometimes reputation is related to a very conservative perspective of the world. And so are there other points of views that are not that conservative that are not seen as valuable and even like something that could jeopardise the reputation</p> <p>actually one of the main barriers that we found is that people felt that working cooperatively would for</p>

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			<p>Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about performing the behavior (includes ‘Cognitive structuring’)</p>	<p>example, make other people do your job. And yeah, like that is that is kind of a threat for you.</p>
Other nudges where addressed bias is unmentioned				
Innovation-fostering	Samuel	<p>And so for example, like HUMU tried to get can like nudge these people to become better managers by kind of like saying like, "Hey, you know, people really value being praised or getting continuous feedback" so there's a lot of people, like 90% managers are pretty shitty as managers, for example. And HUMU and iNudge have a similar idea that they want to give some good kind of nudge, into some message to say like, "Hey, you send an email right now and tell your colleagues this or maybe ask them this question", for example. So that's a behavior right. And, and I think they can definitely be used in terms of the innovation process.</p> <p>if you can, you know, find ways to support managers and build trust, for example, that's a very important thing.</p> <p>one is just training people a little more in the process of, of just keeping track of the predictions. And so like, it's like, I don't know if you heard a Bayesian thinking, yeah. So instead of saying like, okay, "when is this project be completed?" Say put estimates like what do you think okay, well, we are like certain that it's going to be completed in this time. And maybe even like, I would say, more so maybe not the whole project but a phase of the project, because then you can learn from them roughly. And so you put some like, Bayesian predictions, where you say like well can we are like certain percentage that is going to be like three months until this, or like maybe a few weeks even if you have a little bit of a theory of when this is going to be completed, and then we can keep track of this over time</p>	<p>Social support (unspecified) – Advise on, arrange or provide social support or non-contingent praise or reward for performance of the behavior.</p> <p>Feedback on behavior – Monitor and provide informative or evaluative feedback on performance of the behavior</p> <p>Feedback on outcome(s) of behavior – Monitor and provide feedback on the outcome of performance of the behavior</p> <p>Social support (practical) – Advise on, arrange, or provide practical help for performance of the behavior.</p> <p>Social support (emotional) – Advise on, arrange, or provide emotional social support for performance of the behavior.</p> <p>Goal Setting (outcome) – Set or agree on a goal defined in terms of a positive outcome of wanted behavior</p> <p>Self-monitoring of outcome(s) of behavior – Establish a method for the person to monitor and record the outcome(s) of their behavior as part of a behavior change strategy</p>	<p>I think in terms of what they do well is that they don't lie around this assumption that we can train people one time to be really good at x scale. Like most training schemes today, we're like, okay, we're gonna have a one day training session on feedback and communication. And then assuming that people will, like, take this on board, and then be great at giving feedback and communication from the moment, but actually, it's like, it's like building habits, like it's building something to take some time to really become good at</p> <p>one of the most common things where it's very hard with innovation projects is that obviously people underestimate the time it takes to do things. Yeah. And so it's called, like the planning fallacy, or it's just like one simple word, but it combines a lot of things.</p> <p>So most of the time, people are very bad at making predictions for those kinds of things. Like, how long is it gonna take to make this product? Or what the impact can be from this innovation, for example? Yeah. And they're mostly very bad at having these kinds of feedback loops, where they kind of keep track of their predictions or like their assumptions directly. It's very easy for them to like, this is a product when you say, okay, it's going to take six months to do this. At six months maybe about 30 % progress is made. And then they realise well, there's gonna be another six months at least. And then</p>

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		<p>I think that's one of the most important things is like train people a little bit on the basic stuff, in terms of making this get more nuanced predictions where it's not like it's gonna work or not work, like how certain are you that it's gonna work out what is your confidence and then keeping track of that and updating those those beliefs.</p> <p>Because that can be a very important part of the innovation process in terms of how to make sure that... because it's always to lose morale as well, if you have flawed predictions and then you don't reach the milestones. You just fed up and then we're getting stressed and worried and all that.</p>	<p>Feedback on outcome(s) of behavior – Monitor and provide feedback on the outcome of performance of the behavior</p> <p>Review Outcome Goal(s) – Review outcome goal(s) jointly with the person and consider modifying goal(s) in light of achievement.</p> <p>Disclosure and transparency</p> <p>Reduce negative emotions – Advise on ways of reducing negative emotions to facilitate performance of the behavior (includes 'Stress Management')</p>	<p>maybe at nine months, then like "this is gonna be really hard to like to know if this kind of like ever work" well, now we have a little bit like sunk cost fallacy. We're like, well, we spent nine months on this already, we better like keep on fencing. So, what people often forget is like, their initial prediction, like they're really bad at keeping track of initial predictions and learning from them. I think that's, that's something that I have somewhat helped teams with.</p>
Sustainability-fostering	Samuel	N/A	N/A	<p>sustainability in terms of maybe not environmental sustainability, but I work on only projects that have something like making people healthier, happier, or something like that.</p>
Other nudges where new bias is addressed				
Consistency bias	Tommy	<p>one way of breaking this, is to (think) without the prior decisions I've made, what choice would I then make. (Interviewer:) the solution to break the consistency bias is to disregard your previously made decisions? Is that what you're saying? (Tommy:) Yeah, exactly!</p>	<p>Framing/reframing – Suggest the deliberate adoption of a perspective or new perspective on behavior (e.g. its purpose) in order to change cognitions or emotions about performing the behavior (includes 'Cognitive structuring')</p> <p>Comparative imagining of future outcomes – Prompt or advise the imagining and comparing of future outcomes of changed versus unchanged behaviour</p>	
Social identity bias (barriers in the identity of the workers themselves.)	Natalia	<p>try to break those barriers by putting together for example, statisticians and product developers, and researchers and marketing, they started to discuss the different problems.</p>	<p>Restructuring the social environment – Change, or advise to change the social environment in order to facilitate performance of the wanted behavior or create barriers to the unwanted behavior ((other than</p>	<p>If they are statisticians, they will only be focusing on statistics and they have nothing to do with, for example, the behaviour of insurance buyers</p>

			<p>prompts/cues, rewards and punishments</p> <p>Identity associated with changed behavior – Advise the person to construct a new self-identity as someone who ‘used to engage with the unwanted behavior’</p>	
<u>Recommendations in general</u>				
<p>Tommy:</p> <p>I think one way of handling all these biases is to understand how they work. And run through the feelings with logic. Understand that this is how you're supposed to feel. That feeling takes you in that direction you want to.</p> <p>The interesting thing about these biases, is that when I use them, I try to use as many as I can, within the same context, because then it becomes so powerful. It's like pushing the environment the same direction, from different angles.</p> <p>nothing will happen if you're not aware of what is happening. Why people are acting the way they act. If I'm in a meeting, I can see that now we are experiencing this bias, now this other, and so on and so forth. And then I can choose to either raise the issue because I think it's important for the result or outcome of the meeting. But if I don't understand what is going on, I can't do anything. I just go along and then end up somewhere that's a consequence of all these different biases.</p> <p>We never help people with nudging, priming or culture, we help people solving problems. And that's where we start and then we end up somewhere. Okay? We think that now we have enough information about the problem. Who wants to change the behaviour? And why did they do it? Then we can suggest a good method.</p> <p>Samuel:</p> <p>So I would think about it from the perspective of something that is usually overlooked in nudges, and what is really true for something, is that anything that we're trying to do is usually to try to change habits in order to change long term behaviour. And nudges usually are aimed at one behaviour shift like at one time. And for long-term, with habits, there are like context dependent cues, so like triggers or something combined with a kind of an immediate sense of positive reinforcement.</p> <p>One way you can look at nudges, that most people don't look at nudges, but I think could be more interesting is like “Ok, what behaviors do we want to trigger?”, so the nudges come at the right time to trigger the right behaviours, but also “what behaviors do we want to reinforce?”. Could you do nudges as well as a system that when people do the “right thing”, it is reinforced. Having messages or ways of prompting or supporting or, or helping people with both activating the behavior and to reinforce the behaviour.</p> <p>put in that organisational setting like you have a cafeteria some people are bad at putting the the coffee cups in the dishwasher. And so a prompt would be or like a nudge, in this scenario, will be saying like "Nine out of ten people in the office plus the coffee cup in the dishwasher. Don't be the douchebag that doesn't" for example, they'll be prompt. But that wouldn't reinforce the behaviour that would just prompt the behaviour. So once they are putting the coffee cup in the dishwasher, if it is then something like, like you have like a "ping!" signal that says "you're such an awesome person and you make this office so much better. Thank you for your wonderful contribution." Something like that, then that will reinforce that.</p> <p><u>Nudging interventions derived from the recommendations:</u></p> <p>Problem Solving – Analyse , or prompt the person to analyse, factors influencing the behavior and generate or select strategies that include overcoming barriers and/or increasing facilitator</p> <p>Habit formation – Prompt rehearsal and repetition of the behavior in the same context repeatedly so that the context elicits the behavior</p> <p>Habit reversal – Prompt rehearsal and repetition of an alternative behavior to replace an unwanted habitual behavior</p>				

Reward (outcome) – Arrange for the delivery of a reward if and only if there has been effort and/or progress in achieving the behavioral outcome (includes ‘Positive reinforcement’)

\*from direct recommendation of nudge to description of their knowledge of how bias-issue can be- or was resolved in their experience

\*\*a feature of the social environment that affects people’s choices without imposing coercion or any kind of material incentive (choice architecture) liberty-preserving approaches or stimuli that steer people in particular directions, but that also allow them to go their own way. The nudges are derived from:

- Nudging: a very short guide, by Cass Sunstein  
([https://dash.harvard.edu/bitstream/handle/1/16205305/shortguide9\\_22.pdf?sequence=4](https://dash.harvard.edu/bitstream/handle/1/16205305/shortguide9_22.pdf?sequence=4))
- (list of) 93 evidence-based behavior change techniques (often called ‘nudges’ or BCTs) used by psychologists in clinical practice that form the BCTTv1 – Behavior Change Techniques Taxonomy, version 1. The free app has been produced by UCL (University College London). 93 evidence-based behavior change techniques (often called ‘nudges’ or BCTs) used by psychologists in clinical practice that form the BCTTv1 – Behavior Change Techniques Taxonomy, version 1. The free app has been produced by UCL (University College London). <https://digitalwellbeing.org/nudge-psychology-all-93-behavior-change-techniques-listed-and-summarised-free-app/> reported on by this guy (we have to see how we can motivate using his definitions as a source?) <https://www.linkedin.com/in/paulsmarsden/>

Critique/limitations

Tommy:

..Of nudging

nudging to me is just what he chooses to do to make people go left or right. So nudging for me is just to push people in one or the other direction. It's not to actually change a behavior like you can do with culture.

I think it can be a long term solution. But it's not that strong. But it depends on what situation and what problem you wanna solve. For some problems it can be the perfect match. In other situations... I know that there's a company that they get customers and they say that they will help companies to include organisation nudging. And I would say, that's the wrong way of doing it. They can make some, some smaller impact. But when we're talking business and improving how people behave at the workplace, and so on and so forth. It's starting on the wrong end. They start with a solution. They start with, we can help you with nudging.

..Of addressing specific biases

Because you can't start to address all biases just randomly because there are so many biases that you can address. So you need to have some idea of what this specific problem is of that particular person or group of people.

I'm writing a book about biases right now and I will have come up with about at least over 100 biases. I think that the scientists are finding new biases all the time in their research. So the number of biases may not be infinite, but it's quite great that number so that's why it doesn't help if you just randomly try to apply them. Because there are so many.

Samuel:

.. Of nudging

I think this is maybe interesting for you to have as part of this as kind of a limitation of Nudging itself in that, you know, nudging in itself is the idea is that you have small things that are going to be easy to avoid, but in some ways you're going to influence people's decision making for the better. They're only going to make usually relatively minor changes that like a small nudge was usually something like a smaller thing. Obviously we're having, like ultimate purpose is very impactful examples where I can take one little nudge can be like super influential, but mostly that's been like with certain case the use of defaults. It's very rare that we have like this kind of golden opportunities to like, where people make it one decision that's gonna be very influential for what to do.

So I would say I am usually very open with how I see myself and my work. I also wrote a book like nudging practice. I obviously like it, and it is a big part of what I'm doing. But I would say a lot of my work, I don't really think it is nudges, I think it is more solutions to problems. And so maybe those solutions are behaviorally informed and informed by behavior and maybe implemented using behavioral science techniques and so on. But I don't really think about nudges

..Of addressing specific biases

maybe the problems with biases sometimes, like there's so many of them, right? And a lot of them are not per se like based on the most rigorous research. And so, what was interesting was like people can also be under confident, right? You can both overcome them and then you can be opposite. You'd have some people saying, like, "I would never be able to do this" So that's why it's interesting.

## 10.5 Appendix 5: Interviews question and questionnaire

### 10.5.1 First batch

- We'll go through the biases, where we would like you to tell us for each one how you interpreted it, motivate your answer/ranking + if you have any concrete experience or examples please present them?
- Do you see a difference in the prevalence and intensity of these biases in individual behaviour/decision-making cases vs ones in group settings?
- When people are in a group, do you feel that these biases are amplified or reduced?
- How interrelated is your work with sustainability, i.e. take sustainability issues into account: economic, social and environmental?
- Have you worked specifically with sustainable innovation?

## 10.5.2 Second batch

- Have you been working with nudging for sustainable innovation? Sustainability? Innovation? Briefly introduce yourself and it would be nice if you can go through your relevant experience.
- If yes, how have you nudged people towards this?
  - “What nudges have you used?”
  - “What has worked/what hasn’t, and why?”
  - “Which biases have you aimed to counteract?/did you set out to counteract?”
- If not, “We reviewed literature and interviewed professionals working within sustainable innovation, sustainability and/or innovation and identified these inhibiting biases: X. Have you worked with nudging counteracting these? How? What nudges? How did it go?”

## 10.5.3 Questionnaire

1. Please state your job title

2. Which of the following best describes the main responsibility of your profession?

- ☐ Fostering sustainability within the organization
- ☐ Fostering innovation within the organization
- ☐ Fostering sustainable innovation within the organization

Other (please specify)

3. What are the main struggles you face in accomplishing this?

- ☐ People's behaviour
- ☐ Regulation
- ☐ Bureaucracy
- ☐ Resources

Other (please specify)

4. What is (are) the size(s) of the organization(s) where you have (or have had) this responsibility?

- ☐ 0-10
- ☐ 11-49
- ☐ 50-249
- ☐ 250+

5. Is it a challenge to get people within your organization to change their behaviour in order to comply with initiatives that support the mission of your work?

- ☐ No, it's not a challenge at all
- ☐ It is not a significant challenge
- ☐ It is a significant challenge
- ☐ Yes, it is a very difficult challenge

6. How often do you experience the following human behaviour biases as obstacles to your mission?

	Never	Sometimes	Often	Always	I don't understand
<b>Loss aversion bias</b> - the tendency of people to prefer avoiding losses to acquiring equivalent gains. When the fear of losing causes stronger psychological reactions than the prospect of gaining something: "it is better to not lose \$5 than to find \$5."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Present bias/hyperbolic discounting</b> - the tendency to choose a smaller present reward rather than waiting for a larger future reward, in a trade-off situation. E.g. choosing to eat one cookie now, rather than waiting to eat five cookies later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Possession bias/endowment effect</b> - the tendency of people valuing an object they own, or a strategy or an idea they came up with, higher than they would if it had belonged to someone else. E.g. expressed through resistance to pivot from one's own original business idea.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Availability bias** - the tendency to assess the likelihood of an event occurring based on the ease with which related instances or occurrences can be brought to mind, regardless of the number of times this event has actually occurred. E.g. believing that the likelihood of terrorist attacks is higher if asked right after the occurrence of one.

☐ ☐ ☐ ☐ ☐

**Confirmation bias** - the tendency to search for, interpret, favor, and recall information in a way that confirms or strengthens one's prior personal beliefs or hypotheses. People display this bias when they gather or remember information selectively, or when they interpret it in a biased way. E.g. a small downfall in a project being interpreted as a failure by those who were skeptics from the start.

☐ ☐ ☐ ☐ ☐

**Overconfidence bias** - the tendency to have more confidence than you should given the objective parameters of the situation. These could be ability, value, opinion, and beliefs e.g. believing that you are doing more than a neighbor/competitor in terms of sustainability.

☐ ☐ ☐ ☐ ☐

**Status quo bias** - the preference for familiarity. It is evident when people prefer things to stay the same by doing nothing (inertia) or by sticking with a decision made previously, even when only small transition costs are involved and the importance of the decision is great. E.g. keeping the same newspaper subscription throughout the years even though there is no strong preference for the content compared to an equivalent option, to which a switch would be cheap and simple.

☐ ☐ ☐ ☐ ☐

7. Are there any additional significant behavioral obstacles that you experience in your work?

- ☐ Yes
- ☐ No

8. If yes, please briefly describe these behavioural obstacles

9. Due to habits, routines, cognitive boundaries, and biases that are present in individual and social decision-making situations, people do not always make judgments, choices or behave in ways that support their own self-declared interests. A **"nudge"** is any intervention in the choice architecture (the design of different ways in which choices can be presented) specifically aimed at counteracting these boundaries and biases.

To your knowledge, has your organization ever implemented nudging?

- ☐ Yes
- ☐ No
- ☐ I'm not sure if it has/I don't know if it has
- ☐ I don't know what nudging is

Other (please specify)

10. If yes, what type of nudge(s) was (were) implemented) and what was the outcome?