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Applying behavioral economics insights at the workplace

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ABSTRACT

Behavioral economics insights are widely applied by policymakers worldwide, but the private sector seems to be still not fully embracing them. This opens up a new research field and there is a salient call among researchers and practitioners for accumulation of evidence-based nudge interventions at the workplace. This paper reviews studies that apply behavioral economics insights in an organizational setting. The reviewed workplace interventions are based on reminders, default nudges, implementation intentions and priming. There are important take-home messages for human resource practitioners from this relatively novel research stream which has already helped policymakers improve individual and societal welfare worldwide.

KEY WORDS

workplace, behavioral economics, nudging, interventions

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1 INTRODUCTION

It has been a decade since the nudge concept was popularized by Thaler and Sunstein (2008) in their eponymous book. The book really seems to have become the bible of behavioral economics (Kahneman, 2011). Not only did it become a bestseller, but it also made its way to public policy circles leading to the establishment of the world's first government institution dedicated to the application of behavioral sciences - The Behavioural Insights Team. The Government of the United Kingdom established this institution to make public services more cost-effective and easier for citizens to use, improve outcomes by introducing a more realistic model of human behavior to policy and enable people to make better choices for themselves (The Behavioural Insights Team, n.d.). Other nations followed the UK example by introducing their own nudge units: USA, Singapore, Germany, Australia among them (Purnhagen & Reisch, 2016; Samson, 2018). According to recent data the number of institutions worldwide that are using behavioral economics insights in public policy has reached 196 (OECD, n.d.). There are reports on interventions based on behavioral economics insights in various domains of public policy: public health, household finance, education, energy consumption, voting, traffic (Felin, 2014; Samson, 2018).

Although the concept of nudging is relatively new, the discipline of behavioral economics dates back from much earlier. The 2017 Laureate in Economic Sciences, Richard Thaler, who popularized the concept of nudging, is considered as one of the founders of the discipline and is credited for its reception into mainstream economics (Angner & Loewenstein, 2007). Whether this field will end up fully integrated into economics or it will become a separate discipline is still uncertain, but economists who apply insights from psychology into their work offer better advice to policymakers due to their predicting and explaining capacities (Earl, 1990; Metcalfe, 2018).

Judgment and decision-making theories are generally categorized into two groups: normative – concerned with how humans should think and decide and descriptive – aimed at explaining how humans really think and decide based on empirical evidence. Early decision-making models were models of a perfectly rational human being. They

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were based on the idea that decision makers are fully informed about all available options regarding their decision task as well as the possible outcomes from these options, highly sensitive to the slight differences among the options and totally rational in terms of choosing the option with the highest utility. Economics textbooks teach us that homo economicus can think like Albert Einstein, store memory as IBM's Big Blue, and exercise the willpower of Mahatma Gandhi (Thaler & Sunstein, 2008).

But no matter how sophisticated the normative models may seem, human decision making is far more complex than calculating utility and probability. Behavioral economics is particularly concerned with the limits of rationality (Ho et al., 2006). In the 1950s psychologists questioned the concept of unbounded rationality and in 1955 Herbert Simon introduced the concept of bounded rationality. This concept did not conform to the assumption that the theory of subjective expected utility provides a relevant explanation about human rationality (Albar & Jetter, 2009; Polic, 2009). The concept of bounded rationality implies that individuals tend to make rational decisions, but they are faced with certain limits when collecting and processing information, in terms of time, costs, memory, intelligence and perception (Bazerman, 2006). In order to illustrate how human rational behavior is shaped, Herbert Simon uses the scissors metaphor where one blade represents the cognitive restrictions of humans, and the other blade represents the structure of the environment (Basel & Brühl, 2011; Gigerenzer, 2008). Just as it cannot be understood how scissors cut by focusing on one blade only, human behavior cannot be understood neither by studying the cognitive skills nor by studying the environment in isolation. When deciding, individuals do not consider all the options and they do not calculate which one of them yields the highest gain or the lowest loss. They consider the options one by one and choose the first one that satisfices, or that meets the lowest level of acceptance. Herbert Simon's conception of making decisions which are good enough by using the strategy of satisficing has paved the way for a decision-making theory with higher explanatory power than the subjective utility theory and more real assumptions about the psychological capacities of decision makers (Eisenhardt & Zbaracki, 1992; Gigerenzer & Goldstein, 1996).

The broad intellectual tradition which supports the viewpoint of humans as bounded rational creatures, greatly influenced by their social environment, and the way in which choices are presented provided a fundament for the idea of nudges (van Oorschot et al., 2013). Nudges are liberty-preserving approaches that steer people in particular directions, but also leave them the freedom to go their own way (Sunstein, 2014).

Closely related to nudges is the idea of choice architecture as an interface of available options. The design and construction of the menu, ordering and structure of options available can involve various considerations like: which options are made salient and how, which options are made available in the first place, the nature of default options, the order of the options, how the options are framed or made salient, what information is available about each option and which options are incentivized (Felin, 2014).

For good or for bad, choice architecture can increase the probability that a favored option is selected by influencing the decision maker's environment without changing incentives (de Haan & Linde, 2018). Despite debates about the ethics of nudging are becoming the main subject of many recent papers (Loewenstein et al., 2015; Sunstein, 2015), large-scale individual and collective benefits that can be achieved by implementing small nudges are not to be overlooked in the organizational context (Felin, 2014).

In comparison to the ever growing literature reporting on public policy applications of nudges all over the world (Hallsworth et al., 2016; Halpern, 2015; Halpern & Sanders, 2016; OECD, 2017; Whitehead et al., 2014), the literature on nudging and choice architecture at the workplace lags behind. Indeed, applications of behavioral economics insights are not uncommon in organizations. Google's People Analytics Team, for instance, applies behavioral insights to support workplace decision-making and wellbeing (Hollingworth & Barker, 2017). However, those reports are single organization case studies and there is a literature gap for a review focused on applications of different behavioral change interventions at the workplace, related to a particular target behavior or across various contexts.

The aim of this paper is to contribute to this literature gap by reviewing interventions commonly applicable at the workplace based on insights form behavioral economics and regarding various target behaviors. The reviewed behavioral change interventions are based on reminders, default nudges, implementation intentions and priming. It is worth mentioning that defaults and reminders can be found in literature as choice architecture techniques (Münscher et al., 2015), defaults and priming can be found as nudge mechanisms (Blumenthal-Barby & Burroughs, 2012) or nudge interventions (Friis et al., 2017), prompts to form implementation intentions as behavioral nudges (Milkman et al., 2011), reminders and implementation intentions as behavioral design principles (Datta & Mullainathan, 2012). Furthermore, different categorizations of choice architecture techniques are to be found in literature (Szaszi et al., 2018) which is a barrier for a literature review and not to mention scientific reproducibility. The target behaviors vary across the reviewed interventions and are related to: sedentary behavior at work, energy efficiency, saving for retirement, paper usage, productivity, vaccination behavior, job performance, ethical behavior. What connects all of these reviewed examples of interventions at the workplace is that the employees are the target population. This is relatively rarely the case in the literature from the field which is mostly about interventions applied in laboratory, among citizens, customers, students or hotel guests (Münscher et al., 2015; Szaszi et al., 2018).

2 BEHAVIORAL CHANGE INTERVENTIONS AT THE WORKPLACE

2.1 REMINDERS

The everyday information overload and new stimuli mean that information which is more salient has a higher probability of being considered when individuals decide or act. To address the limited attention and cognitive capacities of humans, choice architects might use an intervention based on reminders. Reminders are deliberation nudges that modify the salience and ease of access of options encouraging active, reflective decisions (Haugh, 2017; Münscher et al., 2015; Szaszi et al., 2018).

In the domain of corporate compliance, many companies use interventions based on providing reminders to their employees (Haugh, 2017). Employees usually have the task to fill out forms where they report travel costs. Before performing this task they are reminded of morality with certifications positioned at the top of the form, instead the usual position at the bottom of the form. This intervention prompts one to consider their ethical obligations, resulting in truthful answers. A certification placed at the bottom of a form is also a reminder, but not a timely one. Furthermore, it has become a common practice for companies to include ethics focused certifications prior to any kind of employee engagement that might pose a compliance risk.

Cadena et al. (2011) examine the effect of reminders on employee's procrastination in a bank in Columbia. Loan officers in the bank showed inclination to procrastinate the sourcing of new clients and the collection of credits until the end of the month when the monthly bonuses were calculated. Cadena et al. (2011) introduced a program aimed at nudging loan officers to get more work done at the beginning of the month. For executing a particular set of goals early in the month, employees were offered small prizes to remind them of their progress towards accomplishing the goals. In the second part of the program employees were additionally reminded by branch managers about the goals and their progress. This particular behavioral intervention including the branch managers reinforcing the reminders helped employees fight the procrastination. Redistributing the workload led to higher monthly compensation, increased job satisfaction, less stress at work and improved overall performance at individual level.

2.2 DEFAULTS

As a behavioral change technique, defaults go further than reminders by more directly addressing the dual-system thinking (Haugh, 2017). Defaults are pre-set courses of action that take the effect if nothing is specified by the decision maker. It is crucial that they still leave the decision maker freedom to select a different option. Münscher et al. (2015) enlist the following processes as causes for the default effect: decision inertia, loss aversion and implied endorsement. The implementation of this choice architecture technique categorized as decision structure has shown to be very effective in targeting societal welfare or consumers' lifestyles. From what follows interventions based on this technique seem also very promising in various contexts at the workplace.

Although it would be expected that most USA employees take the required effort to enroll in a defined contribution plan, such as a 401(k), the percentage of enrolled workers is far from 100 %, and it usually takes a long period for workers to enroll (Thaler & Sunstein, 2008). As already widely acknowledged in literature, this has a lot to do with the design of the typical contribution plan where the default option that the employee is presented with is non-enrollment – she has to opt in to become enrolled. Bearing in mind that most individuals procrastinate and become inert, an intervention in the savings program consisted of switching the default from opt-in to opt-out. So, instead requiring an effort from the employee for enrollment, the employee was enrolled into a 401(k) plan by default in case she did not take an action to opt out. Madrian and Shea (2001) examined the effect of such a default intervention on the retirement savings in a firm and it showed positive results in terms of the number of employees enrolled in the automatic enrollment condition.

Although employees join sooner and more of them join at the end (Thaler & Sunstein, 2008), the disadvantage of applying this intervention alone is in terms of the saving rates because workers did not change the modest rate provided by default. Thaler and Benartzi (2004) approached this disadvantage by proposing the Save More Tomorrow (SMT) - a program of automatic escalation of contributions, which prescribed that the employees commit themselves to increase their contribution rates synchronously with their pay rise. The SMT plan successfully addressed the self-control restrictions, loss aversion, the money illusion and the status quo bias. This choice-architecture system was first tested in 1998 at a midsize manufacturing company (Thaler & Benartzi, 2004) and following its benefits for employees' saving rates employers have widely adopted its basic concept in practice. Defaults have also been applied in the UK where employees are automatically enrolled into retirement plans, while they still have the opportunity to opt out. This default resulted in increased pension savings and more people having pension (Service et al., 2014).

The study of Venema et al. (2018) was conducted at a large governmental organization that had invested in sit–stand desks (SSDs) three years beforehand. It was detected that employees very rarely used the desks for working in a stand-up position. The goal of Venema et al.'s (2018) study was to examine if changing the default setting of the SSDs from sitting height into standing height would effectively nudge employees in terms of general time spent working

standing up and whether the nudge would still be effective after the nudge intervention period. This study found that the default nudge intervention raised the stand-up working rates at least until two months after the nudge intervention.

A randomized controlled experiment run by Brown et al. (2012) showed that defaults are an effective behavior-change mechanism also in the context of encouraging energy-efficiency at the workplace. A small reduction in the default setting on office thermostats in an OECD office building during the winter season caused a significant effect on changing the employees' chosen thermostat setting – it reduced the average chosen setting, which in turn led to decrease in energy use. However, in case of large decreases of the default setting, the OECD employees did not stay inert and they responded by returning the setting to the one that they preferred.

Many people use far more paper than needed just because their printers have simplex as default. Switching the default option on printers from simplex to duplex was tested in a natural field experiment at a large Swedish university (Egebark & Ekström, 2013). The university staff was initially informed about the default switch (but not about the study) via email sent by the heads of departments. This gentle nudge intervention saved paper and the effect stayed stable over time. On the other side, applying a more conventional method of pure suggestion by encouraging employees from a random subset of departments to save resources in order to contribute to the university's pro-environmental initiative had no impact at all on paper consumption.

Another example of a default nudge applied at the workplace is highlighted in the study of Chapman et al. (2010). Many people fail to receive an annual flu shot although it is freely available at their workplaces. In the study of Chapman et al. (2010), employees at Rutgers University were randomly assigned to two groups. The first group received an email from the university's occupational health department which informed them about the pre-set date and time of their flu shot appointment, leaving them the freedom to change or cancel it. The participants in the second group were also informed about the freely available flu shots, but instead of a default appointment they were sent a link to schedule the date and time by themselves. What this study found was in line with the previously discussed studies related to the default effect. The implementation of an opt-out condition increased the number of employees who received a seasonal flu vaccination.

In their point of view article, Ebert and Freibichler (2017) propose a slightly different type of default nudge which targets the productivity of knowledge workers. Knowledge workers usually complain about a workplace environment that does not allow them to stay continuously focused on a task without being interrupted. As consultants of many companies, Ebert and Freibichler (2017) propose an intervention which is already implemented by organizations leading to increased productivity. The intervention consists of making a certain day of the week a "no-meeting" day, which could be reinforced by an appropriate default rule in the software the organization uses for scheduling meetings. Furthermore, knowing that knowledge workers spend a lot of time in (virtual) meetings and the efficiency of these meetings is low, the authors propose another default nudge – to adjust the business software which is used for organization of meetings by setting the default duration of a meeting to a shorter period of time than the standard 60 minutes.

2.3 IMPLEMENTATION INTENTIONS PROMPTS

Often there can exist a gap between the individual's intentions and actual behavior so the question that might arise is how can individuals be aided on their way to fulfil their goals (Service et al., 2014). Implementation intentions are strategies for goal achievement that define the conditions that will activate certain behaviors. They are mental links between a specific future situation and the goal-directed behavior which are created unconsciously. The individuals switch to being controlled by a preselected contextual clue of which they are quite unaware (Shantz & Latham, 2011). Pirolli et al. (2017) and differentiate between goal intentions and implementation intentions. The former are viewed as mental representations of desired behavior and end states, whereas the latter are mental representations of simple plans to translate goal intentions into behavior under specific conditions. The prompt to form an implementation intention comes with a minimal expense and as in the case of a default option, does not restrict the individual's freedom of autonomy (Milkman et al., 2011).

Milkman et al. (2011) designed a field experiment to measure the effects of prompts to form implementation intentions on actual influenza vaccination. The study was conducted among employees in a large Midwestern utility company and the vaccination was freely available as in the previously discussed study of Chapman et al. (2010). All of the employees were sent an email reminder with the times and locations of the relevant clinics. The treatment group was also sent an additional prompt to write down the date/date and time the employee planned to get vaccinated. This additional prompt proved to make a difference when comparing the actual vaccination rates between the treatment and the control group. This rate was lower in the latter group where employees were only reminded via email of the freely available flu shots and informed about the location and time details, but were not prompted to form an implementation intention. Another finding from this experiment is that the prompts show the highest effect in the subset that was offered only one available day to plan a vaccination appointment.

Srivastava (2012) successfully applied a planning prompt in an energy company which was promoting annual physicals for its employees. The mail that the employees received emphasized that a great number of their colleagues were showing interest about the physical examination and also prompted the individual to write down the date, time and name of a doctor for the examination.

2.4 PRIMING

Similarly to implementation intentions, a primed goal activates a behavior unconsciously. To consciously set a goal requires cognitive efforts and humans are inclined to conserve this limited resource. Priming effects are of particular relevance for getting the whole picture when thinking about human behavior at work, bearing in mind that most of the human resource (HR) practitioners relate employees' motivation to cognitive processes alone.

Shantz and Latham (2011) examined how primed goals affect employee's performance, focusing on the implications for human resources management. The target population of their study were call center employees whose performance was measured in terms of the amount of money raised from donors. The experimental group was presented with usual instructions on ways to obtain donations printed over a photo of woman winning a race. The study found that the experimental group consisting of primed employees raised significantly more money compared to the control group whose directions did not include a photo of personal achievement. This proved the hypothesis that environment primed a nonconscious goal that had a positive impact on job performance lasting over an entire work shift.

3 CONSIDERATIONS FOR HUMAN RESOURCE MANAGEMENT

Understanding human behavior at work lies at the heart of HR (Gifford, 2014) and HR practitioners mostly look at it through the lens of economic rationality. Including subconscious processes as a research stream in the context of managing organization's human resources is certainly a challenging expansion of conventional thinking regarding human resources management (Shantz & Latham, 2011).

Thaler and Sunstein (2008) argue in favor of nudging at the workplace by pointing at various instances when individuals fail to act in accordance with their clearly defined goals. The authors interpret the failure in behavioral change as a confirmation that individuals would certainly be open for nudges that would help them achieve their goals.

To change employee behavior, companies need to start identifying the required behavior change and define the target behavior. Then, it should be determined if choice architecture is the appropriate or the most pragmatic behavior change approach. The analysis of the behavioral bottleneck shows why the actual behavior of people diverts from the targeted behavior and it enables choosing the right intervention technique. As Münscher et al. (2015) underline, being aware of the relevant biases that hinder the display of the target behavior is essential in the process of matching the insights from the bottleneck analysis to specific choice architecture intervention techniques.

There is an evident gap for practical guidelines on the implementation of behavioral nudges in organizational setting (Michaels & Powell, 2017). Although there is evidence of the impact of nudges within organizations, empirical papers that study the long-term effects of nudges are scarce (Venema et al., 2018) and this is an important drawback for HR practitioners who are concerned with the issue of time length (Latham & Piccolo, 2012). Moreover, implementing nudges at the workplace requires specialist guidance by behavioral economists at best. Nevertheless, there are plenty of sources that might be helpful on the way such as websites, guides and books mostly freely available online (Michaels & Powell, 2017). Companies can also benefit from using the tools of behavioral science already applied and promoted by policymakers.

4 CONCLUSION

This paper contributes to the literature gap on using interventions based on behavioral economics insights at the workplace in various contexts. Regarding the studies reviewed in this paper, the approach for their selection was domain general meaning that they treat various target behaviors at the workplace and intervention general meaning that they are related to different techniques based on behavioral economics.

Behavioral change interventions that are reviewed in this paper are applicable in organizational setting in different contexts. Those contexts include: corporate compliance, employees procrastination, saving for retirement, sedentary behavior, lower energy use, saving resources, attending vaccination appointments and health assessments, job productivity and performance. Workplace interventions based on behavioral economics insights are simple and cost-effective way to help employees translate their personal intentions into actions. A default nudge that changes

the standard setting of a SSD from sitting into standing position has been shown to decrease the time spent sitting at work. Considering that most adults spend approximately 60% of their waking hours at work, the employer can play an important role into shaping employees health behavior (Morgan et al., 2011). Furthermore, nudging employees to healthy lifestyle is also of advantage for employers as improving employees health leads to a healthier bottom line (Srivastava, 2012). Beyond improving the bottom line, companies can also make a pro-environmental contribution by taking the advantage of environmental nudges (Thaler & Sunstein, 2008).

To nudge or not to nudge will be the question that will increasingly attract the attention of businesses and mark a shift from a conventional thinking about human behavior at work. It is clear that employees as decision makers do not make choices in vacuum (Thaler et al., 2010). A modern HR organization can benefit from advances in behavioral economics in many ways. At first it is necessary to remain aware that there is there is no such thing as neutral design (Thaler & Sunstein, 2008). Even an organization avoiding to influence people's choices may have devised unintentional nudges that have major effects on its people's behavior.

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