

**NUDGE E RAZIONALITÀ LIMITATA
ARCHITETTURE DELLE SCELTE E COMPrensIONE
DEI PROCESSI DECISIONALI**

**NUDGES AND BOUNDED RATIONALITY
CHOICE ARCHITECTURE AND THE UNDERSTANDING
OF DECISION-MAKING PROCESSES**

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Abstract

This ebook provides a detailed examination of Thaler and Sunstein's nudge theory and evaluates its consistency with the theory of bounded rationality proposed by Herbert Simon. It first describes the theoretical pillars of nudge theory and discusses the main constructs, such as choice architecture, heuristics and biases, and libertarian paternalism. Then, it identifies points of potential complementarity with Simon's theory. Through a comparative analysis of core concepts, it reveals that, beyond nominal alignment and terminological similarities, numerous methodological discrepancies render the two theories fundamentally divergent. The profound differences between Simon's and Thaler and Sunstein's perspectives are attributed to an underlying epistemological incompatibility. Finally, and somewhat unexpectedly, this essay uncovers salient epistemological links between nudge theory and classical functionalism.

Keywords

Nudging, Bounded rationality, Choice architecture, Libertarian paternalism, Organizational action.

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Nudges and bounded rationality

Choice architecture and the understanding of decision-making processes

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Introduction

Thaler and Sunstein's book on nudges represents a rare case of publishing, academic, and application success. In the text, the two authors introduce a theory that focuses on the possibility of gently influencing, without coercion, individual choice processes through minimal interventions in the decision-making context. They identify nudging as the fundamental tool for inducing decision makers to select socially desirable choices.

The theoretical proposal described in the book has consolidated and systematized a large body of contributions and evidence emerging from experiments in cognitive psychology and behavioral economics and has activated a multidisciplinary scientific debate. Governments and public decision makers quickly implemented the suggestions presented in the book. Indeed, public decision makers are the primary target audience of Thaler and Sunstein's work. Soon after, many large companies established units and departments dedicated to applying nudging interventions, primarily (though not exclusively) to support employee welfare initiatives.

The rapid rise of the nudge theory has also sparked interest within the field of organization theory, in which there have been signs of theoretical attention and practice-oriented initiatives.

In particular, among the various theoretical orientations that characterize organization studies, Thaler and Sunstein's proposal evokes several connections with Simon's classic contributions. Between the 1940s and 1950s, Herbert Simon proposed an organization theory focused on the logical and psychological study of the processes of decision formation and execution in organizational processes;

for Simon, organization theory is typically the theory of bounded and intentional rationality. Simon's proposal has established itself as foundational, inspirational, and in many ways unsurpassed among the many theories studying organization (Maggi, 1984/1990: 194; 2003/2016: 44-49).

At first glance, nudge theory appears compatible with Simon's framework. First, it is grounded in the assumption that decision-making processes unfold under conditions of bounded rationality. Moreover, it places the boundedly rational choices of subjects at the center of its analysis, considering the psychological and social context in which the decision occurs. Along this line, nudge theory adopts many concepts covered extensively by Simon: decision errors, decision premises, heuristics, and decision architecture (the environment of decision). Finally, this theory uses the evidence found by Tversky and Kahneman, whose experiments were cited very favorably by Simon.

Given these parallels, it would seem conceivable to identify a methodologically grounded collocation of Thaler and Sunstein's work in a perspective *à la* Simon, at least in the context of organizational studies. Such a collocation might occur by reconstructing a coherent interpretive framework that links Simon's and Thaler's theories, using Kahneman's theory as the fulcrum between the two. This interpretive framework appears to be rather intuitive: Simon lays the foundation for the conception of organization as a process that addresses and solves problems under conditions of bounded and intentional rationality; Tversky and Kahneman identify detailed experimental evidence on the causes of the relevant gap between human decisions and the precepts of the decision-making scheme characterized by Olympic rationality; Thaler and Sunstein integrate, with their nudge theory, the methods of influence initially identified by Simon with the methods of gentle intervention on the context of choices.

The primary goal of this essay is to analyze the apparent consistency between Simon's theory and Thaler and Sunstein's nudge theory. In the following paragraphs, we will analyze nudge theory and its relationship with Kahneman's theory, and investigate the elements of consistency and

inconsistency with Simon's theory. Specifically, the first four paragraphs will describe nudge theory, its tools, its theoretical foundations, and discuss its impacts, criticisms, and subsequent developments. This initial part aims to present Thaler and Sunstein's theoretical contribution broadly and comprehensively. Next, the paragraph "nudges in organization theory" will discuss possible points of contact and integration of nudge theory with Simon's theory of bounded rationality. The following paragraph, "elements of inconsistency between Simon's theory and nudge theory," will investigate the critical issues and possible methodological inconsistencies between these two theories. The essay will conclude by recognizing the profound differences between the views of the world expressed by Simon's and Thaler and Sunstein's theories, highlighting their epistemological incompatibility. Recognizing these divergencies also allows identifying relevant epistemological connections between nudge theory and classical functionalism.

The invention of nudges

In 2008, economist Richard Thaler and jurist Cass Sunstein published *Nudge: Improving decisions about health, wealth, and happiness*, a book that introduced their theory of choice architecture and efficient methods and tools for influencing the behavior of less than perfectly rational decision makers.

The book's title immediately highlights the goals and methods of the theory presented. It implies the possibility for any decision maker to increase the quality, understood as rationality, of their choices oriented toward health, wealth, and happiness.

The gentle push identified by Thaler and Sunstein is conceived as a slight, almost imperceptible prod that should direct decision makers toward "better" choices (*i.e.*, oriented toward goals of health, wealth, happiness). On the other hand, for a nudge to occur, it is necessary to prefigure not only a "nudged" subject (the decision maker) but also a subject who actively and deliberately applies the nudge. Moreover, nudging must necessarily occur deliberately since it must influence the decision maker's choices toward desired and better states.

The definition of nudge proposed by the two authors reflects these assumptions: “any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives” (Thaler, Sunstein, 2008: 6).

Thus, nudges find application when the environment in which the decision maker makes their choices is structured by a designer/architect (the subject who deliberately operates the nudge).

This definition also highlights other foundational elements of Thaler and Sunstein’s theory. First, it emphasizes that interventions on choice architecture should have predictable behavioral outcomes. Moreover, nudges should, at least formally, preserve subjects’ freedom of decision-making, neither imposing nor prohibiting choices. Finally, nudges should not leverage economic incentives or disincentives.

Predictably irrational decision makers

Nudge theory’s entire apparatus rests on the assumption of bounded rationality in human decision-making. In a continuous comparison between the hypothetical rational decision maker depicted by classical economic theory (referred to as Econ, invoking the term “economist”) and the decision maker operating under conditions of bounded rationality (referred to as Human), Thaler and Sunstein argue, through numerous didactic examples, that the Econ decision maker represents an idealized abstraction. Instead, they propose the prototype of a “real” decision maker: the Human. This prototype is constructed by drawing inspiration from the theoretical proposals of Kahneman and Tversky (1973; 1979; Tversky, Kahneman, 1974), who point out that the most significant part of human choices occurs through decision-making processes implemented intuitively rather than analytically, thus resulting in a high propensity for errors of judgment. From this, Thaler and Sunstein infer the non-rational choices typical of humans.

The experimental evidence emerging from Tversky and Kahneman’s pioneering studies adds another pillar to the nudge theory: the decision-making

strategies adopted by subjects are not erratic, but traceable to typical decision-making shortcuts (judgment heuristics): anchoring, availability, representativeness. Anchoring heuristics occur when, in quantitatively evaluating something, people anchor themselves to an initial value (often provided by context or problem formulation) and adjust their estimation from that reference (Tversky, Kahneman, 1974). Availability heuristics occur when people estimate the probability or frequency of an event based on the ease with which similar examples or instances come to their mind (Tversky, Kahneman, 1973). Representativeness heuristics occur when subjects assess the likelihood that an item A belongs to a category B based on how similar or representative A appears to be of the stereotype of B they have in mind (Kahneman, Tversky, 1972). The two authors also identify the framing effect: how a problem is represented influences the solution choice (Tversky, Kahneman, 1981).

More importantly, the experiments conducted allow for identifying systematic, and therefore predictable, errors (biases) that decision makers incur when they adopt typical heuristics.

Therefore, the decision maker represented by Tversky and Kahneman is boundedly rational and runs into predictable systematic errors. As noted by Ariely (2008), “we are not only irrational, but predictably irrational, [...] our irrationality happens the same way, again and again. Whether we are acting as consumers, businesspeople, or policy makers, understanding how we are predictably irrational provides a starting point for improving our decision making and changing the way we live for the better”.

Predictability implies the possibility (and therefore the need) for extensive empirical analyses and experiments aimed at “scientifically” identifying fallacies and distortions in human decision-making processes to identify their causes and possible corrective interventions.

Thaler and Sunstein consider the predictability of irrational choices and the possibility of influencing decision-making processes as key differences with classical economic theory (which is interested in explaining how subjects “should” make decisions) thus paving the way for the application of nudges: The

picture that emerges is one of busy people trying to cope in a complex world in which they cannot afford to think deeply about every choice they have to make. People adopt sensible rules of thumb that sometimes lead them astray. Because they are busy and have limited attention, they accept questions as posed rather than trying to determine whether their answers would vary under alternative formulations. The bottom line, from our point of view, is that people are, shall we say, nudge-able. Their choices, even in life's most important decisions, are influenced in ways that would not be anticipated in a standard economic framework" (Thaler, Sunstein, 2008: 10).

Therefore, decision makers make choices that are strongly influenced, often unconsciously, by the structure of the decision-making environment and the way options are presented.

The choice architecture

Building on these assumptions, it becomes possible to deliberately design the choice architecture, *i.e.*, the environment in which people make decisions (Thaler *et al.*, 2013; Thaler, 2018a). Hence, choice architecture allows leveraging heuristics and systematic errors to direct choices, and consequently, influence subject's behaviors.

Choice architecture rests on the assumption that human choices take place within a structured context that inevitably conditions their direction, even through minimal signals, having subtle effects on the final decisions.

Choice architecture is never neutral, since in any case, it influences the decisions on several levels: physical, social, and psychological. On the physical level, it is embodied in the arrangement of objects, spaces, or information in the context of the choice (*e.g.*, the placement of healthy foods at eye level in supermarkets, or the pre-selection of desirable options in enrollment forms). On the social level, it takes place through the definition of (implicit or explicit) rules or expectations that influence decisions (*e.g.*, the establishment of social norms that influence eco-friendly consumption and behavior choices) and behaviors. Finally, on the psychological level, influence can occur by stimulating

unconscious cognitive patterns, such as systematic errors and heuristics that condition human decision making.

Prior knowledge of the heuristics used and the cognitive biases in which decision makers incur characterizes the choice designer/architect: “If you indirectly influence the choices other people make, you are a choice architect. And since the choices you are influencing are going to be made by Humans, you will want your architecture to reflect a good understanding of how humans behave” (Thaler, Sunstein, 2008: 83).

The effectiveness of the choice architect’s intervention lies in their ability to strategically use the physical, social, and psychological elements of the context to direct subjects’ decisions toward socially desirable outcomes, while keeping intact the subjects’ ability to choose among several available options freely (Johnson *et al.*, 2012).

Thanks to experiments in cognitive psychology, several major techniques have emerged to shape the decision-makers’ choice architecture subtly:

- Default: this technique relies on the definition of the default choice to be adopted in the absence of an explicit choice by the decision maker; it leverages the subjects’ tendency to follow the traced path, takes advantage of decision inertia, and allows for reducing cognitive fatigue associated with repeated or complex choices. It is a technique widely adopted to foster participation in savings programs, social security, or organ donation (Johnson, Goldstein, 2003).
- Salience and visibility: it involves organizing information to make it more visually or cognitively accessible. By highlighting specific data or options, the attention of the decision maker can be captured, thus steering the choice towards a desired direction. This technique is typically used to emphasize the tangible, direct benefits associated with choosing healthy or financially responsible behaviors (Kahneman, 2011).
- Feedback: if decision makers are supplied with immediate information about the results of their choices, they can directly perceive the consequences of their decisions, encouraging virtuous and conscious behavior. Typical application of this technique takes place, for instance, through household energy consumption

monitoring devices, which show the benefits of virtuous choices in real time, thereby encouraging sustainable behavior (Hattie, Timperley, 2007).

- Complexity structuring: this technique acts to simplify articulated and complex decisions by breaking them down into more narrow and easily manageable choices, thus reducing cognitive overload. Typically, it is adopted through the provision of checklists, guided decision-making trees, or the subdivision of complex options into simpler intermediate choices (Iyengar, Lepper, 2000).

- Social signaling: this technique exploits the tendency of decision makers to conform to social norms and group behavior. It works by informing the decision maker that a particular choice has been adopted by a majority of people whom they believe to be similar to (Cialdini *et al.*, 1990), and is widely used in campaigns to promote sustainable behavior; for example, many energy companies report information on the average consumption of other similar utilities on the back of bills.

- Framing: involves describing information or options in a way that influences subjects' decision-making processes. It originates from experimental evidence positing that decision makers tend to perceive losses and gains asymmetrically: for example, when choice alternatives are presented in the form of potential losses, subjects tend to engage in risk-oriented behavior, whereas when faced with other options presented in terms of potential gains, subjects typically engage in risk-averse behavior (Tversky, Kahneman, 1981).

- Reminders and alerts: this technique consists of sending the decision-maker timely reminders and signals to prompt the adoption of desirable behaviors or to indicate important deadlines. It has been applied in medicine (*e.g.*, vaccination recall notices) (Milkman *et al.*, 2011), personal finance (reminders about payment or saving deadlines), and environmental sustainability (reminders for ecological actions).

Nudges are neither economic incentives nor prohibitions

Thaler and Sunstein stress the strictly non-coercive nature of nudges: choice architecture interventions must not explicitly prohibit or remove options

available to the decision-maker to be properly classified as nudges. Formally, the decision-maker's freedom of choice is not impaired by interventions in the choice architecture.

Likewise, nudges should not substantially alter the economic incentives associated with decisions. This means that nudge-based interventions should not modify the characteristics and attractiveness of the available options. These should not affect the desirability of the different available options or the decision-maker's utility function (*i.e.*, objectives). This clearly distinguishes nudges from traditional marketing and persuasion strategies.

By contrast, marketing activities aim to generate new needs in consumers or to strengthen and direct existing ones: they make some options more desirable than others and thereby alter the decision-maker's goal system (*i.e.*, the consumer comes to place greater importance on satisfying the need targeted by marketing activities). Persuasion works in a similar way, but typically alters the value hierarchy underlying the decision-maker's goals. Furthermore, persuasion can act on the set of available alternatives, leading the decision-maker to discard some options as no longer acceptable or to consider new ones that were previously inadmissible (a relevant example is persuasion concerning the importance of environmental sustainability, which leads to alterations in both the utility function and the evaluation of available alternatives).

Influencing without coercion: libertarian paternalism

A choice architect (the person who designs the nudge) inevitably influences individuals' decisions and, consequently, behaviors. As noted earlier, this influence should guide decision-makers toward choices that are beneficial for themselves and the community (*e.g.*, enrollment in retirement plans, health and social security-related insurance schemes, consent to organ donation, *etc.*). Nevertheless, this influence can be interpreted as a form of manipulation or covert coercion.

Thaler and Sunstein attempt to anticipate such an interpretation by highlighting key elements of their theory and by conceptualizing the so-called *libertarian paternalism*.

In their view, libertarian paternalism is not to be considered an oxymoron but as a foundational principle. The proposed resolution of the oxymoron rests on a set of logically articulated steps. At the core of the argument lies the observation that every human decision necessarily occurs within a choice architecture: no decision maker ever chooses in a fully objective or neutral context. The architecture of choice will always influence decisions, regardless of how and by whom it is structured. This occurs even when the architect is unaware of their role or when no deliberate intervention in the choice context takes place.

Accordingly, Thaler and Sunstein argue that it is impossible not to influence decision-makers. A choice architect who acts without awareness or intention would still shape individuals' choices, but in ambiguous ways and without necessarily promoting individual or collective well-being: "In many situations, some organization or agent must make a choice that will affect the behavior of some other people. There is, in those situations, no way of avoiding nudging in some direction, and whether intended or not, these nudges will affect what people choose" (Thaler, Sunstein, 2008: 10).

Thaler and Sunstein conclude that the conscious action of the choice architect is desirable, as it represents a prerequisite for steering choices toward general beneficial outcomes: if influence on decision-making is inevitable, the paternalism of the architect becomes an effective method to guide decisions and behaviors toward socially desirable ends (Thaler, Sunstein, 2003).

The classic example is the arrangement of food options in a cafeteria: the person who decides how to display the various dishes (what order to place them in, positioning in display cases, plate sizes, *etc.*) is a choice architect, even if unaware of this role. The architect's decisions will influence customer choices in any case. Thaler and Sunstein's concept of paternalism implies that, once this role is acknowledged and fundamental design techniques are learned, the architect

may intervene in the choice architecture to guide individuals toward desirable behaviors (e.g., choosing healthy foods, reducing consumption of sugary drinks, etc.).

Importantly, this is a form of non-coercive paternalism: it does not alter the range of available options, does not prohibit or mandate choices, does not rely on economic incentives or disincentives, and does not seek to persuade the decision-maker. The paternalistic architect shapes the choice environment while preserving the formal decision-making freedom. In this sense, we have *libertarian paternalism*.

Theoretical foundations of nudges: dual system and behavioral economics

Although the essay by Thaler and Sunstein is largely a systematization of a broad range of existing theoretical literature and empirical applications, rather than a substantive theoretical contribution, it has, within a decade, succeeded in establishing nudges as an essential tool in the toolkit of public and private policymakers. These actors have grown increasingly comfortable as designers of decision architectures. Moreover, the concept has persuaded several scholars (e.g., Hafner-Burton *et al.*, 2017; Simon, Tagliabue, 2018; Esmark, 2023) to see the emergence of a broader “behavioral revolution.”

The theoretical foundations of Thaler and Sunstein’s proposal are well established in the literature and have been the subject of scientific debate since the late 1970s. Its principal pillars are the theory of bounded rationality, the empirical findings of Tversky and Kahneman, and the broader framework of behavioral economics.

The theory of nudges draws explicitly on the theoretical insights and cognitive psychology experiments developed by Tversky and Kahneman. Thaler and Sunstein (2008: 23) write: “Although rules of thumb can be very helpful, their use can also lead to systematic biases. This insight, first developed decades ago by two Israeli psychologists, Amos Tversky and Daniel Kahneman (1974), has changed the way psychologists (and eventually economists) think about thinking. Their original work identified three heuristics, or rules of thumb—

anchoring, availability, and representativeness—and the biases that are associated with each. Their research program has come to be known as the “heuristics and biases approach to the study of human judgment”.

The theory developed by Kahneman and Tversky unfolded over more than two decades through many cognitive psychology experiments. Initially, the two scholars focused on the mental shortcuts (heuristics) and systematic errors (biases) that often unconsciously influence human judgment and decision-making. From their early experiments (Tversky, Kahneman, 1974), compelling evidence emerged that, when faced with complex or uncertain situations, individuals resort to non-deliberative simplification strategies that can distort preferences and the assessment of probabilities.

These initial discoveries evolved into a challenging research program (the so-called *heuristics and biases program*), aimed at challenging the axiomatic assumptions of classical economic rationality, primarily, the principle of expected utility maximization. Their work on individual decision-making under uncertainty led to the formulation of *prospect theory* (Kahneman, Tversky, 1979). This theory shows that decision-makers evaluate gains and losses relative to a reference point and reveals a significant asymmetry in the subjective valuation of losses and gains: individuals exhibit greater psychological sensitivity to losses than to equivalent gains. This phenomenon, known as *loss aversion*, constitutes one of the central pillars of Kahneman and Tversky’s theory and marks a key departure from classical economic theory (von Neumann, Morgenstern, 1944), which focuses instead on *risk aversion*: while loss aversion denotes a stronger psychological response to losses than to gains of equal magnitude, risk aversion reflects a preference for certain outcomes over risky ones with the same expected value.

The results of Kahneman and Tversky’s experiments - joined by Thaler from the late 1970s onward - combined with the idea that systematic and predictable biases can be identified (Camerer, 1995), provided fertile ground for the development of what is now known as *behavioral economics*. This field is defined as “Behavioural economics is a scientific discipline that applies

psychological insights into human behaviour to explain economic decision-making. [...] [this results] from multidisciplinary research in fields such as economics, psychology and neuroscience, to understand how humans behave and make decisions in everyday life" (JRC, 2016: 10).

Behavioral economics incorporates concepts and methods from various disciplines, particularly cognitive and social psychology, sociology, and neuroscience (Camerer, Loewenstein, 2004). Experimental and empirical methods play a central role in understanding real-world economic choices and empirically validating theories and hypotheses (Falk, Heckman, 2009).

In summary, the term *behavioral* refers to economic theories grounded in the direct observation of individuals' actual behavior, which integrate findings from psychological and social studies into the analysis of economic decision-making and rely on empirical and experimental methodologies.

Since the early 1980s, the cognitive psychology experiments of Tversky and Kahneman have evolved in parallel with the development of behavioral economics (Thaler, 2015). It is worth noting that during this period Richard Thaler played a key role in the emergence of the discipline (Thaler, Shefrin, 1981; Thaler, 1985, 1999; Kahneman *et al.*, 1986, 1991; Thaler, Johnson, 1990).

After the premature passing of Tversky, Kahneman (2003) further refined his theory of decision-making processes, proposing a distinction between two analytically separate cognitive systems: a fast, intuitive, and automatic system (System 1) and a slow, reflective, and controlled system (System 2).

Although several authors had previously developed classification models of human decision-making processes (*e.g.*, Sloman, 1996; Stanovich, West, 2000; Evans, 2008), Kahneman's model received widespread support due to its conceptual simplicity and the extensive empirical evidence accumulated over decades of research. The widespread acceptance of his dual-system theory was likely facilitated by the reputation and visibility Kahneman acquired after receiving the Nobel Prize in Economic Sciences in 2002.

According to Kahneman, System 1 is fast, intuitive, associative, and largely operates outside conscious control. It is driven by heuristics, which allow

quick processing of stimuli and information but expose the decision maker to systematic errors (Kahneman, Frederick, 2002). The automaticity of System 1 is based on low-effort cognitive processes that generally lead to satisfactory outcomes. System 1 relies on pattern recognition, emotional responses, and well-established associations, enabling rapid reactions to environmental stimuli without requiring conscious deliberation about each decision component.

In contrast, System 2 is slow, deliberate, and conscious: it is based on analytical decision-making processes, requires greater cognitive effort and concentration, and can engage logical reasoning, calculation, and sequential information analysis (Kahneman, 2011).

In everyday life, most human decisions are guided by System 1, while System 2 is activated only when anomalous stimuli challenge the typical representations of the world employed by System 1, thus requiring a more focused and in-depth analysis. The cognitive laziness of System 2 (which can be understood positively as a form of cognitive resource-saving) implies that it is triggered by exception. As a result, many distortions produced by System 1 go unnoticed and uncorrected: System 2 often fails to detect critical elements and does not challenge intuitive choices, as these appear sufficiently plausible and do not generate immediate alarm (Kahneman, 2011).

System 2 becomes engaged when the decision maker faces a novel or particularly difficult choice, or when apparent anomalies are detected in the judgments produced by System 1 (Evans, Stanovich, 2013).

Due to the predominance and pervasiveness of System 1, decision errors are not spontaneously corrected and can systematically emerge even in competent and motivated individuals. This occurs simply because the human cognitive structure favors intuitive speed and efficiency over analytical reflection.

Dual-system theory offers a compelling explanation for many of the biases and decision-making anomalies observed in experiments, including the importance of how a problem is framed, overconfidence in one's own estimates, and the tendency to anchor on initial values.

Subsequent literature (*e.g.*, Stanovich, West, 2000; Evans, 2008) has investigated the conditions under which System 2 can effectively activate to correct the errors and inaccuracies of System 1, identifying as relevant variables: motivation, available time, current cognitive load, and the availability of clear feedback.

Unsurprisingly, this understanding—and the possibility of influencing such mechanisms—has attracted the attention of policy designers, marketing experts, and human resource managers. Understanding how the two systems operate and interact offers a predictive framework for anticipating how individuals will likely decide and behave. It also provides the theoretical foundation for studying choice architecture and developing nudge theory.

Kahneman himself (2011) acknowledged the coherence of Thaler and Sunstein's theoretical proposal with his research and findings: "In 2008 the economist Richard Thaler and the jurist Cass Sunstein teamed up to write a book, *Nudge*, which quickly became an international bestseller and the bible of behavioral economics. Their book introduced several new words into the language, including *Econs* and *Humans*. It also presented a set of solutions to the dilemma of how to help people make good decisions without curtailing their freedom. Thaler and Sunstein advocate a position of libertarian paternalism, in which the state and other institutions are allowed to nudge people to make decisions that serve their own long-term interests. The designation of joining a pension plan as the default option is an example of a nudge. It is difficult to argue that anyone's freedom is diminished by being automatically enrolled in the plan, when they merely have to check a box to opt out. As we saw earlier, the framing of the individual's decision - Thaler and Sunstein call it choice architecture - has a huge effect on the outcome. The nudge is based on sound psychology, which I described earlier. The default option is naturally perceived as the normal choice. Deviating from the normal choice is an act of commission, which requires more effortful deliberation, takes on more responsibility, and is more likely to evoke regret than doing nothing. These are powerful forces that may guide the decision of someone who is otherwise unsure of what to do".

The right theory at the right time

The publication of Thaler and Sunstein's book came at a particularly significant historical moment, in which a deep economic crisis cast doubt on the certainties of classical economic and financial theories.

The Great Recession of 2007–2008 has been the most severe economic and financial crisis since the Great Depression of 1929. It began in early 2007 with the bursting of the housing bubble in the United States and, by the summer of the same year, had already caused turbulence in global financial markets. By late 2008, marked by the failure of Lehman Brothers, the crisis had sent shockwaves through global markets and plunged the world economy into recession

This unexpected and violent collapse of financial markets, despite a regulatory framework managed through sophisticated economic analysis tools, intensified criticism of neoclassical economic theory and catalyzed a surge of interest in behavioral economics and finance (Shiller, 2008; Akerlof, Shiller, 2009).

According to proponents of the behavioral interpretation, the crisis demonstrated that the decisions of financial operators are influenced by systematic errors, emotional excesses, and irrational herd behavior - phenomena largely ignored by classical economic theory (Barberis, 2013). In this context, the pioneering work of Kahneman and Tversky (1979), Thaler (1980), and Shiller (2000) regained prominence. Interpretations of the crisis based on cognitive biases and heuristics quickly spread through the media and political discourse. Governments and international institutions began incorporating behavioral techniques and tools into the design of public policies and financial regulation strategies (Sunstein, 2014).

The rise of behavioral economics was further strengthened by the award of the Nobel Prize in Economics to Daniel Kahneman in 2002, "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty".

While Herbert Simon had received the same prize in 1978 for his theory of bounded rationality in decision-making processes¹, the recognition granted to Kahneman served as a major source of legitimacy for research efforts grounded in his experimental work.

In sum, if the economic crisis amplified the critiques of classical economics, the Nobel Prize awarded to Kahneman legitimized behavioral economics as a potential and innovative alternative. Unsurprisingly, two more scholars in behavioral economics and finance were awarded the Nobel Prize in the following decade: Robert Shiller in 2013² and Richard Thaler in 2017³ - formally cementing the prominent place of behavioral theories within the economic sciences.

The impact of the book

In their book, Thaler and Sunstein do not present an organic or systematic exposition of the concepts and methods underlying their theory of nudges, nor do they develop an extensive theoretical discussion. Instead, the work primarily consists of numerous examples and experiments that illustrate the decision shortcuts adopted by individuals and the systematic errors resulting from them. The book also describes a wide range of real-world interventions in choice architecture, which the authors classify as nudges. It would therefore not be excessive to claim that this constitutes an *ex post* attribution of meaning: many of the nudging interventions described in the book were implemented before the concept of “nudge” had been formally defined or conceptualized. A significant portion of the book is thus devoted to the reinterpretation of previous interventions - typically carried out by public decision makers - as nudging

¹ “for his pioneering research into the decision-making process within economic organizations”
<https://www.nobelprize.org/prizes/economic-sciences/1978/simon/facts/>

² “discovered that stock prices can be predicted over a longer period, such as over the course of several years. In contrast to the dominant perception, stock prices fluctuated much more than corporate dividends. Shiller’s conclusion was therefore that the market is inefficient”
<https://www.nobelprize.org/prizes/economic-sciences/2013/shiller/facts/>

³ “for his contributions to behavioural economics”
<https://www.nobelprize.org/prizes/economic-sciences/2017/thaler/facts/>

activities; that is, as interventions designed to alter people's behavior through minor changes in the choice architecture in which decision processes occur (see, for instance: Johnson, Goldstein, 2003; Hattie, Timperley, 2007; Madrian, Shea, 2001; Iyengar, Lepper, 2000; Thaler, Benartzi, 2004).

Overall, the book is accessible to a broad audience and offers an informative overview with numerous practical suggestions and applications. These features contributed to its editorial success and established it as a turning point in the dissemination of the cited research and the recognition of nudges as a fundamental tool for implementing public policy – particularly in Anglo-Saxon countries.

In the United Kingdom, Prime Minister David Cameron's government established the Behavioural Insights Team (BIT) in 2010 - also known as the *Nudge Unit* - to apply techniques and tools from behavioral research to improve public policy effectiveness (Halpern, 2015). One of the most notable achievements of the BIT was the use of nudges to increase tax compliance: subtle modifications to the wording of letters sent to negligent taxpayers significantly increased the rate of spontaneous repayment of overdue taxes (Hallsworth *et al.*, 2017).

In 2015, U.S. President Obama signed an executive order titled "using behavioral science insights to better serve the American people" establishing the Social and Behavioral Sciences Team (SBST) to support his cabinet. Its goal was to systematically apply behavioral research findings to enhance the effectiveness of federal policies related to health, social security, energy saving, and environmental sustainability (SBST, 2015).

Around the same time, several other countries - including Denmark, the Netherlands, Singapore, and Australia - set up governmental units or dedicated research groups focused on implementing nudges to support public policies. In continental Europe, the adoption of nudge-inspired interventions was less formalized but nonetheless widespread (JRC, 2016).

The enthusiasm generated by the early and partial successes of these public initiatives further popularized nudges. It encouraged their application in

the private sector, often to enhance corporate welfare programs promoting employee well-being and health, participation in retirement plans, and environmentally sustainable behaviors.

In May 2015, the widely read *Harvard Business Review* devoted an issue to behavioral economics and nudging. Among the contributions, a notable article by Beshears and Gino (2015), titled *Leaders as Decision Architects*, called executives to adopt nudges to influence and direct employee behavior.

Between 2010 and 2020, many companies launched projects and programs aimed at redesigning the choice architecture of employees and customers through subtle nudges. For example, Google applied nudges to encourage employees to choose smaller and healthier meal portions in workplace cafeterias (Dolan *et al.*, 2012). Walmart used nudges to gently steer customers toward healthier food choices (Anzalone, 2013; Wansink, 2015). Other prominent cases involved companies such as Amazon, Netflix, Starbucks, and Booking.com (Fogg, 2009; Boatwright, Cagan, 2010; Davenport, 2018; Ye *et al.*, 2020).

Despite its enthusiastic reception, Thaler and Sunstein's contribution quickly drew significant criticism. These critiques focused on fundamental aspects of the theory, particularly on libertarian paternalism, its potentially manipulative drift, and the applicability and effectiveness of nudges.

The most prominent critiques of libertarian paternalism concern the assumption that interventions are always oriented toward individual and collective well-being: in Thaler and Sunstein's formulation, there are no endogenous mechanisms to prevent the instrumental use of nudges for purposes that may not be positive (Leggett, 2014; Ewert *et al.*, 2021).

Libertarian paternalism has also been criticized for the distinction between form and substance. Although decision makers' freedom appears formally preserved, it is plausible that such interventions effectively restrict individual autonomy in ways that may threaten or compress actual freedom (White, 2013).

Several scholars have criticized the context-bound and temporary nature of nudge-based interventions, arguing that they tend to induce superficial and

contingent behavioral changes that are difficult to generalize or sustain over time (Gigerenzer, 2015; Hertwig, Grüne-Yanoff, 2017).

Furthermore, questions have been raised about the generalizability and replicability of experimental results obtained in specific or limited contexts, which may not be extendable to different or more complex environments.

Lastly, nudges have been criticized for acting primarily on small, unconscious decisions, thereby implicitly reducing the scope for reflective judgment and deliberation. For example, Viale (2016) highlights how nudges can easily degenerate into “hedonistic paternalism” – that is, interventions that act on automatic micro-behaviors (through defaults and subtle modifications of the context), thereby weakening the relevance of reflective evaluation by individuals. As a result, decision-making autonomy may be constrained, and the practice may drift toward ethically questionable forms of soft manipulation.

Beyond nudges: the proliferation of behavioral insights

As defined by Thaler and Sunstein, nudges operate primarily by targeting the mental shortcuts and systematic errors typically associated with System 1. By exploiting the fallacies of the automatic system, changes in the choice architecture are designed to steer decisions toward outcomes desired by the choice architect. These minimal, efficient interventions often act below the level of the decision-maker’s conscious awareness.

However, Kahneman’s dual-system theory (2011) highlights that System 2 also operates under conditions of bounded rationality (and is thus susceptible to error) and, more importantly, calls attention to the interactions between the two systems - interactions that may be subject to influence by an architect.

Subsequent behavioral literature recognizes these dynamics and has led to a noteworthy evolution in terminology. While until the mid-2010s “nudge” served as the catch-all term in academic and policy discourse for all behavioral intervention techniques, by the end of the decade, *behavioral insights* had emerged as the prevailing, more inclusive concept (Hallsworth, Kirkman, 2020). Behavioral insights represent an input for the policy-making process and may be

integrated with traditional policy tools (such as regulation, economic incentives, and persuasion), thereby informing and enhancing them: “BIs, contrarily to nudges, do not warrant a specific type of output, and indeed sometimes suggest that no intervention, or a conventional one, is the best solution” (JRC, 2016: 10).

In addition to nudges, the domain of behavioral insights now includes several other behavioral tools. We have the *boosts* (Hertwig, Grüne-Yanoff, 2017), which aim to strengthen individuals’ cognitive and decision-making competencies through targeted training. The underlying hypothesis is that with enhanced analytical skills and greater awareness of common heuristics and biases, individuals will be more capable of making effective decisions without relying on external interventions. Unlike nudges, which act on the choice context, boosts focus on directly empowering decision makers. Examples of boosts include basic financial literacy programs designed to promote more informed saving behaviors, using icons and pictograms to facilitate intuitive risk comprehension, and adopting simplified decision trees - based on robust and easily understandable heuristics - to support physicians in managing particularly complex clinical cases.

Another tool is the *nudge plus* (Banerjee, John, 2020), which combines nudging with reflective interventions that enhance decision makers’ awareness of their own decision processes. Nudge plus aims to increase transparency by encouraging conscious and informed moments of reflection during decision making. It makes the interventions on choice architecture less manipulative and opaque to the decision maker.

Thinks (John *et al.*, 2019) work similarly, encouraging individuals to engage in analytical and deliberate decision making. *Thinks* attempt to activate System 2 by prompting active reasoning about the available choices, typically through techniques such as guided discussion or specific training in decision processes.

Finally, *sludges* represent a tool that stands in opposition to nudges in many respects. They involve deliberately using friction and decision obstacles to discourage undesired behaviors (Soman *et al.*, 2019; Mills, 2023). Initially identified as impediments to the selection of beneficial options (Thaler, 2018b;

Sunstein, 2019), nudges in this newer interpretation are considered valuable tools for making undesirable or harmful choices more difficult or time-consuming.

More recently, spurred by advances in digital technologies (Mills, 2022), a further class of behavioral tools has emerged (Mills, Sætra, 2024; Sadeghian, Otarkhani, 2024). Thanks to growing computational capacity, the development of artificial intelligence, and the availability of large-scale data on individual decisions and behaviors, it is now possible to design the so-called *hyper-nudges*: highly personalized, dynamic, continuously updated, and pervasive interventions capable of adapting in real time to users' actions and environmental conditions (Yeung, 2017). These tools are thus highly effective and largely invisible (Caraban *et al.*, 2019). They are no longer designed by human choice architects, but by highly sophisticated and adaptive algorithms (Kellogg *et al.*, 2020).

Hyper-nudges are already widely employed by search engines, digital content platforms, social media networks, and navigation systems, which subtly use algorithmic techniques to steer users toward commercially relevant options. For example, social media and streaming platforms (such as those focused on movies and music) use historical user data to generate highly personalized recommendations influencing choice behavior. Similarly, credit scoring systems rely on unconventional data (such as social media activity and online shopping behavior) to construct individual customer profiles that guide credit decisions. Online retail platforms increasingly use user characteristics and behavior data, including device type, location, and past activity, to tailor offers and influence purchasing decisions.

The risk of manipulation becomes particularly relevant in these cases, as highlighted by Zuboff (2015; 2019), who situates the algorithmic practices, capable of undermining individuals' capacity for authentic self-determination, at the heart of what she terms *surveillance capitalism*.

Nudges and the theories of the organization

Notably, nudges and other behavioral tools were not initially developed for application within enterprises; as previously mentioned, public policy has represented their principal domain of application. However, within a short period, companies - particularly large corporations - began employing them to influence employee decisions in retirement planning, workplace welfare, and well-being. Recent studies have proposed using nudges to support diversity promotion strategies and reduce unethical employee behavior (Bouzzine *et al.*, 2024; Cervantez, Milkman, 2024). These applications clearly aim to stimulate socially desirable behaviors anchored in ethically sustainable values.

Nevertheless, nudges can also be employed more broadly, for the strategic and operational management of enterprises. For example, they can support change initiatives (van de Poll *et al.*, 2022), stimulate creativity and innovation (Stieler, Henike, 2022), and foster employee engagement and motivation (Güntner *et al.*, 2019; Houdek, 2024). In 2021, the journal *Organizational Behavior and Human Decision Processes* dedicated a special issue to the application of behavioral tools to enterprise management - notably, Richard Thaler was among the guest editors: "Our goal in curating this Special Issue on Nudges and Choice Architecture in Organizations was to produce new insights, stimulate new debates, extend theory, and challenge existing assumptions about how nudges and choice architecture could be used to improve management theory and practice. [...] We hope the work included here will help many scholars generate exciting new research ideas and think differently about how nudges and choice architecture relate to organizational behavior" (Chapman *et al.*, 2021: 3).

The integration of behavioral insight theory into organization studies is nonetheless complex, given that the many disciplines studying the organization have traditionally placed human behavior within organizations at the core of their inquiry (Miner, 2002; Kreitner, Kinicki, 2013; Robbins, Judge, 2024). From its origin, the literature studying the organization has attempted, through different theoretical frameworks, to understand and explain the relationships between organizational choices, control systems, decision-making processes, and

human behavior (individual, social, and collective). The field is therefore characterized by multiple perspectives that reflect the multidisciplinary nature of organizational studies, each focusing on different phenomena, using different methods and analytical tools, and proposing peculiar explanations and interventions (Miner, 2003).

Given the many different theories that directly or indirectly study organizational behavior, it is particularly interesting to focus on the coherence and distinctions between the theory of nudges and Simon's theory (1947/1997). This interest stems from the apparent similarity of objectives and methods, their shared adoption of a bounded rationality perspective, and their common focus on decision-making processes and methods of influencing them to guide human behavior.

Indeed, if we analyze Simon's foundational work (1947/1997) and the essays he published during the 1950s to elaborate his theory of bounded rationality (Simon, 1955; 1956; 1957), numerous points of contact with Thaler and Sunstein's behavioral theory emerge.

First and foremost is the emphasis on human decision-making processes, which for Simon constitute the very essence of organization: "In this book, the term organization refers to the pattern of communications and relations among a group of human beings, including the processes for making and implementing decisions" (Simon, 1947/1997: 19), further specifying that "Administrative Behavior was written on the assumption that decision-making processes hold the key to understanding organizations" (Simon, 1947/1997: IX-X).

Simon also explicitly states his interest in decision-making processes as precursors to behavior: "In all this discussion, however, not very much attention is paid to the choice which prefaces all action - to the determining of what is to be done rather than to the actual doing. It is with this problem - the process of choice which leads to action - that the present study is concerned" (Simon, 1947/1997: 1).

Among the factors influencing decision processes under conditions of bounded and intentional rationality, Simon identifies the *environment of decision* -

a concept that appears parallel to Thaler and Sunstein's choice architecture: "If the psychological environment of choice, the "givens", were determined in some accidental fashion, then adult behavior would show little more pattern or integration than the behavior of children. A higher degree of integration and rationality can, however, be achieved, because the environment of choice itself can be chosen and deliberately modified. Partly this is an individual matter: the individual places himself in a situation where certain stimuli and certain items of information will impinge on him. To a very important extent, however, it is an organizational matter. One function that organization performs is to place the organization members in a psychological environment that will adapt their decisions to the organization objectives, and will provide them with the information needed to make these decisions correctly" (Simon, 1947/1997: 92). And again: "The pattern of human choice is often more nearly a stimulus-response pattern than a choice among alternatives. Human rationality operates, then, within the limits of a psychological environment. This environment imposes on the individual as "givens" a selection of factors upon which he must base his decisions. However, the stimuli of decision can themselves be controlled so as to serve broader ends, and a sequence of individual decisions can be integrated into a well conceived plan. [...] The deliberate control of the environment of decision permits not only the integration of choice, but its socialization as well. Social institutions may be viewed as regularizations of the behavior of individuals through subjection of their behavior to stimulus-patterns socially imposed on them. It is in these patterns that an understanding of the meaning and function of organization is to be found" (Simon, 1947/1997: 117).

In subsequent contributions by Simon, we also find references to decision heuristics (Simon, 1962: 472-473) and the importance of social and psychological factors in shaping the choice situation (March, Simon, 1958/1993: 160).

Moreover, in one of his latest publications, Simon (1997) explicitly refers to the work and experiments of Kahneman and Tversky, aligning their findings with his theory: "a long series of studies by Allais, Kahneman, Tversky, and others have shown serious departures from utility-maximizing rationality when

choices are made under conditions of uncertainty. [...] The sum and substance of these findings is that people just do not maximize utility. They do not have consistent utility functions (Allais). They do not reason correctly and consistently about probabilities and risks (Kahneman and Tversky). They use rules of thumb (heuristics) to simplify choice (Cyert and March). They look for satisfactory courses of action, they satisfice, instead of optimizing (Simon)".

It is also important to note that Kahneman explicitly relates his research and experiments to Simon's theory: "The work cited by the Nobel committee was done jointly with Amos Tversky (1937-1996) during a long and unusually close collaboration. Together, we explored the psychology of intuitive beliefs and choices and examined their bounded rationality. Herbert A. Simon (1955, 1979) had proposed much earlier that decision makers should be viewed as boundedly rational and had offered a model in which utility maximization was replaced by satisficing. Our research attempted to obtain a map of bounded rationality, by exploring the systematic biases that separate the beliefs that people have and the choices they make from the optimal beliefs and choices assumed in rational-agent models. The rational-agent model was our starting point and the main source of our null hypotheses, but Tversky and I viewed our research primarily as a contribution to psychology, with a possible contribution to economics as a secondary benefit" (Kahneman, 2003: 1449). Even in other works, Kahneman refers to Simon as "perhaps the only scholar who is recognized and admired as a hero and founding figure by all the competing clans and tribes in the study of decision making" (Kahneman, 2011).

Eventually, while Thaler never systematically refers to Simon, and Simon never cites the theoretical contributions that Thaler published during the 1980s and 1990s (it should be recalled that Simon passed away in 2001, well before Thaler and Sunstein formally articulated their behavioral theory), it is nonetheless possible to detect significant elements of consistency between their theories: emphasis on decision-making processes, bounded rationality, contextual determination of decision outcomes, relevance of heuristics. Also, the mutual relevance assigned to the empirical findings of Tversky and Kahneman

further suggests an implicit methodological and epistemological coherence. However, this hypothesis calls for more careful and thorough analysis.

Elements of inconsistency between Simon's theory and nudge theory

Bounded Rationality

Devotion to the theory of bounded rationality is a fundamental and indispensable premise in the theory of nudges. However, despite being a core theoretical pillar, bounded rationality is more often invoked than rigorously discussed. For example, Thaler and Sunstein (2008) only provide generic references and focus primarily on experimental evidence concerning heuristics and systematic errors. A telling example of this approach is found in Thaler's (2018a) Nobel Lecture, where he briefly mentions bounded rationality: "Many economists were happy to grant that people exhibited "bounded rationality", to use the term coined by Herbert Simon (1987), but if bounded rationality simply leads to random error, economists could happily go about their business assuming that people make optimal choices based on rational expectations. Adding an error term to a model does not cause an economist to break a sweat. After all, random errors cancel out on average. But if errors are predictable, then departures from rational choice models can also be predictable. This was a crucial insight. It implies that, at least in principle, it would be possible to improve the explanatory power of economics by adding psychological realism" (Thaler, 2018a: 1266-1267).

As already mentioned, the predictability of biases is the cornerstone of nudge theory. Thaler appears only marginally interested in understanding how and why human rationality is bounded; his focus is rather on how the errors resulting from bounded rationality can be isolated, identified, explained, and, above all, predicted. What matters for Thaler are heuristics and biases.

This difference may partly explain the otherwise puzzling absence of references to Simon's work in Thaler's writings (notably, Simon is not cited at all in the 2008 book by Thaler and Sunstein).

Simon, for his part, explicitly expressed skepticism toward the possibility of devising general interventions to direct individuals' decisions and behaviors, precisely due to the differences in information and knowledge that uniquely characterize each decision maker: "We would not think of trying to predict where the moon will be at midnight tomorrow night without knowing where it is tonight. In the same way, we should not presume to predict how a human being will solve a problem or learn a new skill without knowing what that human being already has stored in memory by way of relevant information and skills. Changing the information and skills will change the behavior. This principle is the basis for all of the differences observed between experts and novices" (Simon, 1992: 157).

In short, Thaler is interested in identifying and leveraging recurring human decision fallacies to design interventions capable of nudging large populations of decision makers toward selecting "good" choices. Simon, by contrast, is focused on the decision-making process itself, not on the average outcomes demonstrated by a population, and aims to understand and explain the gap between actual choices and hypothetically optimal ones. For Thaler, bounded rationality is a premise; for Simon, it is the subject of inquiry.

Environment of decision and choice architecture

As conceptualized by Simon, the environment of decision is the context in which the decision-making process takes place. Simon emphasizes that this context is neither given nor objectively definable, thereby marking a clear departure from the assumptions of perfect rationality. He observes that the environment of decision is "the outcome of psychological and sociological processes, including the chooser's own activities and the activities of others in his environment" (March, Simon, 1958/1993: 160).

In *Administrative Behavior*, Simon writes: "The deliberate control of the environment of decision permits not only the integration of choice, but its socialization as well" (Simon, 1947/1997: 117). This statement could be interpreted as an early recognition of the possibility of guiding human behavior

through modifications to the decision context. However, such a sentence cannot be extrapolated and isolated from the broader conceptual framework proposed by the author.

For Simon, the environment of decision can be influenced by the organization through attempts to shape the decision premises: “Individual choice takes place in an environment of ‘givens’ – premises that are accepted by the subject as bases for his choice; and behavior is adaptive only within the limits set by these ‘givens’” (Simon, 1947/1997: 92); “in this and the following chapters it is necessary to keep constantly in mind the idea of a decision as a conclusion drawn from a set of premises—value premises, and factual premises. Organizational influence upon the individual may then be interpreted not as determination by the organization of the decisions of the individual, but as determination for him of some of the premises upon which his decisions are based. Hence, the several modes of influence by no means exclude one another. When the individual decides upon a particular course of action, some of the premises upon which this decision is based may have been imposed upon him by the exercise of the organization’s authority over him, some may have been the result of his training, others of his desire for efficiency, still others of his organizational loyalty, and so forth” (Simon, 1947/1997: 177).

The organization cannot independently design the environment of decision in which the subject operates. It can attempt to influence it by acting on the premises of decision making. Simon does not envision the engineering or architecture of the environment of decision; instead, he proposes interventions aimed at specifying the decision premises available to the decision-maker.

In an insightful interpretation, Gigerenzer (2021) identifies “three principles that define Simon’s program of bounded rationality: (a) Uncertainty. To study decision making under uncertainty, not only risk; (b) Process. To study the actual process of decision making, as opposed to as-if expected utility maximization; (c) Scissors. To study how the structure of an environment, together with the cognitive process, produces the resulting behavior” (Gigerenzer, 2021: 58).

Furthermore, Simon links the effort to influence decision making to the organizational need to integrate (*i.e.*, to align and give order and direction to) individual decisions in pursuit of (bounded) rationality concerning organizational goals.

This interpretation is supported by Viale, who builds on Simon's "scissors" metaphor (Simon, 1990): "bounded rationality arises from the convergence of the first blade, that of the cognitive characteristics of the human mind in its activity of judgment and decision, with the second blade, that of the decision-making environment, with all its uncertainties and complexity" (Viale, 2022).

Simon's theory of the decision environment does not aim to make decisions more rational by correcting systematic errors concerning objectively good or just goals (as in Thaler and Sunstein's view). Rather, it seeks to provide order and regulate decisions and actions made by the subjects within the organization.

In *Administrative Behavior* and his numerous subsequent contributions over five decades, Simon never elaborates specific techniques or tools for directly intervening in the decision context. Instead, he attempts to understand how decision makers receive and process different modes of influence on decision premises. The modes of influence identified by Simon include authority (Simon, 1947/1997: 202), communication (Simon, 1947/1997: 208), training (Simon, 1947/1997: 222), efficiency (Simon, 1947/1997: 256), identification (Simon, 1947/1997: 279).

Simon never envisages the possibility of determining individual choices, since no decision maker, at any level, is ever in a state of perfect rationality. Integrating, coordinating, and adapting subjects' decision-making processes within the organization is thus an evolutionary process, shaped by rules, routines, power relations, and human docility. The organization operates by attempting to reduce the uncertainty and complexity in which decision makers act, filtering information and channeling attention.

James Thompson (1967), in a section of his theory that is unfortunately underexplored and under-cited in subsequent literature, captures the essence of Simon's interpretative framework. He specifies that the control of the organizational action is pursued through the manipulation, at every hierarchical level, of the decision premises used by lower levels. Thompson identifies two fundamental dimensions of such premises: (a) beliefs about cause-effect relationships, and (b) preferences regarding possible outcomes.

Perfect control - what Thompson calls a "computational strategy" - over both types of premises can occur only under conditions of perfect rationality (*i.e.*, perfect knowledge of cause-effect relationships and perfect definition of goals). In all other cases, the capacity for control is compromised and limited.

The dual-system theory

The recognition of the experimental evidence produced by Tversky and Kahneman requires further analysis. Simon (1997) refers to such evidence to state that subjects do not have consistent utility functions, do not reason correctly and coherently about probabilities and risks, rely on heuristics to simplify choices, and adopt the satisficing principle. For Simon, these findings are significant insofar as they contradict the axioms of perfect rationality (Simon, 1979). At no point does Simon refer to interpretations related to dual-system theory. Admittedly, Simon passed away before Kahneman formally articulated this part of his theory. However, from *Administrative Behavior* onward - and particularly in later works such as *Reason in Human Affairs* (1983) - Simon consistently and explicitly criticized theories that dichotomize decision making into (1) analytic/rational and (2) intuitive/emotional systems.

In *Administrative Behavior*, he provides an example: "a person learning to drive a car may notice a red light, be aware that a red light calls for a stop, and be aware that stopping requires applying the brakes. For an experienced driver, the sight of the red light simply evokes the application of brakes. How conscious the actor is of the process—or inversely, how automatic the response is—may differ, but the one response is not more "logical" than the other" (Simon,

1947/1997: 136). The previous example supports Simon's claim that "it is a fallacy to contrast "analytic" and "intuitive" styles of management. Intuition and judgment—at least good judgment—are simply analyses frozen into habit and into the capacity for rapid response through recognition of familiar kinds of situations" (Simon, 1947/1997: 139).

This leads to an interpretation of heuristics that diverges markedly from that of Kahneman. For Simon, heuristics represent (boundedly) rational tools for solving problems that are already familiar to the decision-maker and are the result of learning processes in continuous refinement and evolution (March, Simon, 1958/1993; Simon, 1962).

Finally, Simon shows little interest in systematic errors. For him, heuristics do not imply unconscious, arbitrary, or generally irrational decision-making processes (Gigerenzer, 2008; 2021). Similarly, analytical decision processes - those typically associated with Kahneman's System 2 - are by no means free from error or limitation (Bellini-Leite, Frankish, 2021). Simon's commitment to bounded rationality entails that errors, inaccuracies, and imprecisions are ineliminable features of decision processes. Such errors cannot be predicted: if they could, it would be theoretically possible to intervene and prevent them, thereby contradicting the very premises of bounded rationality.

Simon's theory is explanatory

A further point worth emphasizing is Simon's explicitly descriptive stance, as stated in *Administrative Behavior* and reiterated throughout his subsequent work: "In the present chapter, as in previous ones, no attempt will be made to offer advice as to how organizations should be constructed and operated. The reader has been warned before that this volume deals with the anatomy and physiology of organization and does not attempt to prescribe for the ills of organization. Its field is organizational biology, rather than medicine; and its only claim of contribution to the practical problems of administration is that sound medical practice can only be founded on thorough knowledge of the biology of the organism. Any prescriptions for administrative practice will be

only incidental to the main purpose of description and analysis” (Simon, 1947/1997: 305).

Nudge: the gentle push toward functionalist determinism

Thaler and Sunstein draw on insights and evidence emerging from descriptive theories (in particular, the contributions of Tversky and Kahneman) and develop the theory of nudges and choice architecture as a fundamentally prescriptive theory.

Their framework not only describes decision-making processes but also prescribes efficient methods and tools to intervene to reduce systematic errors and exploit them for good and just outcomes. Adhering to Thaler and Sunstein’s theory entails the possibility - and, hence, the imperative - of reducing the limitations of human rationality. If applied optimally, this theory could hypothetically lead to the attainment of instrumental optimality on average, *i.e.*, concerning the average of decision-making processes, since the theory concerns errors and corrective interventions that operate on a population of decision makers.

Specifically, the theory of nudge and the libertarian paternalism in general propose specific and efficient interventions in the choice architecture to steer decisions toward outcomes considered “better.” It assumes that systematic errors lead to suboptimal decisions, proposes methods and tools to design choice environments that benevolently exploit heuristics and biases (while preserving nominal freedom of choice), and justifies such interventions by invoking libertarian paternalism.

This framework raises two fundamental questions: (a) who determines, and on what basis, what is “better” for decision makers and society?, and (b) under conditions of bounded rationality, how can the choice architect be expected to design environments that minimize errors and are rational with respect to their stated goals?

Who defines the goals, and how?

The choice architect, as envisioned by Thaler and Sunstein, “tries to influence choices in a way that will make choosers better off, as judged by themselves. Drawing on some well-established findings in social science, we show that in many cases, individuals make pretty bad decisions – decisions they would not have made if they had paid full attention and possessed complete information, unlimited cognitive abilities, and complete self-control” (Thaler, Sunstein, 2008: 5).

While appealing, this assertion trivializes the complexity of value judgments and raises significant ethical and moral concerns (Bovens, 2009; Rebonato, 2012; White, 2013; Viale, 2022). The architect must be capable of discerning what decisions are better for the individual decision maker and, furthermore, must be able to align individual decisions with collective welfare. Thaler and Sunstein appear to minimize the difficulty of this issue by emphasizing the competence and experience of the architect: “But the potential for beneficial nudging also depends on the ability of the Nudgers to make good guesses about what is best for the Nudgees. In general, Nudgers will be able to make good guesses when they have much more expertise at their disposal, and when the differences in individuals’ tastes and preferences are either not very big (nearly everyone prefers chocolate ice cream to licorice) or when differences in tastes and needs can be easily detected (as when the government deduces that you are likely to prefer a drug plan that offers low prices on the drugs you take regularly)” (Thaler, Sunstein, 2008: 247).

Kniess (2021) identifies an additional domain in which Thaler and Sunstein’s architect must intervene: the architecture of preferences. Yet concerns persist regarding the transparency of the architect’s choices and their accountability. To whom is the architect accountable? In what settings are their goals disclosed and explained?

Actually, the idea of harmony and consistency among individual goals, group goals, and societal goals, which underpins the paternalism advocated by Thaler and Sunstein, implicitly but fundamentally recalls the tradition of classical

functionalist sociology, particularly Talcott Parsons (1951) and his *AGIL* schema (Adaptation, Goal attainment, Integration, Latency).

Only by adhering to classical functionalist assumptions can it be possible to envisage a choice architect capable of designing preferences unambiguously and harmoniously, thus enabling the integration of individual and public good.

How can the choice architect design a rational choice architecture?

The choice architect envisioned by Thaler and Sunstein is portrayed as capable of leveraging their knowledge of heuristics and the biases to which decision makers are prone, to gently steer them toward courses of action aligned with their long-term interests. While bounded rationality is the foundational premise of this entire theoretical framework, it is paradoxical that the architect appears immune or superior to the decision-making distortions afflicting all other subjects. The contradiction between foundational assumptions and prescriptive proposals becomes particularly evident (Hausman, Welch, 2010; Grüne-Yanoff, Hertwig, 2016; Viale, 2022).

Indeed, the choice architect is characterized as a perfectly rational (hyper-rational) agent, endowed with exceptional abilities in all key aspects of their role: (a) identifying the heuristics and systematic errors that affect the specific decision-makers under their jurisdiction; (b) designing a preference architecture that clarifies and harmonizes the utility function of the individual with that of the society; (c) engineering a choice architecture that minimizes the adverse effects of heuristics and biases, gently but unequivocally nudging the individual toward pre-defined goals.

These considerations highlight a potential internal incoherence in Thaler and Sunstein's theory, rooted in the paradoxical dichotomy between boundedly rational decision makers and expert, conscious, nearly infallible choice architects.

In this regard, a reflection by Thaler (2021) proves illuminating, particularly regarding the scope of intervention assigned to the choice architect: "Often, behavioral scientists are asked to help change a particular behavior but are severely limited in the ways they can alter the underlying environment.

Rarely, if ever, are researchers given the opportunity to design the entire choice architecture. We get to remodel the kitchen, but not design the entire home, let alone pick the lot on which it is built” (Thaler, 2021: 4).

Thaler appears deeply convinced of the soundness and efficiency of choice architecture interventions and even calls for broader and more extensive domains of intervention. In his view, problems would only arise if the architect lacks a clear understanding of available alternatives or shows uncertainty or inconsistency regarding objectives, in other words, if the architect is boundedly rational: “Of course, we need to be worried about incompetence and self-dealing on the part of Nudgers. If the Nudgers are incompetent, then they could easily do more harm than good by directing people’s choices. And if the risk of self-dealing is high, then it is right to be wary of attempts to nudge” (Thaler, Sunstein, 2008: 248).

Discussion

Our analysis has highlighted several critical issues in the theoretical framework of Thaler and Sunstein. Many of these issues, such as libertarian paternalism, the risk of manipulation, and the generalizability of experimental findings, have been widely debated in the literature since the publication of *Nudge* (2008).

Focusing on the central objective of this contribution - namely, to assess the theoretical coherence and potential integration of Thaler and Sunstein’s behavioral theory with Herbert Simon’s theory - we have shown that relevant epistemological and methodological differences mark the two points of view. These differences are profound enough to regard the two theories as autonomous and non-coherent.

Although a superficial alignment might be perceived, primarily due to shared terminology and non-conflicting assumptions, a more detailed analysis reveals deep divergences in conceptual stipulation, operationalization of key notions, research aims, and intervention strategies. What emerges is a fundamental divergence in their respective views of the world.

Simon adopts an interpretive and analytical method. His primary aim is to explain how and why actual decision outcomes deviate from the idealized model of Olympic rationality. His interest lies in understanding how decisions are made *in practice*, rather than how they *should* be made. His concept of rationality is descriptive and explanatory, not prescriptive. Simon does not suggest interventions to improve decision outcomes; instead, he explores methods for organizing the environment of decision to facilitate coordination and integration among organizational decision makers.

In contrast, Thaler and Sunstein adopt a prescriptive and instrumental posture. Their primary concern is identifying efficient and applicable tools to steer individuals toward better decisions. Their theory of nudging is built upon the fundamental assumption of the predictability of cognitive biases, which they treat as operational levers rather than cognitive phenomena requiring in-depth understanding. In this view, bounded rationality becomes a tool, a variable that can be manipulated deliberately.

This methodological divergence is also apparent in the conceptualization of the decision environment. For Simon, it is a complex, dynamic, and socially constructed setting, not designed or designable but continuously represented and amended by subjects. For Thaler and Sunstein, by contrast, the choice architecture is a deliberately designable context, shaped by a rational architect capable of steering decisions with almost surgical precision.

In summary, Simon's theory and that of Thaler and Sunstein presuppose views of the world that are different and incompatible. The latter adopt a functionalist-objectivist perspective, which conceives the organization as an open system that must adapt to its external environment to maintain functional equilibrium. Simon, by contrast, rejects functionalist simplifications and views the organization as an evolving process of action and decisions, unfolding under bounded and intentional rationality (Barbini *et al.*, 2023).

Simon proposes an explanatory theory that conceptualizes the organization as a process of solving problems under bounded rationality. He aims to understand how decision-making processes are integrated to achieve a

(limited) degree of coherence with organizational goals. Goals that are not given and are subject to value judgments. Thaler and Sunstein, by contrast, offer a prescriptive and genuinely functionalist theory, postulating the possibility of determining, through choice architecture, human behavior. They reduce value judgments on goals to a functional adaptation process.

The recognition of these differences does not entail a devaluation of either theory. It underscores the need for methodological analyses beyond formal and terminological similarities, probing each theoretical framework's underlying assumptions and orientations instead.

In the specific case of Thaler and Sunstein, however, it is necessary to make explicit a core internal inconsistency that is both critical and problematic. Their proposal is developed through the assemblage of theoretically incoherent constructs; a patchwork theory, built from oxymoronic foundations, that evades rigorous conceptual definitions in favor of didactic and simplified narratives. The very title of their book, *Nudge: Improving Decisions about Health, Wealth, and Happiness*, is emblematic of this methodological confusion: it combines freedom and manipulation, emergent decision-making with general techniques to influence it, bounded rationality with an omniscient architect, and a socially and psychologically defined decision environment with the idea of its rational design. Too many unresolved oxymorons remain. A formal commitment to freedom of choice alongside the insistence on the inevitability of choice-architecture intervention is insufficient to overcome the more profound contradictions embedded in the nudge theory.

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