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Nudging Towards Sustainability? A Critical Perspective on Behavioral Economics

Matthias Petel*

Modern environmental law has failed to curb the threat of ecological degradation. At present, environmental regulations are insufficient to significantly modify destructive daily behaviors. The concept of Homo oeconomicus, a cornerstone of mainstream economic analysis, portrays the human individual as obeying to perfect rationality. The failure of environmental law stems from a reliance on the premise of Homo oeconomicus, as environmental legal orders that regulate individuals as rational, utility-maximizing, and self-interested economic agents. The underlying assumption of rationality seeks to influence individual interests to their change decisions and behaviors. Environmental law, in particular, consists of regulations—obligations or prohibitions— and financial incentives such as taxation and subsidies to promote eco-friendly behavior. Behavioral economics challenges the assumption at the heart of neoclassical economics, by identifying a series of limits to human rationality. These limits pertain to human decisions, which behavioral economists show, are partly the result of automatisms, emotion, social norms, and psychological biases.

Environmental law should be revisited on premises closer to the behaviors and biases of Homo sapiens rather than a purely theoretical Homo oeconomicus. This paper explores a new generation of behaviorally informed legal instruments for environmental protection. The new legal instruments, rather than rely on the Interventionist State (e.g., to impose eco-friendly lifestyles), the Nudging State could facilitate it through “green nudges” can leverage cognitive biases to elicit sustainable behaviors more efficiently.

Additionally, this paper takes a critical perspective on behavioral economics and its potential for the ecological transition. By targeting individual behaviors, rather than systemic reform, the behavioral approach promises ecological redemption without threatening the commercial and political status quo. It is insufficient to address environmental issues that are deeply politically and structurally embedded. Nudging may be useful to draw forth a cognitive evolution

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in our legal instruments, however it cannot become the new legal paradigm of environmental law.

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INTRODUCTION

Climate scientists have urged drastic shifts towards sustainability as the health of the biosphere continues to decline.¹ Their position is that the required ecological transition, to prevent further damage, is occurring at an insufficient pace to prevent devastating threats emerging.² The need for a rapid and radical change is incontestable. Ecosystem degradation is more severe than ever, despite the efforts of a wide range of actors at the local or the international level.

Academic and professional disciplines are undergoing a massive transformation in light of ecological constraints.³ A fortunate characteristic of the legal system is constant evolution, which means that the law is well-suited to begin its own profound transition with ecological constraints in mind. Despite the 1972 Stockholm Declaration,⁴ constitutional provisions protecting the environment,⁵ progressive case law on environmental matters,⁶ and the 2015 Paris Agreement,⁷ no legal evolution has curbed the biosphere's degradation. That the environment is currently in a more degraded state than when the first environmental laws were adopted points to one conclusion: environmental law is failing and must start its own ecological transformation.⁸

This paper investigates whether advances in behavioral economics can inspire an ecological paradigm shift of the legal discipline. The influence and popularity of behavioral economics is soaring.⁹ The goal of behavioral economics is to integrate cognitive sciences into economic thinking, thereby improving

¹ See, e.g., SUMMARY FOR POLICYMAKERS OF IPCC SPECIAL REPORT ON GLOBAL WARMING OF 1.5°C APPROVED BY GOVERNMENTS (2018) https://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf; ANDREW GRIFFIN, *15,000 Scientists Give Catastrophic Warning About The Fate Of The World In New 'Letter To Humanity'*, THE INDEPENDENT (Nov. 2017), <https://www.independent.co.uk/environment/letter-to-humanity-warning-climate-change-global-warming-scientists-union-concerned-a8052481.html>; PAAVO JÄRVENSIVU ET. AL., GLOBAL SUSTAINABLE DEVELOPMENT REPORT 2019 DRAFTED BY THE GROUP OF INDEPENDENT SCIENTISTS, at 1-2 (2018), https://bios.fi/bios-governance_of_economic_transition.pdf.

² Anthony D. Barnosky, et al., *Approaching A State Shift In Earth's Biosphere*, 486 NATURE 52, 57 (2012).

³ See, e.g., Inge Ropke, *The Early History of Modern Ecological Economics*, 50 ECOLOGICAL ECON. 293, 293 (2004).

⁴ United Nations Conference on the Human Environment, *Declaration of the United Nations Conference on the Human Environment*, U.N. Doc. A/CONF.48/14 (June 16, 1972).

⁵ See DAVID BOYD, *THE ENVIRONMENTAL RIGHTS REVOLUTION: A GLOBAL STUDY OF CONSTITUTIONS, HUMAN RIGHTS, AND THE ENVIRONMENT* (2012).

⁶ See JOANA SETZER & REBECCA BYRNES, *GLOBAL TRENDS IN CLIMATE CHANGE LITIGATION: 2019 SNAPSHOT 1*, 3 (2019) (citing a recent study showing that more than 1300 climate cases have been introduced since 1990 in 28 countries).

⁷ Conference of the Parties, *Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015*, U.N. Doc. FCCC/CP/2015/10/Add.1.

⁸ See generally Ian Lowe, *Wild Law Embodies Values for a Sustainable Future*, WILD LAW – IN PRACTICE, 4 (2014).

⁹ FRANCESCA GINO, *The Rise of Behavioral Economics and Its Influence on Organizations*, HARVARD BUSINESS REVIEW (2017), <https://hbr.org/2017/10/the-rise-of-behavioral-economics-and-its-influence-on-organizations>.

predictions in the decision-making process of individuals.¹⁰ Behavioral economics rebuts the neoclassical postulate of economic agents' absolute rationality and instead describes individuals in light of all their complexities and irrationalities.¹¹ This stands in stark contrast with the assumptions of *Homo oeconomicus*, or the rational and utility-maximizing individual.

Behavioral economics helps explain, in part, why environmental law has failed. One reason for the inability of environmental regulations to foster the ecological transition may be due to the inaccurate understanding of the human decision-making process and its reliance on the rational choice theory. This article argues that environmental law is ineffective partly because it attempts to modify individuals' choices by manipulating their interests via the threat of sanctions or economic incentives. Instead, to influence behavior more effectively, environmental law should acknowledge irrationalities and biases of humans. Developing legal tools informed by cognitive sciences will help public authorities guide individuals towards more sustainable lifestyles and render environmental standards more effective.

Part I of this article explains the premises of mainstream economic theory based on *Homo oeconomicus*. It explores the findings of behavioral economics suggesting cognitive biases influence human decision-making. Part II explores how to integrate behavioral economics in the law and move away from the human rationality assumption. Part III proposes legal synergies between behavioral economics and the ecological transition. The primary question is whether behavioral legal instruments can provoke drastic changes in global behaviors and consumption choices. Finally, Part IV takes a critical perspective on the behavioral economics approach to the environmental crisis and suggests that such an individualistic perspective is inadequate – or at least insufficient – to address the collective issue at hand, which has deep structural political and economic roots.

I. THE BIRTH AND DEATH OF *HOMO OECONOMICUS*

A. *From The Complex Legacy of Adam Smith to the Perfect Rationality Assumption of the Neoclassical School*

The concept of *Homo oeconomicus*, a cornerstone of mainstream economic analysis, portrays the human individual as obeying to perfect rationality.¹² Humans are perceived as rational and self-interested individuals.¹³ Dominant

¹⁰ Daniel Kahneman, *A Psychological Perspective on Economics*, 93 AM. ECON. REV. 162, 162 (2003).

¹¹ See generally CASS R. SUNSTEIN, *BEHAVIORAL LAW & ECONOMICS* (2000).

¹² See Richard C. Wilson, *What Is The Homo Economicus?*, INVESTOPEDIA, (Aug. 25, 2018), <https://www.investopedia.com/ask/answers/08/homo-economicus.asp>.

¹³ JON ELSTER, *RATIONAL CHOICE* (1986).

economic theories explain that humans will always think through all possible outcomes and choose the best possible option.¹⁴ The economic approach is “comprehensive . . . [and] applicable to all human behavior . . . involving money prizes or imputed shadow prices, repeated or infrequent decisions, large or minor decisions, emotional or mechanical ends, rich or poor persons, men and women, adults or children, brilliant or stupid persons.”¹⁵

Adam Smith, along with John Stuart Mill¹⁶ and Jeremy Bentham,¹⁷ is regarded as leading proponent of *Homo oeconomicus*. Indeed, Smith argued “[i]t is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest,”¹⁸ and “[e]very man, therefore, is much more deeply interested in whatever immediately concerns himself, than in what concerns any other man.”¹⁹ In *The Wealth of Nations*, Smith explains that the pursuit of personal interests fostered a natural evolution from hunters and gatherers to commercial development and economic growth – the desirable end of any society.²⁰ Such evolution was inevitable because the pursuit of each individual’s self-interest leads to collective prosperity through the “invisible hand of the market.”²¹ The invisible hand of the market regulates competing human interests and leads to the realization of the general interest: “if individuals consider only their own well-being, the market will ensure that the welfare of all is maximized.”²²

Smithian anthropology, however, is more complex than this partial reading suggests. The Smithian individual is driven by self-interest but is also able to show compassion for others.²³ Humans are affected by dynamic and interactive social

¹⁴ DOMENEC MELE & CÉSAR GONZALEZ-CANTON, HUMAN FOUNDATIONS OF MANAGEMENT 9, 18 (2014).

¹⁵ GARY S. BECKER, THE ECONOMIC APPROACH TO HUMAN BEHAVIOR 8 (1976).

¹⁶ See John Stuart Mill, *On the Definition of Political Economy; and on the Method of Investigation Proper to It*, LONDON AND WESTMINSTER REV. (1836) (“[Political economy] does not treat of the whole conduct of man in society. It is concerned with him solely as a being who desires to possess wealth, and who is capable of judging the comparative efficacy of means for obtaining that end.”).

¹⁷ The founding father of the “utilitarianism” philosophy, Jeremy Bentham, argued that people are motivated solely by their self-interest as all their behaviors result from innate drive to seek pleasure and avoid pain. Bentham reduced society to a sum of individuals governed by the principle of utility. See JEREMY BENTHAM, AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION (Clarendon Press, 1996) (1789).

¹⁸ ADAM SMITH, THE WEALTH OF NATIONS 119 (1986).

¹⁹ ADAM SMITH, THE THEORY OF MORAL SENTIMENTS 82-3 (1979), originally published in 1759.

²⁰ Antoine Bailleux & François Ost, *Six hypothèses à l'épreuve du paradigme croissanciel*, 77 REV. INTERDISC. ETUD. JUR. 27 (2016).

²¹ CHRISTIAN MAROUBY, L'ÉCONOMIE DE LA NATURE. ESSAI SUR ADAM SMITH ET L'ANTHROPOLOGIE DE LA CROISSANCE, (2004).

²² STEVE KEEN, DEBUNKING ECONOMICS – REVISED AND EXPANDED EDITION: THE NAKED EMPEROR DETHRONED?, 38 (2011).

²³ FONNA FORMAN-BARZILAI, ADAM SMITH AND THE CIRCLES OF SYMPATHY: COSMOPOLITANISM AND MORAL THEORY (IDEAS IN CONTEXT) (2010), at 47.

relationships and seek “mutual sympathy.”²⁴ Even Adam Smith acknowledged other influential elements in the human decision-making process besides the maximization of personal interest.

Despite his contribution to the field of economics, Adam Smith is not the creator of modern *Homo oeconomicus*.²⁵ Members of the ‘neoclassical’ school – W. Stanley Jevons, Carl Menger, and Léon Walras – are the true fathers of this concept. The neoclassical economists share three central assumptions: (1) “[p]eople have rational preferences among outcomes;” (2) “[i]ndividuals maximize utility and firms maximize profits at all times;” and (3) “[p]eople act independently . . . bas[ed] . . . on the relevant information.”²⁶ These premises are the foundation of the rational choice theory, which claims that an individual will always make a rational choice among the possible alternatives by taking into account the available information, probabilities of events, and potential costs and benefits.²⁷ Mainstream economics analyzes social and economic behavior as choices made by a fictional “economic man” who at all times adopts a rational attitude and seeks to maximize his utility.²⁸ All the complexities of human nature are set aside. However, W. Stanley Jevons was aware that economics only adopts a truncated view of the individual: “econom[ics] does not treat of all human motives. There are motives nearly always present with us, arising from conscience, compassion, or from some moral or religious source, which economy cannot and does not pretend to treat.”²⁹

Despite its limits, the rational actor theory was adopted to transform economics into a mathematical and autonomous science providing clear and reliable predictions.³⁰ Viewing the scientific method of “hard sciences” as more credible, when compared to the speculative social sciences, neoclassical economists developed an economic methodology to create a universal vision of humans replicable in mathematical models, or *Homo oeconomicus*. The *Homo oeconomicus* is a rational being who makes decisions based on thoughtful calculations, in isolation from external elements (such as social norms and peer pressure), with utility maximization as the ultimate objective.³¹ Rationality enables individuals to choose what they perceive as the optimal decision based

²⁴ Mark K. Moller, *Sympathy, Community, and Promising: Adam Smith's Case for Reviving Moral Consideration*, 66 U. CHI. L. REV. 213, 219 (1999).

²⁵ Mele & Gonzalez-Canton, *supra* note 15, at 12.

²⁶ E. Roy Weintraub, *Neoclassical Economics*, THE CONCISE ENCYCLOPEDIA OF ECONOMICS, (2007), <http://www.econlib.org/library/Enc1/NeoclassicalEconomics.html> (Accessed 18 April 2019).

²⁷ MILTON FRIEDMAN, *ESSAYS IN POSITIVE ECONOMICS* 15, 22 (1953).

²⁸ Emmanuel Petit, *L'économie du comportement et la théorie du care. Les enjeux d'une filiation*, 1 REVUE DU MAUSS 347, 347 (2013).

²⁹ William Stanley Jevons, *Brief Account of a General Mathematical Theory of Political Economy*, J. ROYAL STAT. SOC. 282, (1866).

³⁰ Mary S. Morgan, *Economic Man as Model Man: Ideal Types, Idealisation and Caricatures*, 28 J. HIST. ECON. THOUGHT 1, 14 (2006).

³¹ Mele & Gonzalez-Canton, *supra* note 14, at 15.

solely on their own interest.³² This brand of economics suggests that society is not explained by social institutions, power relations, dominant ideologies, or the history of struggles between classes with diverging interests, and can instead completely be analyzed by mathematical models based on autonomous and rational individuals.³³ This reasoning was applied to explain all human behavior from the commercial to the familial sphere.³⁴

Yet, such models that aim to predict the decisions of economic agents are distanced from reality given their simplified version of the decision-making process. Proponents of the rational action theory acknowledge its shortcomings: “An economic model does not aim to depict reality precisely, but rather strives to explain and analyze reality by focusing on a small number of variables, and assuming away the complexity of the real world.”³⁵ *Homo oeconomicus* was thus created to develop economic models and was never intended to be a comprehensive view of mankind.³⁶

B. Behavioral Economics: The Integration of Humans’ Bounded Rationality

Behavioral economics combines cognitive sciences, psychology, and economics.³⁷ It is primarily concerned with “improving the predictions of economic models through the introduction of behavioral hypotheses based on psychological theories.”³⁸ Behavioral economics aims to depart from traditional notions of actor rationality by analyzing the decision-making process through clinical experiences.³⁹ Such analysis reveals the shortcomings of neoclassic economics models, particularly as agents often act irrationally.⁴⁰ Behavioral economics represents human actions as the result of “constant interferences between affectivity and cognition, deliberation and reflection or even judgment

³² Christian Schmidt, *Quelques points de rencontre entre économistes et psychologues*, 57 PRESSES DE SCIENCES PO, REV. ÉCON. 242, 245 (2006).

³³ Christian Amsperger, *Critique existentielle de la croissance économique. Eléments pour une « transition anthropologique*, 77 REV. INTERDISC. ETUD. JUR. 73, 76 (2016).

³⁴ Gary Becker has applied the economic reasoning of the *Homo oeconomicus* to analyze personal decisions such as getting married, having children, choosing to divorce. See Gary S. Becker, A TREATISE ON THE FAMILY (1981).

³⁵ EYAL ZAMIR & DORON TEICHMAN, BEHAVIORAL LAW AND ECONOMICS, 9 (2018).

³⁶ MILTON FRIEDMAN, THE METHODOLOGY OF POSITIVE ECONOMICS », ESSAYS IN POSITIVE ECONOMICS 14-15 (University of Chicago Press, 1966).

³⁷ RICHARD THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH AND HAPPINESS, 7 (2008).

³⁸ Laure Cabantous & Denis Hilton, *Économie et psychologie* (author’s translation), ECONOMIE ET COGNITION, B. Walliser (ed.) 93, 93 (2008).

³⁹ See for an introduction to the origins of behavioral economics: EDWARD CARTWRIGHT, BEHAVIORAL ECONOMICS, 7-10 (2018).

⁴⁰ HERBERT A. SIMON, *Models of Bounded Rationality*, ECONOMIC ANALYSIS AND PUBLIC POLICY 478, (1982).

and calculation.”⁴¹ In this sense, *Homo oeconomicus* is supplanted by a more realistic description of *Homo sapiens*: “his egoism is less radical, his preferences less intangible, his logic less implacable, more uncertain and sensitive.”⁴²

Kahneman and Tversky were among the firsts to propose an alternative theoretical approach to economics. By analyzing the decision-making and cognitive processes that underpin human economic decision-making, Kahneman and Tversky demonstrated that human choices are complex and affected by factors such as routine, emotions, moral judgements, and the surrounding environment.⁴³ More precisely, Kahneman divides human cognitive systems into two radically opposed modes of operation.⁴⁴ The first system processes information automatically based on conscious or unconscious intuitions, automatism, stereotypes, and idea association.⁴⁵ This cognitive process relies on heuristics or “a rule of behavior or of evaluation used by the actors to simplify their tasks of information processing and therefore their decision,”⁴⁶ minimizing efforts in the decision-making process.⁴⁷ In contrast, the second system uses reason, reflection, calculation, and logic.⁴⁸ It is slower and allows humans to move beyond the well-established reflexes to methodically evaluate the options available. However, given the high “cognitive cost” of time and energy required for this type of reasoning, it is of little use in our daily lives.⁴⁹ Most human decisions are not the result of deep reflection or calculation, but the fruit of automatism, reflexes, subconscious, or even genetic inheritance. High cognitive cost explains why individuals often do not examine each option methodically and deviate significantly from rationality.⁵⁰

According to Kahneman, rationality is not absent from all decisions but is instead supplemented by moral judgments, emotions, instinctive reactions, habits, and social pressure.⁵¹ Such understanding of the human decision-making process should apply to revamp older, simplistic economic models. Indeed, human psychology is “too complex to be captured by a simple theory.”⁵² Behavioral

⁴¹ Bruno Deffains & Samuel Ferey, *Economie comportementale du droit : quelle place pour la neuroéconomie ?* (author’s translation), 16 ECON. ET INST. 141, 145 (2011).

⁴² Petit, *supra* note 28, at 348.

⁴³ Amos Tversky & Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, SCIENCE 1124-1131 (1974).

⁴⁴ DANIEL KAHNEMAN, THINKING, FAST AND SLOW (2011).

⁴⁵ *Id.* at 109-85.

⁴⁶ Deffains & Ferey, *supra* note 41, at 150.

⁴⁷ Kahneman, *supra* 44, at 31-39. Full citation needed.

⁴⁸ *Id.* at 3-18.

⁴⁹ Christian Gollier, Denis Hilton & Eric Raufaste, *Daniel Kahneman et l’analyse de la décision face au risque*, 113 REV. ÉCON. POL. 295, 297 (2003).

⁵⁰ KAREN AKERLOF & CHRIS KENNEDY, NUDGING TOWARD A HEALTHY NATURAL ENVIRONMENTAL. HOW BEHAVIORAL CHANGE RESEARCH CAN INFORM CONSERVATION, Gordon and Betty Moore Foundation 6 (2013).

⁵¹ Kahneman, *supra* note 44, at 408-18.

⁵² ZAMIR & TEICHMAN, *supra* note 35, at 27.

economics values psychological realism over the neoclassical simplification: “life is more complex for behavioral economics than for true believers in human rationality.”⁵³

Furthermore, three elements help to explain the reason most decisions do not align with theoretical *Homo oeconomicus*’ choices: (1) limited rationality, (2) limited self-power, and (3) limited self-interest.⁵⁴ First, rationality is limited because human cognitive abilities cannot systematically analyze all the information available.⁵⁵ This is because humans often underestimate the likelihood of high-probability risks associated with each decision.⁵⁶ Secondly, human willpower is also limited as inconsistencies in human rationality creates a gap between intentions (or preferences) and actions. Concretely, this means that individuals “often take actions that they know to be in conflict with their own long-term interests.”⁵⁷ Finally, personal interest is not absolute since humans may act altruistically and in contradiction with utility maximization.⁵⁸ Humans may be driven by principles of fairness, justice, respect for nature, and moral norms.

II. INTEGRATION OF BEHAVIORAL ECONOMICS INTO THE LAW

A. *Homo Oeconomicus in Legal Orders: A Primacy to Reconsider*

Law regulates humans as beings reacting with absolute rationality. Law also attempts to shape behavior through regulations (imposing obligations or prohibitions) or financial incentives (taxation and subsidies).⁵⁹ Contemporary regulations, such as environmental regulation, seek to modify the interests of individuals either by influencing costs and benefits, or simply prohibiting certain behaviors with the risk of sanction (i.e. also raising the cost of a certain behavior) in order to change their decisions and behaviors.⁶⁰ Such an approach is based on the premise that individuals are motivated by their own interests and seek financial rewards while avoiding costs/sanctions.⁶¹ *Homo oeconomicus* thus remains a central feature of modern law by assuming that rational actors will adapt

⁵³ Kahneman, *supra* 44, at 412.

⁵⁴ See generally Christine Jolls, Cass R. Sunstein & Richard H. Thaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1476, 1476-80 (1998).

⁵⁵ See generally BOUNDED RATIONALITY: THE ADAPTIVE TOOLBOX PAPERBACK (Gerd Gigerenzer & Reinhard Selten eds., 2002).

⁵⁶ AKERLOF & KENNEDY, *supra* note 50, at 8.

⁵⁷ Jolls, Sunstein & Thaler, *supra* 54, at 1479.

⁵⁸ Daniel J. Rankin, *The social side of Homo economicus* 26 TRENDS IN ECOLOGY & EVOLUTION 1, 1-3 (2011).

⁵⁹ See generally Jolls, Sunstein & Thaler, *supra* 54, at 1471.

⁶⁰ AKERLOF & KENNEDY, *supra* note 50, at 3.

⁶¹ See generally Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q. J. ECON. 99, 99-118 (1955); Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. ORG. 39, 39-60 (1980).

their behavior according to perceived risks and the severity of potential sanctions.⁶²

While mainstream economics once rejected behavioral economics, the latter has been increasingly integrated into dominant economic theory.⁶³ Similarly, legal theory has made attempts to integrate insights from behavioral sciences.⁶⁴ Based on research in psychology, neuroscience, and behavioral economics, governmental entities are rethinking their regulatory approaches to take into account these advances in our understanding of human rationality.⁶⁵ The incorporation of behavioral economics into modern law is critical to its effectiveness: the law will be ineffective if it is based on a distorted vision of the individuals it seeks to regulate. Given the strong tie between the human decision-making process and underlying motivations and interests, human psychology can play a critical role in constructing the law.⁶⁶ A behavioral approach can provide new explanations for the failures and limitations of conventional regulations.

B. Behavioral Economics in our Legal Order: The Rise of Legal Paternalism

Even though humans are not as rational as conventional economics suggests, they are still predictable.⁶⁷ Behavioral sciences reveal the cognitive biases and systematic blind spots of humans, allowing scientists and economists to predict behaviors despite a lack of rationality. In other words, humans are predictably irrational as they all make the same mistakes.⁶⁸

Behavioral economics has given way to proposals that advise authorities in formation and implementation of laws.⁶⁹ The *Behavioral Law and Economics* school postulates that the inputs of cognitive sciences should be taken into consideration in the formation of legal rules.⁷⁰ In other terms, “it seeks to modify

⁶² Deffains & Ferey, *supra* note 41, at 149.

⁶³ As demonstrated by the strong reception of Richard Thaler’s work and the fact the he was awarded the Nobel Memorial Prize in Economic Sciences for his contributions to behavioral economics in 2017.

⁶⁴ See Harvard Law School, Program on Behavioral Economics and Public Policy, <https://hls.harvard.edu/faculty-research/research-programs-and-centers/program-on-behavioral-economics-and-public-policy/>.

⁶⁵ Binyamin Appelbaum, *Behaviorists Show the U.S. How to Improve Government Operations*, NEW YORK TIMES (Sept. 29, 2015), <https://www.nytimes.com/2015/09/30/business/behaviorists-show-the-us-how-to-improve-government-operations.html>.

⁶⁶ ANNE-LISE SIBONY & ALBERTO ALEMANNO, *The Emergence of Behavioural Policy-Making: A European Perspective*, NUDGE AND THE LAW 5 (2015).

⁶⁷ Alberto Alemanno, Geneviève Helleringer & Anne-Lise Sibony, *Brève introduction à l’analyse comportementale du droit*, 16 RECUEIL DALLOZ 911, 913 (2016).

⁶⁸ DAN ARIELY, *PREDICTABLY IRRATIONAL: THE HIDDEN FORCES THAT SHAPE OUR DECISIONS* (2008).

⁶⁹ Cass R. Sunstein, *Empirically Informed Regulation*, 78 U. CHI. L. REV. 1349, 1349-1412 (2011).

⁷⁰ See the comprehensive presentation of this approach in the book: ZAMIR & TEICHMAN, *supra* note 35.

traditional law and economics by incorporating the growing body of empirical evidence on the biases and confusions that often afflict human behavior.”⁷¹ More concretely, this approach rests on the use of “nudges” or subtle alterations of the environment so that automatic cognitive processes are triggered to favor the desired outcome.⁷² Nudging is “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.”⁷³ “Choice architecture” occurs whenever policymakers – or “choice architects” – purposefully modify the features of the environment in which individuals make their choices in order to promote personally and socially desirable behaviors.⁷⁴ Such an approach is not coercive, but instead sets a framework to partially determine the behavior adopted.⁷⁵

The concept of nudging is clearly illustrated in the following examples. The Amsterdam airport used nudging to drastically reduce the costs incurred for cleaning men’s toilets. The toilets were consistently stained by splashing until airport authorities placed false flies at the bottom of urinals to focus users’ attention, minimize distraction, and thereby reduce cleaning needs.⁷⁶ In another example, inserting a red chip between regular chips in boxes of Pringles and Lay’s reduces the consumption by 50% compared to a regular tube.⁷⁷ In fact, the colored segmentation was enough to drastically decrease the consumption due to three psychological mechanisms: “(a) they call attention to and encourage better monitoring of eating, (b) they suggest smaller consumption (portion size) norms, or (c) they break automated eating sequences by introducing a pause.”⁷⁸

Utilizing nudging as a policy tool can lead to two main approaches. First, the law can minimize individuals’ biases to help them achieve rationality. In this sense, “the mission . . . [is] to transform their behavior into that of *Homo oeconomicus* reviewed and corrected by the knowledge of the biases that govern their behavior.”⁷⁹ Legal norms are “debiassing through law” and attempting to reduce individuals’ departure from the perfect rationality assumption of the

⁷¹ Christine Jolls, *Can behavioral economics improve law?*, YALE INSIGHTS (Nov. 4, 2009), <https://insights.som.yale.edu/insights/can-behavioral-economics-improve-law>.

⁷² See generally Yashar Saghai, *Salvaging the Concept of Nudge*, 39 J. OF MED. ETHICS 487, 487 (2013).

⁷³ Thaler & Sunstein, *supra* 37, at 6.

⁷⁴ See generally Thaler & Sunstein, *supra* 37.

⁷⁵ See generally RICHARD H. THALER, CASS R. SUNSTEIN, JOHN P. BALZ, *Choice Architecture*, THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY, 428-39 (Eldar Shafir ed., 2012).

⁷⁶ Blake Evans-Pritchard, *Aiming To Reduce Cleaning Costs*, WORKS THAT WORK (2013), <https://worksthatwork.com/1/urinal-fly>.

⁷⁷ Andrew Geier, Brian Wansink & Paul Rozin, *Red Potato Chips: Segmentation Cues Can Substantially Decrease Food Intake*, 31 HEALTH PSYCHOL. 398, 398-401 (2012).

⁷⁸ *Id.*

⁷⁹ JEAN-MICHEL SERVET, *L’ECONOMIE COMPORTEMENTALE EN QUESTION* (2018), at 21-22 (author’s translation)

traditional economic analysis.⁸⁰ Following Adam's Smith's reasoning, legal orders should shape behavior to ensure that agents maximize their utility since the pursuit of each person's self-interest leads to collective prosperity. For example, nudging has been used to help people save enough money for their retirement,⁸¹ or to favor healthy food.⁸² Second, the State could influence individuals to act in an altruistic manner, favoring the interests of others or adoption of pro-environmental behavior, rather than seeking their self-interest.⁸³ While conventional nudging was first implemented in areas where individuals make poor decisions *for themselves*, there exists a growing interest concerning nudging in favor of decisions that are beneficial *for society* more broadly.⁸⁴ Therefore, cognitive biases can be used to guide individuals' behavior without seeking to encourage a utility-maximizing form of rationality and promoting instead socially or environmentally beneficial objectives. In this perspective, nudging can be designed to encourage people to donate their organs⁸⁵ or to ensure tax compliance.⁸⁶

The common denominator of those perspectives is that public authorities build on the kind of human psychological biases identified by the behavioral sciences to promote certain ways of acting. The approach is known as legal paternalism (or libertarian paternalism), as the authorities choose preferred outcomes following the idea that individuals are not able to act by themselves in their own nor society's interests.⁸⁷ The objective is to ensure that individuals act in a way that allows the pursuit of the general interest (defined as resulting from perfect rationality or not). In any case, irrationality is manipulated to influence choices towards a certain behavior without forcing the individual to do so. Individuals

⁸⁰ See the comprehensive analysis of this approach: Christine Jolls & Cass R. Sunstein, *Debiasing through law*, 35 J. OF L. STUD. 199, (2006).

⁸¹ See "Save More Tomorrow", the pension program created by Thaler and Benartzi, designed to help people saving more using behavioral techniques; Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving*, 112 J. OF POLITICAL ECON. 164, (2004).

⁸² See, e.g., Julie Downs, George Loewenstein & Jessica Wisdom, *Strategies for Promoting Healthier Food Choices*, 99 AM. ECON. REV. 154, 159-64, (2009); Tamara Bucher et al., *Nudging consumers towards healthier choices: a systematic review of positional influences on food choice*, 115 BRITISH J. OF NUTRITION 2252, 2252-63, (2016).

⁸³ Hilary Byerly et. al, *Nudging pro-environmental behavior: evidence and opportunities*, 16 FRONT. ECOL. ENVIRON. 159, 159-168 (2018).

⁸⁴ Fredrik Carlsson & Olof Johansson-Stenman, *Optimal Prosocial Nudging*, WORKING PAPER IN ECONOMICS No. 757, https://gupea.ub.gu.se/bitstream/2077/59897/1/gupea_2077_59897_1.pdf.

⁸⁵ Eric J. Johnson & Daniel G. Goldstein, *Do Defaults Save Lives?*, 302 SCIENCE 1138, 1338-1339, (2003).

⁸⁶ Michael Hallsworth, John List, Robert Metcalfe, & Ivo Vlaev, *The behavioralist as tax collector: Using natural field experiments to enhance tax compliance*, 148 J. OF PUBLIC ECON. 14, 14-31, (2017).

⁸⁷ Richard Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175, 175-179 (2003).

remain free, whilst being guided towards purposes considered beneficial for themselves or the common good.⁸⁸

Nudging may prove advantageous for policymakers. First, it is a cheap alternative to the heavy-handed regulatory approaches or to the expensive use of financial incentives.⁸⁹ Instead of forcing an individual to adopt a certain behavior through ‘command and control’, the nudge is designed to invoke voluntary (or, if not voluntary, unconscious and painless) compliance with the expected behavior.⁹⁰ Second, nudging does not force, but rather guides without imposing: the individual is free to deviate from the preferred choice.⁹¹ There is a greater respect of agent’s freedom through nudging than through coercive regulation. While the agent is not truly free in his/her decision (because the choice was pre-determined by modification of the environment), the individual is nonetheless given agency and discretion in decision-making.⁹² Third, nudging is more likely to be accepted (or at least less likely to raise opposition) by the public than coercive measures given that the intervention is invisible. Nudging thus responds “to the need to modify individual behavior in a context of limited budgetary means of the public power and of reduced acceptability of the public towards taxes and additional regulatory constraints.”⁹³

III. BEHAVIORAL ECONOMICS AND ENVIRONMENTAL LAW: A PROMISING ALLIANCE

A. *From Information to Action: Psychological Barriers to Eco-Friendly Behavior*

Despite a growing number of norms protecting the environment, the ecological crisis remains unresolved. As environmental degradation is closely linked to the polluting daily habits of individuals, it is imperative to change behaviors in favor of greater environmental responsibility.⁹⁴ Even though evidence suggests environmental consciousness is rising,⁹⁵ destructive lifestyles have not radically

⁸⁸ Sunstein, *supra* note 11.

⁸⁹ Sunstein, *supra* note 69, at 1350.

⁹⁰ Sibony & Alemanno, *supra* note 67, at 2-3.

⁹¹ Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 J. LEGAL STUD. 199, 202 (2006).

⁹² Alexandre Flückiger, *Gouverner par des « coups de pouce » (nudges) : instrumentaliser nos biais cognitifs au lieu de légiférer?* (author’s translation), 59 LES CAHIERS DE DROIT 199, 200-201 (2018).

⁹³ La Fabrique Ecologique & Futuribles International, *L’incitation aux comportements écologiques. Les nudges, un nouvel outil des politiques publiques* (2016), 30, <http://temis.documentation.developpement-durable.gouv.fr/docs/Temis/0084/Temis-0084218/22454.pdf>.

⁹⁴ Joern Fischer, Robert Dyball, Ioan Fazey, et al., *Human behavior and sustainability*, 10 FRONT. ECOL. ENVIRON. 153, 153–60, (2012).

⁹⁵ See, e.g., on the rising awareness on climate change in the US: Anthony Leiserowitz, et. al, *Climate Change in the American Mind: December 2018*, YALE PROGRAM ON CLIMATE CHANGE

changed in the Global North. Indeed, the ecological footprint of the average American citizen still is 7.0 gha (global hectares) while 1.7 gha are available per person worldwide to respect the biocapacity of the Earth.⁹⁶ A certain paradox appears: whilst environmental protection is increasingly important for Western citizens, the impact of their behavior remains dangerously high.

The lack of change in lifestyles can be explained at least in part by human “cognitive dissonances,” or the gap between beliefs and behaviors.⁹⁷ Information and knowledge are insufficient to turn intention into action. These inconsistencies prevent a large-scale change of daily polluting behaviors. From this perspective, the main obstacles for solving ecological issues are psychological, including laziness, bad habits, addictions, risk aversion, procrastination, and comfort. Nudging could be utilized to overcome the many psychological barriers hindering change and to channel human biases, desires, and emotions to foster sustainable lifestyles. The State could help individuals overcome their cognitive dissonances by manipulating their biases towards greater environmental protection. Instead of considering humans’ biases as obstacles towards the ecological transition, they could become tools for authorities to promote green behaviors. As behavioral economics demonstrates that a large number of non-utilitarian elements and irrationalities are involved in the decision-making process, environmental policy, only based on command-and-control or price incentive schemes, is judged to be insufficient to influence behavior.⁹⁸

More concretely, two powerful cognitive biases could be easily instrumentalized for the purpose of environmental protection: the preference for the status quo and the power of social comparison.

- i. Humans have a strong tendency to favor the status quo rather than risking worthwhile change.⁹⁹

Most people do not take concrete action to counteract a decision that was made “upstream” by an external actor – e.g. political authorities.¹⁰⁰ Cass Sunstein and Lucia Reisch, leading thinkers of the behavioral approach from a legal and economic perspective respectively, demonstrate how this understanding of human

COMMUNICATION, <https://climatecommunication.yale.edu/wp-content/uploads/2019/01/Climate-Change-American-Mind-December-2018.pdf>.

⁹⁶ WBCSD’s Sustainable Lifestyles and Global Footprint Network, *Sustainable Lifestyles - A brief look at lifestyle impacts in the USA* (2015), https://www.footprintnetwork.org/content/documents/WBCSD_SLWGUS15.pdf.

⁹⁷ See generally LEON FESTINGER, *A THEORY OF COGNITIVE DISSONANCE*, (1962).

⁹⁸ Markus Pasche, *What Can be Learned from Behavioural Economics for Environmental Policy?*, No. 2013-020 Jena Economic Research Papers, Max Planck Institute of Economics (2013), 3 <https://www.econstor.eu/bitstream/10419/85031/1/746328281.pdf>.

⁹⁹ SIBONY & ALEMANN, *supra* note 67, at 3.

¹⁰⁰ Cass R. Sunstein & Lucia A. Reisch, *Automatically Green: Behavioral Economics and Environmental Protection*, 38 HARV. ENVTL. L. REV. 127, 131 (2014).

behavior can be used to promote green behaviors.¹⁰¹ For example, authorities in one German municipality chose a renewable energy source as the default option on the energy grid. As a result of this political decision, 90% of the households run on a renewable energy source.¹⁰²

Several psychological elements explain how this particular nudge operates. First, the *default* choice acts as a suggestion or “soft” recommendation, such that the individual assumes s/he should only reject the default decision if there is reliable external information to justify an alternative choice.¹⁰³ Second, humans automatically favor the status quo because of the time and energy costs that exploring alternatives demands. Considering the power of inertia and the tendency to procrastinate, people usually do not change the default rule as it would require an active choice to reject that rule.¹⁰⁴ Third, the “loss aversion” phenomenon implies that people dislike losses far more than they enjoy corresponding gains of the same amount.¹⁰⁵ In that case, “what counts as a loss depends on the reference point, which is established by the default rule”,¹⁰⁶ and therefore deciding to make a different choice than the one that will result from inaction implies that the individual accepts a possible loss if their choice turns out to be poor.¹⁰⁷

Carefully selected default rules have the potential to be more effective than information, education, or substantial economic incentives: “[a] well-chosen default rule . . . [is] a significant contributor to efforts to protect human health and the environment.”¹⁰⁸ Individuals will usually opt for the status quo, or the default selected by public authorities, without feeling as though they lacked the freedom of choice.¹⁰⁹

Green default rules could become a helpful tool that should be used to reduce polluting behavior and shift society towards more environmentally sustainable practices. A few examples of pro-environmental default rules have shown the potential of this approach: making the default plate size of hotels and restaurants smaller can reduce food waste by 20% ,¹¹⁰ switching default printer settings to double-sided printing has decreased paper consumption at a university by 15%

¹⁰¹ *Id.* at 127-58.

¹⁰² *Id.* at 135.

¹⁰³ Cass R. Sunstein, *Deciding By Default*, 162 U. PA. L. REV. 1, 20 (2013).

¹⁰⁴ *Id.* at 17.

¹⁰⁵ Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference Dependent Model*, 106 Q. J. ECON. 1039, 1047 (1991).

¹⁰⁶ Sunstein & Reisch, *supra* note 100, at 143

¹⁰⁷ Christopher J. Anderson, *The Psychology of Doing Nothing: Forms of Decision Avoidance Result From Reason and Emotion*, 129 PSYCHOL. BULL. 139, 139 (2003).

¹⁰⁸ Sunstein & Reisch, *supra* note 100, at 158.

¹⁰⁹ See Sunstein, *supra* 103, at 17-24.

¹¹⁰ Steffen Kallbekken & Hakon Sælen, “Nudging” hotel guests to reduce food waste as a win-win environmental measure, 119 ECON. LETT. 325, 325–27, (2013).

per day,¹¹¹ favoring “green” energy contract by default had a strong impact on consumers’ final choices.¹¹²

- ii. Humans are influenced by the behaviors of others, and partly determine their own behavior based on how others act.¹¹³

Aside from inertia bias, socially accepted norms can be an extremely powerful factor to motivate preferable decision-making. By harnessing this bias, the State can stimulate an “ecological emulation,” or a kind of “contagious effect” within a group, encouraging agents to adopt more eco-friendly lifestyles.¹¹⁴ Psychology has long demonstrated the human tendency to conform to societal trends and behavior to feel valued by others.¹¹⁵ Even an active minority has the power to change the accepted norm through influential behavior. New social conventions emerge when the minority reaches a critical mass, or the portion of the population necessary to initiate social change.¹¹⁶ While the critical mass varies between populations, it is never necessary to change the behavior of 51% of the population to redefine social norms in a community.¹¹⁷ The dominant social norm is often underpinned by a moral norm such that it has a contagious effect on the rest of the population.

Authorities should praise the eco-friendly decisions of community members and withhold praise from non-eco-friendly choices in order to influence behavior. For example, authorities in LaVerne, California posted a note on 120 houses every day for four weeks to inform individuals of the number of neighbors involved in a recycling waste program, and the amount of recycled material which resulted.¹¹⁸ In response, recycling volume increased by 19%. This example highlights the neighborhood trend towards recycling enabled authorities to influence behaviors without major additional costs for the municipality.¹¹⁹ The same mechanism is

¹¹¹ Johan Egebark & Mathias Ekström, *Can indifference make the world Greener?*, 76 J. ENVIRON. ECON. MANAG. 1, 1–13, (2016).

¹¹² Daniel Pichert & Konstantinos Katsikopoulos, *Green defaults: Information presentation and pro-environmental behaviour*, 28 J. OF ENVIRON. PSYCH. 63, 70–71, (2008).

¹¹³ See, e.g., Leonard Berkowitz, *Social norms, feelings, and other factors affecting helping and Altruism*, 6 ADVANCES IN EXPERIMENTAL SOC. PSYCHOL. 63, (1972).

¹¹⁴ See *Les nudges verts*, MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE (Mar. 7, 2019), <https://www.ecologique-solidaire.gouv.fr/nudges-verts>.

¹¹⁵ Solomon E. Asch, *Opinions and Social Pressure*, 193 SCIENTIFIC AMERICAN, 31, 31–35 (1955).

¹¹⁶ Damon Centola, Joshua Becker, Devon Brackbill, Andrea Baronchelli, *Experimental evidence for tipping points in social convention*, 360 SCIENCE 1116, 1116–1119 (2018).

¹¹⁷ *Id.* at 117–18.

¹¹⁸ P. Wesley Schultz, *Changing behavior with normative feedback interventions: A field experiment on curbside recycling*, 21 BAS. APPL. SOC. PSYCHOL. 25, 26–28 (1998).

¹¹⁹ *Id.* at 34.

regularly used by many hotels to reduce the cost of washing towels.¹²⁰ Resorting to the power of social pressure, hotel management selected a statistic about other hotel guests to encourage towel re-use with sentences such as: “75% of people who occupied this room before you have used their towels several times.”¹²¹ Another example from California demonstrates how social comparison can be a powerful tool for sustainable behavior.¹²² Four types of messages were placed on residents’ doors to advertise the use of fans over air conditioning. The first message highlighted the significant savings on monthly electricity bills. The second note pointed to the beneficial impact on the environment from decreased greenhouse gas emissions. The third message announced that fan use was the most responsible practice because it was more energy efficient. Finally, the fourth note emphasized that fan use was the neighborhood trend and the “most popular choice in your community.” The final message had the most significant impact in inspiring neighbors to stop using air conditioning.¹²³

In general, studies show the strong impact of social comparisons on reducing the use of energy¹²⁴ and water¹²⁵ by households, stressing the importance for public authorities to make public the pro-environmental behavior of some to encourage others to follow. However, such nudges are difficult to implement on a widespread scale.¹²⁶ In the example above, the messages were all handwritten to emphasize the level of human effort involved in the campaign. On the contrary, scaling up this method to the whole city had more ambiguous results. This is in line with findings in social psychology which demonstrate that social norms are more powerful (and effective) when they concern people that one can relate to.¹²⁷ Further, the best results are observed when the “social distance” is low. Conversely, anonymity will trigger more selfish behaviors.¹²⁸

¹²⁰ Noah Goldstein, Robert B. Cialdini & Vidas Griskevicius, *A Room with a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels*, 35 J. CONSUMER RES. 472, 472 (2008).

¹²¹ Julia E. Blose, Rhonda W. Mack, Robert E. Pitts, *The Influence of Message Framing on Hotel Guests’ Linen-Reuse Intentions*, 56 CORNELL HOSPITALITY QUARTERLY 145, (2015).

¹²² Jessica M. Nolan et al., *Normative Social Influence is Underdetected*, 34 PERSON. SOC. PSYCHOL. BULL. 913, 913-23 (2008).

¹²³ *Id.* at 915-21

¹²⁴ Hunt Allcott, *Social norms and energy conservation*, 95 J. OF PUBLIC ECON. 1082, 1082-95, (2011).

¹²⁵ Daniel A. Brent, Joseph H. Cook & Skylar Olsen, *Social comparisons, household water use, and participation in utility conservation programs: evidence from three randomized trials*, 2 J. ASSOC. ENVIRON. RESOURCE ECON. 597, 597-627, (2015).

¹²⁶ Kelli A. Bird, Benjamin L. Castleman, Jeffrey T. Denning, Joshua Goodman, Cait Lamberton, Kelly Ochs Rosinger, *Nudging at Scale: Experimental Evidence from FAFSA Completion Campaigns* (NBER Working Paper No. 26158 August 2019).

¹²⁷ Centre d’analyse stratégique, *Nudges verts : de nouvelles incitations pour des comportements écologiques*, NOTE D’ANALYSE n° 216 - mars 2011, http://archives.strategie.gouv.fr/cas/system/files/2011-03-09-na-216-nudgesverts_0.pdf.

¹²⁸ Petit, *supra* note 28, at 353.

B. Promoting the Ecological Transition: From an Interventionist State to a Nudging State?

This section discusses the potential role of public authorities in promoting the ecological transition through behavioral instruments. From that perspective, policymakers will move away from “interventionist” approaches which rely on prohibitions, binding limits, taxes, and subsidies. Instead, the State should aim to support lifestyles changes and new consumption patterns by “soft” approaches that ensure the sustainable choice is the easiest one to make.

Concerning sustainability, policymakers should identify the numerous psychological obstacles that prevent citizens from transforming their habits and seek to achieve consistency by reducing the gap observed between desire and action. Public action should try to drive emotions, values, or social norms towards eco-friendly behavior. In this sense, public authorities become the architects of our choices, by shaping an environment conducive to the adoption of certain predetermined practices without any visible constraints.¹²⁹ Authorities should set public interest nudges, addressing predefined collective objectives – energy efficiency, sustainable food choices, eco-friendly means of transport – in complement to other tools of public policies.¹³⁰ Nudging could be employed to yield significant results without requiring large-scale infrastructure change and financial investment.¹³¹

A revision of the State’s role is already underway. For example, the United Kingdom introduced the Behavioral Insights Team (BIT) known as the “Nudge Unit.”¹³² BIT’s aim was to apply nudges to improve the policies and instruments of the British government.¹³³ Britain’s BIT echoes the use of cognitive sciences by certain large industrial groups to understand how consumers make choices and eventually shape the consumer behaviors of their clients.¹³⁴ Known as neuromarketing, this approach is gaining momentum in businesses to trigger certain purchase decisions by identifying the neurological mechanisms involved in the shopping process.¹³⁵ Unilever, the British-Dutch transnational consumer

¹²⁹ Flückiger, *supra* note 92, at 214.

¹³⁰ La Fabrique Ecologique & Futuribes International, *supra* note 89, at 1.

¹³¹ AKERLOF & KENNEDY, *supra* note 50, at 5.

¹³² Chris Bell, *Inside the Coalition’s Controversial ‘Nudge Unit’*, TELEGRAPH, (Feb. 11, 2013, 6:50 AM), <https://www.telegraph.co.uk/news/politics/9853384/Inside-the-Coalitions-controversial-Nudge-Unit.html>.

¹³³ See on the use of nudging to influence the behavior of the British population: DAVID HALPERN, *INSIDE THE NUDGE UNIT: HOW SMALL CHANGES CAN MAKE A BIG DIFFERENCE* (2015).

¹³⁴ See generally LEON ZURAWICKI, *NEUROMARKETING : EXPLORING THE BRAIN OF THE CONSUMER* (2010).

¹³⁵ See PATRICK RENVOISE & CHRISTOPHE MORIN, *NEUROMARKETING: UNDERSTANDING THE BUY BUTTONS IN YOUR CUSTOMER’S BRAIN* (2007) (describing neurological research used to implement highly effective sales techniques). But see Didier Courbet & Denis Benoit, *Neurosciences au Service de la Communication Commerciale: Manipulation et Éthique. Une Critique du Neuromarketing*, 40 *ÉTUDES COMMUNICATION* 27 (2013) (offering critical perspective on this marketing strategy from an ethical point on view).

goods company, has identified five ways to inspire consumers to adopt a more sustainable lifestyle: (1) making the sustainable consumption choice understood; (2) making it easy; (3) making it desirable; (4) making it rewarding; and (5) making it a habit.¹³⁶ The European Commission is building on Unilever's strategy for behavioral change by transcribing these points into four principles for sustainable consumption: (1) affordability; (2) availability; (3) attractiveness; and (4) consumer rewards.¹³⁷ Through such an approach, the State does not condemn, punish, or impose, and it does not constrain citizens to act in a certain way through financial incentives or sanctions. It does, however, need to revisit and renew its regulations, most of which are currently based on an outdated vision of human decision-making.

IV. NUDGING AND ENVIRONMENTAL PROTECTION: INDIVIDUALIZATION OF A COLLECTIVE AND STRUCTURAL ISSUE

Despite its promising features, it is necessary to address the limits of a behavioral paradigm for environmental law. One limit is that behavioral regulations overemphasize the individual's responsibility when facing ecological issues. Daily human behavior, particularly consumption choices, are identified as the root of the ecological crisis. Behaviorally informed environmental law would push individuals to switch to greener lifestyles, which requires redirecting consumption and channeling materialist desires towards "green" objects through nudging. This approach entails using individual psychological flaws to guide behaviors towards environmental-friendly consumer practices.

This narrative presents several interrelated limitations. First, it places the burden of change on the individual rather than the collective, limiting society's capacity to explore structural reforms. Secondly, therefore, the individualistic perspective significantly weakens the emancipatory aspect of environmental movements by promoting personal rather than political change. Finally, the behavioral perspective focuses on consumption as a tool for social change instead of considering the transformation of the economic system.

A. *The Methodological Individualism of Behavioral Economics: The Abandonment of the Collective Dimension of Environmental Protection*

The individual is the cornerstone of all behavioral economists' analysis which understand social change as the sum of individual decisions.¹³⁸ Although the

¹³⁶ Unilever, *Inspiring Sustainable Living: Expert Insights into Consumer Behaviour & Unilever's Five Levers for Change* (2011), https://www.unilever.com/Images/slp_5-levers-for-change_tcm244-414399_en.pdf.

¹³⁷ BIO Intelligence Service, *Policies to Encourage Sustainable Consumption, Final Report Prepared for European Commission (DG ENV)* (2012), https://ec.europa.eu/environment/eussd/pdf/report_22082012.pdf.

¹³⁸ Author's translation of SERVET, *supra* note 79, at 22.

individual is not considered consistently rational, behavioral economics fails to completely break with the neoclassical legacy based on methodological individualism. Therefore, proponents of the behavioral approach attempt to change and adapt the individual rather than consider macroeconomic reforms.¹³⁹ In this sense, behavioral economics transfers collective responsibility to the individual.¹⁴⁰ Under that analytical framework, the role of public authorities is to guide the choices and behaviors of individuals by shaping desires instead of proposing institutional, political or structural transformations.

In the ecological context, this narrative considers that individuals must change their behavior – helped by a Nudging State – to resolve the crisis, whilst leaving the economic system unchallenged. Here, two visions are in a clear opposition. According to the first approach, the protection of the environment would be first and foremost an individual responsibility – resulting from personal choices – and the role of the State should be to nudge citizens to make them choose sustainable rather than polluting lifestyles. Therefore, the behavioral perspective would be a highly relevant tool for environmental regulations.

The second approach claims that the ecological crisis is the result of gross inequalities (as the level of pollution is proportionate to the level of income¹⁴¹), capitalism's inexorable drive for growth,¹⁴² and the endless expansion of economic activity supported by corporate interests.¹⁴³ The latter claims should be further assessed, nuanced, and developed. However, they share a common stance: the ecological issue has deep political dimensions and requires a collective response. Following that line of reasoning, the behavioral approach remains insufficient as the responsibility of the State should be to lead this ecological transformation, ensuring the respect of natural ecosystems, limiting polluting activities and supporting an alternative economic development. Behavioral economics thus may have a limited impact for facing ecological threats, as this approach tends to mask the structural conditions and the political dimension of societal issues.¹⁴⁴ In that sense, adopting a behavioral approach would maintain a dominant narrative according to which the structural problems of an exploitative

¹³⁹ *Id.* at 162.

¹⁴⁰ *Id.* at 163.

¹⁴¹ Lucas Chancel & Thomas Piketty, *Carbon and inequality : from Kyoto to Paris* (2015), <http://piketty.pse.ens.fr/files/ChancelPiketty2015.pdf>.

¹⁴² See IAN ANGUS, *FACING THE ANTHROPOCENE: FOSSIL CAPITALISM AND THE CRISIS OF THE EARTH SYSTEM* (2016).

¹⁴³ See generally Arif S. Malik, *Sustainable Development: Ecology and Economic Growth*, *HANDBOOK OF CLIMATE CHANGE MITIGATION*, Wei-Yin Chen, John Seiner, Toshio Suzuki & Maximilian Lackner (eds.), 197-233 (2012).

¹⁴⁴ Alexandre Tanase, *Les Nudges: enjeux, applications et limites du paternalisme libertarien*, *CONGRÈS AFSP AIX* (2015), 5, <http://www.afsp.info/archives/congres/congres2015/st/st62/st62tanase.pdf>.

system are due to personal deficiencies.¹⁴⁵ The behavioral revolution would modify individuals' conducts within an unsustainable framework, which would nonetheless remain unquestioned.

B. Focusing on Individual Responsibility: The Weakening of the Political Narrative Among Environmental Movements

Consequently, as the behavioral approach rests on a methodological individualism, its adoption by environmental movements would result in a depoliticization of their claims. Ecological struggles, despite their variety, are initially based on deep structural demands seeking to provoke moral or political transformations. Many authors of the ecology movement denounced the exploitation of nature and mankind for capital accumulation.¹⁴⁶ During the 1980s, a social movement gathered around the idea that the environmental issue was a social issue resulting from strong inequalities.¹⁴⁷

In sharp contrast, during the same years, a focus on the small actions of everyday life gained momentum among the leading environmental organizations. Instead of criticizing excessive industrialization or deregulated capitalism, some organizations focused on the daily choices of the general population.¹⁴⁸ This change in the narrative was the result of environmental movements adapting to the new world order based on liberal globalization. Michael Maniates articulates that the shift from collective to individual responsibility among those environmental organizations began in the United States when Ronald Reagan equipped with his neoliberal doctrine came to power.¹⁴⁹ Environmentalists sought "win-win" strategies between private economic actors and the environment, thus removing all political and social demands in favor of a depoliticized ecological transition. Naomi Klein, author and social activist, denounces this tendency as the disastrous fusion between "Big Business" and "Big Green."¹⁵⁰ Under Klein's line of reasoning, consumers can pursue social justice and environmental protection

¹⁴⁵ Martin Lukacs, *Neoliberalism has conned us into fighting climate change as individuals*, THE GUARDIAN, (July 17 2017), <https://www.theguardian.com/environment/true-north/2017/jul/17/neoliberalism-has-conned-us-into-fighting-climate-change-as-individuals>.

¹⁴⁶ See, e.g., ANDRÉ GORZ, *ÉCOLOGIE ET POLITIQUE* (1978); IVAN ILLICH, *LA CONVIVIALITÉ* (1972); MURRAY BOOKCHIN, *THE ECOLOGY OF FREEDOM: THE EMERGENCE AND DISSOLUTION OF HIERARCHY* (1982).

¹⁴⁷ See, e.g., DAVID SCHLOSBERG, *DEFINING ENVIRONMENTAL JUSTICE: THEORIES, MOVEMENTS, AND NATURE*, (2007); ROBERT D. BULLARD, *THE QUEST FOR ENVIRONMENTAL JUSTICE: HUMAN RIGHTS AND THE POLITICS OF POLLUTION* (2005).

¹⁴⁸ Michael Maniates, *Individualization: Plant a Tree, Buy a Bike, Save the World?*, *CONFRONTING CONSUMPTION*, Thomas Princen, Michael Maniates & Ken Conca (eds.), 53-56 (MIT Press, 2001).

¹⁴⁹ *Id.* at 53.

¹⁵⁰ NAOMI KLEIN, *THIS CHANGES EVERYTHING* (2014) at 191-229.

through the market by using their purchasing power to turn towards green consumption.¹⁵¹

This focus on individuals and their daily actions indicates environmental movements' powerlessness to change the economic and political structures at the heart of environmental degradation. The claim that humans are all equally and individually responsible "seems to have become a systematic response to a loss of centrality of the State, facing the intrusion of the market sphere into the political field and the valorization of the individual action capabilities of citizens/consumers."¹⁵² Business leaders, policymakers, and some environmental organizations focus on the individual because it does not require a systematic upheaval that would require them to depart from key features of the economic system. This phenomenon is not new: "to explain the overcoming of ecological limits, there has always been a tendency in capitalist society to condemn everything outside the economic system itself."¹⁵³ The objective is to achieve the ecological transition without any profound changes in the distribution of wealth and power, the economy, or our relationship to the world, others, and nature.

Embracing the behavioral approach would force environment movements to remain in this individualistic framework, thereby setting aside more radical transformative demands. Operating a behavioral revolution allows us to modify some consumption patterns without touching upon the system's central flaws. Distancing from central flaws is one of Cass Sunstein's arguments in favor of the "green" default choices presented above: there is no need for "aggressive" state intervention such as a ban if authorities can avoid it. According to Sunstein, it is always better to make a decision that has the least impact on the market and the freedom of the actors and whose cost-benefit analysis is the most positive.¹⁵⁴ Nudging could be useful in transforming daily behaviors if it reaches a critical mass of eco-friendly individuals. Sustainable behaviors, in this view, can be achieved without addressing structural political and social problems. Based on this reasoning, the ecological transition should occur through the combination of technological innovation and consumer choices expertly shaped by governmental nudging. However, it also allows institutions to hide behind citizens' inaction to justify their own failures.¹⁵⁵ In this sense, individual responsibility acts as a palliative remedy to systemic flaws.

¹⁵¹ Richard Wilk, "Green Consumerism Is No Solution", HUFFPOST, (June 14 2013), https://www.huffingtonpost.com/american-anthropological-association/green-consumerism-is-no-solution_b_3437457.html.

¹⁵² Denis Salles, *Environnement : La gouvernance par la responsabilité ?*, 6 [VERTIGO] REV. ÉLEC. SCI. ENV., 4 (2009), at 1.

¹⁵³ John Bellamy Foster, Brett Clark & Richard York, *L'écologie de la consommation* (author's translation), 3 ECOLOGIE & POLITIQUE 107, 109 (2011).

¹⁵⁴ Sunstein & Reisch, *supra* note 100, at 156-57.

¹⁵⁵ See generally Quigey & Stokes, Muireann Quigey & Elen Stokes, Nudging and Evidence Based Policy in Europe: Problems of Normative Legitimacy and Effectiveness, in NUDGE AND THE LAW, A EUROPEAN PERSPECTIVE, Anne-Lise Sibony & Alberto Alemanno (ed.), 67 (2015), at 70.

C. *An Analysis of Social Change Through the Lens of Consumption*

“Change the world, consume differently” summarizes the vision of social change explicitly or implicitly supported by behavioral environmental regulations. The behavioral approach, resting on nudging, focuses on the act of consumption. If current environmental law imposes standards on producers, behavioral environmental law would focus on consumer choices and habits. According to this perspective, the individual’s impact on society depends on his/her consumption choices, not his/her political action.¹⁵⁶

Green consumerism promoted by behavioral instruments is attractive because it offers the promise of ecological redemption without threatening the commercial and political status quo.¹⁵⁷ The shift of our consumption habits enables the ideal of a green economic growth through nudged consumers. It becomes possible for consumers “to undertake the function of maintaining economic growth while simultaneously, even if contradictorily, bearing the burden to drive the system towards sustainability.”¹⁵⁸ Individuals would be able to employ an environmentally-responsible consumption thanks to the behavioral assistance of the State.

However, this approach is insufficient in many ways. First, in many ecological initiatives, sustainable consumption models are generally experienced collectively.¹⁵⁹ For instance, alternative economic circuits are set up by concerned citizens to favor sustainable goods and services. However, the collective organization of new modes of consumption cannot be the fruit of nudging or other behavioral instrument, given the importance of actors and agency in sustainable initiatives.¹⁶⁰ Behavioral regulations would transform certain consumption choices of individuals while they remain passive. It would never suffice to favor the emergence of alternative economic models that require a collective and reflexive action. Nudging does not foster a genuine awareness of citizens to develop their environmental convictions, their capacity to act collectively and their willingness to organize new pathways for a sustainable and a resilient future.

Secondly, this approach focuses on the end of the economic chain. In behavioral economics, there is little concern for the production chain, investments, and accumulated capital. Yet, “neglecting the impact of investors on the environment means excluding the driving force of the capitalist economy.”¹⁶¹ Mainstream economists generally proclaim the existence of “consumer

¹⁵⁶ Salles, *supra* note 152, at 4.

¹⁵⁷ Quigley & Stokes, *supra* note 155, at 69.

¹⁵⁸ Lewis Akenji, *Consumer Scapegoatism and Limits To Green Consumerism*, 63 J. CLEAN. PROD. 13, 13 (2014).

¹⁵⁹ See, e.g., the “Transition Network” movement where communities act together to build new sustainable prosperity pathways for their towns, <https://transitionnetwork.org/>.

¹⁶⁰ See Lisa-Britt Fischer & Jens Newig, Importance of Actors and Agency in Sustainability Transitions: A Systematic Exploration of the Literature, *Sustainability* 2016, 8, 476.

¹⁶¹ Foster, Clark & York (author’s translation), *supra* note 153, at 114.

sovereignty”¹⁶² in modern society (i.e. the idea that all economic decisions are governed by the demand of consumers). Consumers are therefore held responsible for how the economy is shaped. Accordingly, the ecological transition would require public authorities to guide consumer choices towards less polluting goods.¹⁶³ However, “the consumer is no freer than the producer.”¹⁶⁴ In order to bring about a more sustainable society, it is fundamental to recognize “the necessary dialectical relationship between production and consumption.”¹⁶⁵ A true ecology of consumption is possible only by its incorporation in a new ecology of production, which requires society to be “aware of its natural limits and in which production and consumption are concentrated on collective needs and human development.”¹⁶⁶ However, an ecological transition based on behavioral economics could not succeed in that ambitious task because these instruments apply much more naturally to acts of consumption, rather than to an upheaval of the logics of profit and accumulation.

Thirdly, the objective of behavioral methods is to modify the behavior of the “average” consumer without differentiating between the wealthier and low-income classes. According to this logic, the ordinary consumer is guilty because his/her individual ecological footprint multiplied by the population is responsible for destructive mass consumption. However, such a reasoning runs the risk of missing out on alternative analyses that point to the profligacy of resources’ use by a minority, growing inequalities, the establishment of a world market, neo-colonialism, etc.¹⁶⁷ This approach focuses on the average citizen as if all are equally responsible for the ecological crisis, ignoring “the richest twenty percent of the world’s population [which] consumes roughly eighty percent of the planet’s economic output, and generates ninety percent of its hazardous waste.”¹⁶⁸ Behavioral analysis has no answer for the need of justice and equality when facing ecological threats.

CONCLUSION

Behavioral economics explains that the actions of individuals are often driven by their emotions, their environment, and social and by moral norms. Those findings must be integrated into environmental regulations which now primarily

¹⁶² See generally G. PETER PENZ, CONSUMER SOVEREIGNTY AND HUMAN INTERESTS, (1986) (criticizing the concept of consumer sovereignty within the field of economics).

¹⁶³ Randall Krantz, *A New Vision of Sustainable Consumption: The Business Challenge*, 14 J. IND. ECOL. 7, 8 (2010).

¹⁶⁴ KARL MARX, THE POVERTY OF PHILOSOPHY, 41 (1963) (original publication 1847).

¹⁶⁵ Foster, Clark & York (author’s translation), *supra* note 153, at 126.

¹⁶⁶ *Id.* at 126.

¹⁶⁷ See CHRISTOPHE BONNEUIL & JEAN-BAPTISTE FRESSOZ, *L’ÉVÉNEMENT ANTHROPOCÈNE: LA TERRE, L’HISTOIRE ET NOUS*, (2013).

¹⁶⁸ Carmen Gonzalez, *Environmental Justice, Human Rights, and the Global South*, 13 SANTA CLARA J. INT’L L. 151 (2015) 154.

rest on the assumption of individuals' perfect rationality for the sake of effectiveness. Behavioral environmental law would be able to instrumentalize people's biases and irrationalities to influence their daily decisions. Green "nudges" would be particularly relevant to foster the adoption of eco-friendly lifestyles. Therefore, a Nudging State would be able to shape people's behavior towards sustainable consumption.

However, the solutions resulting from the behavioral analysis fail to embrace the structural aspects of the ecological crisis. The behavioral approach is not appropriate for changing institutions, challenging relations of power and amending macroeconomic policies. Instead, it is the individuals who must adapt.¹⁶⁹ At a time when humans most need an unprecedented collective reaction to solve the ecological crisis, the ideology of individual responsibility prevents us from engaging into more radical paths. Individualizing ecological issues involves isolating the population from past political lessons and today's collective struggles for social change, while reinforcing the corrosive idea that human society is unable to act together.¹⁷⁰ Neoliberalism has shaped us to respond to climate change and the various ecological threats as an individual rather than as a community.¹⁷¹ The behavioral method should not be condemned, but instead recognized as only a simple complement to deeper changes requiring strong interventions by authorities. The "Ecological State" cannot *only* be a "Nudging State."

Homo economicus does not correspond with any reality, but rather simplifies and reinforces the idea of human inability to move beyond its own self-interest to reach collective ideals which the ecological transition requires. *Homo confusus* portrayed by behavioral economics, even "nudged," is maintained in an individualistic perspective. It is necessary to promote a *Homo politicus* as capable of sound consumption choices, but also willing to participate in collective radical change. The ecological revolution must occur as a political movement with clear demands for systemic changes. A more diversified approach in the individual-collective articulation is necessary in order to end the trend of "consumer scapegoatism."¹⁷² We must foster a commitment that extends well beyond green consumption and deals with genuine ecological and social citizenship.¹⁷³

The most relevant proposals for this commitment extend well beyond the scope of this article. Some proposals include social-ecological planning that ensures basic human needs within planetary limits' framework, reduced working time to allow ecological activities, a strong wealth redistribution to break the vicious circle of conspicuous consumption, a limitation of the commodification of nature,

¹⁶⁹ Servet, *supra* note 79, at 23.

¹⁷⁰ Maniates, *supra* note 148, at 59.

¹⁷¹ Lukacs, *supra* note 145.

¹⁷² Akenji, *supra* note 158, at 22.

¹⁷³ Meaghan Guckian, Raymond De Young, Spencer Harbo, *Beyond Green Consumerism: Uncovering the Motivations of Green Citizenship*, 5 MICH. J. SUST. 73, 75-6 (2017).

and the imposition of new alternative indicators to GDP within public policies. Such paths will not emerge from behavioral economics, but they must be discussed, especially in the legal field. In addition to examining individual irrationalities, it is essential to examine the collective irrationalities that lead to our own loss.