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Nudge as an instrument of legal regulation

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Thank you my dearest people: Gosia, Julia and Grażyna.

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Introduction

Over the last four decades, the intellectual landscape of economics and law has undergone a profound transformation. The dominance of neoclassical rational choice theory, built upon the assumption of an autonomous, consistent, and utility-maximizing individual, has been steadily eroded by the empirical findings of behavioral economics and cognitive psychology. These disciplines have revealed systematic deviations of human decision-making from the model of *homo oeconomicus*, showing that individuals act under bounded rationality, influenced by heuristics, cognitive biases, and situational contexts. This epistemic shift has had far-reaching implications for jurisprudence and public policy, because the decision-making context of whether to obey legal norms and regulations is no longer perceived as a purely rational framework but as an environment that interacts with psychologically complex legal subjects. Against this background, nudge theory emerged as one of the most influential and controversial innovations in contemporary regulatory thought. Popularized by Richard H. Thaler and Cass R. Sunstein in ‘Nudge: Improving Decisions about Health, Wealth, and Happiness,’ the concept introduced the idea that public authorities can shape individuals’ choices through subtle changes in the decision-making environment without restricting freedom of choice or resorting to coercion. This approach, rooted in libertarian paternalism, seeks to preserve formal freedom of choice while gently steering individuals toward decisions that are expected to improve their welfare as judged by themselves.

The adoption of behavioral insights into policy-making has since expanded globally, influencing governments, public institutions, and international organizations. Yet, the integration of nudging into law raises profound theoretical and normative questions. Can non-coercive behavioral interventions be considered legitimate instruments of legal regulation? Do they comply with the principles of legality, accountability, and democratic legitimacy? And, perhaps most fundamentally, how should law conceptualize the individual—the legal subject—whose behavior it seeks to guide? These questions form the conceptual core of the present dissertation, which investigates whether and under what conditions nudges can function as legitimate instruments of legal regulation within democratic legal systems.

The dissertation examines the intersection between law, behavioral economics, and public policy, exploring the models of legal subjects underlying both traditional and behavioral compliance theories, the comparative effectiveness of behavioral and traditional regulatory tools, and the criticism of nudging.

The central aim of this research is to assess the legal status and normative legitimacy of nudges as tools of public regulation. The inquiry seeks to determine whether behavioral instruments designed to influence decisions without coercion can be reconciled with the foundational principles of constitutional democracy and the rule of law. To this end, the dissertation examines how the concept of nudge evolved from behavioral economics into the domain of law, what distinguishes nudging from other regulatory instruments, how libertarian paternalism justifies its use, how behavioral models of legal agents differ from the rational actor model assumed by legal theory, what advantages and limitations behavioral tools present compared to command-and-control regulations, and whether a system of legal safeguards can be developed to ensure that behavioral regulation complies with democratic and constitutional standards.

The research adopts a multidisciplinary and comparative legal methodology, integrating insights from behavioral economics, legal theory, political philosophy, and regulatory studies. It combines doctrinal analysis of legal principles such as legality, accountability, and proportionality within EU with conceptual analysis of rationality, autonomy, and libertarian paternalism. Comparative study is employed to contrast traditional regulatory instruments—such as command-and-control measures and incentive structures—with behavioral tools like nudges and boosts. In addition, the dissertation undertakes a critical synthesis of empirical literature assessing the effectiveness of nudges, as well as a normative evaluation, grounded in Rawlsian public reason and legal principles, to assess the legitimacy of behavioral regulation. This framework allows for an interdisciplinary dialogue between law and behavioral sciences while ensuring that the analysis remains rooted in the constitutional values of legality, equality, and democratic participation.

The significance of the dissertation lies in its contribution to the growing field of behavioral law and economics and behavioral jurisprudence. It offers a systematic legal-theoretical evaluation of nudging, a topic often explored empirically but rarely examined from a constitutional and jurisprudential perspective. The research advances three original contributions. First, it develops a refined legal definition of nudge, distinguishing between direct and indirect legal agents and emphasizing the normative dimension of behavioral regulation. Second, it constructs a comparative framework juxtaposing traditional and behavioral compliance theories, revealing the limitations of the *homo oeconomicus* model and proposing an alternative conception of the boundedly rational legal agent. Third, it elaborates the theoretical and dogmatic foundations for situating the philosophy of nudge within the system of legal regulation, interpreting it through the lenses of legal theory, philosophy of law,

and the science of public policy in a democratic rule-of-law state. In doing so, the dissertation clarifies the normative position of behavioral regulation within legal doctrine and its implications for the legitimacy and design of public policies. While the proposed framework of legal safeguards draws on earlier scholarly work, it is reinterpreted here in a broader jurisprudential context, as part of an effort to integrate behavioral insights into the legal order without compromising principles of law.

The structure of the dissertation reflects the gradual development of this theoretical and legal framework, moving from the conceptual foundations of nudging to its normative and institutional implications within the legal order. Chapter I traces the intellectual history of nudging, from the decline of neoclassical rationality to the rise of behavioral economics and the concepts of bounded and ecological rationality. Chapter II examines the theoretical foundations of libertarian paternalism and defines the constitutive features of nudging, clarifying its relationship to other behavioral tools. Chapter III analyzes traditional models of legal agents within jurisprudence and compliance theory, contrasting them with behavioral models of legal agency. Chapter IV presents a comparative analysis of traditional and behavioral regulatory instruments, developing the concept of Behavioral Compliance Theory as a hybrid model of legal governance. Chapter V explores the ethical and practical criticisms of nudging, addressing issues of manipulation, autonomy, and empirical validity. Chapter VI extends the critique to the political and legal domains, assessing the compatibility of nudges with constitutional principles and proposing a system of legal safeguards grounded in human rights jurisprudence.

By situating the phenomenon of nudging within the broader evolution of legal thought, the dissertation argues that the behavioral turn in regulation challenges the traditional conception of law itself. The central thesis advanced here is that nudges can serve as legitimate instruments of legal regulation only when embedded within a framework of legality, proportionality, and democratic accountability. In doing so, the research contributes to rethinking the relationship between behavioral science and law, between governance and freedom, and ultimately between knowledge and power in modern democratic societies.

Chapter I

From neoclassical economics to nudge. Short history and introduction of key concepts.

The task before us is not to discover some intrinsic truth about whether people are “rational” or not. Of course they are, and of course they are not. It depends on how we look at behavior and by what criteria we assess the rationality of behavior and beliefs. This in turn depends on the purposes for which we are constructing our models. What exactly do we wish to understand?

~Mario J Rizzo¹

1. Introduction

The purpose of the first chapter is to set out the intellectual and methodological background within which the notion of the ‘nudge’ has been formulated. The central research question is how economic thought has defined human rationality and agency, how these definitions have been challenged, and how this theoretical evolution has ultimately paved the way for the behavioral turn in economics and the rise of libertarian paternalism. At stake is not a simple dichotomy of whether people are rational or irrational, but rather the more nuanced question of what standards of rationality economists have adopted, what kinds of behavior these standards illuminate or obscure, and how alternative perspectives from psychology and the social sciences have reshaped the debate. The analysis is not confined to the discipline of economics: it also highlights the profound analogies with jurisprudence, where legal theory and philosophy have historically drawn upon the same rationalist assumptions, and where the more recent emergence of experimental jurisprudence and behaviorally informed regulatory techniques reflects a parallel transformation.

To this end, the chapter addresses a series of interrelated questions. First, what is the conceptual status of *homo oeconomicus* and rational choice theory within economics, and how did these constructs support the ambition of making economics resemble the natural sciences in method and precision? Second, what criticisms have been raised against these assumptions—especially concerning their empirical plausibility, their neglect of social and cultural contexts,

¹ Mario J Rizzo, ‘Rationality – What? Misconceptions of Neoclassical and Behavioral Economics’ in Matthew Todd Henderson (ed), *The Cambridge Handbook of Classical Liberal Thought* (Cambridge University Press 2018) 3.

and their reliance on abstract formalism? Third, how do concepts such as bounded and ecological rationality alter our understanding of decision-making, shifting attention from optimisation to satisficing, from universal laws to context-sensitive adaptation? Fourth, in what way did behavioral economics emerge from these critiques, particularly through the work of Kahneman, Tversky, and others who demonstrated the systematic role of heuristics, biases, and dual-process cognition? And finally, how have these theoretical developments translated into policy design, culminating in libertarian paternalism, which seeks to reconcile respect for freedom of choice with empirically grounded interventions aimed at welfare improvement?

Taken together, these questions frame Chapter I as both a historical reconstruction and a conceptual clarification. By tracing the path from neoclassical orthodoxy to behavioral refinements, the chapter lays the groundwork for evaluating how behavioral insights have been institutionalised into public policy. In this way, it not only examines the intellectual lineage of nudge but also situates the concept within broader debates about autonomy, welfare, and the proper role of state intervention. Here, the analogy with jurisprudence becomes evident: just as economics has begun to account for heuristics, biases, and environmental constraints, so too has legal theory turned towards empirical studies of how individuals actually interpret, follow, and respond to legal norms. This has led to the emergence of experimental jurisprudence and behaviorally informed regulatory models that challenge the purely deductive and doctrinal approach to law.

2. Neoclassical economics

When seeking a contemporary and concise definition of economics, one encounters the following modern formulation:

Economics is a social science concerned with the production, distribution, and consumption of goods and services. It studies how individuals, businesses, governments, and nations make choices about how to allocate resources. Economics focuses on the actions of human beings, based on assumptions that humans act with rational behavior, seeking the most optimal level of benefit or utility.²

² Adam Hayes, 'Economics Defined With Types, Indicators, and Systems' (Investopedia, 28 June 2024) <<https://www.investopedia.com/terms/e/economics.asp>> accessed 15 July 2025

Within this succinct definition, rationality and optimal choice—central tenets of the neoclassical view of economic agents—emerge as the discipline’s guiding ideas. Neoclassical economics originates in the eighteenth-century doctrine of utilitarianism, grounded in the will to maximise the utility yielded by one’s actions. According to utilitarian thought, the task of economics was to establish, in an objective manner, rules for conduct that produce desirable or undesirable outcomes.

Because the nascent field of psychology lacked a coherent and stable theoretical corpus until its rapid post-war development, neoclassical economists regarded psychological methodology as irrelevant to economic inquiry. In their analyses of decision-making by the economic agent—the abstract model termed *homo oeconomicus*—they typically disregarded motivations that escaped formal logic, assuming instead that each actor selfishly seeks to increase personal benefit. *Homo oeconomicus*, an indispensable construct of neoclassical theory, is defined as a

hypothetical agent who, besides having complete information about the options available for choice, has also perfect foresight of the consequences from choosing those options, and the wherewithal to solve an optimization problem (typically of considerable complexity) that identifies an option which maximizes the agent’s personal utility.³

The model of *homo oeconomicus* was modified many times across history. From Adam Smith’s nuanced portrait—where self-interest coexists with varied talents, a propensity to trade and invest, and even a moral “doux-commerce” role⁴—later economists progressively stripped *homo oeconomicus* down: Mill narrowed him to wealth-seeking,⁵ Jevons cast him as a hedonic utility-calculator,⁶ and early-20th-century theorists endowed him with full information, perfect

³ Gregory Wheeler, ‘Bounded Rationality’ (Stanford Encyclopedia of Philosophy, Winter 2024 edn) <<https://plato.stanford.edu/entries/bounded-rationality/>> accessed 15 July 2025

⁴ Smith’s observations can be read as anticipating several ideas later formalised in behavioural economics—such as loss aversion, optimism bias, the endowment effect and hyperbolic discounting—rather than identifying them in a modern, technical sense. See: Adam Smith, *The Theory of Moral Sentiments* (London, A Millar 1759); Adam Smith, *The Essays of Adam Smith* (Joseph Black and James Hutton eds, 6th edn, Alex Murray & Co 1872) 9.; Marek Lisiński, ‘Metody naukowe w metodologii nauk o zarządzaniu’ (2016) 4 Przegląd Organizacji 11, 13. <<https://doi.org/10.33141/po.2016.04.02>> accessed 15 July 2025

⁵ Mary S Morgan, ‘Economic man as model man: Ideal types, idealization and caricatures’ (2006) 28 Journal of the History of Economic Thought 1, 4. <<https://doi.org/10.1080/10427710500509763>> accessed 15 July 2025

⁶ Erik Angner and George Loewenstein, ‘Behavioral Economics’ in Uskali Mäki, Dov M Gabbay, Paul Thagard and John Woods (eds), *Philosophy of Economics* (Amsterdam, Elsevier 2012) 641, 645.

foresight, and isolation to ease mathematical formalisation.⁷ Mid-century work then severed the last psychological ties, defining the agent merely by internally consistent choices, completing the transition from self-interest maximiser to an axiomatic construct of rationality.⁸

Standard economic theory rests on the following assumptions: (1) agents aim to maximise expected utility; (2) motivations are narrowly self-regarding,⁹ with no concern for the utility others obtain; (3) outcomes are evaluated as the product of the utility of each outcome weighted by its probability; (4) preferences are complete, transitive, and dynamically consistent;¹⁰ (5) all forms of income and wealth are fully fungible;¹¹ (6) behavior is rational; and (7) agents act on the basis of complete and accurate information¹² and possess unlimited cognitive capacity to process it.¹³ This constellation of premises is commonly labelled orthodox, or neoclassical economics.¹⁴

Neoclassical methodology is grounded in the rationality convention. In other words, ‘the presumption of rationality implies that any belief in a scientific theory can be proven (i.e., justified)—at least to the point of demonstrating its logical consistency with conventional acceptance criteria.’¹⁵ The logical-mathematical mode of analysis—introduced into economics

⁷ Morgan (n 5).

⁸ Nicola Giocoli, ‘Modeling rational agents: The consistency view of rationality and the changing image of neoclassical economics’ (2005) 49 *Cahiers d’Économie Politique* 177.

<<https://doi.org/10.3917/cep.049.0177>> accessed 15 July 2025

⁹ Henry W Spiegel, *The Growth of Economic Thought* (3rd edn, Duke University Press 1991) 342.; Michał A Michalski, ‘Kim jest postmodernistyczny *homo oeconomicus*, czyli pytanie o współczesne relacje pomiędzy rodziną a rynkiem’ (2011) 14 *Annales. Etyka w Życiu Gospodarczym* 141.

<<https://doi.org/10.18778/1899-2226.14.1.13>> accessed 15 July 2025

¹⁰ Bill McCarthy, ‘New Economics of Sociological Criminology’ (2002) 28 *Annual Review of Sociology* 417, 419. <[10.1146/annurev.soc.28.110601.140752](https://doi.org/10.1146/annurev.soc.28.110601.140752)> accessed 22 November 2024; Dan Usher, *The Welfare Economics of Markets, Voting and Predation* (Manchester University Press 1992); Ben Fine and Francis Green, ‘Economics, social capital, and the colonization of the social sciences’ in Stephen Baron, John Field and Tom Schuller (eds), *Social Capital: Critical Perspectives* (Oxford University Press 2000) 78. <<https://doi.org/10.1093/oso/9780198297130.003.0004>> accessed 15 July 2025; Gerardo Infante, Guilhem Lecouteux and Robert Sugden, ‘Preference purification and the inner rational agent: a critique of the conventional wisdom of behavioural welfare economics’ (2016) 23 *Journal of Economic Methodology* 1. <<http://dx.doi.org/10.1080/1350178X.2015.1070527>> accessed 5 February 2025

¹¹ Nick Wilkinson and Matthias Klaes, *An Introduction to Behavioral Economics* (Palgrave Macmillan 2012) 10.

¹² Bert Mosselmans, ‘William Stanley Jevons’, *The Stanford Encyclopedia of Philosophy* (Spring edn, 2020). <<https://plato.stanford.edu/archives/spr2020/entries/william-jevons/>> accessed 14 May 2025.

¹³ Adrian Solek, ‘Ekonomia behawioralna a ekonomia neoklasyczna’ (2010) 8 *Zeszyty Naukowe* 22. <https://archiwum.pte.pl/pliki/1/1066/01_Solek.doc.pdf> accessed 12 November 2024; John Malcolm Dowling and Chin-Fang Yap, *Modern Developments in Behavioral Economics: Social Science Perspectives on Choice and Decision Making* (World Scientific 2007).

¹⁴ Anthony Michael C Waterman, ‘The Evolution of “Orthodoxy” in Economics: From Adam Smith to Paul Samuelson’ (2019) 24 *The Independent Review* 325, 326. <<http://www.jstor.org/stable/45238859>> accessed 12 November 2024

¹⁵ Lawrence A Boland, ‘Scientific thinking without scientific method’ in Roger E Backhouse (ed), *New directions in economic methodology* (Routledge 1994) 165.

by Antoine Augustin Cournot, a French mathematician and philosopher—culminated in the adoption of formalised models to explain the behavior of economic agents. Specifically, the hypothetico-deductive approach was embraced: to explain a phenomenon, one begins with at least one universal proposition which, supplemented by a set of initial conditions, yields the logical premises of the theorem under investigation. Methodologically, neoclassical economics espouses individualism and reductionism.¹⁶ By anchoring its reasoning in formal logic and mathematical equations, the discipline attained a scientific stature that commanded respect and was regarded as epistemically reliable.

The canonical portrayal of the economic agent has been repeatedly revised by scholars who have grafted onto *homo oeconomicus* progressively richer human characteristics and intentions.¹⁷ In *The Theory of Moral Sentiments*¹⁸ Even Adam Smith himself enumerates several “sentiments”—altruism, sympathy, reciprocity, self-interest, and empathy—that he regards as influential in economic choice.¹⁹ Yet these departures from the standard image scarcely affected neoclassical model building, because that programme rested on methodological individualism: the claim that the basic unit of analysis is the representative individual rather than any group or collective. Consequently, neoclassical theory set aside culture, environment, and context—*homo oeconomicus* was treated as an atom in a vacuum—as well as the institutions that shape agents and their preferences.²⁰

The embrace of this hypothetical figure stemmed from a desire to recast economics as a static, simple, and precise discipline.²¹ Equilibrium served as the analytical reference point toward which all models converged. Hence the agent was depicted as a machine, and his choices were presented as deterministic, automatic, and orderly.²² *Homo oeconomicus* thus

¹⁶ Reductionism is defined as ‘an extreme view that asserts that all economics is reducible to the most basic physics...’, see: Kevin D Hoover, ‘Reductionism in Economics: Intentionality and Eschatological Justification in the Microfoundations of Macroeconomics’ (2015) 82 *Philosophy of Science* 689, 691.

<<http://www.jstor.org/stable/10.1086/682917>> accessed 17 September 2025

¹⁷ Mosselmans (n 12).

¹⁸ Smith, *The Theory...* (n 4).

¹⁹ Smith, *The Essays...* (n 4). A well-cited review further argues that Smith anticipated core behavioral ideas such as loss aversion, intertemporal choice issues, and social preferences, see: Nava Ashraf, Colin F Camerer and George Loewenstein, ‘Adam Smith, Behavioral Economist’ (2005) 19 *Journal of Economic Perspectives* 131. <<https://www.aeaweb.org/articles?id=10.1257/089533005774357897>> accessed 30 September 2025

²⁰ Przemysław Rapka, ‘Indywidualizm to nie pogląd na ekonomię’, *Mises.pl* (19 September 2018) <<https://mises.pl/blog/2018/09/19/rapka-indywidualizm-to-nie-pogląd-na-ekonomię/>> accessed 15 July 2025

²¹ Sabine Frerichs, ‘Bounded sociality: behavioural economists’ truncated understanding of the social and its implications for politics’ (2019) 26 *Journal of Economic Methodology* 243. <<https://doi.org/10.1080/1350178X.2019.1625217>> accessed 15 May 2025

²² John F Tomer, ‘What is behavioral economics?’ (2007) 36 *The Journal of Socio-Economics* 463 <<https://doi.org/10.1016/j.socec.2006.12.007>> accessed 15 July 2025

embodies an effort to render economics a rigorous social science. The aspiration to universality—an account of economic behavior independent of cultural or social variation—is captured in the standardised nature of *homo oeconomicus*, abstracted from lived human experience and everyday realities.

3. Rational Choice Theory

There are two principal perspectives on the function of rational choice theory. The first conceives the theory as a purely prescriptive modelling device, one that makes no claim that economic agents actually deliberate in the manner it posits; its orientation is therefore normative, stipulating how agents ought to choose rather than how they in fact choose.²³ The second contends that rational choice theory captures the choice principles that genuine rational action displays. The figure of *homo oeconomicus* aligns with rational choice theory, which depicts decision-making as a logical, data-driven mental procedure,²⁴

[i]n the standard view, rational choice is defined to mean the process of determining what options are available and then choosing the most preferred one according to some consistent criterion. In a certain sense, this rational choice model is already an optimization-based approach.²⁵

According to rational choice theory, an agent selects among alternatives by weighing their costs, risks, and benefits.²⁶ Numerous scholars define individual rationality as the congruence between an agent's decisions and her own preferences and goals.²⁷ As McCarthy emphasises:

²³ Rizzo (n 1).Frerichs argues that rational choice theory is not intended to function as a descriptive framework. See Frerichs (n 21); Don Ross, 'The economic agent: not human, but important' in Uskali Mäki, Dov M Gabbay, Paul Thagard and John Woods (eds), *Philosophy of Economics* (Elsevier 2012).

²⁴ Rational choice theory is applied to model decision-making, particularly in the framework of microeconomics, where it is used to help economists better understand the behavior of society from the perspective of individual actions.

²⁵ Jonathan D Levin and Paul R Milgrom, 'Introduction to Choice Theory' (*Stanford.edu*, 2004). <<https://web.stanford.edu/~jdlevin/Econ%20202/Choice%20Theory.pdf>> accessed 20 November 2024

²⁶ Fred S McChesney, 'Behavioral Economics: Old Wine in Irrelevant New Bottles?' (2014) 21 *Supreme Court Economic Review* 43, 47. <<https://www.jstor.org/stable/10.1086/675265>> accessed 22 October 2024; Robert H Frank, *Microeconomics and Behavior* (4th edn, McGraw-Hill Education 2005).

²⁷ McCarthy (n 10); Nicholas Rescher, *Sensible decisions: issues of rational decisions in personal choice and public policy* (Rowman & Littlefield Publishers 2003); Sonja M Amadae, 'Rational choice

[t]he rational choice approach is not a theory of cognition. It does not argue that people think in ways typically associated with rationality as used in common discourse (e.g., reasoned, thoughtful, reflective), nor does it assume people undertake literal calculations. The rational choice approach simply refers to the consistency between people's preferences and choices.'²⁸

This internal coherence is formalised in a set of mathematical axioms: a rational agent is one whose decisions satisfy the consistency conditions those axioms impose.²⁹ Rational choice theory further maintains that every circumstance pertinent to choice—attitudes toward risk, aversion, sympathy, jealousy, loyalty, love, or a sense of justice—can be incorporated into the agent's preference ordering over all possible outcomes. Because researchers have only indirect access to knowledge about peoples' preferences, they reconstruct the underlying hierarchy from observed behavior, a procedure formalised in revealed-preference theory.³⁰

Rational choice theory

...provides an explanation of how most people make many of their decisions, without assuming that all choices can be explained. Thus, it recognizes that individuals' choices will vary, even when confronted with the same preferences, information, and approaches to risk. It does not assume that people are always conscious of their attempts to maximize their interests but simply argues that many of their actions can be understood as rational.³¹

theory', *Encyclopaedia Britannica*. <<https://www.britannica.com/topic/rational-choice-theory>> accessed 15 July 2025; Raymond Paternoster and Greg Pogarsky, 'Rational Choice, Agency and Thoughtfully Reflective Decision Making: The Short and Long-Term Consequences of Making Good Choices' (2009) 25 *Journal of Quantitative Criminology* 103, 105.

<<https://www.researchgate.net/publication/225760176>> accessed 22 November 2024

²⁸ McCarthy (n 10) 422.

²⁹ Thomas S Ulen, 'Behavioral Law and Economics: Law, Policy, and Science' (2013) 21 *Supreme Court Economic Review* 5. <<https://www.journals.uchicago.edu/doi/full/10.1086/675264>> accessed 22 October 2024

³⁰ Thomas Demuyne and Per Hjerstrand, 'Samuelson's Approach to Revealed Preference Theory: Some Recent Advances' in: Robert A Cord, Richard A Anderson and William Barnett (eds) *Paul Samuelson. Remaking Economics: Eminent Post-War Economists* (Palgrave Macmillan 2019). <https://doi.org/10.1057/978-1-137-56812-0_9> accessed 18 November 2024; Rizzo (n 1) 7.

³¹ McCarthy (n 10) 422.

According to Paternoster and Pogarsky, rational decision making secures a good life—higher earnings and living standards, greater stability, and enhanced social status.³² Drawing on rational choice theory, they introduce the term TRDM (Thoughtfully Reflective Decision Making), stressing that this cognitive procedure ‘is part of what it means to be a rational person and is therefore an integral part of any rational choice theory...’³³ A good decision is thus defined as ‘one made on the basis of thoughtful consideration of alternatives; it is a competent decision made on the basis of reason and intelligence.’³⁴

Paternoster and Pogarsky further emphasise that rational thinking must be coupled with human agency, understood as ‘an intentional activity directed toward some goal.’³⁵ Action must therefore align with preferences: ‘[i]f rationality is making choices consistent with preferences, then agency is intentionally doing things in the world to make that consistency come about.’³⁶ This multi-stage cognitive process (TRDM) is frequently discussed in tandem with self-control. Gottfredson characterises low self-control as an individual’s difficulty in contemplating the long-term consequences of behavior; it captures the cumulative effect of neglecting both immediate and delayed outcomes, manifesting across a spectrum of adverse results.³⁷

The thesis that human behavior is fundamentally rational remains widely accepted among contemporary economists and continues to underpin the construction of economic models and the explanation of commercial conduct by individuals and groups.

³² James S Coleman, ‘Social Capital in the Creation of Human Capital’ (1988) 94 *American Journal of Sociology* S95. <<https://www.jstor.org/stable/2780243>> accessed 25 November 2024

³³ Paternoster and Pogarsky (n 27) 105.

³⁴ Paternoster and Pogarsky (n 27) 111. According to Paternoster and Pogarsky, rational decision making has to be based on four stages; one must ‘(1) recognize that there are alternatives to attaining some goal, and that one must collect information about these alternatives and what the costs and benefits are to each, (2) consider and compare the costs and benefits of these alternatives, (3) make a decision as to which alternative one is going to choose based on that consideration, and (4) revisit that decision later to see if it could have been improved.’ See: Paternoster and Pogarsky (n 27) 107.

³⁵ *ibidem* 111.

³⁶ *ibidem*. Human agency consists of four components: (1) intentionality, (2) forethought, understood as the consideration of alternative courses of action, (3) self-reactiveness, and (4) self-reflectiveness, which involves both self-motivation and self-evaluation to ensure alignment with personal standards. See: Albert Bandura, ‘Social cognition theory: an agentic perspective’ (2001) 52 *Annual Review of Psychology* 1. <<https://doi.org/10.1146/annurev.psych.52.1.1>> accessed 28 November 2024; Albert Bandura, ‘Social Cognitive Theory: An Agentic Perspective’ (2020) 12 *Psychology the Journal of the Hellenic Psychological Society* 313. <[10.12681/psy_hps.23964](https://doi.org/10.12681/psy_hps.23964)> accessed 28 November 2024

³⁷ Michael R Gottfredson, ‘The empirical status of control theory in criminology’ in: Francis T Cullen, John Paul Wright, Kristie R Blevins (eds) *Taking stock: the status of criminological theory* (Transaction Publishers 2006) 77.

4. Criticism toward neoclassical assumptions

Neoclassical economics has been subjected to severe critique by leading economists, who challenge its scientific quality, methodological rigour, empirical deficit, highly normative and unrealistic assumptions,³⁸ and limited relevance to public-policy analysis.³⁹ John F. Tomer distils six defining traits of orthodox economics: narrowness, rigidity, intolerance, mechanicalness, separateness, and individualism.⁴⁰ Critics argue that many shortcomings stem from a misconceived view of human nature, cognition, and habit, and from the ambition to portray market phenomena solely through rationalist models.⁴¹ Neoclassical theory has likewise been faulted for its excessive infatuation with mathematical formalism,⁴² a focus that confines inquiry to variables, equations, and closed-form models and thereby narrows the research agenda.⁴³ Appeals for a more interpretive stance—privileging historical, psychological, and cultural narratives⁴⁴—materialised, inter alia, in John M. Keynes's work on the 'psychological law of consumption'⁴⁵ and in George Katona's pioneering investigations

³⁸ Rizzo (n 1).

³⁹ Lee Boldeman, 'The Long-Running Critique of Neoclassical Economics and its Limited Relevance to Policy' in *The Cult of the Market: Economic Fundamentalism and its Discontents* (ANU Press 2007). <http://press-files.anu.edu.au/downloads/press/p98831/mobile/ch08s03.html> accessed 15 July 2025; Kenneth M Casebeer and Charles J Whalen, 'Taking Interdependence and Production More Seriously: Toward Mutual Rationality and a More Useful Law and Economics' (2011) 66 University of Miami Law Review 141, 150. <<https://repository.law.miami.edu/umlr/vol66/iss1/6>> accessed 22 October 2024

⁴⁰ Tomer (n 22).

⁴¹ Thomas S Ulen, 'Behavioral Law and Economics: An Introduction' in Morris Altman (ed) *Handbook of Contemporary Behavioral Economics* (Routledge 2006) 372; Amanda P Reeves and Maurice E Stucke, 'Behavioral Antitrust' (2010) 86 Indiana Law Journal, University of Tennessee Legal Studies Research Paper No. 106, 1527, 1532. <<https://ssrn.com/abstract=1582720>> accessed 22 October 2024

⁴² Carl Menger, Austrian economist, expressed in his correspondence that '... mathematical method is mainly a method of exposition and demonstration rather than of investigation.' It should be used as a tool to express certain theories, not as a means of searching for facts. See: Guilhem Lecouteux, 'Reconciling Behavioural and Neoclassical Economics' (2013) École Polytechnique Cahiers de Recherche Working Paper 2013/09, 12. <<https://hal.science/hal-00819763>> accessed 15 July 2025

⁴³ The method of data analysis should not overweight the description of reality itself. See: Marcin Rzeszutek and Adam Szyszka, 'Od homo oeconomicus do homo realis: o korzyściach płynących z większego otwarcia się ekonomii na psychologię' (2017) 155 Studia i Prace. Zeszyt Naukowy Kolegium Zarządzania i Finansów 73. <https://econjournals.sgh.waw.pl/SiP/zeszyt_naukowy_155> accessed 15 July 2025

⁴⁴ Rapka (n 20); Coleman (n 32).

⁴⁵ Keynes pointed out that although people attempt to choose the best option and make a calculation whenever possible, they are often driven by impulse, sentiment or coincidence. Some authors view his insights as fundamental to the later research of behavioral macroeconomists. See: Ronald Schettkat, 'The Behavioral Economics of John Maynard Keynes' 2018) Schumpeter Discussion Papers No 2018-007, 4. <<https://hdl.handle.net/10419/206675>> accessed 15 July 2025; John Maynard Keynes, *Ogólna teoria zatrudnienia, procentu i pieniądza* (trans Michał Kalecki and Stanisław Rączkowski, 2nd edn, PWN 1985) 185; Krzysztof Orlik, *Makroekonomia behawioralna: Jak wyjaśniać zjawiska makroekonomiczne z wykorzystaniem ekonomii behawioralnej* (CeDeWu 2017) 17.

into economic decision-making and information framing, contributions that earned him recognition as a founder of behavioral economics.⁴⁶

The separation of neoclassical economics from the other social sciences⁴⁷—and its concomitant fascination with the exact sciences—has been characterised as the ‘desocialisation’ and ‘dehistoricisation’ of the discipline.⁴⁸ In response to this methodological secession, economists have, for more than five decades, turned increasingly to insights from neighbouring fields, engendering a rich array of interdisciplinary programmes: new institutional economics, economic sociology, evolutionary economics, complexity economics, behavioral economics, and many others.⁴⁹ A further milestone in re-examining the economic agent was the rise of behaviorism,⁵⁰ experimental economics,⁵¹ and, more recently, neuroeconomics,⁵² which collectively redirected the discipline from exclusive reliance on abstract formalism toward empirically grounded programmes.⁵³ Laboratory hypotheses now

⁴⁶ George Katona, 'The Role of the Frame of Reference in War and Post-War Economy' (1944) 49 *American Journal of Sociology* 340. <<https://doi.org/10.1086/219428>> accessed 15 July 2025; Richard T Curtin, 'George Katona: A Founder of Behavioral Economics' in Roger Frantz and others (eds), *Routledge Handbook of Behavioral Economics* (Routledge 2016) 1.

⁴⁷ Ted O'Donoghue and Matthew Rabin, 'Risky behavior among youths: some issues from behavioral economics' in Jonathan Gruber (ed), *Risky behavior among youths: An Economic Analysis* (National Bureau of Economic Research Conference Report 2001) 29.

<<https://www.nber.org/system/files/chapters/c10686/c10686.pdf>> accessed 22 November 2024; Richard Swedberg, *Economics and Sociology, Redefining Their Boundaries: Conversations with Economics and Sociologists* (Princeton University Press 1990).

⁴⁸ Ben Fine and Dimitris Milonakis, *From Economics Imperialism to Freakonomics: The Shifting Boundaries between Economics and Other Social Sciences* (Routledge 2009).

⁴⁹ Rzeszutek and Szyszka (n 43) 77.

⁵⁰ Behaviorism is a science claiming that all behaviors of individuals can be explained by identifying relationships between stimuli and responses or between responses and rewards. The precursor of the study was I. Pavlov, and the founder of behaviorism is J.B. Watson, who in 1913 published a paper, *Psychology as the Behaviorist Views It*, called the behaviorist manifesto. See: John B Watson, 'Psychology as the behaviorist views it' (1913) 20 *Psychological Review* 158. <<https://doi.org/10.1037/h0074428>> accessed 3 October 2025

⁵¹ The birth of experimental economics is associated with the deep conviction of economists such as Blaug and Hausman, that there is no progress without exploring real world phenomena. See: Bruce J Caldwell, 'Proposals for the Recovery of Economic Practice' in Roger E Backhouse (ed), *New Directions in Economic Methodology* (Routledge 1994) 146; Elżbieta Jabłońska, 'Obszary zastosowania ekonomii eksperymentalnej' (2013) 32 *Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania* 37, 39. <https://bazhum.muzhp.pl/media/texts/studia-i-prace-wydziau-nauk-ekonomicznych-i-zarzadzania/2013-tom-32-numer-2/studia_i_prace_wydzialu_nauk_ekonomicznych_i_zarzadzania-r2013-t32-n2-s37-50.pdf> accessed 15 July 2025

⁵² Advocates of neuroeconomics emphasize the importance of studying the brain's workings during decision-making with the goal of developing accurate methods for forecasting automatic and unconscious human behavior when exposed to a particular stimulus. See: Marian Noga, *Neuroekonomia a ekonomia głównego nurtu* (CeDeWu 2017) 11.

⁵³ It should be noted that experiments in economics are not a novelty introduced by behavioral economics. Economists outside the behavioral tradition, such as Raymond Battalio, Vernon Smith, Charles Plott, Elizabeth Hoffman, and Matthew Spitzer, had also employed this research method. For further discussion, see: John H Kagel and John B Van Huyck, 'Introduction to Issue of "Experimental Economics" in Honor of Raymond C. Battalio' (2007) 10 *Experimental Economics* 201.

inspire new research, and experimental findings supply cues for fresh directions in economic theory.⁵⁴

This interdisciplinary influence obliged economic theory to acknowledge society's formative influence on the individual through processes of socialisation.⁵⁵ The abstract figure of *homo sociologicus* thus emerged, depicting agents whose choices do not invariably conform to the rigid canons of economic rationality. Scholars recognised that the springs of action include shared values as well as private interest, and they began to portray deliberation and conduct as potentially consonant with multiple forms of rationality, with non-rational impulses, or even with outright irrationality.

The reorientation extended beyond the portrayal of agents to the aims and methods of inquiry itself. Explanation, description, and interpretation supplanted measurement and calculation as primary objectives; empirical and qualitative techniques displaced an exclusive

<<https://doi.org/10.1007/s10683-007-9177-x>> accessed 23 October 2024; Vernon L Smith, 'Relevance of Laboratory Experiments to Testing Resource Allocation Theory' in Jan Kmenta and James B Ramsey (eds) *The New Palgrave Dictionary of Economics* (Academic Press 1980); Vernon L Smith, 'Theory, Experiment and Economics' (1989) 3 *Journal of Economic Perspectives* 151. <<https://www.aeaweb.org/articles?id=10.1257/jep.3.1.151>> accessed 23 October 2024; Vernon L Smith, 'Economics in the Laboratory' (1994) 8 *Journal of Economic Perspectives* 113. <<https://www.aeaweb.org/articles?id=10.1257/jep.8.1.113>> accessed 23 October 2024; Charles R Plott, 'Rational Choice in Experimental Markets' (1986) 59 *The Journal of Business* 301. <<http://www.jstor.org/stable/2352762>> accessed 23 October 2024; Elizabeth Hoffman, Kevin McCabe and Vernon L Smith, 'Reciprocity in Ultimatum and Dictator Games: An Introduction' in Charles R Plott and Vernon L Smith (eds) *Handbook of Experimental Economics Results* (Elsevier 2008) <<https://ideas.repec.org/h/eee/expchp/4-46.html>> accessed 23 October 2024; Elizabeth Hoffman and Matthew L Spitzer, 'Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice' (1985) 14 *The Journal of Legal Studies* 259. <<http://www.jstor.org/stable/724430>> accessed 23 October 2024

⁵⁴ Interestingly, the world of economists accepts the use of experiments in the analysis of economic phenomena with great resistance. The pessimism of these researchers manifests itself in the fact that they doubt the effectiveness of experiments in advancing scientific insight. They highlight the problem concerning experiments that 'there will always be variables that cannot be measured that will allow one rationality to question a finding, and there will always be studies that reach different conclusions when alternative plausible variables are included in a regression. As a result, differences in interpretation will always be rife.' See: Caldwell (n 51) 147; George Katona, 'Psychology and Consumer Economics' (1974) 1 *Journal of Consumer Research* 1.

<<https://www.jstor.org/stable/2488948>> accessed 27 November 2024

⁵⁵ *Homo sociologicus* presents humans as not completely autonomous entities; in fact, it displays people as the followers of the instructions of society. When assessing behavioral models, it is relevant to take into account not only the way in which the individual acts but also the community in which the individual lives that influences his attitudes, values, and views. See: Rita Yi Man Li, 'The Institutional Analysis of Fittings in Residential Units' in *Law, Economics and Finance of the Real Estate Market* (Springer 2014); Witold Morawski, *Socjologia ekonomiczna. Problemy. Teoria. Empiria* (PWN 2001) 30.

reliance on formal analytics; and methodological holism⁵⁶ and organicism⁵⁷ replaced reductionism. Within this broadened perspective arose a call to revise *homo oeconomicus*, yielding a diverse menagerie of successor constructs—*homo reciprocans*, *homo politicus*, *homo darwinianus*, *neo-homo economicus*, *homo erroneus*, *homo religiosus*, *homo corporativus*, *homo sociologicus*, *homo humanisticus economicus*, *homo institutional economicus*, *homo social economicus*, and *homo socio-economicus*, among others.⁵⁸

Neoclassical economics has been increasingly challenged by schools of thought that transcend orthodox boundaries, giving rise to a heterodox current in economic inquiry.⁵⁹ Salient—though not exhaustive—heterodox principles include: (1) economic agents are social beings guided chiefly by habit and tradition rather than by abstract logic; (2) analysis should emphasise collective as well as individual outcomes; (3) the strict micro–macro division is outdated; (4) historical context matters; (5) pluralism and holistic perspectives are essential; (6) formal mathematical or statistical methods are not intrinsically superior; (7) alternative methods and data sources are valuable; and (8) fact and value are intertwined and cannot be cleanly separated.

A persistent tension divides the normative and descriptive roles of economics. Commenting on this issue, Lauterbach observes:

Economic theory has faced from its beginning two basic alternatives in its assumptions on human behavior. It could either operate with the known motivations of human beings in the real world in so far as they affect the market and other material processes in society; or it could process on the basis of

⁵⁶ The holistic view on economics is that ‘explanations that invoke social phenomena (e.g., institutions, social structures or cultures) should be offered within the social sciences: their use is indispensable. Methodological holists commonly take the following list of items to exemplify social phenomena: organizations, social processes, statistical properties, cultures and traditions, beliefs, desires, and other mental properties ascribed to groups, norms and rules, properties of social networks, social structures, social roles.’ See: Julie Zahle, ‘Methodological Holism in the Social Sciences’, *The Stanford Encyclopedia of Philosophy* (Winter edn, 2023). <https://plato.stanford.edu/entries/holism-social/> accessed 16 July 2025

⁵⁷ Organicism is the philosophical concept of society being perceived as a living organism. Its functioning and development depend on the action of smaller parts metaphorically depicted as closely related organs. The whole constitutes more than just a collection of its parts. See: Karolina Stajniak, ‘Organicyzm’, *Encyklopedia Zarządzania* (2024). <https://mfiles.pl/pl/index.php/Organicyzm> accessed 16 July 2025

⁵⁸ Lucyna Wojcieszka, ‘Współczesna koncepcja Homo socio-oeconomicus’ (Uniwersytet Ekonomiczny we Wrocławiu) 242. https://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/23_L.Wojcieszka_Wspolczesna_koncepcja....pdf accessed 16 July 2025

⁵⁹ McChesney (n 31) 46.

hypothetical assumptions concerning human attitudes and reactions, and work out functional relationships which would be valid only if and when people behaved in this hypothetical way (which was then classified as economic). By and large the second alternative prevailed, though this often occurred in a confused or unconscious combination with the first.⁶⁰

Frank likewise underscores the tension between descriptive accuracy and predictive capacity:

...a theory that can explain everything ends up explaining nothing at all. To be scientifically valuable, a theory must make predictions that are at least in principle capable of being falsified. And hence the dilemma confronting proponents of rational choice theory: versions that assume narrow self-interest are clearly not descriptive, whereas those to which goals can be added without constraint lack real explanatory power.⁶¹

He observes an impasse that arises when a theoretical model is required, on the one hand, to possess descriptive realism, yet, on the other, meeting that demand extinguishes the model's ability to predict future events. Thaler observes that adherence to rational-choice models leads to inaccurate predictions.⁶²

5. Ecological and bounded rationality

As previously noted, neoclassical economics—particularly the construct of *homo oeconomicus*—has attracted sustained criticism because its premises do not correspond to actual human behavior.⁶³ A central objection to rational choice theory is that real-world

⁶⁰ Albert Lauterbach, 'Psychological Assumptions of Economic Theory' (1950) 10 *The American Journal of Economics and Sociology* 27. <<https://www.jstor.org/stable/3483431>> accessed 18 August 2025

⁶¹ Robert H Frank, *What Price the Moral High Ground?* (Princeton University Press 2003).

⁶² Richard H Thaler, 'Behavioral Economics: Past, Present, and Future' (2016) 106 *American Economic Review* 1577, 1591. <<http://dx.doi.org/10.1257/aer.106.7.1577>> accessed 30 June 2025

⁶³ Kevin Sontheimer, 'Behavioral Versus Neoclassical Economics: Paradigm Shift or Generalization?' in Morris Altman (ed), *Handbook of Contemporary Behavioral Economics: Foundations and Developments* (Routledge 2006) 238; Gary S Becker, *Accounting for Tastes* (Cambridge: Harvard University Press 1996); Raymond Boudon, 'Beyond Rational Choice Theory' (2003) 29 *Annual Review of Sociology* 1. <<http://www.jstor.com/stable/30036958>> accessed 18 August 2025

decisions are situational and context-dependent:⁶⁴ the framing of options, the social setting, the decision-maker's emotional state, and myriad other environmental factors all shape choice.⁶⁵

Decades of research in cognitive psychology and behavioral economics have demonstrated that human decision-making frequently deviates from strict rationality;⁶⁶ individuals often fail to maximise utility.⁶⁷ Egon Brunswik introduced the concept of 'ecological validity,' emphasizing that perception and judgment should be studied in the context of the probabilistic structure of the environment.⁶⁸ Nobel laureate Herbert A. Simon challenged the prevailing assumption of fully rational agents, advocating a theory of bounded rationality as a more realistic account. He proposed replacing *homo oeconomicus* with *homo satisfaciendus*: an agent who invests limited cognitive effort in tackling complex problems⁶⁹ and, lacking the capacity to maximise utility, meets needs only at a satisfactory—rather than optimal—level.⁷⁰ Operating in contexts of limited, asymmetric, or uncertain information,⁷¹

⁶⁴ Rizzo (n 1).

⁶⁵ Levin and Milgrom (n 25) 22.

⁶⁶ Musa Şimşek, 'Behavioral Economics: The Psychology of Economic Decision-Making' in Rahmi Incekara (ed), *Economy in Every Field* (Akademisyen Kitabevi A.Ş. 2022); Justin Fox, 'From "Economic Man" to Behavioral Economics' (*Harvard Business Review*, May 2015).

<<https://hbr.org/2015/05/from-economic-man-to-behavioral-economics>> accessed 18 August 2025

⁶⁷ Bruno S Frey and Jana Gallus, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 11; Mark D White, 'The Crucial Importance of Interests in Libertarian Paternalism' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 21.

⁶⁸ Egon Brunswik, 'Organismic achievement and environmental probability' (1943) 50 *Psychological Review* 255. <<https://doi.org/10.1037/h0060889>> accessed 29 June 2025; Egon Brunswik, 'Representative design and probabilistic theory in a functional psychology' (1955) 62 *Psychological Review* 193. <<https://doi.org/10.1037/h0047470>> accessed 29 June 2025

⁶⁹ Colin Camerer, Samuel Issacharoff, George Loewenstein, Ted O'Donoghue and Matthew Rabin, 'Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism"' (2003) 151 *University of Pennsylvania Law Review* 1211, 2017.

<<https://www.cmu.edu/dietrich/sds/docs/loewenstein/regulationforconservatives.pdf>> accessed 26 October 2024; Paternoster and Pogarsky (n 27) 106.

⁷⁰ Curtin (n 46) 2.

⁷¹ Michael H Riordan, 'Uncertainty, Asymmetric Information and Bilateral Contracts' (1984) 51 *The Review of Economic Studies* 83. <<https://doi.org/10.2307/2297706>> accessed 18 August 2025; Patrick J Glen, 'Law as Asymmetric Information: Theory, Application, and Results in the Context of Foreign Direct Investment in Real Estate' (2011) 8 *Berkeley Business Law Journal* 116.

<<https://scholarship.law.georgetown.edu/facpub/494/>> accessed 18 August 2025; Sean P Sullivan, 'Why Wait to Settle? An Experimental Test of the Asymmetric-Information Hypothesis' (2016) 59 *The Journal of Law & Economics* 497. <<https://www.jstor.org/stable/26456956>> accessed 18 August 2025; McCarthy (n 10) 420; Stephanie Mertens, Mario Herberz, Ulf JJ Hahnel and Tobias Brosch, 'The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains' (2022) 119 *Proceedings of the National Academy of Sciences* 1, 2.

<<https://doi.org/10.1073/pnas.2107346118>> accessed 16 December 2024; Peter Charles John, Graham Smith and Gerry Stoker, 'Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour' (2009) 80 *The Political Quarterly* 361, 366. <https://www.researchgate.net/publication/230361341_Nudge_Nudge_Think_Think_Two_Strategies_for_Changing_Civic_Behaviour> accessed 24 August 2024; Russell Korobkin, 'Bounded Rationality,

individuals cannot acquire all the data required for optimal choice⁷² and thus adopt suboptimal strategies.⁷³ Confronted with everyday problems, they often resort to informal and intuitive cognitive means, rarely able to act in full conformity with ideal rationality.⁷⁴ Gerd Gigerenzer and his collaborators later advanced these ideas, demonstrating that seemingly irrational strategies can yield normatively desirable outcomes when matched to specific environmental regularities.⁷⁵ Vernon Smith extended the concept into institutional theory, suggesting that social and legal institutions themselves may evolve toward forms of ecological rationality that enhance coordination and efficiency without requiring individual omniscience.⁷⁶ Collectively, these contributions mark a shift from internal consistency models of rationality toward a substantive, context-sensitive framework that aligns cognition with ecological constraints. In the context of ecological rationality theory, human cognition is described as capable of adjusting cognitive strategies to fit the structure of the informational environment. This allows for decision-making that may not always align with logic or the requirements of instrumental rationality, yet still leads to effective choices that help achieve goals under specific conditions. Rizzo points out that ‘...there is a failure to see the sometimes subtle ways in which “irrational” behavior is adaptive to the circumstances at hand and can increase the agent’s welfare.’⁷⁷ Similarly, Katsikopoulos argues that:

...fast and frugal heuristics perform better than complex optimization models if the available information is of low quality or scarce, or if there exist dominant options or attributes. The bias-variance decomposition of statistical prediction error, which is explained in layperson’s terms, underpins these claims.⁷⁸

Standard Form Contracts, and Unconscionability’ (2003) 70 The University of Chicago Law Review 1203. <<https://doi.org/10.2307/1600574>> accessed 21 November 2024

⁷² Bryan D Jones, *Politics and the Architecture of Choice* (University of Chicago Press 2001) 27.

⁷³ Herbert A Simon, *Models of Bounded Rationality. Empirically Grounded Economic Reason* (3rd edn, The MIT Press 1997) 293.

⁷⁴ Bertrand Munier and others, ‘Bounded Rationality Modeling’ (1999) 10 Marketing Letters 233, 234. <<https://doi.org/10.1023/A:1008058417088>> accessed 18 August 2025

⁷⁵ Gerd Gigerenzer, Peter M Todd and the ABC Research Group, *Simple Heuristics That Make Us Smart* (Oxford University Press 1999); Gerd Gigerenzer and Reinhard Selten, *Bounded Rationality: The Adaptive Toolbox* (The MIT Press 2001);

⁷⁶ Vernon L Smith, ‘Constructivist and Ecological Rationality in Economics’ (2003) 93 American Economic Review 465. <<https://www.aeaweb.org/articles?id=10.1257/000282803322156954>> accessed 29 June 2025

⁷⁷ Mario J Rizzo, ‘Rationality – What? Misconceptions of Neoclassical and Behavioral Economics’ in Matthew Todd Henderson (ed), *The Cambridge Handbook of Classical Liberal Thought* (Cambridge University Press 2018) 3.

⁷⁸ Konstantinos V Katsikopoulos, ‘Fast and Frugal Heuristics,’ *Oxford Research Encyclopedia of Politics* (2020). <<https://doi.org/10.1093/acrefore/9780190228637.013.973>> accessed 19 June 2025

Further criticism of the *homo oeconomicus* model focuses on its premise that individuals pursue only self-interest and invariably maximise personal benefit.⁷⁹ Such a view neglects empathy, altruism, social norms, and other pro-social motives.⁸⁰ People make decisions within social frameworks in which collective interests and mutual cooperation shape behavior (cf. *homo politicus*⁸¹ and *homo corporativus*⁸²). Social norms—the unwritten (and occasionally written) rules that vary across cultures and define normal, acceptable, respectful conduct—exert powerful influence: peer pressure, family traditions, and local customs pervade many choices. Most individuals imitate others almost automatically; the authority heuristic, for instance, embodies the implicit supposition that those in high positions possess superior insight, so conforming to their views will yield favourable outcomes⁸³—an assumption that can, however, lead to poor decisions.⁸⁴

⁷⁹ Geoffrey M Hodgson, 'What Is the Essence of Institutional Economics?' (2000) 34 *Journal of Economic Issues* 317. <<https://www.jstor.org/stable/4227559>> accessed 18 August 2025; Jane J Mansbridge, *Beyond self interest* (University of Chicago Press 1990); Dale T Miller, 'The norm of self-interest' (1999) 54 *American Psychologist* 1053. <<https://doi.org/10.1037/0003-066x.54.12.1053>> accessed 18 August 2025

⁸⁰ Audrey Korsgaard and Bruce M Meglino, 'Beyond the individualistic self: A framework for prosocial motives and judgments' in Heidi A Wayment and Jack J Bauer (eds), *Transcending self-interest: Psychological explorations of the quiet ego* (American Psychological Association 2008). <<https://doi.org/10.1037/11771-017>> accessed 22 August 2025; Ernst Fehr and Simon Gächter, 'Fairness and Retaliation: The Economics of Reciprocity' (2000) 14 *The Journal of Economic Perspectives* 159. <<https://www.jstor.org/stable/2646924>> accessed 21 November 2024; Joseph Henrich and others, '"Economic man" in cross-cultural perspective: Behavioral experiments in 15 small-scale societies' (2005) 28 *Behavioral and Brain Science* 795. <[10.1017/S0140525X05000142](https://doi.org/10.1017/S0140525X05000142)> accessed 22 August 2025; Ernst Fehr, Urs Fischbacher and Simon Gächter, 'Strong reciprocity, human cooperation, and the enforcement of social norms' (2002) 13 *Human Nature* 1. <<https://doi.org/10.1007/s12110-002-1012-7>> accessed 21 November 2024; James Andreoni, 'Cooperation in public-goods experiments: kindness or confusion?' (1995) 85 *American Economic Review* 891. <<https://www.jstor.org/stable/2118238>> accessed 22 August 2025; Robert Sugden, 'Reciprocity: the supply of public goods through voluntary contributions' (1984) 94 *Economic Journal* 772. <<https://doi.org/10.2307/2232294>> accessed 22 August 2025; Simon P Anderson, Jacob K Goeree and Charles A Holt, 'A theoretical analysis of altruism and decision error in public goods games' (1998) 70 *Journal of Public Economics* 297. <[https://doi.org/10.1016/S0047-2727\(98\)00035-8](https://doi.org/10.1016/S0047-2727(98)00035-8)> accessed 22 August 2025; Rachel TA Croson, 'Theories of commitment, altruism and reciprocity: evidence from linear public goods games' (2007) 45 *Economic Inquiry* 199. <<https://doi.org/10.1111/j.1465-7295.2006.00006.x>> accessed 22 August 2025

⁸¹ Malte Faber, Thomas Petersen and Johannes Schiller, 'Homo oeconomicus and homo politicus in Ecological Economics' (2002) 40 *Ecological Economics* 323. <[https://doi.org/10.1016/S0921-8009\(01\)00279-8](https://doi.org/10.1016/S0921-8009(01)00279-8)> accessed 22 August 2025

⁸² Carlos Bastien and Jose L Cardoso, 'From homo economicus to homo corporativus: A neglected critique of neoclassical economics' (2007) 36 *The Journal of Socio-Economics* 118. <<https://doi.org/10.1016/j.socec.2005.11.016>> accessed 22 August 2025

⁸³ It can be utterly misleading to consider a text to be truth-promoting depending on the language employed by the author. The more authoritative the language sounds, the greater the tendency to ascribe righteousness to it. See: Leonard Bickman, 'The social power of a uniform' (1974) 4 *Journal of Applied Social Psychology* 47. <[10.1111/j.1559-1816.1974.tb02807.x](https://doi.org/10.1111/j.1559-1816.1974.tb02807.x)> accessed 22 August 2025

⁸⁴ David J Gerber, 'Authority Heuristics' (2004) 79 *Chicago-Kent Law Review* 759, 960. <<https://scholarship.kentlaw.iit.edu/cklawreview/vol79/iss3/25>> accessed 22 August 2025

Another challenge concerns the model's assumption of static preferences—unchanging objectives immune to context or framing. Empirical findings show that choices are often governed by social preferences grounded in reciprocity, inequality aversion, envy, and altruism.⁸⁵ Decision-makers' preferences can be contradictory, unstable over time, and context-dependent;⁸⁶ indeed, people frequently act on unconscious predilections, remain unaware of what would enhance their utility or happiness,⁸⁷ or process information in idiosyncratic ways.⁸⁸ Nadler argues that individuals behave as rule-following, adaptive agents whose actions are guided by internalised norms, membership in particular in-groups, and social sanctions;⁸⁹ their preferences are situation-specific and endogenous, evolving through experience.⁹⁰ Experimental evidence further demonstrates that the framing of options can decisively alter choice, underscoring the fluidity of preferences and the decisive role of situational factors.⁹¹

In sum, the dominant critiques hold that (1) human rationality is bounded by cognitive limitations, (2) behavior is adaptive rather than optimization-seeking, and (3) economic agents are not strict maximisers but instead aim for satisfactory outcomes.⁹²

⁸⁵ Samuel Bowles, 'Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions' (1998) 36 *Journal of Economic Literature* 75.

<<https://ideas.repec.org/a/aea/jeclit/v36y1998i1p75-111.html>> accessed 21 November 2024

⁸⁶ Daniel Read and Barbara van Leeuwen, 'Predicting hunger: The effects of appetite and delay on choice' (1998) 76 *Organizational Behavior and Human Decision Processes* 189.

<<https://doi.org/10.1006/obhd.1998.2803>> accessed 29 August 2024; Daniel Kahneman, Jack L Knetsch and Richard H Thaler, 'Experimental tests of the endowment effect and the Coase Theorem' (1990) 98 *Journal of Political Economy* 1325, 1338. <<https://doi.org/10.1086/261737>> accessed 5 February 2025; Leonard J Savage, *The foundations of statistics* (John Wiley & Sons 1954) 101.

⁸⁷ Dowling and Yap (n 13).

⁸⁸ Cass R Sunstein, Christine Jolls and Richard H Thaler, 'A Behavioral Approach to Law and Economics' (1998) 50 *Stanford Law Review* 1471.

<https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=12172&context=journal_articles> accessed 26 October 2023; Dan Ariely, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (HarperCollins 2009); Infante, Lecouteux and Sugden (n 10).

⁸⁹ Janice Nadler, 'Expressive Law, Social Norms, and Social Groups' (2017) 42 *Law & Social Inquiry* 60. <<https://www.jstor.org/stable/26630860>> accessed 21 November 2024

⁹⁰ Infante, Lecouteux and Sugden (n 10).

⁹¹ Melissa Knoll, 'The Role of Behavioral Economics and Behavioral Decision Making in Americans' Retirement Savings Decisions' (2010) 70 *Social Security Bulletin* 1.

<<https://ssrn.com/abstract=1702815>> accessed 26 November 2024; Alexander J Rothman, Roger D Bartels, John Wlaschin and Peter Salovey, 'The strategic use of gain- and loss-framed messages to promote healthy behavior: How theory can inform practice' (2006) 56 *Journal of Communication* S202. <<https://doi.org/10.1111/j.1460-2466.2006.00290.x>> accessed 26 November 2024; Irwin P Levin, 'Associative effects of information framing' (1987) 25 *Bulletin of the Psychonomic Society* 85. <<https://doi.org/10.3758/bf03330291>> accessed 26 November 2024; Irwin P Levin, Sara K Schnittjer and Shannon L Thee, 'Information framing effects in social and personal decisions' (1988) 24 *Journal of Experimental Social Psychology* 520. <[https://doi.org/10.1016/0022-1031\(88\)90050-9](https://doi.org/10.1016/0022-1031(88)90050-9)> accessed 26 November 2024

⁹² Ludwig von Mises, *Human Action: A Treatise on Economics* (4th edn, Liberty Fund 2007) 242; Chris Doucouliagos, 'A Note on the Evolution of Homo Economicus' (1994) 28 *Journal of Economic Issues* 877. <<https://www.jstor.org/stable/4226858>> accessed 21 November 2024

6. Toward behavioral economics — psychological economics

In 1979 Daniel Kahneman and Amos Tversky integrated findings from psychological research on judgment under uncertainty into economic analysis, thereby inaugurating the rapid development of behavioral economics.⁹³ Commenting on their contribution, Richard Thaler observed:

The economic theory of the consumer is a combination of positive and normative theories. Since it is based on a rational maximizing model it describes how consumers should choose, but it is alleged to also describe how they do choose. ... [I]n certain well-defined situations many consumers act in a manner that is inconsistent with economic theory. In these situations economic theory will make systematic errors in predicting behavior. Kahneman and Tversky's prospect theory is proposed as the basis for an alternative descriptive theory.⁹⁴

The intellectual roots of behavioral economics thus lie in the insights of cognitive psychology and neuropsychology. Researchers have demonstrated that:

... many human behaviors are guided by processes that operate outside of conscious awareness. Decisions are influenced by apparently trivial cues in the environment which we are often not aware of, such as a smell, a melody, or the order of objects. ... In a similar vein, many decisions are not made based on lengthy deliberate thinking, but on quick and automatic heuristic processing. Indeed, most of the time, people do not have the time, motivation, or cognitive resources to carefully and consciously think through all the decisions they make throughout the day. For example, research has shown that more than 200 daily food-related decisions are made outside of conscious awareness, and that habits and impulses govern many decisions.⁹⁵

⁹³ Daniel Kahneman and Amos Tversky, 'Prospect Theory: An Analysis of Decision under Risk' (1979) 47 *Econometrica* 263. <<https://doi.org/10.2307/1914185>> accessed 19 June 2025

⁹⁴ Richard H Thaler, 'Toward a positive theory of consumer choice' (1980) 1 *Journal of Economic Behavior & Organization* 39. <[https://doi.org/10.1016/0167-2681\(80\)90051-7](https://doi.org/10.1016/0167-2681(80)90051-7)> accessed 27 November 2024

⁹⁵ David R Marchiori, Marieke A Adriaanse and Denise TD De Ridder, 'Unresolved questions in nudging research: Putting the psychology back in nudging' (2017) 11 *Social and Personality Psychology Compass* 1, 2. <<https://doi.org/10.1111/spc3.12297>> accessed 13 August 2024

Building on investigations into decision making under uncertainty, human cognition, and automatic behavior by Daniel Kahneman, Amos Tversky, and Paul Slovic, the heuristics-and-biases research programme crystallised in the early 1970s.⁹⁶ In a 1974 *Science* article they argued that individuals, constrained by limited time and cognitive capacity, confront a torrent of complex information that cannot be fully processed; consequently, they rely on ‘quick-and-dirty’ computational shortcuts to appraise situations swiftly.⁹⁷

Drawing on a wide array of experiments, Kahneman and colleagues proposed a dual-process model of cognition that regulates thought and response to stimuli.⁹⁸ This dichotomous framework seeks to explain the frequent lack of coherence between espoused values and actual

⁹⁶ Daniel Kahneman and Amos Tversky, *Choices, values and frames* (Cambridge University Press 2000); Daniel Kahneman, Paul Slovic, and Amos Tversky, *Judgment under uncertainty: Heuristics and biases* (Cambridge University Press 1982).

⁹⁷ Amos Tversky and Daniel Kahneman, ‘Judgment under Uncertainty: Heuristics and Biases’ (1974) 185 *Science* 1124. <<https://www.jstor.org/stable/1738360>> accessed 14 August 2024; Eliot R Smith and Jamie M DeCoster, ‘Dual-process models in social and cognitive psychology: conceptual integration and links to underlying memory systems’ (2000) 4 *Personality and Social Psychology Review* 108, 108.

<https://www.researchgate.net/publication/248551974_Dual-Process_Models_in_Social_and_Cognitive_Psychology_Conceptual_Integration_and_Links_to_Underlying_Memory_Systems> accessed 15 August 2024

⁹⁸ Daniel Kahneman, ‘Maps of Bounded Rationality: Psychology for Behavioral Economics’ (2003) 93 *The American Economic Review* 1449.

<<https://www.jstor.org/stable/3132137>> accessed 13 August 2024; Daniel Kahneman and Shane Frederick, ‘Representativeness revisited: Attribute substitution in intuitive judgement’ in Thomas Gilovich, Dale Griffin and Daniel Kahneman (eds), *Heuristics and Biases: The Psychology of Intuitive Judgment* (Cambridge University Press 2002) 49.

behavior.⁹⁹ In *Thinking, Fast and Slow* Kahneman distinguishes System 1 and System 2.¹⁰⁰ System 1—sometimes called the ‘automatic mind’—operates intuitively and effortlessly:¹⁰¹ it is uncontrolled, associative, rapid, and impulsive,¹⁰² consuming little attentional resources.¹⁰³ As Sunstein illustrates, ‘[w]hen people recognize a smiling face, add three plus three, or know

⁹⁹ The account of human cognition developed by Kahneman and Tversky, which is discussed in this study, is not the only dual-process model proposed by scholars. The work of many other researchers—such as Evans, Stanovich, Strack and Deutsch, and Schneider and Shiffrin—has also described, in various ways, the dichotomous functioning of the human cognitive system. As Evans summarizes, ‘Almost all authors agree on a distinction between processes that are unconscious, rapid, automatic, and high capacity, and those that are conscious, slow, and deliberative.’ See: Jonathan St BT Evans, ‘Dual-Processing Accounts of Reasoning, Judgment, and Social Cognition’ (2008) 59 *Annual Review of Psychology* 255, 256. <https://sites.ualberta.ca/~francisp/Phil488/EvansDualProcessing2008.pdf>> accessed 13 August 2024; Jonathan SBT Evans, *Bias in Human Reasoning: Causes and Consequences* (Erlbaum 1989); Jonathan SBT Evans and David E Over, *Rationality and Reasoning* (Routledge 1996); Jonathan SBT Evans and Keith E Stanovich, ‘Dual-process theories of higher cognition: Advancing the debate’ (2013) 8 *Perspectives on Psychological Science* 223. <[10.1177/1745691612460685](https://doi.org/10.1177/1745691612460685)> accessed 22 August 2025; Keith E Stanovich, *Who is Rational? Studies of Individual Differences in Reasoning* (Lawrence Erlbaum Associates Publishers 1999); Keith E Stanovich, *The Robot’s Rebellion: Finding Meaning in the Age of Darwin* (Chicago University Press 2004); Fritz Strack and Roland Deutsch, ‘Reflective and impulsive determinants of social behavior’ (2004) 8 *Personality and Social Psychology Review* 220. <<https://pubmed.ncbi.nlm.nih.gov/15454347/>> accessed 13 August 2024; Walter Schneider and Richard M Shiffrin, ‘Controlled and automatic human information processing I: detection, search and attention’ (1977) 84 *Psychological Review* 1. <https://www.researchgate.net/publication/232568886_Controlled_and_automatic_human_information_processing_II_Perceptual_learning_automatic_attending_and_a_general_theory> accessed 13 August 2024); Theresa T Marteau and others, ‘Judging Nudging: Can Nudging Improve Population Health?’ (2011) 342 *The BMJ* 263. <https://www.researchgate.net/publication/49784905_Judging_Nudging_Can_Nudging_Improve_Population_Health> accessed 21 August 2024; There are alternative conceptualizations of human cognition that do not rely on a dichotomous system. Examples include unimodel approaches proposed by various authors: Gideon Keren and Yaacov Schul, ‘Two is not always better than one a critical evaluation of two-system theories’ (2009) 4 *Perspectives on psychological science* 533. <<https://doi.org/10.1111/j.1745-6924.2009.011>> accessed 22 August 2025; Arie W Kruglanski and Gerd Gigerenzer, ‘Intuitive and deliberate judgments are based on common principles’ (2011) 118 *Psychological Review* 97. <https://pure.mpg.de/rest/items/item_2098989/component/file_2098988/content> accessed 29 August 2024; See a tri-dimensional processing model here: Alexandra L Varga and Kai Hamburger, ‘Beyond type 1 vs. type 2 processing: the tri-dimensional way’ (2014) 5 *Frontiers in Psychology* 1. <<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2014.00993/full>> accessed 29 August 2024

¹⁰⁰ Daniel Kahneman, *Thinking fast and slow* (Farrar, Straus and Giroux 2011).

¹⁰¹ Paschal Sheeran, Peter M Gollwitzer and John Bargh, ‘Non-conscious processes and health’ (2013) 32 *Health Psychology* 460. <https://www.researchgate.net/publication/230664470_Nonconscious_Processes_and_Health> accessed 15 August 2024

¹⁰² Wilhelm Hofmann, Malte Friese and Fritz Strack, ‘Impulse and self-control from a dual-systems perspective’ (2009) 4 *Perspectives on Psychological Science* 162, 164. <<https://typeset.io/papers/impulse-and-self-control-from-a-dual-systems-perspective-o0z75n8b48>> accessed 15 August 2024

¹⁰³ Magda Osman, ‘An evaluation of dual-process theories of reasoning’ (2004) 11 *Psychonomic Bulletin & Review* 988, 989. <https://www.researchgate.net/publication/7864887_An_evaluation_of_dual-process_theories_of_reasoning> accessed 15 August 2024

how to get to their bathroom in the middle of the night, System 1 is at work.’¹⁰⁴ System 2, by contrast, engages in deliberate, analytical reasoning, but is slower and more resource-intensive.

In System 2 (also called the ‘reflective mind,’ with its distinctive cognitive mode termed TRDM—thoughtfully reflective decision making),¹⁰⁵ operations are slower, conscious, and effortful.¹⁰⁶ Their outputs are judgments or conceptual representations constructed from analyses of past events, current stimuli, and future projections. System 2 is deductive, self-aware, and rule-governed,¹⁰⁷ and it underpins the sense of agency, autonomy, and volition.¹⁰⁸ This can be illustrated by the following examples: ‘[w]hen people first learn to drive, when they multiply 563 times 322, or when they choose a medical plan among several hard-to-distinguish alternatives, they must rely on System 2.’¹⁰⁹

Both cognitive systems operate simultaneously and can compete for control.¹¹⁰ A necessary consequence of this dual architecture is the appearance of discrepancies between the

¹⁰⁴ Cass R Sunstein, ‘People Prefer System 2 Nudges (Kind Of)’ (2016) 66 Duke Law Journal 121. <<https://scholarship.law.duke.edu/dlj/vol66/iss1/3>> accessed 5 December 2024

¹⁰⁵ Paternoster and Pogarsky (n 27) 105.

¹⁰⁶ Theresa T Marteau, Gareth J Hollands and Paul C Fletcher, ‘Changing human behavior to prevent disease: The importance of targeting automatic processes’ (2012) 337 Science 1492, 1492. <<[10.1126/science.1226918](https://doi.org/10.1126/science.1226918)>> accessed 15 August 2024; Marteau and others (n 99); Åsa Löfgren and Katarina Nordblom, ‘A theoretical framework of decision making explaining the mechanisms of nudging’ (2020) 174 Journal of Economic Behavior & Organization 1, 2. <<https://www.sciencedirect.com/science/article/pii/S0167268120300871>> accessed 3 September 2024

¹⁰⁷ Steven A Sloman, ‘The empirical case for two systems of reasoning’ (1996) 119 Psychological Bulletin 3, 4, 5. <https://www.researchgate.net/publication/200045300_The_Empirical_Case_For_Two_Systems_of_Reasoning> accessed 15 August 2024

¹⁰⁸ Keith Stanovich, *Rationality and the Reflective Mind* (Oxford University Press 2010) 6.

¹⁰⁹ Sunstein (n 105) 2.

¹¹⁰ According to the authors, the decision-making or analytical process occurs according to the following formula: System 1 is automatically activated first and it provides a solution. Then, System 2, whose task is to monitor the overall quality of mental operations, is either activated or left inactive. Therefore, the rationality of the decision is determined by whether the individual engages System 2 to make a judgment. The predominant framework utilized to elucidate the functioning of these systems is the default-interventionist model. This model posits that System 1 processing serves as the default operational mode, while System 2 engages only when intervention is deemed necessary. Initially, System 1 processes were regarded as suboptimal, often resulting in inaccurate judgments or with the opposite effect to the reflected preferences of an agent. See: Sunstein (n 105) 3; Pelle Guldberg Hansen and Andreas Maaløe Jespersen, ‘Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy’ (2013) 4 European Journal of Risk Regulation 3, 12. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024. System 2 reasoning has traditionally been regarded as more desirable than System 1 reasoning from a normative standpoint, see: Jonathan St B T Evans, ‘Dual process theories of deductive reasoning: facts and fallacies’ in Keith J Holyoak and Robert G Morrison (eds), *The Oxford handbook of thinking and reasoning* (Oxford University Press 2012). Nevertheless, contemporary perspectives have shifted, viewing System 1 not as merely a source of errors and biases but as an adaptive mechanism that facilitates efficient decision-making under conditions of uncertainty, see: Gerg Gigerenzer, ‘On the supposed evidence for libertarian paternalism’ (2015) 6 Review of Philosophy and Psychology 361. <<https://doi.org/10.1007/s13164-015-0248-1>> accessed 4 November 2024; Greg Gigerenzer and Dan G Goldstein, ‘Reasoning the fast and frugal way: models of bounded

decisions generated by the two systems.¹¹¹ Such biases violate the criteria of rationality postulated by neoclassical economics.¹¹² Individuals often harbour serious misconceptions about probability, which can produce judgment errors with potentially life-altering consequences.¹¹³ A typical instance of automatic behavior triggered by System 1 occurs when ‘we ... find ourselves taking the well-travelled route home when the original intention had been to call elsewhere.’¹¹⁴

Although System 1 is more primitive in evolutionary terms than System 2, many scholars emphasise that it is not intrinsically less capable.¹¹⁵

rationality’ (1996) 103 *Psychological review* 650. <[10.1037/0033-295x.103.4.650](https://doi.org/10.1037/0033-295x.103.4.650)> accessed 22 August 2025

¹¹¹ Marteau, Hollands and Fletcher (n 106).

¹¹² Orlik (n 45) 37.

¹¹³ Daniel L Chen, Tobias J Moskowitz and Kelly Shue, ‘Decision-Making Under the Gambler’s Fallacy: Evidence from Asylum Judges, Loan Officers, and Baseball Umpires’ (2016) 131 *Quarterly Journal of Economics* 1181. <<https://ssrn.com/abstract=2538147>> accessed 6 December 2024; John Conlisk, ‘Why bounded rationality?’ (1996) 34 *Journal of Economic Literature* 667. <<http://www.jstor.org/stable/2729218>> accessed 28 December 2024

¹¹⁴ Marteau, Hollands and Fletcher (n 106).

¹¹⁵ Gigerenzer argues that our intuitions are both sufficient and beneficial in the contexts we typically encounter. See: Gigerenzer, Todd, and the ABC Research Group (n 75); Similarly, Kahneman and Klein have shown that System 1 frequently enables effective functioning in real-world environments. See: Daniel Kahneman and Gary Klein, ‘Conditions for Intuitive Expertise: A Failure to Disagree’ (2009) 64 *American Psychologist* 515. <https://www.researchgate.net/publication/26798603_Conditions_for_Intuitive_Expertise_A_Failure_to_Disagree> accessed 5 December 2024; Kahneman and Frederick (n 98) 49, 51; Marteau and colleagues emphasize that System 1 is especially inefficient in routine situations: ‘Why would one wish to deliberate over each stage of a familiar route home?’ See: Marteau, Hollands and Fletcher (n 106). A similar perspective is offered by Gerd Gigerenzer, Ralph Hertwig and Thorsten Pachur, *Heuristics: The foundations of adaptive behavior* (Oxford University Press 2011). Gigerenzer and Goldstein argue that the claim of System 2’s superiority fails to account for the evolutionary advantages inherent in System 1 reasoning. The fast-and-frugal approach characteristic of System 1 decision-making embodies forms of knowledge that may remain inaccessible both to the individual and to external bureaucratic observers, such as policy-makers. See: Gigerenzer and Goldstein (n 110).

Due to information overload,¹¹⁶ individuals seek to minimise cognitive effort, and their choices are often shaped by strong emotions,¹¹⁷ familiarity, habit,¹¹⁸ or time pressure.¹¹⁹ Human reasoning is marked by departures from normative probability calculus, yet these deviations are not necessarily irrational.¹²⁰ Empirical study of actual thinking, decision making, and responses to external stimuli suggests that the rationality-based model no longer provides an adequate description of reality;¹²¹ thus, *homo oeconomicus* is increasingly viewed as a normative rather than a descriptive construct.

Research indicates that, under conditions of uncertainty, decisions are frequently guided by heuristics, cognitive errors, and rules of thumb.¹²² Heuristics are defined as ‘efficient cognitive processes, conscious or unconscious, that ignore part of the information.’¹²³ They constitute streamlined reasoning procedures that people employ automatically—and usually

¹¹⁶ Sheena Sethi Iyengar and Mark R Lepper, ‘When choice is demotivating: can one desire too much of a good thing?’ (2000) 79 *Journal of Personality and Social Psychology* 995.

<https://www.researchgate.net/publication/12189991_When_Choice_is_Demotivating_Can_One_Desire_Too_Much_of_a_Good_Thing> accessed 6 November 2024; Jacob Jacoby, ‘Perspectives on information overload’ (1984) 10 *Journal of Consumer Research* 432.

<<https://www.jstor.org/stable/2488912>> accessed 6 November 2024; Benjamin Scheibehenne, Rainer Greifeneder and Peter M Todd, ‘Can there ever be too many options? A meta-analytic review of choice overload’ (2010) 37 *Journal of Consumer Research* 409.

<<https://academic.oup.com/jcr/article-abstract/37/3/409/1827647?redirectedFrom=fulltext>> accessed 6 November 2024

¹¹⁷ Jonathan H Turner, Jan E Stets, *The sociology of emotions* (Cambridge University Press 2005); George Loewenstein, ‘Out of control: visceral influences on behavior’ (1996) 65 *Organizational Behavior and Human Decision Processes* 272. <<https://doi.org/10.1006/obhd.1996.0028>> accessed 27 November 2024; Kathleen D Vohs, Roy F Baumeister, George Loewenstein, *Do emotions help or hurt decision making?* (Russell Sage Foundation 2007).

¹¹⁸ Charles Camic, ‘The matter of habit’ (1986) 91 *American Journal of Sociology* 1039.

<<https://www.jstor.org/stable/2780121>> accessed 26 November 2024; Daniel Kahneman, ‘Maps of Bounded Rationality: Psychology for Behavioral Economics’ (2003) 93 *The American Economic Review* 1449, 1451. <<https://www.jstor.org/stable/3132137>> accessed 26 November 2024

¹¹⁹ Tversky and Kahneman (n 97); Marchiori, Adriaanse and De Ridder (n 95) 2.

¹²⁰ John, Smith and Stoker (n 71) 366.

¹²¹ Frerichs (n 21).

¹²² Kahneman (n 100); Reeves and Stucke (n 41) 1533.

¹²³ Gerd Gigerenzer and Wolfgang Gaissmaier, ‘Heuristic Decision Making’ (2011) 62 *Annual Review of Psychology* 451, 451.

<https://www.researchgate.net/publication/49653132_Heuristic_Decision_Making> accessed 13

August 2024; For details on biases and heuristics, see Amos Tversky and Daniel Kahneman, ‘The Framing of Decisions and the Psychology of Choice’ (1981) 211 *Science* 453.

<<https://www.jstor.org/stable/1685855>> accessed 24 October 2024; Kahneman, Slovic and Tversky (n 96); Amos Tversky and Daniel Kahneman, ‘Loss Aversion in Riskless Choice: A Reference-Dependent Model’ (1991) 106 *Quarterly Journal of Economics* 1039.

<<https://doi.org/10.2307/2937956>> accessed 29 June 2025; Daniel Kahneman, ‘New Challenges to the Rationality Assumption’ (1997) 3 *Legal Theory* 105.

<<https://doi.org/10.1017/S1352325200000689>> accessed 29 June 2025; Daniel Kahneman, ‘A Perspective on Judgment and Choice. Mapping Bounded Rationality’ (2003) 58 *American Psychologist* 697. <[10.1037/0003-066X.58.9.697](https://doi.org/10.1037/0003-066X.58.9.697)> accessed 29 June 2025; Kahneman and Tversky

(n 93); Kahneman (n 100).

unknowingly—to arrive at quick judgements.¹²⁴ Within the dual-process framework of Kahneman and colleagues, heuristics are swiftly formed opinions that support decision making when time is limited or when the cognitive resources required for System 2 processing are lacking.¹²⁵ When applied to novel or atypical situations, however, heuristics may prove inaccurate and lead to error.¹²⁶ Another important program for the development of behavioral economics that describes human cognition, alongside the heuristics-and-biases research program, is the fast-and-frugal heuristics. This stems from research by scientists such as Gigerenzer¹²⁷ and Hertwig,¹²⁸ who challenged the validity of using rational choice theory to explain decision-making processes in the condition of uncertainty.¹²⁹ Love and others define fast-and-frugal heuristics as ‘...simple, task-specific decision strategies that form part of a decision maker’s repertoire of cognitive strategies for solving judgment and decision tasks.’¹³⁰

A comprehensive catalogue of biases and heuristics lies beyond the scope of this discussion, yet several core examples merit mention:

- availability heuristic: assigning higher probability to events that are easier to recall and more emotionally salient;
- representativeness heuristic: classifying an object or event on the basis of its partial resemblance to a familiar, prototypical case;¹³¹
- scarcity heuristic: attributing greater value to an item the harder it is to obtain or retain;¹³²
- consistency heuristic: selecting options in line with previous decisions to preserve internal

¹²⁴ Gerd Gigerenzer and Henry Brighton, ‘Homo Heuristicus: Why Biased Minds Make Better Inferences’ (2009) 1 *Topics in Cognitive Science* 107. <<https://doi.org/10.1111/j.1756-8765.2008.01006.x>> accessed 19 June 2025

¹²⁵ Orlik (n 45) 37.

¹²⁶ Robert J Sternberg, *Psychologia poznawcza* (WSiP 2011); Löfgren and Nordblom (n 106) 2; Gigerenzer and Gaissmaier (n 123).

¹²⁷ Gerd Gigerenzer, *Gut feelings: The intelligence of the unconscious* (Penguin 2007).

¹²⁸ Gigerenzer, Hertwig and Pachur (n 115).

¹²⁹ Gigerenzer and Gaissmaier (n 123).

¹³⁰ Peter ED Love, Lavagnon A Ika, and Jeff K Pinto, ‘Fast-and-frugal heuristics for decision-making in uncertain and complex settings in construction’ (2023) 14 *Developments in the Built Environment* 1. <<https://doi.org/10.1016/j.dibe.2023.100129>> accessed 22 August 2025

¹³¹ Tversky and Kahneman (n 97); Emilia Klepczarek, ‘Dualistyczny model poznawczy i heurystyki Daniela Kahnemana i Amosa Tversky’ego’ (2012) 31 *Economy in Practice and Theory* 57, 64. <[10.18778/1429-3730.31.05](https://doi.org/10.18778/1429-3730.31.05)> accessed 22 August 2025

¹³² Association for Psychological Science, ‘Spinning class, the scarcity heuristic, and me’ (*Psychologicalscience.org*, 13 April 2010). <<https://www.psychologicalscience.org/news/full-frontal-psychology/spinning-class-the-scarcity-heuristic-and-me.html>> accessed 17 September 2025; The Linus, ‘The Scarcity Heuristic: Why We Want What We Can’t Have’ (*Thelinusgroup.com*, 20 October 2021). <<https://www.thelinusgroup.com/blog/scarcity>> accessed 17 September 2025

coherence, even when this conflicts with cost-benefit analysis or logical rules;¹³³

- endowment effect: valuing an owned object more highly than the same object would be valued if it were not owned;¹³⁴
- anchoring-and-adjustment heuristic: placing disproportionate weight on initial information when estimating unknown quantities.¹³⁵

The use of heuristics frequently gives rise to cognitive biases, defined as systematic distortions in perceiving reality that shape attitudes, emotions, reasoning, and behavior. The term ‘cognitive bias’ was introduced by Tversky and Kahneman in 1972.¹³⁶ Such errors typically reflect the brain’s effort to simplify information processing.¹³⁷ Biases may originate in memory—where emotion colours recall—or in attention, when the effort required to focus on a stimulus shifts cognition into ‘autopilot.’ Hence, rules of thumb often yield predictable mistakes.¹³⁸ A pivotal insight is that these biases are not random but systemic.¹³⁹

Representative examples include:

- optimism bias: the belief that adverse events are less likely than they are;¹⁴⁰
- confirmation bias: ‘a tendency to process information by looking for, or interpreting, information that is consistent with one’s existing beliefs’;¹⁴¹
- sunk-cost bias: continuing an endeavour merely because resources have already been

¹³³ Therese Fessenden, ‘The Principle of Commitment and Behavioral Consistency’ (*Nngroup.com*, 4 March 2018). <<https://www.nngroup.com/articles/commitment-consistency-ux/>> accessed 17 September 2025

¹³⁴ Akhilesh Ganti, ‘Understanding the Endowment Effect: Causes, Examples, and Impacts’ (*Investopedia.com*, 8 September 2025). <<https://www.investopedia.com/terms/e/endowment-effect.asp>> accessed 17 September 2025

¹³⁵ Stephen Dale, ‘Heuristics and biases: The science of decision-making’ (2015) 32 *Business Information Review* 93. <[10.1177/0266382115592536](https://doi.org/10.1177/0266382115592536)> accessed 20 September 2025

¹³⁶ Daniel Kahneman and Amos Tversky, ‘Subjective probability: A judgment of representativeness’ (1972) 3 *Cognitive psychology* 430. <<https://www.sciencedirect.com/science/article/abs/pii/0010028572900163?via%3Dihub>> accessed 13 August 2024

¹³⁷ Kendra Cherry, ‘How Cognitive Biases Influence the Way You Think and Act’ (*Verywellmind.com*, 7 May 2024). <<https://www.verywellmind.com/what-is-a-cognitive-bias-2794963>> accessed 20 September 2025

¹³⁸ Tversky and Kahneman (n. 97).

¹³⁹ Richard H Thaler, *Misbehaving: The Making of Behavioral Economics* (W. W. Norton & Company 2015) 43.

¹⁴⁰ Daniel Kahneman and Dan Lovallo, ‘Timid choices and bold forecasts: a cognitive perspective on risk taking’ (1993) 39 *Management Science* 17. <<http://www.jstor.org/stable/2661517>> accessed 7 November 2024; Tali Sharot, ‘The Optimistic Bias’ (2011) 21 *Current Biology* R941. <<https://doi.org/10.1016/j.cub.2011.10.030>> accessed 6 December 2024; Eric J Johnson and others, ‘Beyond nudges: Tools of a choice architecture’ (2012) 23 *Marketing Letters* 487, 492. <https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architect> accessed 7 November 2024

¹⁴¹ Bettina J Casad and James E Luebering, ‘Confirmation bias’ (*Britannica*, 29 July 2025). <<https://www.britannica.com/science/confirmation-bias>> accessed 22 August 2025

invested;¹⁴²

- status-quo bias: preferring the current state of affairs and resisting change;¹⁴³
- loss aversion: ‘an individual’s tendency to prefer avoiding losses to acquiring equivalent gains’;¹⁴⁴
- present bias: the tendency of individuals to assign significant importance to the present moment while rapidly and substantially diminishing the value of future moments.¹⁴⁵

All these findings indicate that the neoclassical account of how economic agents think and act requires revision.

7. Reconciliation problem

The tension between neoclassical assumptions and the behavioral school is captured by the ‘reconciliation problem’¹⁴⁶—how to design and justify economic policy once the premise of neoclassical rationality is abandoned. No consensus exists. At least three main positions can be discerned.

First, some scholars argue that behavioral economics, by more accurately describing behavior and its determinants, merely amends or tests neoclassical assumptions (George Katona, Ernst Fehr, Harvey Leibenstein, George Akerlof, Robert Shiller, Paul De Grauwe, Ian M. MacDonald, Andrei Shleifer, Meir Statman, Hersh Shefrin, Colin F. Camerer, George Loewenstein).¹⁴⁷

¹⁴² Hal R Arkes and Catherine Blumer, ‘The psychology of sunk costs’ (1985) 35 *Organizational Behavior and Human Decision Processes* 124. <[https://doi.org/10.1016/0749-5978\(85\)90049-4](https://doi.org/10.1016/0749-5978(85)90049-4)> accessed 23 August 2025

¹⁴³ George Loewenstein, Troyen Brennan and Kevin G Volpp, ‘Asymmetric Paternalism to Improve Health Behaviors’ (2007) 298 *JAMA* 3415. <<https://jamanetwork.com/journals/jama/article-abstract/209557>> accessed 28 December 2024; Mark Dean, Ozgur Kibris and Yusufcan Masatlioglu, ‘Limited attention and status quo bias’ (2017) 169 *Journal of Economic Theory* 93. <<https://doi.org/10.1016/j.jet.2017.01.009>> accessed 23 August 2025

¹⁴⁴ Amos Tversky and Daniel Kahneman, ‘Advances in Prospect Theory: Cumulative Representation of Uncertainty’ (1992) 5 *Journal of Risk and Uncertainty* 297. <<https://doi.org/10.1007/BF00122574>> accessed 23 August 2025

¹⁴⁵ Adam Oliver, ‘Nudges, shoves and budes: Behavioural economic policy frameworks’ (2018) 33 *The International Journal of Health Planning and Management* 272, 276. <<https://core.ac.uk/download/pdf/35437043.pdf>> accessed 29 August 2024; Read and van Leeuwen (n 86).

¹⁴⁶ Ben McQuillin and Robert Sugden, ‘Reconciling normative and behavioural economics: The problems to be solved’ (2012) 38 *Social Choice and Welfare* 553. <<https://doi.org/10.1007/s00355-011-0627-1>> accessed 22 August 2025

¹⁴⁷ See more: Colin F Camerer and George Loewenstein, ‘Behavioral Economics: Past, Present, Future’ in Colin F Camerer, George Loewenstein and Matthew Rabin (eds), *Advances in Behavioral Economics* (Princeton University Press 2004) 1.

Second, Richard Thaler, G. A. Akerlof, and R. J. Shiller maintain that behavioral economics is not a separate field but an enhanced economics, enriched by psychology and the other social sciences; in their view, it should replace the outdated neoclassical paradigm.¹⁴⁸ Others contend that behavioral and classical economics serve different purposes and therefore do not conflict: behavioral economics offers descriptive accounts of choice under uncertainty, whereas neoclassical theory advances normative propositions about how agents ought to decide.¹⁴⁹ Rizzo however counters that the axioms of neoclassical theory are constitutive rather than prescriptive: they specify the conditions for a modelled state but do not dictate behavior.¹⁵⁰

Third, some critics argue that the fragmentary insights of behavioral economics cannot be woven into a coherent framework¹⁵¹ and thus cannot supplant the structured edifice of neoclassical theory. McChesney writes: ‘[b]ehavioral economics cannot claim to provide much of a corrective supplement to neoclassical economics, because it has practically nothing to do with economics as it is ordinarily understood.’¹⁵² He concludes that behavioral economics examines phenomena largely outside the scope of orthodox theory; its proper role is complementary, addressing issues that the classical apparatus cannot capture.

8. Behavioral economics

The discoveries concerning human cognition described above laid the foundation for behavioral economics—a discipline rooted in multiple fields, including economics, psychology, anthropology, sociology, political science, and philosophy.¹⁵³ This interdisciplinary research provided a scientific lens for understanding cognitive biases and enabled systematic explanations for the discrepancies between the neoclassical model (normative theory) and observed human behavior (positive theory). The emergence of behavioral economics was largely driven by doubts about the adequacy of using the concept of *homo oeconomicus* to capture actual human behavior.

¹⁴⁸ See more here: Richard H Thaler, ‘Doing Economics without Homo Economicus’ in Steven G Medema, Warren J Samuels (eds), *Foundations of Research in Economics: How Do Economists Do Economics?* (Edward Elgar Publishing 1996) 67; George A Akerlof and Robert J Shiller, *Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism* (Princeton University Press 2010).

¹⁴⁹ Adam Oliver, *The Origins of Behavioural Public Policy* (Cambridge University Press 2017) 7; Munier (n 74) 235.

¹⁵⁰ Rizzo (n 1) 2.

¹⁵¹ Līga Pūce, ‘Criticism of behavioural economics: Attacks towards ideology, evidence and practical application’ (2019) 8 Journal of WEI Business and Economics 32, 34.
<<https://doi.org/10.36739/jweibe.2019.v8.i1.3>> accessed 23 August 2024

¹⁵² McChesney (n 31) 76.

¹⁵³ Oliver (n 149) xiii.

The polemic with the foundational assumptions of neoclassical economics led to the identification of a

discipline of knowledge commonly thought to focus upon the set of observations that show that people often systematically, and therefore seemingly deliberately, violate the assumptions of rational choice theory and the broader assumptions of standard economic theory.¹⁵⁴

Behavioral economics has thus become a bridge linking classical and neoclassical theory with experimentally verified psychological models of human behavior, especially in the area of motivation.¹⁵⁵ Behavioral economists argue that this development marks a return to reflection on human nature, rooted in the psychological approach that characterized early economic thought.¹⁵⁶ As Or Amir and Orly Lobel note,

[f]inding patterns of how we stumble and designing systems that can prevent common behavioral failures is the subject of the new field of behavior economics which attempts to incorporate the vast knowledge accumulated by cognitive and social scientists into predictive models.¹⁵⁷

The application of normative analysis—specifically, neoclassical models—to the prediction and explanation of actual behavior might appear warranted insofar as individuals generally strive to attain their goals efficiently. Nonetheless, departures from the normative model are sufficiently pervasive that they demand systematic investigation; behavioral economics has therefore emerged as a research programme devoted to an adequate description of real-world decision-making processes.¹⁵⁸

¹⁵⁴ *ibidem* 8.

¹⁵⁵ Piotr Niemcewicz, 'Ekonomia behawioralna – hybryda teorii i eksperyment' (2018) 51 *Studia i Prace WNEiZ US* 9. <<http://dx.doi.org/10.18276/sip.2018.51/1-01>> accessed 23 August 2025

¹⁵⁶ Bogusław Bogdanowicz, 'Ekonomia behawioralna a klasyczny paradygmat ekonomii' (2014) 313 *Folia Pomeranae Universitatis Technologiae Stetinensis. Oeconomica* 23, 26. <<http://foliaoe.zut.edu.pl/pdf/files/magazines/2/49/618.pdf>> accessed 23 August 2025

¹⁵⁷ Or Amir and Orly Lobel, 'Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy' (2008) 108 *Columbia Law Review* 2098, 2099. <<http://www.jstor.org/stable/40041817>> accessed 2 December 2024

¹⁵⁸ Mark Pingle, 'Deliberation Cost as a Foundation for Behavioral Economics' in Morris Altman (ed) *Handbook of Contemporary Behavioral Economics: Foundations and Developments* (Routledge 2007) 341.

9. Libertarian paternalism

Libertarian paternalism—sometimes labelled an oxymoron¹⁵⁹—represents a blend of liberal and paternalistic doctrines. Paternalism is generally defined as a doctrine that 'limits the liberty or autonomy of individuals but does so for that person's own good ... in a fatherly manner but restricting individual freedom and responsibilities.'¹⁶⁰ In a similar vein, Kleinig states that paternalism arises when 'X acts to diminish Y's freedom, to the end that Y's good may be secured.'¹⁶¹ As stated in the Stanford Encyclopedia of Philosophy, paternalism is 'the interference of a State or an individual with another person, against their will, and defended or motivated by a claim that the person interfered with will be better off or protected from harm.'¹⁶² Many economists regard paternalistic interventions as problematic: when regulators steer individuals toward predetermined outcomes, the resulting constraints appear incompatible with liberal ideals of personal autonomy.

Classical liberalism is commonly understood as the overarching framework of political ideologies that prioritizes individual freedom above the authority of a central government. Libertarians therefore presume that agents can choose rationally and, by extension, safeguard their own welfare without external guidance.

The contemporary phase of behavioral economics began with a series of publications¹⁶³ in which leading behavioral economists advanced the concept of libertarian paternalism, a policy doctrine that seeks to influence choice through non-mandatory means.

The authors characterise it as 'relatively weak and nonintrusive type of paternalism that in its most cautious forms... imposes trivial costs on those who seek to depart from the

¹⁵⁹ Gregory Mitchell, 'Libertarian Paternalism Is an Oxymoron' (2004) 99 Northwestern University Law Review 1.

<https://www.researchgate.net/publication/228249621_Libertarian_Paternalism_Is_an_Oxymoron> accessed 29 June 2025

¹⁶⁰ Rainer Baisch, 'Nudging: Information, Choice Architecture and Beyond' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 221.

¹⁶¹ John Kleinig, *Paternalism* (Oxford Clarendon Press 1984) 18.

¹⁶² Gerald Dworkin, 'Paternalism', *The Stanford Encyclopedia of Philosophy* (December edn 2005). <www.plato.stanford.edu/archives/win2005/entries/paternalism> accessed 8 May 2015

¹⁶³ In 2003, two distinct groups of economists released papers that initiated a significant movement integrating behavioral economics into public policy. One group named their work 'Regulation for Conservatives,' while the other referred to theirs as 'Libertarian Paternalism.' Both talked about inviting behavioral insights into policy-making. See: Camerer et al. (n 69); Richard H Thaler and Cass R Sunstein, 'Libertarian paternalism' (2003) 93 *The American Economic Review* 175. <<http://www.jstor.org/stable/3132220>> accessed 26 October 2024.

planner's preferred option.¹⁶⁴ In a related study, Jolls and Sunstein describe it as a 'less intrusive, more direct, and more democratic response to the problem of bounded rationality.'¹⁶⁵

Although the label 'libertarian paternalism' appears self-contradictory, Sunstein and Thaler defend it as a synthesis that offsets the shortcomings of both libertarianism and traditional paternalism.¹⁶⁶ They reject equating paternalism with coercion, contending that welfare-enhancing, non-coercive measures—an inevitable feature of any choice architecture—should be deliberately designed rather than left to chance. The authors further maintain that some paternalistic judgment is unavoidable in legislation, making categorical resistance to such interventions both impracticable and theoretically unsound.¹⁶⁷ Paraphrasing Sunstein and Thaler, Mongin and Cozic define paternalism as follows: '[t]heir longstanding interest is to reconcile libertarianism (in the sense of respecting the individual's freedom of choice) and paternalism (in the sense of giving priority to welfare improvement over the individual's spontaneous will).'¹⁶⁸ They therefore emphasize features of nudges such as preserving freedom of choice and promoting people's welfare, while prioritizing well-being over an individual's biased will (people can inadvertently harm themselves).

Libertarian paternalism exhibits depoliticising tendencies and, while it might be seen as based on a single notion of rationality,¹⁶⁹ Sunstein emphasizes that it is compatible with heterogeneous conceptions of welfare and respects agency:¹⁷⁰ defaults and prompts are designed to be choice-preserving, with opt-outs and transparency. The 'choosing not to choose'

¹⁶⁴ Cass R Sunstein and Richard H Thaler, 'Libertarian paternalism is not an oxymoron' (2003) 70 *The University of Chicago Law Review* 1159, 1162.

<https://www.researchgate.net/publication/5027248_Libertarian_Paternalism_Is_Not_An_Oxymoron> accessed 15 August 2024

¹⁶⁵ Christine Jolls and Cass R Sunstein, 'Debiasing Through Law' (2006) 35 *Journal of Legal Studies* 199, 200. <<https://doi.org/10.1086/500096>> accessed 29 November 2024

¹⁶⁶ Sunstein and Thaler (n 164).

¹⁶⁷ *ibidem* 175.

¹⁶⁸ Philippe Mongin and Mikael Cozic, 'Rethinking nudges' (2014) HEC Paris Research Paper no. ECO/SCD-2014-1067, 1, 3.

<https://www.researchgate.net/publication/314476261_Rethinking_Nudges> accessed 5 August 2024; Philippe Mongin and Mikael Cozic, 'Rethinking Nudge: Not One But Three Concepts' (2018) 2 *Behavioural Public Policy* 107, 110. <<https://www.cambridge.org/core/journals/behavioural-public-policy/article/rethinking-nudge-not-one-but-three-concepts/60BEEA6CEDBE6749C31845CF8EF3A91A>> accessed 11 September 2024

¹⁶⁹ Suzanne Schneider, 'Technocracy without society: a critique of nudging as an approach to managing risk' (2024) *International Review Of Applied Economics* 1, 7. <<https://doi.org/10.1080/02692171.2024.2384457>> accessed 8 January 2025

¹⁷⁰ Cass R Sunstein, 'Nudges vs Shoves' (2014) 127 *Harvard Law Review Forum* 210, 211. <<http://harvardlawreview.org/2014/04/nudges-vs-shoves/>> accessed 5 July 2025

argument further highlights bandwidth limits and the legitimacy of delegating certain decisions to institutions.¹⁷¹

While preserving the principle that public policies should maximise the well-being of legal subjects, it deliberately refrains from restricting individual freedom. It is described as a middle ground between laissez-faire and classical paternalism.¹⁷² The legislator selects what is deemed beneficial for individuals and, employing behavioral tools, gently nudges them toward those choices; yet the regulation always leaves them at liberty to disregard the nudge and act otherwise.¹⁷³ A similar aim—shielding individuals from their cognitive limitations while respecting freedom of choice—underlies the doctrine of asymmetric paternalism.¹⁷⁴

Sunstein and Thaler argue that a policy can steer behavior toward desired outcomes without obliging individuals to perform a specific act or achieve a predetermined end. This possibility arises from applying behavioral science to the rule-making process. At the core of libertarian paternalism lies its distinctive regulatory instrument: the nudge.

The vocabulary of ‘nudge’ is recent, yet its underlying logic has long animated both scholarly inquiry and public administration.¹⁷⁵ Well before the term was popularized by Thaler and Sunstein in 2008,¹⁷⁶ behavioral economists, sociologists, and legal theorists were already

¹⁷¹ Cass R Sunstein, ‘Choosing not to choose’ (2014) 64 Duke Law Journal 1, 37.
<<https://scholarship.law.duke.edu/dlj/vol64/iss1/1/>> accessed 30 September 2025

¹⁷² Jolls and Sunstein (n 165) 208, 216; Mario J Rizzo and Douglas Glen Whitman, ‘Little Brother is Watching You: New Paternalism on the Slippery Slopes’ (2009) 51 Arizona Law Review 685, 687.
<<https://arizonalawreview.org/pdf/51-3/51arizrev685.pdf>> accessed 29 November 2024; Schneider (n 169) 2.

¹⁷³ Cass Sunstein claims that nudges should encourage behavior that is in line with an individual's preferences and hence promotes one's own welfare. It means that lawmakers do not pick what is best for people, but rather introduce tools that enable behavior producing outcomes that are in line with human preferences. See: Cass R Sunstein, *Why Nudge? The Politics of Libertarian Paternalism* (Yale University Press 2014). The problem with this statement is that people often do not have any preferences in a chosen matter, their preferences change over time, or preferences of different groups vary. In such cases, lawmakers are left with no choice but to choose what is good for the people. It is proposed by Richard Thaler and Cass Sunstein to estimate private welfare assuming the fulfillment of an agent's genuine preferences, or those that an agent would have under perfect circumstances, such as total information, no lack of self-control, and limitless cognitive capacity. See: Sunstein and Thaler (n 164).

¹⁷⁴ Loewenstein, Brennan and Volpp (n 143); Camerer and others (n 69); Jolls and Sunstein (n 165); Frey and Gallus (n 67) 11.

¹⁷⁵ Russell B Korobkin and Thomas S Ulen, ‘Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics’ (2000) 88 California Law Review 1051, 1059.
<<https://doi.org/10.2307/3481255>> accessed 23 August 2025; Glendon A Schubert, ‘The Study of Judicial Decision-Making as an Aspect of Political Behavior’ (1958) 52 The American Political Science Review 1007. <<https://doi.org/10.2307/1951981>> accessed 1 March 2025; Nathan Grundstein, ‘Administrative Law and the Behavioral and Management Sciences’ (1982) 24 Journal of the Indian Law Institute 279. <<http://www.jstor.org/stable/43952209>> accessed 1 March 2025; Kenneth C Davis, ‘Behavioral Science and Administrative Law’ (1964) 17 Journal of Legal Education 137, 148.
<<http://www.jstor.org/stable/42891618>> accessed 1 March 2025

¹⁷⁶ Richard H Thaler and Cass R Sunstein, *Nudge: Improving decisions about health, wealth, and happiness* (Yale University Press 2008).

analysing default effects, framing, and salience, while legislators experimented with them in situ. Frederick the Great's celebrated potato stratagem—guarded royal plots that converted perceived scarcity into culinary fashion¹⁷⁷—foreshadowed modern defaults such as opt-out organ donation,¹⁷⁸ automatic-enrolment pensions,¹⁷⁹ a host of public-health policies,¹⁸⁰ and 'situational crime prevention techniques' to reduce opportunities for criminal wrongdoing.¹⁸¹

Today these logics pervade quotidian environments. Road markings, speed-calming chicanes, and the white demarcation between traffic lanes constitute infrastructural choice architecture, silently disciplining velocity without legal compulsion.¹⁸² Retailers deploy parallel tactics: shelf placement and height,¹⁸³ environmental cues,¹⁸⁴ product positioning on

¹⁷⁷ David Halpern, *Inside the nudge unit. How small changes can make a big difference* (WH Allen 2015).

¹⁷⁸ Eric J Johnson and Daniel G Goldstein, 'Do defaults save lives?' (2003) 302 *Science* 1338. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1324774> accessed 15 August 2024; Alberto Abadie and Sebastien Gay, 'The impact of presumed consent legislation on cadaveric organ donation: a cross-country study' (2006) 25 *Journal of Health Economics* 599.

<<https://www.sciencedirect.com/science/article/abs/pii/S016762960600004X>> accessed 3 September 2024; Daniel Goldstein, Eric J Johnson, Andreas Herrman and Mark Heitmann, 'Nudge your customers toward better choices' (2008) 86 *Harvard Business Review* 99.

<https://www.researchgate.net/publication/262042571_Nudge_Your_Customers_Toward_Better_Choices> accessed 6 November 2024

¹⁷⁹ Brigitte C Madrian and Dennis F Shea, 'The power of suggestion: Inertia in 401(k) participation and savings behavior' (2001) 116 *Quarterly Journal of Economics* 1149.

<<https://www.jstor.org/stable/2696456>> accessed 18 August 2024

¹⁸⁰ Barbara J McNeil, Stephen G Pauker, Harold C Jr Sox and Amos Tversky, 'On the elicitation of preferences for alternative therapies' (1982) 306 *The New England Journal of Medicine* 1259.

<https://www.researchgate.net/publication/16129490_On_the_Elicitation_of_Preference_for_Alternative_Therapies> accessed 15 August 2024; Kim M Blankenship KM, SR Friedman, Shari L Dworkin and Joanne E Mantell, 'Structural interventions: concepts, challenges and opportunities for research' (2006) 83 *Journal of Urban Health* 59.

<https://www.researchgate.net/publication/7047211_Structural_Interventions_Concepts_Challenges_and_Opportunities_for_Research> accessed 17 August 2024

¹⁸¹ David W Garland, 'Ideas, Institutions and Situational Crime Prevention', in Andreas von Hirsch, David W Garland and Alison Wakefield (eds), *Ethical and Social Perspectives on Situational Crime Prevention* (Hart Publishing 2000) 1.

¹⁸² Texas A&M Transportation Institute, 'Bicycle Lanes' (*Transportation Policy Research*, 2015)

<<https://policy.tti.tamu.edu/strategy/bicycle-lanes/>> accessed 23 August 2025

¹⁸³ Ana Valenzuela and Priya Raghubir, 'Position-based beliefs: The center-stage effect' (2009) 19 *Journal of Consumer Psychology* 185.

<https://www.researchgate.net/publication/247353185_Position-based_beliefs_The_center-stage_effect> accessed 14 August 2024; Joanna Blythman, *Shopped: the shocking power of British supermarkets* (Fourth Estate 2004); Paul Rozin, Sydney Scott, Megan Dingley, Joanna K Urbanek, Hong Jiang and Mark Kaltenbach, 'Nudge to Nobesity I: Minor Changes in Accessibility Decrease Food Intake' (2011) 6 *Judgment and Decision Making* 323.

<<https://doi.org/10.1017/S1930297500001935>> accessed 13 December 2024; Thaler and Sunstein (n 163); Eran Dayan and Maya Bar-Hillel, 'Nudge to Nobesity II: Menu Positions Influence Food Orders' (2011) 6 *Judgment and Decision Making* 333. <<https://doi.org/10.1017/S1930297500001947>> accessed 6 December 2024

¹⁸⁴ Laurits Rohden Skov and others, 'Choice architecture as a means to change eating behaviour in self-service settings: A systematic review' (2013) 14 *Obesity Reviews* 187, 6.

<https://www.researchgate.net/publication/233723061_Choice_architecture_as_a_means_to_change_eating_behaviour_in_self-service_settings_A_systematic_review> accessed 14 August 2024; Sosja

the top of the list,¹⁸⁵ and colour-coded labels¹⁸⁶ (‘bestseller,’ ‘water-repellent,’ ‘made from 20 ocean bottles’) guide attention and hasten purchase; scarcity cues (‘limited edition,’ ‘low stock’) harness loss aversion and social proof. Digital interfaces do the same, ranking search results or pre-selecting privacy settings in ways that steer yet do not dictate. Even the proximity of a supermarket or bike-share station shapes consumption through sheer physical availability.¹⁸⁷

Prinsen, Denise TD De Ridder and Emely De Vet, ‘Eating by example: Effects of environmental cues on dietary decisions’ (2013) 70 *Appetite* 1.

<<https://www.sciencedirect.com/science/article/abs/pii/S019566631300216X>> accessed 14 August 2024; Ellen Van Kleef, Kai Otten and Hans CM van Trijp, ‘Healthy snacks at the checkout counter: A lab and field study on the impact of shelf arrangement and assortment structure on consumer choices’ (2012) 12 *British Medical Journal: Public Health* 1072, 1084.

<https://www.researchgate.net/publication/233900383_Healthy_snacks_at_the_checkout_counter_A_lab_and_field_study_on_the_impact_of_shelf_arrangement_and_assortment_structure_on_consumer_choices> accessed 14 August 2024; Floor M Kroese, David R Marchiori and Denise TD De Ridder, ‘Nudging healthy food choices: A field experiment at the train station’ (2015) 38 *Journal of Public Health* 1.

<https://www.researchgate.net/publication/280116474_Nudging_healthy_food_choices_A_field_experiment_at_the_train_station> accessed 14 August 2024; Brian Wansink and Koert van Ittersum, ‘Bottoms up! The influence of elongation on pouring and consumption Volume’ (2003) 30 *Journal of Consumer Research* 455. <<https://doi.org/10.1086/378621>> accessed 13 December 2024; Tina AG Venema, Floor M Kroese, Bas Verplanken and Denise TD De Ridder, ‘The (bitter) sweet taste of nudge effectiveness: The role of habits in a portion size nudge, a proof of concept study’ (2020) 151 *Appetite* 1. <<https://doi.org/10.1016/j.appet.2020.104699>> accessed 17 December 2024; Laurens C Van Gestel, Floor M Kroese and Denise De Ridder, ‘Nudging at the checkout counter – A longitudinal study of the effect of a food repositioning nudge on healthy food choice’ (2017) 33 *Psychology & Health* 800. <<https://doi.org/10.1080/08870446.2017.1416116>> accessed 17 December 2024; Rasmus Friis and others, ‘Comparison of three nudge interventions (priming, default option, and perceived variety) to promote vegetable consumption in a self-service buffet setting’ (2017) 12 *PLoS ONE* 1. <<https://doi.org/10.1371/journal.pone.0176028>> accessed 17 December 2024

¹⁸⁵ Verena Kurz, ‘Nudging to reduce meat consumption: Immediate and persistent effects of an intervention at a university restaurant’ (2018) 90 *Journal of Environmental Economics and Management* 317.

<<https://www.sciencedirect.com/science/article/abs/pii/S0095069617307738>> accessed 3 September 2024; Christina Gravert and Verena Kurz, ‘Nudging à la carte: a field experiment on climate-friendly food choice’ (2019) 5 *Behavioral Public Policy* 1.

<https://www.researchgate.net/publication/333294579_Nudging_a_la_carte_a_field_experiment_on_climate-friendly_food_choice> accessed 6 September 2024; Richard H Thaler, Cass R Sunstein and John P Balz, ‘Choice architecture’ in Eldar Shafir (ed), *The Behavioral Foundations of Public Policy* (Princeton University Press 2013) 428. <<https://www.jstor.org/stable/j.ctv550cbm.31>> accessed 4 October 2024; Riccardo Rebonato, *Taking liberties: A critical examination of libertarian paternalism* (Palgrave Macmillan 2012).

¹⁸⁶ Anne N Thorndike and others, ‘A 2-phase labeling and choice architecture intervention to improve healthy food and beverage choices’ (2012) 102 *American Journal of Public Health* 527. <[10.2105/AJPH.2011.300391](https://doi.org/10.2105/AJPH.2011.300391)> accessed 14 December 2024

¹⁸⁷ Lorraine R Reitzel and others, ‘The Effect of Tobacco Outlet Density and Proximity on Smoking Cessation’ (2011) 101 *American Journal of Public Health* 315.

<[10.2105/AJPH.2010.191676](https://doi.org/10.2105/AJPH.2010.191676)> accessed 13 December 2024; Johan Faskunger, Eric Poortvliet, Kamilla Nyland and Jenny Rossen, ‘Effect of an environmental barrier to physical activity on commuter stair use’ (2003) 47 *Scandinavian Journal of Nutrition* 26.

<<https://doi.org/10.3402/fnr.v47i1.1467>> accessed 13 December 2024; Simone A French and others, ‘Pricing and availability intervention in vending machines at four bus garages’ (2010) 52 *Journal of occupational and environmental medicine* S29. <[10.1097/JOM.0b013e3181c5c476](https://doi.org/10.1097/JOM.0b013e3181c5c476)> accessed 13 December 2024; Josje Maas, Denise T D de Ridder, Emely de Vet and John B F de Wit, ‘Do distant

What unites genuine nudges across domains is a minimalist regulatory posture: they modify the architecture of choice rather than the menu of options, they eschew coercion, and they operate through empirically grounded mental heuristics. In that sense, each of us encounters nudges daily—on the road, online, and in the market—often without noticing the gentle hand that shapes our decisions.

From a political perspective, the introduction of nudge in the UK represented a regulatory innovation that supposedly allowed for a compromise between the conservative and liberal sides of the political spectrum. The implementation of nudge coincided with the Global Economic Crisis of 2007-2008, making the opportunity to regulate in a less expensive way seem even more appealing.¹⁸⁸ In the context of introducing behavioral interventions, the economic crisis was framed as a crisis of rationality,¹⁸⁹ which further justified incorporating insights from behavioral economics into government programs.¹⁹⁰ As Burgess explains, ‘[a]longside wellbeing, transparency, and decentralisation this experiment with behavioral economics is one of the new emphases in government thinking. All this is underpinned with the promotion of an ethos of promoting greater personal responsibility.’¹⁹¹ The message expressed in the programme introduced by the UK Coalition Government (2010-15) posed the classical question: “Ask not what society can do for you, but what you can do for society.” Their role is to make that more possible, be that through making it easier to do voluntary work, or reduce the burden on the health service by encouraging healthier lifestyles.’¹⁹² From a political standpoint, libertarian paternalism represents a ‘third way’ between state coercion and inaction.¹⁹³

foods decrease intake? The effect of food accessibility on consumption’ (2012) 27 *Psychology & Health* 59. <<https://doi.org/10.1080/08870446.2011.565341>> accessed 17 December 2024; Daniel Knowles, Kyle Brown and Silvio Aldrovandi, ‘Exploring the underpinning mechanisms of the proximity effect within a competitive food environment’ (2019) 134 *Appetite* 94. <[10.1016/j.appet.2018.12.005](https://doi.org/10.1016/j.appet.2018.12.005)> accessed 17 December 2024

¹⁸⁸ Stuart Mills and Richard Whittle, ‘How “nudge” happened: the political economy of nudging in the UK’ (2025) 49 *Cambridge Journal of Economics* 1. <<https://doi.org/10.1093/cje/beae038>> accessed 10 February 2025

¹⁸⁹ Andy Hira, ‘Irrational Exuberance: An Evolutionary Perspective on the Underlying Causes of the Financial Crisis’ (2013) 48 *Intereconomics* 116. <<https://www.intereconomics.eu/contents/year/2013/number/2/article/irrational-exuberance-an-evolutionary-perspective-on-the-underlying-causes-of-the-financial-crisis.html>> accessed 10 February 2025

¹⁹⁰ Mills and Whittle (n 188).

¹⁹¹ Adam Burgess, “Nudging” Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market’ (2012) 3 *European Journal of Risk Regulation* 3. <<https://www.jstor.org/stable/24323121>> accessed 8 February 2025

¹⁹² *ibidem*.

¹⁹³ Ryan Calo, ‘Code, Nudge, or Notice?’ (2014) 99 *Iowa Law Review* 773, 784. <<https://ilr.law.uiowa.edu/sites/ilr.law.uiowa.edu/files/2023-02/ILR-99-2-Calo.pdf>> accessed 8 February 2025

In the United Kingdom, this translation of behavioral theory into practice was marked by the Cabinet Office and the Institute for Government's MINDSPACE report which outlined nine key behavioral effects relevant for policy design.¹⁹⁴ Later, the Behavioural Insights Team proposed the EAST framework, presenting four practical principles—Easy, Attractive, Social, and Timely—for applying behavioral insights in government.¹⁹⁵ These frameworks illustrate the shift from theoretical accounts of nudging towards concrete, operational tools for public administration.¹⁹⁶

10. Conclusions

The analysis undertaken in Chapter I demonstrates that the classical figure of *homo oeconomicus* and the axioms of rational choice theory, while central to the scientific identity of neoclassical economics, provide only a partial and idealised account of human conduct. The critiques surveyed reveal that individuals rarely act as perfect optimisers: instead, they are guided by social norms, emotions, bounded cognitive capacities, and adaptive heuristics. Far from undermining rationality altogether, these findings suggest a pluralistic and context-sensitive conception of rational behavior, one that aligns more closely with observed decision-making.

From this perspective, behavioral economics emerges not as a wholesale rejection of the neoclassical paradigm but as its refinement and extension. By documenting systematic patterns of deviation from rational choice theory, it bridges the gap between descriptive accuracy and normative aspirations. The doctrine of libertarian paternalism represents a concrete policy response to these insights: it operationalises behavioral findings into regulatory

¹⁹⁴ Paul Dolan and others, 'Mindspace: Influencing behaviour through public policy' (2010) Institute For Government, 1. <<http://www.instituteforgovernment.org.uk/publications/mindspace>> accessed 16 December 2024

¹⁹⁵ Behavioural Insights Team, 'EAST: Four Simple Ways to Apply Behavioural Insights' (*Bi.team*, 2014). <<https://www.bi.team/wp-content/uploads/2014/04/BIT-EAST-1.pdf>> accessed 30 September 2025

¹⁹⁶ At the same time, alternative approaches emerged: Hertwig and Grüne-Yanoff popularized the notion of 'boosts' as a counterpart to nudges, defining them in terms of competence-building interventions; see: Ralph Hertwig and Till Grüne-Yanoff, 'Nudging and boosting: Steering or empowering good decisions' (2017) 12 *Perspectives on Psychological Science* 973. <<https://pages.ucsd.edu/~mckenzie/Hertwig&Grune-Yanoff2017PerspectivesPsychSci.pdf>> accessed 15 August 2024; More recently, Sunstein highlighted 'sludge'—frictions, delays, and paperwork that hinder welfare-enhancing choices—and proposed 'sludge audits' to identify and reduce such burdens. Together, these developments broaden the canon of behaviorally informed policy instruments beyond nudges alone. See: Cass R Sunstein, 'Sludge Audits' (2020) 6 *Behavioural Public Policy* 1. <[10.1017/bpp.2019.32](https://doi.org/10.1017/bpp.2019.32)> accessed 30 September 2025

strategies that steer individuals towards welfare-enhancing choices without formally constraining their autonomy.

The conclusions of this chapter therefore answer the guiding questions: the neoclassical model is revealed as powerful but limited; the critiques highlight the need for interdisciplinary integration; bounded and ecological rationality provide a more realistic framework; behavioral economics offers the theoretical tools for that framework; and libertarian paternalism exemplifies its translation into governance.

This trajectory naturally leads to the next stage of inquiry, developed in Chapter II. Having established the intellectual foundations of behavioral economics and libertarian paternalism, the dissertation now turns to the precise meaning of the concept of nudge. The second chapter asks whether we truly know what qualifies as a nudge, disentangling its definitional components and examining how it differs from other behavioral interventions and from the broader notion of choice architecture. It analyses the criteria that distinguish nudges from mandates, prohibitions, and financial incentives, as well as the debates concerning transparency, autonomy, and welfare. In doing so, Chapter II lays the conceptual groundwork for evaluating nudging not merely as a theoretical construct but as a practical regulatory tool.

Chapter II

Nudge and other behavioral interventions. Do we really know what nudge is?

1. Introduction

The second chapter undertakes a systematic deconstruction of the concept of the nudge, subjecting its definitional core to detailed scrutiny. While Chapter I established the intellectual and jurisprudential trajectory from rational choice theory to behavioral economics and libertarian paternalism, this chapter asks a more precise question: do we in fact know what a nudge is? To answer, it dissects the definitional components proposed by Richard Thaler and Cass Sunstein and evaluates them against the backdrop of extensive academic debate, drawing on literature in economics, psychology, philosophy, and law. The objective is twofold: first, to identify the precise conditions under which an intervention can be qualified as a nudge; and second, to assess whether these conditions withstand critical examination when viewed from the perspective of legal theory and legislative practice.

The analysis proceeds through a series of thematic inquiries. It asks, to begin with, whether nudges can truly be distinguished from other forms of interventions, such as mandates, bans, and financial incentives. The definitional claim that a nudge ‘does not forbid any options, nor significantly change economic incentives’ remains one of the most contested aspects, raising the question of whether certain interventions—such as small taxes, subsidies, or default rules—ought to be included or excluded.

A second point of contention lies in the requirement that a nudge be ‘easy and cheap to avoid.’ What counts as trivial cost, and for whom? Does avoidability depend solely on economic factors, or must it also take account of time, effort, transparency, and social pressures? These questions invite a normative as well as a descriptive inquiry, particularly in the legal context, where the balance between regulatory design and respect for autonomy is paramount.

Third, the chapter interrogates the role of cognitive mechanisms: must a nudge always exploit heuristics and biases, thereby operating through failures of rationality, or can it also include ‘mindful’ interventions, such as information disclosures or decision aids, that engage deliberative processes? This question has deep implications for the legitimacy of nudging in law, as it touches upon the boundary between persuasion, manipulation, and autonomy-preserving guidance.

Finally, the welfare condition is critically examined. To what extent must a nudge operate for the benefit of the individual, and who determines what counts as ‘benefit’? Can nudges be justified if they serve third parties or society at large, even when individual preferences diverge? The debate surrounding paternalism, autonomy, and collective welfare illustrates how the definitional ambiguity of nudges intersects directly with legal philosophy and normative theory.

By dissecting these controversial components—prohibition and incentives, avoidability, cognitive mechanisms, and welfare—the chapter reveals the persistent indeterminacy that characterises the concept of a nudge. Its ultimate aim is to resolve these ambiguities by proposing a refined definition that not only systematises existing debates but also proves particularly functional within legal scholarship and legislative practice.

2. Classic definition of nudge

The term nudge is a famous term popularized by Cass Sunstein and Richard Thaler who described it in 2008 in the book *Nudge: Improving Decisions About Health, Wealth, and Happiness*¹ which was the New York Times bestseller and named a Best Book of the Year by The Economist and the Financial Times. The novelty offered by Thaler and Sunstein lay in the fact that they presented their insights in a way that could be understood by both policy-makers and lay readers, while also providing a serious intellectual critique of neoclassical concepts of market equilibrium and theory of rational choice.² According to the authors, nudge is defined as:

any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates.³

Moreover, the authors add that an intervention classified as nudge has to significantly alter the behavior of Humans even though it would be ignored by Econs,⁴ ‘where Econs is their

¹ Richard H Thaler and Cass R Sunstein, *Nudge: Improving decisions about health, wealth, and happiness* (Yale University Press 2008).

² Nicholas Gane, ‘Nudge Economics as Libertarian Paternalism’ (2021) 38 Theory, Culture & Society 119, 119. <<https://doi.org/10.1177/0263276421999447>> accessed 15 August 2024

³ Thaler and Sunstein (n 1) 6.

⁴ *ibidem* 8.

term for agents acting according to the standard rational model of agency found in politics, philosophy and economics, and Humans are the empirical agents studied in cognitive and social psychology as well as in Behavioural Economics.’⁵

In a later work, Cass Sunstein acknowledges that a nudge is synonymous with soft paternalism referred to as

actions of government that attempt to improve people’s welfare by influencing their choices without imposing material costs on those choices. ... We can understand soft paternalism, thus defined, as including nudges, and I will use the terms interchangeably here.⁶

Sunstein elaborates on the aforementioned definition of nudge in his more recent paper:

Nudges are interventions that steer people in particular directions but that also allow them to go their own way. A reminder is a nudge; so is a warning. A GPS nudges; a default rule nudges. To qualify as a nudge, an intervention must not impose significant material incentives (including disincentives). A subsidy is not a nudge; a tax is not a nudge; a fine or a jail sentence is not a nudge. To count as such, a nudge must fully preserve freedom of choice.⁷

Nudge is frequently characterized as synonymous with choice architecture,⁸ libertarian paternalism,⁹ or behavioral public policy, but this is a misconception, as nudge is a more

⁵ Pelle Guldberg Hansen, ‘The ‘Big Gulp Ban’ – a nudge or not?’ (iNudgeyou, 8 October 2012) <<https://inudgeyou.com/en/the-big-gulp-ban-a-nudge-or-not/>> accessed 15 August 2024

⁶ Cass Sunstein, *Why Nudge? The Politics of Libertarian Paternalism* (New Haven: Yale University Press 2014) 58.

⁷ Cass Sunstein, ‘The ethics of nudging’ (2015) 32 *Yale Journal on Regulation* 413, 417. <<http://hdl.handle.net/20.500.13051/8225>> accessed 23 August 2025

⁸ Chris Mills, ‘The heteronomy of choice architecture’ (2015) 6 *Review of Philosophy and Psychology* 495. <<https://wrap.warwick.ac.uk/id/eprint/91069/1/WRAP-heteronomy-choice-architecture-Mills-2015.pdf>> accessed 18 August 2024

⁹ Mark D White, ‘The Crucial Importance of Interests in Libertarian Paternalism’ in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 21.

specific concept in comparison to the latter terms.¹⁰ Barton and Grüne-Yanoff suggest a clear distinction among these concepts;

we characterize the choice architecture as the context in which people make decisions, and nudges as interventions on the choice architecture with the aim of steering people's behaviour into specific directions. Finally, we characterize libertarian paternalism as a particular kind of advocacy of nudges.¹¹

In the context of distinguishing between the concepts of behavioral intervention and nudge, Lofgren and Nordblom define behavioral interventions as tools designed 'to alter people's behavior without changing economic incentives or regulating behavior...'¹² Conversely, a nudge is a tool that possesses more distinctive characteristics than the former two.

From the definitions provided, seven components of a nudge emerge, which are essential conditions for classifying a public intervention as a nudge:

- 1) A nudge is an instrument that influences behavior, operating within a choice environment, particularly in an organizational context, which surrounds the decision-making process.
- 2) The change induced by a nudge must be intentional; thus, the nudge should activate a mechanism that commences with a stimulus and is designed to culminate in a specific, pre-determined decision made by the policy-maker.
- 3) It cannot be based on prohibitions, mandates, or the reduction of available options.
- 4) It must not rely on influencing human decisions through the imposition of burdens or financial incentives.

¹⁰ Till Grüne-Yanoff, 'Behavioral Public Policy, One Name, Many Types. A Mechanistic Perspective' in Conrad Heilmann and Julian Reiss (eds) *The Routledge Handbook of the Philosophy of Economics* (Routledge 2021) 480; Gareth J Hollands and others, 'Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions' (2013) 13 *BMC Public Health* 1, 5. <<https://doi.org/10.1186/1471-2458-13-1218>> accessed 14 December 2024

¹¹ Adrien Barton and Till Grüne-Yanoff, 'From Libertarian Paternalism to Nudging—and Beyond' (2015) 6 *Review of Philosophy and Psychology* 341, 342. <<https://link.springer.com/article/10.1007/s13164-015-0268-x>> accessed 11 December 2024

¹² Åsa Löfgren and Katarina Nordblom, 'A theoretical framework of decision making explaining the mechanisms of nudging' (2020) 174 *Journal of Economic Behavior & Organization* 1. <<https://www.sciencedirect.com/science/article/pii/S0167268120300871>> accessed 3 September 2024

5) It must be avoidable, meaning that every individual being nudged should be able to easily and without significant difficulty make a different choice than the one suggested by the nudge.

6) It must be anchored in mechanisms that reflect human behavior: cognitive biases, heuristics, rules of thumb, social influences, etc., rather than economic principles.

7) A nudge must serve the welfare of individuals, meaning it should operate in their favor, assisting them in making better decisions to enhance their levels of happiness and health.

Thaler's and Sunstein's nudge definition has given rise to much confusion and debate over the conceptual edges of the term and the ambiguity of the above-mentioned components of its definition.¹³ Some authors consider tools that contain only a portion of the aforementioned components as nudges. Congiu and Moscati categorized the definition into four fundamental components that constitute a nudge, which are frequently cited as a source of confusion:¹⁴

- 1) nudge does not forbid any options and does not make any option more costly in terms of time, money, trouble, or social sanctions¹⁵
- 2) nudge does not change the economic incentive
- 3) nudge is easy and cheap to avoid, or easy to resist¹⁶
- 4) nudge significantly alters the behavior of Humans even though it would be ignored by Econs.

2.1. Choice architecture

The authors Richard Thaler and Cass Sunstein defined choice architecture as a way of 'organizing the context in which people make decisions.'¹⁷ The research on choice architecture

¹³ Grüne-Yanoff (n 10); Luca Congiu and Ivan Moscati, 'A review of nudges: Definitions, justifications, effectiveness' (2022) 36 *Journal of Economic Surveys* 188.

<<https://onlinelibrary.wiley.com/doi/full/10.1111/joes.12453>> accessed 5 August 2024; Luciano Floridi, 'Tolerant Paternalism: Pro-ethical Design as a Resolution of the Dilemma of Toleration' (2016) 22 *Science and Engineering Ethics* 1. <[10.1007/s11948-015-9733-2](https://doi.org/10.1007/s11948-015-9733-2)> accessed 15 August 2025; Evan Selinger and Kyle P Whyte, 'What counts as a nudge?' (2012) 12 *The American Journal of Bioethics* 11. <[10.1080/15265161.2011.634485](https://doi.org/10.1080/15265161.2011.634485)> accessed 15 August 2025

¹⁴ Congiu and Moscati (n 13) 195.

¹⁵ David R Marchiori, Marieke A Adriaanse, and Denise TD De Ridder, 'Unresolved questions in nudging research: Putting the psychology back in nudging' (2017) 11 *Social and Personality Psychology Compass* 1. <<https://www.uu.nl/sites/default/files/marchiori-et-al-2017-social-and-personality-psychology-compass.pdf>> accessed 14 August 2024

¹⁶ Yashar Saghai, 'Salvaging the concept of nudge' (2013) 39 *Journal of Medical Ethics* 487. <<https://jme.bmj.com/content/39/8/487>> accessed 15 August 2024

¹⁷ Richard H Thaler, Cass Sunstein and John P Balz, 'Choice architecture' in Eldar Shafir (ed), *The Behavioral Foundations of Public Policy* (Princeton University Press 2013) 428.

shows how seemingly small changes in how choices are presented can have large effects on people's decisions without changing the underlying choice itself.¹⁸ Mills defines choice architecture as 'an approach to policy design that seeks to harness evidence from behavioural economics and cognitive psychology to overcome blunders we commonly make in our decision-making.'¹⁹ In other words, choice architecture is an intervention 'that involves altering small-scale physical and social environments, or micro-environments'²⁰ to steer people towards a certain choice. Hollands et al. clarify;

[s]uch interventions are implemented within the same micro-environment as that in which the target behaviour is performed, typically require minimal conscious engagement, can in principle influence the behaviour of many people simultaneously, and are not targeted or tailored to specific individuals.²¹

Sunstein and others contend that every decision context rests on some architecture—deliberate or random—so eschewing design simply entrenches an unreflective status quo.²² Consequently, the legislator who seeks to enhance social welfare must adopt the role of choice architect rather than remain a passive custodian of chance.²³

Choice architecture consists in making only slight,²⁴ non-coercive alterations to the decision context, exploiting or neutralising familiar heuristics rather than training new

¹⁸ Job Krijnen, 'Choice Architecture 2.0: How People Interpret and Make Sense of Nudges' (behavioralscientists.org, 18 September 2018).
<<https://behavioralscientist.org/choice-architecture-2-0-how-people-interpret-and-make-sense-of-nudges/>> accessed 15 August 2024; Thaler and Sunstein (n 1); Thaler, Sunstein and Balz (n 17).

¹⁹ Mills (n 8).

²⁰ Hollands and others (n 10) 2.

²¹ *ibidem* 3.

²² Eric J Johnson and others, 'Beyond nudges: Tools of a choice architecture' (2012) 23 Marketing Letters 487, 488.

<https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architect> accessed 7 November 2024

²³ Richard H Thaler and Cass R Sunstein and John P Balz, 'Choice architecture' (2010)

<<http://ssrn.com/abstract=1583509>> accessed 15 August 2024

²⁴ Philippe Mongin and Mikael Cozic, 'Rethinking nudges' (2014) HEC Paris Research Paper no. ECO/SCD-2014-1067, 1.

<https://www.researchgate.net/publication/314476261_Rethinking_Nudges> accessed 5 August 2024

competences.²⁵ By anticipating inevitable errors²⁶ and supplying immediate, low-friction feedback, it steers agents toward welfare-enhancing outcomes while preserving their autonomy. Its central ambition is navigability: to simplify the route to each person's self-endorsed destination.²⁷

An example of effective choice architecture in the field of promoting healthy eating is the alteration of plate size, which has reduced food waste in buffet restaurants by as much as 20%.²⁸

2.2. A tool that brings about predictable change

Saghai noted that a nudge increases the likelihood of certain individuals or groups engaging in specific behaviors, acting as a probabilistic success metric.²⁹ Nudges must be based on experimental evidence and require careful design, testing, and evaluation. Researchers emphasize that implementing nudges should follow thorough investigations, as they are evidence-based interventions.³⁰ Randomized controlled trials (RCTs), considered the 'gold standard' in evidence-based policy-making, are crucial in applied behavioral science for their quantitative focus that provides a strong counterfactual for assessing intervention impacts.³¹ For studies to be valid, they must meet specific standards, share universal traits, and be

²⁵ Daniel M Hausman, 'Nudging and Other Ways of Steering Choices' (2018) 53 *Intereconomics* 17, 19 <<https://doi.org/10.1007/s10272-018-0713-z>> accessed 4 August 2024. It is worth noting at this point that not all authors agree with the claim that choice architecture is not intended to teach individuals new skills or to enhance their competences. See section 2.6. for further discussion on this issue.

²⁶ Peter Charles John, Graham Smith and Gerry Stoker, 'Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour' (2009) 80 *The Political Quarterly* 361, 367. <https://www.researchgate.net/publication/230361341_Nudge_Nudge_Think_Think_Two_Strategies_for_Changing_Civic_Behaviour> accessed 24 August 2024

²⁷ Cass R Sunstein, 'Nudges, agency, and abstraction: a reply to critics' (2015) 6 *Review of Philosophy and Psychology* 511, 513. <https://www.researchgate.net/publication/277927867_Nudges_Agency_and_Abstraction_A_Reply_to_Critics> accessed 15 August 2024

²⁸ Steffen Kallbekken and Håkon Saelen, "'Nudging" hotel guests to reduce food waste as a win-win environmental measure' (2013) 119 *Economics Letters* 325. <<https://www.sciencedirect.com/science/article/abs/pii/S0165176513001286>> accessed 6 September 2024

²⁹ Saghai (n 16) 491.

³⁰ Barnabas Szaszi and others, 'A systematic scoping review of the choice architecture movement: Toward understanding when and why nudges work' (2018) 31 *Journal of Behavioral Decision Making* 355, 362. <<https://doi.org/10.1002/bdm.2035>> accessed 5 November 2024

³¹ Jessica Heal and Bibi Groot, 'Running RCTs with complex interventions' (*Behavioural Insights Team Blog*, 1 November 2017). <<https://www.bi.team/blogs/running-rcts-with-complex-interventions/>> accessed 3 December 2024; Michael Hallsworth, 'A Manifesto for Applying Behavioral Science' (*Behavioural Insights Team Blog*, 20 March 2023) 45. <<https://www.bi.team/publications/a-manifesto-for-applying-behavioral-science/>> accessed 2 December 2024

replicable, using consistent terminology understood across disciplines.³² Nudges are context-sensitive; applying a nudge from one country to another may yield different results due to varying contexts. Every behavioral challenge represents a causal framework that extends beyond immediate choice architecture—neglecting the environmental context limits intervention effectiveness. Considering broader environmental factors influencing behavior is essential for identifying and tailoring interventions.³³

The Behavioural Insights Team (BIT) dedicates significant resources to Randomized Controlled Trials (RCTs) and other methods to evaluate the impact of their interventions. Its main goals are to determine the effectiveness of these interventions and identify the contexts, timings, and target groups where they succeed.³⁴ This effort has resulted in a comprehensive collection of findings from various experiments, all systematically documented.³⁵ Researchers at the University of California, Berkeley, conducted a thorough study on the effectiveness of nudges, using a complete database from BIT and the U.S. Office for Evaluation Sciences. Their findings showed a notable positive impact, with an average improvement of 8.1%, increasing from 17.2% to 18.6% due to the interventions.³⁶ The success of nudges is closely tied to the predictability of behavioral interventions, indicating they are well-designed and based on empirical evidence. Löfgren and Nordblom developed a positive analysis to forecast the effectiveness of nudges, creating a theoretical framework that explains the key mechanisms affecting individual choice behavior and predicting the conditions and scenarios for decision-making.³⁷

2.3. Nudge as a ban or mandate

Sunstein argues that a subsidy, tax, fine, or jail sentence cannot be considered a nudge, which must preserve freedom of choice.³⁸ Since Sunstein and Thaler introduced the concept,

³² Szaszi and others (n 30) 362.

³³ Elina Halonen, 'If context is king, why has nudging ignored it so much?' (Square Peg Insight, 20 September 2021). <<https://www.squarepeginsight.com/post/context-is-king-so-why-has-nudging-ignored-it-so-much>> accessed 2 December 2024

³⁴ Michael Hallsworth, 'Do nudges actually work?' (*Behavioural Insights Team Blog*, 27 July 2020) <<https://www.bi.team/blogs/do-nudges-actually-work/>> accessed 2 December 2024

³⁵ Hallsworth (n 31) 15.

³⁶ Stefano DellaVigna and Elizabeth Linos, 'RCTs to Scale: Comprehensive Evidence From Two Nudge Units' (2022) 90 *Econometrica* 81. <<https://doi.org/10.3982/ECTA18709>> accessed 24 October 2024. This represents only a small portion of the existing research on the effectiveness of nudges. A more detailed discussion of both effective and ineffective applications of nudging is provided in Chapter V.

³⁷ Löfgren and Nordblom (n 12).

³⁸ Sunstein (n 27) 417.

'nudge' has been widely interpreted in academia as a non-regulatory tool. This view is echoed by several scholars: Ralph Hertwig and Till Grüne-Yanoff define nudges as non-regulatory, nonmonetary interventions that guide choices while maintaining freedom.³⁹ Marteau and colleagues emphasize that nudging offers simple, low-cost solutions without requiring legislation, appealing to those who prefer less government intervention.⁴⁰ Oliver posits that a nudge 'preserves liberty and is therefore antiregulatory.'⁴¹ The author establishes a conceptual dichotomy between liberty and regulation, illustrating this through a Figure 1.

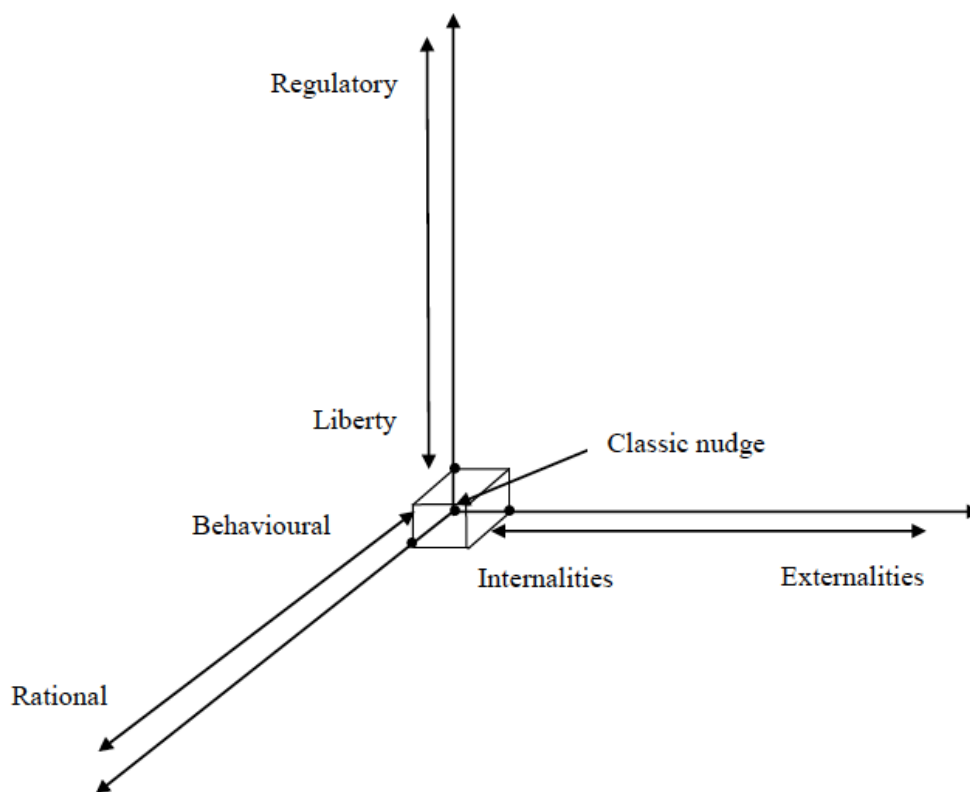


Figure 1. A nudge space according to Oliver.⁴²

³⁹ Ralph Hertwig and Till Grüne-Yanoff, 'Nudging and boosting: Steering or empowering good decisions' (2017) 12 *Perspectives on Psychological Science* 973. <https://pages.ucsd.edu/~mckenzie/Hertwig&Grune-Yanoff2017PerspectivesPsychSci.pdf> accessed 15 August 2024

⁴⁰ Theresa T Marteau and others, 'Judging Nudging: Can Nudging Improve Population Health?' (2011) 342 *The BMJ* 263. https://www.researchgate.net/publication/49784905_Judging_Nudging_Can_Nudging_Improve_Population_Health accessed 21 August 2024

⁴¹ Adam Oliver, 'Nudges, shoves and budes: Behavioural economic policy frameworks' (2018) 33 *The International Journal of Health Planning and Management* 272, 284. <https://doi.org/10.1002/hpm.2419> accessed 29 August 2024

⁴² According to the figure above, the classic nudge is a tool that preserves individual liberty by avoiding reliance on prohibitions, mandates, penalties, or state coercion. It is informed by behavioral economics and therefore builds on a model of human behavior formulated in opposition to rational

As illustrated in Oliver's diagram, since a nudge is aimed at increasing individual freedom of choice, it cannot be conceived as a legal regulatory measure.

However, defining nudges as interventions that are 'neither a command nor a prohibition' has led to confusion about what non-regulatory means. Does it imply nudges cannot be bans or mandates? This ongoing debate highlights the need for clearer terminology in behavioral policy discussions.

The prevalence of nudges within legal norms makes the idea that they exist outside regulation increasingly implausible. Sunstein cites examples of nudges embedded in legal frameworks prior to the publication of *Nudge*, including *ius dispositivum* provision that serves as default options.⁴³ Thus, nudges should be recognized as established regulatory tools that can be implemented through statutory regulations.⁴⁴ This recognition has prompted calls for their formal inclusion in legislative frameworks.⁴⁵ However, if nudges are viewed as non-regulatory, their implementation must avoid prohibitions or mandates.

The debate on implementing nudges as bans gained traction in the U.S. with the proposed Big Gulp Ban in 2012 by New York City Mayor Michael Bloomberg, aimed at combating obesity.⁴⁶ This initiative sought to prohibit the sale of sodas and other sugar-sweetened beverages over 16 ounces (47 cl) in restaurants, cinemas, and mobile food vendors. The proposal ignited significant debate, especially since Bloomberg labeled it a nudge. When

choice theory. Finally, it targets negative externalities, meaning that it relies on the internal preferences of the nudgee rather than on preferences imposed by policy-makers. See: Oliver (n 41) 302.

⁴³ Sunstein (n 7) 417; see also: Mario J Rizzo and Douglas Glen Whitman, 'Little Brother is Watching You: New Paternalism on the Slippery Slopes' (2009) 51 Arizona Law Review 685, 695.

<<https://arizonalawreview.org/pdf/51-3/51arizrev685.pdf>> accessed 29 November 2024; Ian Ayres and Robert Gertner, 'Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules' (1989) 99 Yale Law Journal 87. <<http://hdl.handle.net/20.500.13051/781>> accessed 5 December 2024

⁴⁴ Jake Beech and others, 'What Role Do Taxes and Regulation Play in Promoting Better Health' (*The King's Fund*, 6 March 2020). <<https://www.kingsfund.org.uk/insight-and-analysis/briefings/taxes-regulation-better-health>> accessed 23 August 2025; Nick Chater and George Loewenstein, 'The I-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray' (2023) 46 Behavioral and Brain Sciences 1.

<<https://doi.org/10.1017/S0140525X22002023>> accessed 3 January 2025; Miriam A Jenny and Cornelia Betsch, 'Large-scale behavioural data are key to climate policy' (2022) 6 Nature Human Behaviour 1444. <<https://doi.org/10.1038/s41562-022-01479-4>> accessed 23 August 2025; Theresa T Marteau, Eleni Mantzari and Gareth J Hollands, 'Do nudges need a regulatory push? Comparing the effectiveness and implementation of exemplar nudge (size-based) and non-nudge (price-based) dietary interventions' (2025) 373 Social Science & Medicine 1.

<<https://doi.org/10.1016/j.socscimed.2025.118004>> accessed 23 August 2025 Of course, not every nudge is implemented as a formal regulation. Also, nudges may be implemented by public or private actors.

⁴⁵ Marteau and others (n 40).

⁴⁶ The regulation was invalidated by the New York Court of Appeals in 2014; it never took effect.

asked if the regulation could be seen as a nudge, Sunstein and Thaler rejected that view, citing its clear deviation from the traditional nudge definition. In contrast, Hansen contended that the Big Gulp Ban qualifies as a nudge.⁴⁷

Hansen justified his position by highlighting a key criterion: a nudge must notably affect human behavior, even if it is overlooked by Econs.⁴⁸ Hansen contrasts the expected effects of the Big Gulp Ban on Econs and Humans. An Econ knows his preferences and consumes the optimal amount of sweetened beverage, whether in one large bottle or two smaller cans. Conversely, Humans respond differently. Hansen notes that research indicates many consumers believe portion sizes are excessive, yet they often overestimate their thirst, fail to track their consumption, and typically finish their drinks due to inattention or sunk cost, having already paid for a large drink.⁴⁹ Instead of a total ban on sugar-sweetened beverages, the intervention introduced a cooling-off period in the decision-making process. Hansen explains that the Big Gulp Ban aims to reduce serving sizes, creating a moment for consumers to reflect on their thirst after a 16-ounce serving, which may satisfy their needs and reduce the desire for more.⁵⁰ This approach encourages healthier consumption without restricting personal choice, allowing individuals to consider their thirst after the first drink, unlike when a large bottle is consumed regardless of thirst to avoid waste.⁵¹ The ban was not absolute; consumers could easily circumvent it by ordering multiple 16-ounce servings⁵² or requesting refills, and it only applied in certain locations, with larger drinks still available in grocery stores.

With respect to the designation ‘ban,’ even though the classical definition of a nudge precludes any form of prohibition, the addressee-based theory of law reveals that this purportedly constitutive feature of a nudge cannot be maintained as stated, or must at minimum be further refined.

The addressees of legal norms are the entities to which these norms are aimed.⁵³ Legal theory distinguishes between enforcing entities (state bodies issuing decisions) and adhering

⁴⁷ Hansen (n 5).

⁴⁸ Econs represent agents following the standard rational model in politics, philosophy, and economics, while Humans are the empirical agents studied in cognitive and social psychology and Behavioral Economics. See: Thaler and Sunstein (n 1) 8.

⁴⁹ Hansen (n 5).

⁵⁰ *ibidem*.

⁵¹ *ibidem*.

⁵² Ryna Calo, ‘Code, Nudge, or Notice?’ (2014) 99 Iowa Law Review 773, 776.

<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2217013> accessed 29 June 2025

⁵³ Jakub Wiecha, ‘Addressee of the Law: Actual and Rational’ (2024) *Przegląd Prawniczy TBSP UJ* 2023/2 26. <[10.5281/ZENODO.12625613](https://ojs.tbbsp.uj.edu.pl/handle/document/10.5281/ZENODO.12625613)> accessed 11 March 2025; Andrzej Redelbach, Sławomira Wronkowska and Zygmunt Ziemiński, *Zarys teorii państwa i prawa* (PWN 1994) 74; Zygmunt

entities (citizens).⁵⁴ Further, it differentiates between indirect and direct addressees of the law, which is vital for this analysis.⁵⁵ Applying a revised version of this framework, a regulation acting as a nudge—whether framed as a mandate or a ban—functions through indirect addressees (in this case, selected vendors of sugar-sweetened beverages), while the direct addressees, or end-users, are the legal subjects who are actually being nudged. Their set of options, as previously illustrated, is not diminished but rather restructured to create a cool-off effect following the consumption of a small can, thus discouraging impulsive and poorly thought-out purchases. In the classification proposed by Mongin and Cozic, the Big Gulp Ban serves as an example of a type 3 nudge, offering a withdrawal period that aids in preventing compulsory decisions driven by overconfidence.⁵⁶ In summary, the prohibition applies to the sellers—restaurants, cinemas, and food carts—while end-users maintain full discretion over the amount of sugary beverages they choose to consume. Therefore, the indirect addressee (the choice-architecture arranger) is subject to the ban, whereas the direct addressee (the end-user) is not, thereby preserving the latter’s freedom of choice.

When a legislature seeks to implement a nudge, it must target a specific group of legal addressees—known as indirect addressees—to alter the relevant choice architecture. For these entities, the regulation typically takes the form of either a mandate or a prohibition. In fact, there is no other way for the normative system to introduce a nudge: the legislature must require indirect addressees to create a defined choice environment. This could involve mandates such as requiring cigarette manufacturers to include specific graphic warnings on their packaging or food producers to provide calorie information on their products. In contrast, the end-users of the nudge simply engage with the established choice architecture and can choose to act based on their own preferences. Thus, regarding the Big Gulp Ban, the initiative does not impose a mandate or prohibition on end-users; it merely alters the options available to them.

When considering another dimension of the nudge definition, namely its influence on the set of available options, the current literature lacks a consensus on whether a nudge can effectively reduce or increase the number of available options (via a decoy effect).⁵⁷ Mongin

Ziemiński, *Logika praktyczna* (PWN 2001) 106; Franciszek Studnicki, *Przeływ wiadomości o normach* (Zeszyty Naukowe UJ Prace Prawnicze 1965) 110.

⁵⁴ Józef Nowacki and Zygmunt Tobor, *Wstęp do prawoznawstwa* (6th edn, Wolters Kluwer 2020) 32.

⁵⁵ Studnicki (n 53) 106; Drury D Stevenson, ‘Kelsen’s View of the Addressee of the Law: Primary and Secondary Norms’ in Jeremy Telman (ed), *Hans Kelsen in America – Selective Affinities and the Mysteries of Academic Influence* (Springer 2016) 303.

⁵⁶ Mongin and Cozic (n 24) 2.

⁵⁷ Marchiori, Adriaanse and De Ridder (n 15) 6; Congiu and Moscati (n 13); Mongin and Cozic (n 24); Pelle G Hansen, ‘The Definition of Nudge and Libertarian Paternalism: Does the Hand Fit the Glove?’

and Cozic⁵⁸ explicitly allow for nudges that either keep the option set unchanged or expand it, while Hansen⁵⁹ advocates for nudges that reduce the set. Johnson et al. note that

[t]o answer the question of how many options to present, the choice architect needs to balance two criteria: first that more options increase the chances of offering a preference match to the consumer, and second that more options places a greater cognitive burden on consumers because of the additional need to evaluate options.’⁶⁰

The standard definition of a nudge emphasizes that the critical aspect is not the quantity of alternatives but rather the decision space they collectively provide. An individual presented with two choices retains their freedom even if a nudge introduces a third option; similarly, if four choices exist and a nudge eliminates one, three options still remain—thus, freedom of choice is maintained. Consequently, the numerical size of the option set is analytically separate from the breadth of choice.

Marchiori et al., in their commentary on the Big Gulp Ban discussion, offer the following viewpoint regarding this matter:

When deciding to modify a choice set, we believe that choice architects should be able to forbid an *option*, such as 16-ounces cups, but should not be able to forbid a *choice*, such as to drink more, refuse a refill or the sale of a second drink. Clearly, an intervention banning an option that would result in inhibiting a choice cannot be labeled a nudge.⁶¹

In the next part of the article, the authors contend—drawing on empirical evidence⁶²—that reducing the number of available options is an effective strategy for simplifying the decision-making process:

(2016) 7 European Journal of Risk Regulation 155, 156. <<https://www.jstor.org/stable/24770005>> accessed 4 August 2024

⁵⁸ Philippe Mongin and Mikaël Cozic, ‘Rethinking Nudge: Not One But Three Concepts’ (2018) 2 Behavioural Public Policy 107, 110. <<https://doi.org/10.1017/bpp.2016.16>> accessed 23 August 2025

⁵⁹ Hansen (n 64) 167.

⁶⁰ Johnson and others (n 22) 490.

⁶¹ Marchiori, Adriaanse and De Ridder (n 15) 7.

⁶² Benjamin Scheibehenne, Rainer Greifeneder and Peter M Todd, ‘Can there ever be too many options? A meta-analytic review of choice overload’ (2010) 37 Journal of Consumer Research 409.

Indeed, reducing choice sets does not only nudge people into making different choices, but can also help to decrease the complexity of making choices, reduce the likelihood of opting out of making a decision, and lessen anxiety to choose, a phenomenon called choice overload. This literature demonstrated that decreasing the number of options can significantly lead to more satisfying choices. In this view, reducing the number of options, while keeping the choices intact, may actually be beneficial for the nudgee.⁶³

To determine if a regulatory measure limiting options qualifies as a nudge, one must evaluate its key characteristics. First, the intervention should genuinely enhance the nudgee's welfare⁶⁴ or at least benefit the broader social good, rather than favoring specific stakeholders (see more in Section 2.7.1.).⁶⁵ Second, the measure must demonstrate a significant level of avoidability, enabling the nudgee to easily opt out of the suggested choice (see more in Section 2.5.).⁶⁶ Thirdly, as previously mentioned, a nudge aims to alter the behavior of Humans while leaving the decisions of Econs untouched (see more in Section 2.6.). For the sake of conceptual clarity, a distinction between the narrow and the broad definition of a nudge is introduced at this point. According to the narrow definition, if an intervention fails to meet the last criterion, it should not be considered a nudge *sensu stricto*.⁶⁷ For example, 'hidden default options' or 'forced choice' practices mislead users by presenting a default as the sole option, despite other choices being available but hard to find.⁶⁸ This is common in software, where default settings

<<https://doi.org/10.1086/651235>> accessed 6 November 2024; See also: Jeffrey R Kling and others, 'Comparison friction: Experimental evidence from medicare drug plans' (2012) 127 *The Quarterly Journal of Economics* 199. <[10.1093/qje/qjr055](https://doi.org/10.1093/qje/qjr055)> accessed 23 August 2025

⁶³ Marchiori, Adriaanse and De Ridder (n 15) 7.

⁶⁴ Thaler and Sunstein (n 1); Bruno S Frey and Jana Gallus, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 11.

⁶⁵ Sunstein (n 27) 514; Tim Mullett, 'What are the advantages and disadvantages of nudging?' (*Warwick Business School*, 14 February 2022). <<https://www.wbs.ac.uk/news/what-are-the-advantages-and-disadvantages-of-nudging/>> accessed 29 January 2025

⁶⁶ Marchiori, Adriaanse and De Ridder (n 15); Saghai (n 16); Rebecca Zeilstra, 'Nudging and the Safeguards of the Rule of Law' (2024) 25 *German Law Journal* 750, 765. <<https://doi.org/10.1017/glj.2024.30>> accessed 6 February 2025.

⁶⁷ The authors also distinguish between a narrow and a broad definition of a nudge, see: Barton and Grüne-Yanoff (n 11) 343. From the standpoint of a nudge definition *sensu largo*, by contrast, the third condition would be expressed in softer terms: a nudge typically alters the behavior of Humans, while the decisions of Econs remain largely unaffected.

⁶⁸ Johnson and others (n 22) 491.

are not well-documented, imposing a high search cost on users who wish to change them.⁶⁹ While beneficial for businesses and simplifying choices for novices, hidden defaults can create significant barriers for those wanting to explore alternatives. Organ-donation systems face a parallel issue: when institutions make opting out difficult, the nudge effect is lost. If a choice architect hides alternatives, disadvantaging the nudgee or steering them away from their interests, it no longer qualifies as a nudge. Similarly, a ban on cash payments in certain Chinese or Swedish businesses fails to qualify as a nudge. While not a complete ban—other payment methods exist—the primary aim is to cut cash-handling costs for firms, which does not benefit the nudgee or serve public interest. Thus, this reduction in options is not a nudge. In a similar vein, the prohibition of plastic bag sales in large retail outlets does not qualify as a nudge, even though it also simply limits the available options (customers can either bring their own plastic bags or buy carry-bags made from non-plastic materials). This restriction primarily impacts indirect addressees—the retailers—while end-users still have the option to package their purchases in plastic if they wish. However, this measure cannot be classified as a nudge *sensu stricto* because it influences both Econs and Humans in exactly the same manner: it does not create any asymmetry that would take advantage of bounded rationality or cognitive bias.⁷⁰ Consequently, both instances illustrate regulatory limitations on choice architecture, yet neither fulfills the essential criteria of a nudge.

2.4. Financial incentive

According to Sunstein and Thaler's own definition, a nudge cannot operate by financially rewarding desired conduct or by levying monetary penalties on undesired conduct. Bonell and other authors,⁷¹ however, note that the authors blur this boundary by labelling certain interventions that contain modest financial inducements as nudges, thereby clouding the concept:

⁶⁹ Daniel Goldstein, Eric J Johnson, Andreas Herrman and Mark Heitmann, 'Nudge your customers toward better choices' (2008) 86 Harvard Business Review 99. https://www.researchgate.net/publication/262042571_Nudge_Your_Customers_Toward_Better_Chices accessed 6 November 2024

⁷⁰ This essential component of the *sensu stricto* definition of a nudge likewise extends to its conceptual distinction from financial incentives. See more in Section 2.4.

⁷¹ Robert Baldwin, 'From regulation to behaviour change: giving nudge the third degree' (2014) 77 The Modern Law Review 831, 834. <http://eprints.lse.ac.uk/64343/1/From%20Regulation.pdf> accessed 22 August 2024; Grüne-Yanoff (n 10).

[M]any of Thaler and Sunstein's examples of nudges don't fit with their own definition. ... They ... cite a programme paying a "dollar a day" to teenage mothers contingent on their having no further pregnancies; this would exert a considerable financial pressure on young women in poverty, contradicting the definition of nudges as not exerting such pressures.⁷²

What, then, does it mean to say that a nudge is a device devoid of economic incentives? Sunstein insists that 'To qualify as a nudge, an intervention must not impose significant material incentives (including disincentives). A subsidy is not a nudge; a tax is not a nudge; a fine or a jail sentence is not a nudge.'⁷³ Yet the phrase 'significant material incentive' remains elusive: the literature offers no principled metric for determining how much financial pressure renders an intervention something other than a nudge.

Ralph Hertwig and Till Grüne-Yanoff confront the same problem of demarcating 'small' economic incentives. They write that '[n]udging ... includes all behavioral policies that do not coerce people or substantially change their financial incentives...' ⁷⁴ Yet 'substantially,' like Sunstein's 'significantly,' is opaque. Thaler and Sunstein attempt clarification by insisting that the material cost of avoiding a nudge must remain 'cheap,'⁷⁵ an equally indeterminate benchmark. What constitutes a trivial cost? The answer necessarily depends on the financial circumstances of the individual who is being nudged.⁷⁶ Barton and Grüne-Yanoff note that

...as a nudge should not "significantly" change the economic incentives, there is a continuum among interventions from nudges on one hand, to full-blown taxes or financial rewards on the other hand: think for example about the "dollar a day" program that pays teenage girls who already have a baby one dollar for each day they are not pregnant ... which lies in-between a nudge and a financial reward.⁷⁷

⁷² Chris Bonell and others, 'One nudge forward, two steps back' (2011) 342 British Medical Journal 2. <<https://researchonline.lshtm.ac.uk/id/eprint/1610/1/One%20nudge%20forward%2C%20two%20steps%20back%20-%20The%20BMJ.pdf>> accessed 17 August 2024

⁷³ Sunstein (n 7) 417.

⁷⁴ Hertwig and Grüne-Yanoff (n 39) 976.

⁷⁵ Thaler and Sunstein (n 1) 8.

⁷⁶ Harald Schmidt, Kristin Voigt and Daniel Wikler, 'Carrots, Sticks, and Health Care Reform - Problems with Wellness Incentives' (2010) 362 The New England Journal of Medicine e3. <[10.1056/NEJMp0911552](https://doi.org/10.1056/NEJMp0911552)> accessed 12 November 2024

⁷⁷ Barton and Grüne-Yanoff (n 11) 343.

Somewhere on the continuum of public interventions—ranging from those that involve insignificant financial incentives to those predicated on substantial financial gains or losses—lies the nudge. The debate over how to differentiate a nudge from other measures employing modest monetary inducements reaches the question of whether a tax qualifies as a nudge when a slight price increase is introduced to discourage end-users from consuming a given product, such as sugar, tobacco, or alcohol. As Hansen observes,

[f]or instance, while imposing a tax is said not to be a nudge, and the same goes for placing candy in an obscure place in the supermarket, choosing a charm price or asking customers to pay 5 cents for plastic bags both count as a nudge. But, as someone with philosophical inclinations might ask, where is the objective point of difference to be found between the nudge provided by a 5-cent tax on plastic bags or placing candy at eye height, and a non-nudge of a 5-dollar tax on plastic bags or placing candy behind the counter?⁷⁸

Marcus adopts a similar perspective, treating cigarette taxation intended to curb consumption as a nudge.⁷⁹ Carlsson and others categorize taxes as standard policy tools that tackle behavioral issues.⁸⁰ According to the authors, taxes serve as instruments that address limited attention to prices,⁸¹ acknowledge that individuals may not always be fully rational and attentive in their decision-making, and that people can have incorrect understanding of the outcomes of certain behaviors.⁸²

Why, then, do Thaler and Sunstein exclude taxes from the nudge category? A sugar levy discourages purchase yet does not prohibit it, further blurring the boundary between fiscal policy and non-coercive steering.

⁷⁸ Hansen (n 64) 156.

⁷⁹ Ruth Marcus, 'Michael Bloomberg's ban on super-size sugary sodas is nudge government run amok' *The Oregonian* (5 June 2021). <https://www.oregonlive.com/opinion/2012/06/michael_bloombergs_ban_on_supe.html> accessed 30 April 2025

⁸⁰ Fredrik Carlsson and others, 'Nudging as an Environmental Policy Instrument' (2020) 756 Working Paper in Economics 1, 4. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3711946> accessed 5 September 2024

⁸¹ Emmanuel Farhi and Xavier Gabaix, 'Optimal taxation with behavioral agents' (2019) 110 *American Economic Review* 298. <<https://www.aeaweb.org/articles?id=10.1257/aer.20151079>> accessed 23 August 2025

⁸² Brigitte C Madrian, 'Applying Insights from Behavioral Economics to Policy Design' (2014) 6 *Annual Review of Economics* 663. <<https://www.jstor.org/stable/42940305>> accessed 23 August 2025

The classification of an intervention as a nudge is contested in the case of behavioral schemes built on a deposit contract that exploits loss aversion: ‘...people offer up their own money at the start of the intervention and receive the money back only if they achieve their target.’⁸³ Such programmes have been implemented in smoking-cessation⁸⁴ and weight-loss initiatives.⁸⁵ Schmidt does not classify these measures as nudges, yet he concedes that they rely on behavioral insights: ‘...policies that are not nudges in a strict sense but rely on behavioral science in similar ways. Such policies seek to change people’s behaviors through small incentives.’⁸⁶ When analysing this approach in the health sector, Schmidt and colleagues label it a ‘wellness program’ and remark that it ‘could be called participation incentives, which offer a premium discount or other reimbursement simply for participating in a health-promotion program, and attainment incentives, which provide reimbursements only for meeting targets — for example, a particular body mass index or cholesterol level.’⁸⁷ Comparable cases include lottery-style incentives, where a minuscule chance of a large reward motivates action (since people tend to overestimate small probabilities),⁸⁸ and a Malawian scheme that pays individuals 10 per cent of daily earnings for collecting their HIV test results.⁸⁹ A further borderline example is the refundable deposit on glass bottles: consumers cannot avoid the surcharge, yet the prospect of recovery encourages proper disposal. Whether such mechanisms constitute nudges thus hinges on an elusive threshold of ‘significant’ financial pressure—one that the literature has yet to fix with analytic precision.

A nudge *sensu stricto* cannot take the form of introducing a financial incentive, since such a measure does not satisfy another defining characteristic of a nudge, namely its operation on Humans while leaving Econs unaffected (more in Section 2.6.).

⁸³ Adam Oliver, Geof Rayner and Tim Lang, ‘Is nudge an effective public health strategy to tackle obesity?’ (2011) 342 *British Medical Journal* 898. <<https://www.jstor.org/stable/41150305>> accessed 17 August 2024

⁸⁴ Xavier Giné, Dean Karlan and Jonathan Zinman, ‘Put your money where your butt is: a commitment contract for smoking cessation’ (2010) 2 *American Economic Journal: Applied Economics* 213. <<https://www.aeaweb.org/articles?id=10.1257/app.2.4.213>> accessed 6 September 2024

⁸⁵ Saghai (n 16).

⁸⁶ Andreas T Schmidt, ‘Getting Real on Rationality—Behavioral Science, Nudging, and Public Policy’ (2019) 129 *Ethics* 511, 514. <<https://doi.org/10.1086/702970>> accessed 9 November 2024

⁸⁷ Schmidt, Voigt and Wikler (n 76).

⁸⁸ Kevin G Volpp and others, ‘Financial incentive-based approaches for weight loss: a randomized trial’ (2008) 300 *Journal of the American Medical Association* 2631. <https://www.hbs.edu/ris/Publication%20Files/Volpp%20et%20al%202008%20-%20Financial%20Incentive-Based%20Approaches%20for%20Weight%20Loss_5baab50f-4876-4e90-9d0f-40a3342b5521.pdf> accessed 27 August 2024

⁸⁹ Rebecca L Thornton, ‘The Demand for, and Impact of, Learning HIV Status’ (2008) 98 *American Economic Review* 1829. <<https://www.aeaweb.org/articles?id=10.1257/aer.98.5.1829>> accessed 21 September 2025

2.5. Nudges are easy to avoid

There is a consensus among researchers that one of the defining characteristics of a nudge is that it is easy and inexpensive to avoid, or simple to resist.⁹⁰ The authors modify the original definition provided by Sunstein and Thaler, adding that in addition to the requirement that avoiding a nudge should not incur economic or financial burdens, it should also not involve excessive burdens related to the time spent, effort exerted, and social costs incurred.⁹¹

Saghai indicates, '[t]o qualify as 'relatively' effortless, the influencee should not be expected to have acquired unusually high skills enhancing her attention-bringing or inhibitory capacities.'⁹² The degree of avoidability depends on several components, such as controllability, transparency, autonomy.

2.5.1. Controllability

Barton and Grüne-Yanoff,⁹³ Saghai,⁹⁴ Faden and Beauchamp⁹⁵ indicate that there exists a continuum of interventions due to varying degrees of controllability, which spans from persuasion, or in other terms, convincing reasoning that employs arguments (and is therefore entirely noncontrolling), to coercion, which uses threats of sanctions (and is consequently strictly controlling), with nudges (which are essentially noncontrolling) somewhere in the middle. The authors summarise that '...an influence preserves freedom of choice if and only if it preserves the choice-set and is fully or substantially noncontrolling.'⁹⁶

In this context nudge can be defined as 'an intervention on the choice architecture that is predictably behavior-steering, but preserves the choice-set and is (at least) substantially noncontrolling, and does not significantly change the economic incentives.'⁹⁷

⁹⁰ Saghai (n 16); Zeilstra (n 66) 765.

⁹¹ *ibidem*; Marchiori, Adriaanse and De Ridder (n 15); Daniel M Hausman and Brynn Welch, 'Debate: To Nudge or Not to Nudge' (2009) 18 *The Journal of Political Philosophy* 123.

<https://www.researchgate.net/publication/229562409_Debate_To_Nudge_or_Not_to_Nudge> accessed 6 August 2024

⁹² Saghai (n 16) 490.

⁹³ Barton and Grüne-Yanoff (n 11).

⁹⁴ Saghai (n 16) 488.

⁹⁵ Ruth R Faden and Tom L Beauchamp, *A history and theory of informed consent* (Oxford University Press 1986).

⁹⁶ Saghai (n 16) 489.

⁹⁷ Barton and Grüne-Yanoff (n 11).

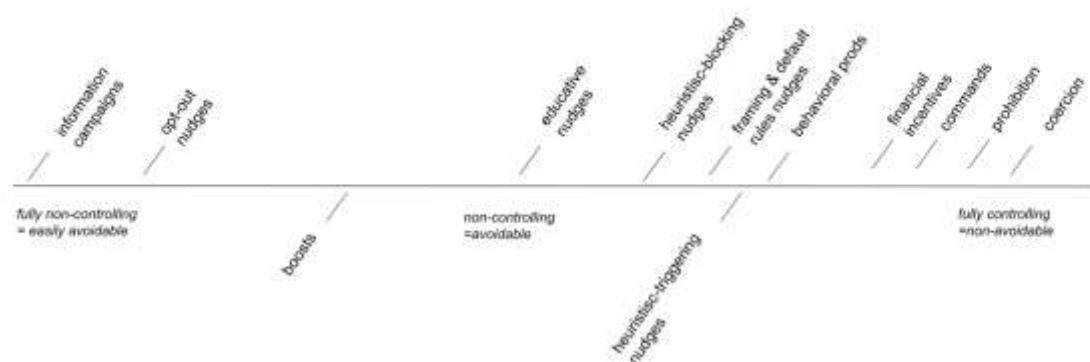


Figure 2. Gradient of controllability with different types of public interventions.

2.5.2. Transparency

Additionally, the degree of transparency of a nudge may affect how avoidable it is. The premise of transparency implies that an individual making decisions is aware of the existence, *modus operandi*, and goal of a nudge. ‘Invisible’ nudges are less avoidable than transparent nudges which are easy to detect and comprehend.⁹⁸ If nudges go undetected, the opt-out choice is limited, and so the avoidability of nudge is diminished.⁹⁹ Bruns et al. emphasize that ‘the designers of a nudge have the option to enhance transparency over what the nudge is attempting to do (and via which means), and hence presumably restore some form of control to the individual.’¹⁰⁰ Bovens points out: ‘... *Nudges* must be transparent in principle at the level of each token *Nudge*, in order to ensure that everyone can unmask the manipulation if they wish to do so. This protects the rights of the minorities who do not wish to be so manipulated and it keeps a check on the government.’¹⁰¹

In 2011, the House of Lords established criteria that behavioral intervention must meet in order to be considered transparent, and consequently, ethical. They suggest that

⁹⁸ Luc Bovens, ‘The ethics of nudge’ in Till Grüne-Yanoff and Sven Ove Hansson (eds), *Preference change: Approaches from philosophy, economics and psychology* (Springer 2009).
<https://doi.org/10.1007/978-90-481-2593-7_10> accessed 18 August 2024

⁹⁹ N Craig Smith, Daniel G Goldstein and Eric J Johnson, ‘Choice without awareness: Ethical and policy implications of defaults’ (2013) 32 *Journal of Public Policy and Marketing* 159.
<<https://doi.org/10.1509/jppm.10.114>> accessed 4 November 2024

¹⁰⁰ Hendrik Bruns and others, ‘“Fear of the Light”? Transparency does not reduce the effectiveness of nudges. A data-driven review’ (2023) University of Cyprus Working Papers in Economics 04-2023, 1.
<<https://www2.aueb.gr/conferences/Crete2023/papers/Maniadis.pdf>> accessed 1 November 2024

¹⁰¹ Bovens (n 98) 15.

there were two sorts of transparency which might be relevant to behaviour change interventions. Transparency might mean telling people about an intervention directly, or it might mean ensuring that a perceptive person could discern for themselves that an intervention had been implemented.¹⁰²

In light of Bovens' argument that default options 'typically work best in the dark,'¹⁰³ it has been acknowledged that it is not required of the government 'to explain that an intervention has been implemented, particularly if full transparency limits its effectiveness, so long as those being nudged have the ability to discern its implementation.'¹⁰⁴ Nonetheless, an intervention, such as a specific type of food labeling, may be readily apparent, while the rationale behind its specific design could remain hidden. The underlying reasons for the forms that nudges adopt must go unnoticed by the intended audience; if the rationale is made explicit, the motivation may be scrutinized, potentially jeopardizing their effectiveness.¹⁰⁵

Although it is commonly thought that a nudge is most effective when it is subtle, research aimed at verifying this idea does not consistently back it up.¹⁰⁶ Michaelsen and Sunstein have recently examined the empirical literature on default nudges and made a compelling assertion that when a disclosure is combined with a default nudge, the impact on behavior remains consistent. In this regard, according to the authors, Boven's conjecture has

¹⁰² The House of Lords, Science and Technology Select Committee 'Definitions, categorisation and the ethics of behaviour change interventions' (Parliament.uk, 2011).
<<https://publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/17905.htm#note23>> accessed 17 August 2024

¹⁰³ Bovens (n 96) 3, 13; See also Ezio Di Nucci, 'Habits, Nudges, and Consent' (2013) 13 The American Journal of Bioethics 27. <<https://doi.org/10.1080/15265161.2013.781711>> accessed 16 August 2025

¹⁰⁴ Oliver (n 41) 283; Behavioural Insights Team, 'Behaviour Change and Energy Use' (2011) Cabinet Office BIT Publications.
<<https://assets.publishing.service.gov.uk/media/5a79cee1ed915d6b1deb37f8/behaviour-change-and-energy-use.pdf>> accessed 23 August 2025

¹⁰⁵ Oliver (n 41) 282; Peter Wells, 'A Nudge One Way, A Nudge the Other: Libertarian Paternalism as Political Strategy' (2010) 4 People, Place and Policy 111
<<https://pdfs.semanticscholar.org/42dd/f6da25c8be757d3d3cc5156801008431c062.pdf>> accessed 29 August 2024

¹⁰⁶ Floor M Kroese, David R Marchiori and Denise TD De Ridder, 'Nudging healthy food choices: A field experiment at the train station' (2015) 38 Journal of Public Health 1.
<https://www.researchgate.net/publication/280116474_Nudging_healthy_food_choices_A_field_experiment_at_the_train_station> accessed 14 August 2024; Denise de Ridder, Floor Kroese and Laurens van Gestel, 'Nudgeability: Mapping conditions of susceptibility to nudge influence' (2022) 17 Perspectives on Psychological Science 346.
<<https://journals.sagepub.com/doi/10.1177/1745691621995183>> accessed 1 November 2024; Bruns and others (n 100) 3;

been disproven.¹⁰⁷ Research conducted by Loewenstein and others has demonstrated that ‘fuller disclosure of a nudge could potentially be achieved with little or no negative impact on the effectiveness of the intervention.’¹⁰⁸ Research in the field of conditioning indicates that individuals are more likely to respond favorably to conditioning when they recognize the connection between the stimuli.¹⁰⁹ It has been suggested that people may interpret defaults as silent or implied endorsements from authorities.¹¹⁰ This perspective is corroborated by a number of experiments that varied the disclosure of the nudging agent. The findings indicated that the effectiveness of the default option—specifically, the preselection of elective courses in a hypothetical context—was increased when the source of the nudge, specifically the university administration, was revealed.¹¹¹

Hansen and Jaspersen indicate that Sunstein and Thaler advocate for a stricter form of the transparency requirement, which may lead to the emergence of an ethical paradox.¹¹² If one were to impose a requirement on every regulation that it must be easily monitored in terms of its visibility and the feasibility of its oversight, there would be regulations that would not pass this test, yet cannot be denied their ethical value. The authors, referencing the paper by Koert van Ittersum and Brian Wansink, provide an example of nudges designed to influence the quantity of beverages consumed by reducing the size of the container or vessel.¹¹³ Nudges may not realize that they are consuming a meal or drink from a container with a reduced surface area, which does not imply that such a nudge operates contrary to ethical standards.

Such ubiquity invites caution. Not every behaviorally informed intervention merits the honorific ‘nudge.’ Practices that rely on deception, exploit cognitive overload, or erode

¹⁰⁷ Patrick Michaelsen and Cass R Sunstein, *Default Nudges: From People's Experiences to Policymaking Implications* (Springer Nature 2023).

¹⁰⁸ George Loewenstein, Cindy Bryce, David Hagmann and Sachin Rajpal, ‘Warning: You are about to be nudged’ (2015) 1 Behavioral Science & Policy 35, 36, 40.

<https://www.researchgate.net/publication/272299492_Warning_You_are_about_to_be_nudged> accessed 17 August 2024

¹⁰⁹ Bruns and others (n 100) 2.

¹¹⁰ Craig RM McKenzie, Michael J Liersch and Stacey R Finkelstein ‘Recommendations implicit in policy defaults’ (2006) 17 Psychological Science 414. <<https://doi.org/10.1111/j.1467-9280.2006.01721.x>> accessed 6 November 2024

¹¹¹ Yavor Paunov, Michaela Wänke and Tobias Vogel, ‘Transparency effects on policy compliance: Disclosing how defaults work can enhance their effectiveness’ (2019) 3 Behavioral Public Policy 187. <<https://doi.org/10.1017/bpp.2018.40>> accessed 6 November 2024

¹¹² Pelle Guldberg Hansen and Andreas Maaløe Jespersen, ‘Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy’ (2013) 4 European Journal of Risk Regulation 3, 17. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024

¹¹³ Koert van Ittersum and Brian Wansink, ‘Shape of Glass and Amount of Alcohol Poured: Comparative Study of Effect of Practice and Concentration’ (2005) BMJ 331.7531, 1512. <<https://ssrn.com/abstract=2474664>> accessed 9 December 2024

autonomy—exemplified by aggressive dark-pattern marketing—depart from the normative requisites of transparency, easy avoidability, and welfare orientation that anchor the nudge concept.¹¹⁴

2.5.3. Autonomy

Mills explains that '[p]ersonal autonomy is the capacity for an individual to determine and pursue her own conception of the good according to her own will.'¹¹⁵ The safeguarding of freedom of choice is specifically aimed at preserving human dignity.¹¹⁶ It is said that nudge can act against autonomy, since it might bypass the reflective part of human cognition.¹¹⁷

Baldwin indicates that the protection of decision-makers' autonomy is contingent upon the type of nudge employed by the legislator. The author identifies three degrees of nudge.¹¹⁸ First Degree nudges respect individual decision-making and promote thoughtful choices. They usually provide simple information or reminders, like 'Pay your tax within a week to be on time.' A Second Degree nudge takes advantage of behavioral limitations to steer decisions in a certain way. For example, a default option with an opt-out, like presumed consent for organ donation, or arranging a smoking area far from work can influence choices by leveraging inertia. This type of nudge affects personal autonomy more than the First Degree nudge, as individuals may accept it with little awareness. However, they can still recognize the nudge and evaluate its impact upon reflection. A Third Degree nudge represents a deeper intrusion on autonomy, using behavioral manipulation in ways that are harder to identify. It can involve framing techniques that shape decisions and preferences, making it difficult for individuals to

¹¹⁴ Michael Moss, '((Salt + Fat2) / Satisfying Crunch) × Pleasing Mouth Feel = A Food Designed to Addict' (New York Times Magazine. 24 February 2013). <https://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html> accessed 1 March 2025; Lior Jacob Strahilevitz, 'Toward a Positive Theory of Privacy Law' (2013) 126 Harvard Law Review 2010. <https://www.jstor.org/stable/23415064> accessed 23 August 2025; Eli Pariser, *The Filter Bubble: What The Internet Is Hiding From You* (Penguin Books Ltd 2012) 14; Joseph Turow, *Niche Envy: Marketing Discrimination in the Digital Age* (The Mit Press 2006) 2; Ira S Rubinstein, Ronald D Lee and Paul M Schwartz, 'Data Mining and Internet Profiling: Emerging Regulatory and Technological Approaches' (2008) 75 The University of Chicago Law Review 261, 272–73. <https://chicagounbound.uchicago.edu/ucirev/vol75/iss1/12> accessed 1 March 2025; Ryan Calo, 'Digital Market Manipulation' (2014) 82 The George Washington Law Review 995, 999. https://www.gwlr.org/wp-content/uploads/2014/10/Calo_82_41.pdf accessed 1 March 2025

¹¹⁵ Mills (n 8) 499.

¹¹⁶ Artur Nilsson and others, 'Who Are the Opponents of Nudging? Insights from Moral Foundations Theory' (2020) 5 Comprehensive Results in Social Psychology 64. <https://www.tandfonline.com/doi/full/10.1080/23743603.2020.1756241#abstract> accessed 21 August 2024

¹¹⁷ Saghai (n 16).

¹¹⁸ Baldwin (n 71) 836.

analyze the nudge's influence.¹¹⁹ Additionally, Third Degree nudges often use strong emotional cues or striking examples to achieve their effects.

Saghai challenges the view that the effects of such intrusive nudges are necessarily unavoidable, contending that certain nudges which activate automatic responses from System 1 can nevertheless be resisted. He develops the concept of 'Easy Resistibility,' which, when satisfied, allows individuals to evade the direction suggested by the nudge with minimal effort.¹²⁰ The author asserts that '... at least some influences triggering automatic cognitive processes are easily resistible.'¹²¹

The validity and ethics of employing nudges in the context of respecting individual autonomy will be examined in detail in Chapter V.

2.6. A mechanism based on rationality failure

The classic nudge definition says that nudge has an impact on Humans, not on Econs. It means that it operates by influencing behaviors rooted in deviations from rational thinking.¹²² One of the distinctive criteria for behavioral interventions such as nudges, according to Oliver, is that '...its applications are informed by behavioural economics rather than the standard model of rational choice...'¹²³ Nudges aim to target Kahneman's System 1 in order to trigger automatic, non-reflective reaction of a nudgee.¹²⁴ Nudge 'uses ... cues to activate nonconscious thought processes involved in human decision-making.'¹²⁵ It bypasses the deliberative capacities of people.¹²⁶ 'Nudgeability' is defined as a state of being vulnerable to being nudged due to inattentive choosing or not following rational thinking.¹²⁷ According to Lofgren and Nordblom, it is not possible to nudge a person who is in the process of attentive decision making.¹²⁸ Mongin and Cozic point out that nudges '... use rationality failures instrumentally

¹¹⁹ Amos Tversky and Daniel Kahneman, 'The Framing of Decisions and the Psychology of Choice' (1981) 211 Science 453. <<https://www.jstor.org/stable/1685855>> accessed 24 October 2024

¹²⁰ Saghai notes that '[t]o qualify as "relatively" effortless, the influencee should not be expected to have acquired unusually high skills enhancing her attention-bringing or inhibitory capacities.' See Saghai (n 16) 489-490.

¹²¹ *ibidem*.

¹²² Sarah Conly, *Against Autonomy: Justifying Coercive Paternalism* (Cambridge University Press 2012).

¹²³ Oliver (n 41) 284.

¹²⁴ De Ridder, Kroese and Van Gestel (n 106); Marchiori, Adriaanse and De Ridder (n 15) 3; Hansen (n 64) 174.

¹²⁵ Marchiori, Adriaanse and De Ridder (n 15) 3.

¹²⁶ Saghai (n 16).

¹²⁷ Löfgren and Nordblom (n 12) 2.

¹²⁸ *ibidem* 2, 3.

...; and they alleviate the unfavourable effects of these failures ...'¹²⁹ The use of psychological and sociological insights to shape choice architecture and influence decisions dates back to the last century. What distinguishes modern nudges is their reliance on behavioral science research regarding predictable irrationality in public interventions.¹³⁰ Researchers describe the cognitive processes these strategies target with terms like flaws, biases or inadequacy,¹³¹ others refer to them as 'subconscious cues,'¹³² irrationality,¹³³ rationality failures,¹³⁴ shortcomings of mind, deficiencies in human rationality.¹³⁵ Notably, not all nudges engage heuristics; some, like the mandatory cool-off period before a purchase, are designed to inhibit them. In these cases, the heuristic-blocking nudge serves as 'positive sludge,' creating friction that delays or prevents action for the individual's benefit.¹³⁶

Some behavioral instruments that the literature labels nudges do not satisfy the foregoing criterion.¹³⁷ These so-called type-2,¹³⁸ or mindful,¹³⁹ nudges rely on deliberative processing: they foster rational reflection¹⁴⁰ and are 'specifically designed to increase people's capacity to exercise their own agency'¹⁴¹ and to cultivate sound decision-making competences.¹⁴² As Sunstein observes, '[d]isclosure of relevant information ...about the risks of smoking or the costs of borrowing... counts as a nudge.'¹⁴³ He also differentiates between

¹²⁹ Mongin and Cozic (n 24).

¹³⁰ Oliver, Rayner and Lang (n 88); Theresa T Marteau and others (n 40); Bovens (n 98) 3; Hausman (n 25) 18.

¹³¹ Samuli Reijula and others, 'Nudge, Boost, or Design? Limitations of behaviorally informed policy under social interaction' (2018) 2 *The Journal of Behavioral Economics for Policy* 99. <<https://sabeconomics.org/wordpress/wp-content/uploads/JBEP-2-1-14.pdf>> accessed 23 August 2025

¹³² Bonell and others (n 72).

¹³³ Bovens (n 98) 3.

¹³⁴ Mongin and Cozic (n 24).

¹³⁵ Nilsson and others (n 116).

¹³⁶ Sina Shahab and Leonhard K Lades, 'Sludge and Transaction Costs' (2024) 8 *Behavioural Public Policy* 327. <<https://doi.org/10.1017/bpp.2021.12>> accessed 11 December 2024

¹³⁷ Grüne-Yanoff (n 10) 481.

¹³⁸ Cass R Sunstein, 'People Prefer System 2 Nudges (Kind Of)' (2016) 66 *Duke Law Journal* 121. <<https://scholarship.law.duke.edu/dlj/vol66/iss1/3>> accessed 5 December 2024; Hansen and Jespersen (n 112) 14.

¹³⁹ Kim Ly, Nina Mazar, Min Zhao and Dilip Soman, 'A Practitioner's Guide to Nudging' (2013) Rotman School of Management: Research Report Series Behavioural Economics in Action, 1, 10. <<https://www.yumpu.com/en/document/read/53646826/a-practitioners-guide-to-nudging>> accessed 16 December 2024

¹⁴⁰ Zeilstra (n 66) 766.

¹⁴¹ Sunstein (n 138) 5.

¹⁴² Reijula and others (n 131); Eva M Krockow, 'Nudge or Boost: What's Best For Changing Behavior?' (Psychology Today, 13 January 2023). <<https://www.psychologytoday.com/us/blog/stretching-theory/202301/nudge-or-boost-whats-best-for-changing-behavior>> accessed 23 August 2025

¹⁴³ Sunstein (n 138); Viscusi likewise considers information provision a form of nudge. According to Barton and Grune-Yanoff, disseminating information can indeed shape behavior predictably,

disclosures that engage System 2 and those that appeal to System 1.¹⁴⁴ 'We might distinguish between System 2 disclosures, designed simply to give people factual information and to ask them to process it, and System 1 disclosures, designed to work on the automatic system (for example, by inculcating fear or hope).'¹⁴⁵ Graphic health warnings illustrate a System 1 nudge.¹⁴⁶

Sunstein places the boost within this category.¹⁴⁷ A boost activates System 2 by compelling individuals to pause and reflect before acting. It facilitates choice by offering straightforward steps or data, yet still requires effort from the boostee—for instance, conducting an analysis based on the information supplied.¹⁴⁸ A boost such as decision aid¹⁴⁹ '...reduces the cognitive cost of making the optimization, so that an attentive choice becomes more likely.'¹⁵⁰

Some scholars contest Sunstein's view,¹⁵¹ arguing that educating individuals through information provision is not nudging because it does not target flaws in the decision-making

assuming that agents respond to it with sufficient uniformity; 'a sign informing that a river is dangerous to swim in would count as a nudge, simply because there are enough people who place a high priority on not drowning.' Information provision thus constitutes a category of nudge, and Sunstein maintains that certain instruments, such as GPS devices, exert a nudge effect merely by supplying information. See: William Kip Viscusi, 'Efficiency Criteria for Nudges and Norms' (2022) 191 *Public Choice* Springer 465, 469. <https://ideas.repec.org/a/kap/pubcho/v191y2022i3d10.1007_s11127-019-00712-5.html> accessed 9 December 2024; Barton and Grüne-Yanoff (n 11) 343; Sunstein (n 27).

¹⁴⁴ Sunstein (n 138).

¹⁴⁵ *ibidem* 4.

¹⁴⁶ Christine Jolls, 'Product Warnings, Debiasing, and Free Speech: The Case of Tobacco Regulation' (2013) 169 *Journal of Institutional and Theoretical Economics* 53. <[0.2307/23354770](https://doi.org/10.2307/23354770)> accessed 6 December 2024

¹⁴⁷ While nudging is grounded in the heuristics-and-biases research framework within the psychology of decision-making, boosts are derived from the fast-and-frugal-heuristics approach. See: Reijula and others (n 131).

¹⁴⁸ Reijula and others (n 131).

¹⁴⁹ Gerald Häubl and Valerie Trifts, 'Consumer decision making in online shopping environments: the effects of interactive decision aids' (2000) 19 *Marketing Science* 4. <<https://doi.org/10.1287/mksc.19.1.4.15178>> accessed 6 November 2024; See for example the Patient Decision Aid elaborated by Ottawa Hospital Health Institute to help the patient to decide if he or his family member should go to live with family or stay in the long-term care or nursing home during the COVID pandemic: Dawn Stacey and others, *Decision Aid* (2015) The Ottawa Hospital Research Institute.

<<https://decisionaid.ohri.ca/docs/das/COVID-MoveFromLongTermCare.pdf>> accessed 23 August 2025; See more about decision trees used in different areas of medical decision here: Vili Podgorelec and others, 'Decision trees: an overview and their use in medicine' (2002) 26 *Journal of Medical Systems* 445.

<https://www.researchgate.net/publication/11205595_Decision_Trees_An_Overview_and_Their_Use_in_Medicine> accessed 23 August 2025; See for example the Decision Tree designed by the Office of Civil Rights, Department of Health & Human Services USA to provide people with information about when they can obtain treatment information about their loved ones, available here: <https://www.hhs.gov/sites/default/files/families-hipaa-decision-tree-adult-patients.pdf>

¹⁵⁰ Löfgren and Nordblom (n 12) 3, 8.

¹⁵¹ Sunstein (n 7) 446.

process.¹⁵² Calo distinguishes between nudge, code, and notice: a stimulus that does not rely on behavioral insights and serves as a simple physical prompt is classified as code, rather than nudge. The provision of information that does not draw upon behavioral insights is categorized as notice, not nudge.¹⁵³ The Econ is oriented toward gathering relevant data and drawing rational conclusions; consequently, the provision of information does not bypass the Econ but addresses him directly and influences his choices. Sunstein himself acknowledges this point: in his reply to critics, he writes that ‘behavioral bias is not a necessary condition for a nudge.’¹⁵⁴ and adds: ‘some nudges combat behavioral biases but others do not...’¹⁵⁵ As a consequence, he removes from the sine qua non conditions the requirement that a nudge must leave Econs unaffected.

Some researchers take a middle-ground view, suggesting that certain nudges activate both Systems 1 and 2.¹⁵⁶ For example, Saghai classifies the ‘Less Than You Think’ campaign¹⁵⁷ as a nudge because its message, based on social norms and anchoring, elicits responses from behavioral cues rather than rational choice.¹⁵⁸ Similar effects arise when forms are simplified or information is recontextualized: while understanding still requires deliberation, behavioral cues reduce cognitive load.¹⁵⁹ Framing works similarly, as the way a decision is presented can influence peoples’ reflective choices through emotional responses linked to that frame.¹⁶⁰ A single intervention can fit multiple categories, such as shocking tobacco health warnings that inform while also leveraging cognitive shortcuts like availability heuristics.¹⁶¹ Haines and Spear’s social-norm nudge—informing students that their peers binge-drink less than they think—combines information provision with conformist heuristics to promote healthier

¹⁵² Hausman (n 25) 19; Baldwin (n 71) 834; Löfgren and Nordblom also argue that new information provision is not a nudge, since it activates the reflective part of people’s mind: ‘we do not consider information that is new to an individual to be a nudge.’ See: Löfgren and Nordblom (n 12) 3, 6.

¹⁵³ Calo (n 52).

¹⁵⁴ Sunstein (n 27) 512.

¹⁵⁵ *ibidem* 514.

¹⁵⁶ Theresa T Marteau and others (n 40); Carlsson and others (n 80) 3, 4; Hansen and Jespersen (n 112) 6.

¹⁵⁷ The ‘Less Than You Think’ campaign was a public health initiative designed to reduce excessive alcohol consumption among college students by correcting their misperceptions of peer drinking norms. As described by Thaler and Sunstein, the campaign used social norm feedback—showing students that most of their peers drink less than they assume—to nudge individuals toward more moderate behaviour without imposing any bans or penalties. See: Thaler and Sunstein (n 1) 68.

¹⁵⁸ Saghai (n 16) 489.

¹⁵⁹ Richard P Larrick and Jack B Soll, ‘Economics - The MPG illusion’ (2008) 320 *Science* 1593.

<https://www.researchgate.net/publication/5288853_Economics_-_The_MPG_illusion> accessed 17 December 2024

¹⁶⁰ Hansen and Jespersen (n 112) 15.

¹⁶¹ Barton and Grüne-Yanoff (n 11) 343.

behavior.¹⁶² In contrast, the five-cent fee on disposable bags, often seen as a nudge, aligns more with an economic perspective and functions as a standard fiscal measure, enhanced by loss aversion and salience, thus engaging both cognitive systems.¹⁶³

Saghai contends that a nudge acts on both non-deliberative and incompletely deliberative processes because it triggers a ‘shallow cognitive process’ in a substantially noncontrolling way.¹⁶⁴ Replacing the idea of ‘automatic cognitive processes’ by that of ‘shallow cognitive processes’ is an important amendment to Thaler and Sunstein’s account of nudge.¹⁶⁵ The authors classify behavioral interventions as either boosts or nudges, suggesting that both types of interventions either fully or partially bypass the deliberative system. Mongin and Cozic also point out that lapses in rational thinking result in negative consequences for individual decision-making. Both nudge and boost aim to improve this scenario.¹⁶⁶

The notion of a ‘shallow cognitive process’ provides an intriguing conceptual pathway to include within the definition of nudge instruments such as boosts, information provision, and minor financial incentives, which would otherwise be excluded under a stricter interpretation.¹⁶⁷

2.7. Nudge must operate for the benefit of individuals

Sunstein and Thaler emphasize that a defining characteristic of a nudge is that it ‘attempts to improve people's welfare.’¹⁶⁸ However, this definition does not clearly indicate how to assess what is beneficial for individuals or whether a nudge should serve the interests of the nudgee, nudger, society, or third parties.¹⁶⁹ As Kuyser and Gordijn emphasize, ‘A normative discussion is required to decide who may decide on the goals of nudges, for which goals nudges are appropriate and who should benefit from the use of nudges.’¹⁷⁰

¹⁶² Michael P Haines and Sherilynn F Spear, ‘Changing the perception of the norm: a strategy to decrease binge drinking among college students’ (1996) 45 *Journal of American College Health* 134. <[10.1080/07448481.1996.9936873](https://doi.org/10.1080/07448481.1996.9936873)> accessed 11 December 2024

¹⁶³ Congiu and Moscati (n 13) 195.

¹⁶⁴ Saghai (n 16) 491; Di Nucci defines nudging as appealing to ‘less than conscious mechanisms’. See: Di Nucci (n 103), 33. And Mills describes it as ‘unreflective intuitive reasoning’ See: Chris Mills, ‘The Choice Architect’s Trilemma’ (2018) 24 *Res Publica* 395. <<https://doi.org/10.1007/s11158-017-9363-4>> accessed 16 August 2025

¹⁶⁵ Saghai (n 16) 489.

¹⁶⁶ Mongin and Cozic (n 58) 109; Sunstein (n 138) 4.

¹⁶⁷ See more in Section 3.

¹⁶⁸ Sunstein (n 6) 58.

¹⁶⁹ De Ridder, Kroese and Van Gestel (n 106).

¹⁷⁰ Paul Kuyser and Bert Gordijn, ‘Nudge in perspective: A systematic literature review on the ethical issues with nudging’ (2023) 35 *Rationality and Society*. <<https://doi.org/10.1177/10434631231155005>> accessed 15 August 2025

It is evident that not all behavioral interventions derived from behavioral insights can be classified as nudges. For instance, an advertising campaign that presented food-related content to children watching cartoons resulted in a 45% increase in snack consumption compared to those who were not exposed to such content.¹⁷¹ Although this approach employs behavioral insights to activate or inhibit mental representations, it does not seek to enhance the welfare of the individuals involved, and therefore, it does not meet the criteria for a nudge. A nudge cannot operate for the particular interests of any influential group. Sunstein highlights that

Nonetheless, it is true that the idea of nudging – and indeed the very word – might be taken to suggest impositions by some kind of elite, determined to steer people in the directions that it prefers. We can readily imagine nudges that would run afoul of this objection. But in a nation that is committed to both individual liberty and social welfare, those nudges are unacceptable.¹⁷²

2.7.1. Nudge for nudgee welfare

Nudge is fundamentally intended to serve the interests of the nudgee or the society as a whole. However, as Aiken points out, it is challenging to define the objectives of libertarian paternalism and what it considers to be the common good: ‘[l]iberal paternalism remains unclear whether its goal is some kind of ‘objective’ welfare (e.g. a healthy body), full rationality

¹⁷¹ Jennifer L Harris, John A Bargh and Kelly D Brownell, ‘Priming effects of television food advertising on eating behavior’ (2009) 28 *Health psychology* 404. <[10.1037/a0014399](https://doi.org/10.1037/a0014399)> accessed 13 December 2024

¹⁷² Sunstein (n 27) 514.

or autonomy.¹⁷³ Some aspects of the doctrine suggest that nudges should align with human preferences,¹⁷⁴ values,¹⁷⁵ interests,¹⁷⁶ or judgments.¹⁷⁷

How can one determine which decision would align with the preferences of the nudgee, especially when they often lack clearly defined preferences or exhibit incoherence? Moreover, individuals frequently do not understand what enhances their utility and happiness.¹⁷⁸ Proponents of libertarian paternalism believe that it is acceptable to nudge people towards choices they would make when reflecting. Critics, however, argue that there is no guarantee these reflective preferences exist, questioning policy-makers' ability to know what individuals truly want in a deliberative context.¹⁷⁹

Hausman expresses similar concerns: 'If people are not good judges of what to do, why should economists accept their judgment of whether a nudge is good for them?'¹⁸⁰ Karen Yeung points out that challenges in categorizing any intervention (not limited to nudges) as paternalistic stem from the heterogeneity of nudgee's preferences.¹⁸¹ Therefore, why would a policy-maker seek his opinion or take it into account?

Thaler and Sunstein, along with others, propose that a nudge should operate in accordance with the preferences of the nudgee and lead to the best possible outcome for him¹⁸²

¹⁷³ Anne Van Aaken, 'Constitutional Limits to Nudging: A Proportionality Assessment' (2015) University of St. Gallen Law School, Law and Economics Research Paper Series, Working Paper No. 2015-03.

<https://www.researchgate.net/publication/314541952_Constitutional_Limits_to_Nudging_A_Proportionality_Assessment> accessed 18 June 2025

¹⁷⁴ Adam Oliver, 'Nudging, Shoving, and Budging: Behavioural Economic-Informed Policy' (2015) 93 Public Administration 700, 703. <<https://doi.org/10.1111/padm.12165>> accessed 9 January 2025; Thaler and Sunstein (n 1); Júlia de Quintana Medina, 'What is wrong with nudges? Addressing normative objections to the aims and the means of nudges' (2021) Instituto Nacional de Administración Pública (INAP) no. 25, 23. <<https://doi.org/10.24965/gapp.i25.10865>> accessed 5 February 2025; Chris Berg and Sinclair Davidson, 'Nudging, calculation, and utopia' (2017) 1 Journal of Behavioral Economics for Policy 49, 50.

<https://www.academia.edu/35101352/Nudging_calculation_and_utopia> accessed 29 August 2024

¹⁷⁵ Pascal Ohlhausen and Nina Langen, 'When a Combination of Nudges Decreases Sustainable Food Choices Out-Of-Home-The Example of Food Decoys and Descriptive Name Labels' (2020) 9 Foods 557. <[10.3390/foods9050557](https://doi.org/10.3390/foods9050557)> accessed 17 December 2024

¹⁷⁶ Frey and Gallus (n 64) 11.

¹⁷⁷ Mario J Rizzo and Douglas Glen Whitman, 'The Camel's Nose is in the Tent: Rules, Theories and Slippery Slopes' (2003) 51 Ucla Law Review 539, 700. <<http://hdl.handle.net/10211.3/195767>> accessed 29 November 2024

¹⁷⁸ John Malcolm Dowling and Yap Chin Fang, *Modern Developments In Behavioral Economics: Social Science Perspectives On Choice And Decision Making* (Wspc 2007).

¹⁷⁹ Oliver (n 41) 295.

¹⁸⁰ Hausman (n 25) 19.

¹⁸¹ Karen Yeung, 'Are design-based regulatory instruments legitimate?' (2015) King's College London Dickson Poon School of Law Legal Studies Research Paper Series: Paper No. 2015-27, 1.

<[10.2139/ssrn.2570280](https://ssrn.com/abstract=2570280)> accessed 23 August 2025

¹⁸² Thaler and Sunstein (n 1).

(it should act in his best interest).¹⁸³ Within the framework of the conceptualization of human behavior, the authors posit the existence of two distinct ‘selves’ within individuals, referred to as the ‘planner’ and the ‘doer.’ Consequently, the evaluation of an individual’s behavior would be based on what the planner deems appropriate.¹⁸⁴ This conceptualization aligns with the dual-process theory of cognition introduced by Kahneman, which distinguishes between System 1 and System 2. The ‘planner’ aligns with System 2, exhibiting characteristics such as long-term foresight, deliberate thinking, and a preference for activities that yield long-term benefits, like exercising, consuming healthful foods, and engaging in financial savings. Conversely, the ‘doer’ is representative of System 1, prone to making quick, impulsive decisions that gratify immediate desires, such as indulging in streaming services, consuming fast food, and enjoying premium alcoholic beverages. Berg and Davidson describes this phenomenon as follows:

The planner’s and doer’s preferences are inconsistent; consumers may regret after an evening of television, hamburgers, and fine whisky that they had not been more virtuous. The doer personality too often dominates the planner personality because of the influence of temptation and mindlessness.¹⁸⁵

These two cognitive systems often produce conflicting preferences within the same individual, leading to situations where the immediate gratifications chosen by the ‘doer’ may later be regretted by the ‘planner.’ Such conflicts illustrate the frequent dominance of System 1 in everyday decision-making, driven by the allure of immediate rewards and the ease of habitual actions. Alternatively, this inconsistency is referred to as ‘the intention–behavior gap.’¹⁸⁶

The role of libertarian paternalism, as proposed by Thaler and Sunstein, is to design interventions that enhance the influence of System 2, thereby helping individuals to make decisions that are more aligned with their considered preferences and long-term well-being.¹⁸⁷ Nudge operates in such a way that an individual, over time, would also arrive at the same decision upon observing its outcome or having the opportunity to analyze this decision using

¹⁸³ Frey and Gallus (n 64) 11.

¹⁸⁴ Medina (n 174) 23.

¹⁸⁵ Berg and Davidson (n 174) 50.

¹⁸⁶ Paschal Sheeran and Thomas L Webb, ‘The intention-behavior gap’ (2016) 10 *Social and Personality Psychology Compass* 503. <<https://doi.org/10.1111/spc3.12265>> accessed 17 December 2024

¹⁸⁷ Berg and Davidson (n 174) 50.

the reflective cognitive system.¹⁸⁸ It is considered that such a decision would be rational.¹⁸⁹ The planning of nudging involves an attempt to evaluate ex post the results of the subject's behavior (through research and experiments) and to adjust the choice architecture so that the behavioral effects are advantageous; '[t]he approach is only paternalistic in the sense of wanting to motivate behaviour change among those who, on reflection, would have liked to have made different choices for themselves.'¹⁹⁰

Some authors emphasize that nudges influence decision-making outcomes irrespective of any pre-existing preferences for a particular option.¹⁹¹ On one hand, such nudge actions demonstrate the power of their effect; on the other hand, they may raise concerns due to the potential infringement on the decision-maker's autonomy.¹⁹²

The question arises regarding which values are truly paramount for nudgees: is it genuinely health, prosperity, and wellbeing? Or could it be that short-term pleasures hold greater significance for some individuals than long-term benefits? Who would be responsible for making such determinations? What if a particular value is recognized by the majority of society (let us assume it is a value that serves the common good), yet a segment of society does not regard this value as important or desirable, and it does not align with their objectives?¹⁹³ Can this value still be represented through a nudge?¹⁹⁴ Arad and Rubinstein offer the following response: '[a]dvocates of the approach agree that nudges should be used to steer behavior only when it is clear that a large majority of the population will benefit.'¹⁹⁵ Oliver emphasizes that making such decisions necessitates confidence from policy-makers and will not always be aligned with the opinions and desires of all nudgees:

When one considers all relevant trade-offs – e.g. more lifetime health versus greater enjoyment in the moment, enhanced financial security versus taking the risks that are sometimes necessary to enable a rich and varied life, increasing happiness for

¹⁸⁸ Frey and Gallus (n 64) 12; Oliver (n 41) 281.

¹⁸⁹ Oliver (n 174) 703.

¹⁹⁰ Oliver (n 41) 281.

¹⁹¹ De Ridder, Kroese and Van Gestel (n 106).

¹⁹² John, Smith and Stoker (n 26).

¹⁹³ Robert Sugden, 'Why Incoherent Preferences Do Not Justify Paternalism' (2008) 19 Constitutional Political Economy 226. <[10.1007/s10602-008-9043-7](https://doi.org/10.1007/s10602-008-9043-7)> accessed 23 August 2025

¹⁹⁴ Ayala Arad and Ariel Rubinstein, 'The People's Perspective on Libertarian-Paternalistic Policies' (2018) 61 Journal of Law and Economics 311, 312. <<https://arielrubinstein.tau.ac.il/papers/101.pdf>> accessed 9 December 2024

¹⁹⁵ *ibidem* 312.

oneself versus keeping a promise made to another – there may not be an objective wellbeing on which most of us can agree.¹⁹⁶

2.7.2. Non-paternalistic nudge?

Some authors lean towards the thesis that not every nudge is paternalistic, meaning that not all of them align with the concept of libertarian paternalism.¹⁹⁷ Balz emphasizes that

[i]t's important to point out that nudging complements a libertarian paternalism outlook about public policy, but the two are distinct concepts. Libertarian paternalism is intended as means to help people make decisions that make them better off as defined or judged by themselves—not by a government or private authority. While the nudges cited in the book are intended to do exactly this, nudging takes place in [a] variety of realms where the nudger's explicit goal is to promote [the nudger's] own welfare (think of almost any consumer marketing strategy or retail store layout).¹⁹⁸

Mills provides examples of non-paternalistic nudges: 'For example, nudges may be designed to increase organ-donation, combat climate change, or reduce discrimination in the work place. As these policies seek to aid third-parties (even after the death of the subject in some instances) they are cases of non-paternalistic nudging.'¹⁹⁹ Similarly, Saghai notes that if one were to accept that a change must be beneficial for the nudgee, then regulations such as generic medication defaults, where physicians prescribe generic drugs to patients, or organ donation defaults, where the nudgee consents to the use of their organs after death, would not qualify as nudges. This is because the former regulation is intended to reduce healthcare costs, while the latter benefits third parties who would receive the available organs.²⁰⁰ However, when considering these regulations from a broader perspective, one could argue that they are designed for societal welfare.

¹⁹⁶ Oliver (n 41) 290.

¹⁹⁷ Hausman (n 25) 19; Mongin and Cozic (n 24); Bovens (n 98); Hansen (n 64); John P Balz, 'A nudge on a hot button issue: abortion' (*The Nudge*, 1 May 2008). <<http://nudges.org/a-nudge-on-a-hot-button-issue-abortion/>> accessed 4 Apr 2021; Mills (n 8) 496; Van Aaken (n 173).

¹⁹⁸ Balz (n 197).

¹⁹⁹ Mills (n 8) 496.

²⁰⁰ Saghai (n 16) 488.

As a side note, it should be mentioned that a number of scholars refrain from classifying nudges as paternalistic instruments for reasons distinct from those discussed above. For instance, Floridi, defining paternalism as the exercise of power against a subject's will but for their own good, points out that there are non-paternalistic nudges—those that steer individuals toward choices they would readily make themselves.²⁰¹ Some critics further argue that a nudge cannot be regarded as a paternalistic tool, since 'genuine paternalism imposes superior view of well-being on recalcitrant subjects' rather than aiming to improve citizens' well-being as defined by their own preferences.²⁰²

2.7.3. Nudge for society welfare

Is the assumption that better decisions (in terms of yielding more favorable outcomes for the decision-maker) also contribute to an increase in collective welfare valid and fact-based? As noted by Reijula and colleagues; '[m]uch of this "behaviorally informed policy" has been aimed at improving personal decisions of individuals, implicitly assuming that more effective pursuit of individual goals also yields better consequences for society.'²⁰³ Mertens et al. emphasize that the design of choice environments must '...facilitate personally and socially desirable decisions...' ²⁰⁴ An intervention is deemed beneficial as it serves the common good.²⁰⁵ Mellet further states that '[i]n addition to improving the choices of individuals, nudging can have positive outcomes for society. For instance, it could be used to encourage more people to become organ donors, reducing the wait for people who require organ donations and thus saving more lives.'²⁰⁶ Bovens also asserts that nudge '...leads people toward options that are either thought to be in their own best interest or thought to be in society's best interest.'²⁰⁷ Similarly, Calo reflects on nudge: 'its mechanism is to exploit the ways that individuals deviate from rational choice in order to benefit themselves or society at large.'²⁰⁸ Wells makes a similar

²⁰¹ Floridi (n 13) 14.

²⁰² Francesco Guala and Luigi Mittone, 'A political justification of nudging' (2015) 6 *Review of Philosophy and Psychology* 385. <<https://doi.org/10.1007/s13164-015-0241-8>> accessed 16 August 2025

²⁰³ Reijula and others (n 131).

²⁰⁴ Stephanie Mertens and others, 'The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains' (2022) 119 *PNAS* 1. <<https://doi.org/10.1073/pnas.2107346118>> accessed 16 December 2024

²⁰⁵ This way of looking at interventions is called libertarian benevolence. See more here: Mills (n 203); Guala and Mittone (n 252); Mullett (n 65).

²⁰⁶ Mullett (n 65).

²⁰⁷ Bovens (n 98) 2.

²⁰⁸ Calo (n 52).

distinction: ‘Nudging may be through changing the decision structures faced by individuals so that either individual or collective welfare is increased.’²⁰⁹

And finally, Guala and Mittone argue that nudges should be beneficial for third parties who would otherwise be harmed in their absence.²¹⁰ In their view, it is particularly justified to nudge people in cases where individual behavior has negative consequences for society as a whole—for example, when a person fails to save money, or neglects their health and physical fitness. The costs of someone’s poverty or health problems will ultimately be borne by others in the future. This is why nudging should be used to steer such choices in the right direction.

3. Proposed definition of nudge

From the discussion above, both a narrow and a broad definition of a nudge can be identified. A nudge *sensu stricto* is a regulatory instrument which, operating within the framework of choice architecture, addresses only Humans while bypassing Econs. It is therefore a tool that relies on rationality failures and cannot operate through financial incentives. In contrast, a nudge *sensu largo* is an instrument that may or may not rely on rationality failures and can influence both Econs and Humans. Consequently, minor economic incentives and information provision may also be classified as nudges.

In light of the arguments and the components of a nudge outlined above, and given the numerous controversies and definitional inconsistencies surrounding the concept, the following section proposes a legal-institutional definition of a nudge that seeks to bring greater clarity to the notion of a nudge and to delineate its boundaries.

The definition proposed in this chapter leans towards the broader understanding of a nudge, refraining from treating the requirement that nudges influence Humans while bypassing Econs as a *sine qua non* condition. By contrast, the exclusion of financial incentives is maintained in a deliberately narrow sense, for both normative and analytical reasons. Classifying taxes, subsidies or deposit–refund schemes as nudges would blur the boundary between behavioural tools and traditional economic instruments, undermining conceptual clarity.

Here is the proposed definition:

²⁰⁹ Wells (n 105) 112.

²¹⁰ Guala and Mittone (n 252) 395.

Nudge is a stimulus implemented in the form of a regulation, directed at the arranger of choice architecture, the impact of which is directed to end-users.²¹¹ The change induced by a nudge must be intentional, activating a mechanism initiated by a stimulus and directed toward a specific decision set by the policy-maker. The stimulus, affecting the shallow cognitive process (System 1 or System 1 and 2), steers end-users toward action or inaction, without relying on coercion, threats of punishment or financial incentives. Nudge acts for the good of the nudgee or for the good of society. Nudge can be implemented in a form of ban or mandate toward choice-architecture arrangers, never toward end-users though.

Under this revised formulation, a measure must meet several conditions before it qualifies as a nudge. Accordingly, the original definitional fragment asserting that ‘nudges are not mandates nor bans’ cannot be sustained, as it is both misleading and overly general.

4. Conclusions

The inquiry conducted in Chapter II demonstrates that the concept of the nudge, though widely adopted in both scholarship and policy-making, remains fraught with definitional uncertainty. By analysing the central components of Thaler and Sunstein’s definition against a vast body of interdisciplinary literature, this chapter has shown that the term’s apparent simplicity masks profound theoretical and normative controversies.

First, the exclusion of bans, mandates, and financial incentives is not as clear-cut as originally suggested. Many interventions occupy a grey zone between nudges and traditional regulatory instruments, and the boundaries often collapse once applied in real legal contexts. Second, the requirement of easy avoidability is itself relative, depending not only on financial cost but also on effort, transparency, and social context, raising challenges for the legitimacy of nudges in law. Third, the claim that nudges necessarily exploit cognitive biases is open to question: some interventions instead cultivate reflective decision-making, blurring the line between nudging and education or persuasion. Finally, the welfare condition remains highly contested: whether nudges should prioritise the interests of the individual, the majority, or

²¹¹ Of course, some nudges are implemented without formal incorporation into the legal system however they stay outside the scope of this study. The definition proposed in this chapter refers specifically to tools used in public policy and to behavioral interventions implemented within the legal system.

society as a whole is an unresolved normative issue that speaks directly to the philosophy of law.

The chapter concludes by proposing a redefined conception of the nudge. The new definition grounded in critical analysis of doctrinal debates, is designed to be particularly applicable within legal studies and legislative practice, offering jurists a clearer tool for classifying and evaluating behaviorally informed interventions called nudge.

The results of this inquiry pave the way for Chapter III. Having clarified the meaning and scope of the nudge, the dissertation now turns from the definitional to the jurisprudential level. Chapter III explores how legal scholarship has historically conceived of the legal agents—initially in terms strikingly analogous to *homo oeconomicus*, as a rational and autonomous actor. Just as economics has moved from this abstract construct toward the empirically grounded perspective of behavioral economics, so too legal theory is undergoing a parallel transformation, reconsidering the assumptions that underlie the definition of the legal agent. In this way, the trajectory of legal thought mirrors that of economics, advancing from the rationalist paradigm of the past to contemporary behavioral and experimental approaches.

Chapter III

Models of legal agents within jurisprudence and legal doctrine. Traditional compliance theory.

1. Introduction

The third chapter investigates how jurisprudence, doctrinal scholarship, and legal philosophy have historically conceptualised the legal agent—that is, the addressee of law whose behavior is to be shaped by rules and sanctions. Just as neoclassical economics built its models upon the rational, utility-maximising *homo oeconomicus*, so too legal thought relied upon constructs of rational, self-interested, and calculating actors. In both disciplines, these assumptions not only structured theory but also guided practical applications—economic modelling in one case, legislative drafting and judicial reasoning in the other. This chapter therefore asks whether the legal agent, as traditionally understood, has in fact been modelled on the same rationalist premises that underpinned neoclassical economics, and whether those premises remain adequate in light of contemporary critique.

The inquiry unfolds along three axes. First, it reconstructs the juridical models of rational legal agents that have influenced legislation and adjudication: Holmes’s calculating bad man, Hart’s uncertain puzzled man, the rational offender in economic criminology, the reasonable person standard in negligence law, the Learned Hand formula, and the due care model in Polish jurisprudence. Each of these figures, in different ways, embodies the assumption that legal agents are informed, logical, and capable of cost–benefit analysis. This raises a central question: to what extent do these models presuppose unrealistic cognitive capacities, such as full information and unlimited foresight, and how do they resemble the economic fiction of *homo oeconomicus*?

Second, the chapter examines attitudes toward law and compliance theory, asking why individuals obey norms. Do citizens comply primarily to avoid sanctions, as deterrence theory suggests? Do they act out of respect for legal authority? Or are obedience and disobedience better explained by social conformity, legitimacy, or moral conviction? These accounts converge on a common sequence—awareness, comprehension, evaluation, and motivation—but differ sharply in how they weigh rational calculation against social and normative factors. The guiding problem here is whether law can be effective if compliance is assumed to rest mostly on rational deliberation, or whether alternative psychological and sociological mechanisms must also be recognised.

Finally, the chapter interrogates the philosophical foundations of compliance in legal theory. From Austin and Bentham's coercive models, through Kelsen's structural positivism and Durkheim's sociology of norms, to Rawls's and Dworkin's moralised accounts of legitimacy, jurisprudence has persistently presupposed that legal agents are rational beings capable of understanding rules, weighing reasons, and adjusting behavior accordingly.

The critical question is whether this rationalist construction remains tenable: are legal agents in fact the abstract rational entities envisaged by theory, or are they better understood as bounded agents whose behavior cannot be captured by the assumptions of perfect rationality? By addressing these questions, Chapter III seeks to demonstrate that the jurisprudential construction of the legal agent parallels the economic construction of *homo oeconomicus*. Both traditions share a reliance on rationalist models of agency, and both face the same challenges in accounting for real human behavior. This recognition prepares the ground for the analysis in Chapter IV, where the shift toward behavioral and empirically grounded conceptions of the legal agent becomes fully apparent.

2. Legal agent

Contemporary literature distinguishes the legal agent from both normative and sociological viewpoints. From the sociological perspective, the addressee of law—variously labelled the reader of a legal text, the recipient of law, or simply the recipient of the legislator's message (without restricting the inquiry to the written instrument)—is considered within the factual, not the normative, domain. Accordingly, the legal agent is a subject who understands, knows, or can reasonably acquaint itself with the applicable legal norms.¹

Other accounts portray the recipient of the legislator's communication as an agent who possesses a specified set of characteristics articulated in the rule; possession of those characteristics alone suffices to render that subject a legal agent, regardless of whether the text has actually been consulted.²

The jurisprudential literature further differentiates between the factual and the rational addressee of a legal rule, belonging, respectively, to the empirical and normative spheres.³ The factual (sociological) addressee is a concrete individual who can be identified as the recipient of the legislator's message. The rational addressee, by contrast, is a lawyerly fiction—a

¹ Jakub Wiecha, 'Addressee of the Law: Actual and Rational' (2024) *Przegląd Prawniczy TBSP UJ* 2023/2 26, 31. <[10.5281/ZENODO.12625613](https://ojs.umi.onk.pl/handle/11362/12625613)> accessed 11 March 2025; Lon L Fuller, *Moralność prawa* (Stefan Amsterdamski tr, Państwowy Instytut Wydawniczy 1978) 219.

² Tomasz Gizbert-Studnicki, *Język prawny z perspektywy socjolingwistycznej* (PWN 1986) 54.

³ Wiecha (n 1) 35.

construct of doctrinal reasoning analogous to the rational legislator, who is dogmatic rather than empirical.⁴ It is not a real entity but a normative benchmark, a mental personification of the recipient of a dogmatic legislator's communication. As Wiecha explains, '[t]he rational addressee—and the assumptions concerning it—are grounded in the factual addressees of a given communication at a specific point in time and must be examined separately for each communication.'⁵ The rational legal agent is presumed to possess the subject-matter knowledge⁶ and linguistic competence sufficient for the correct understanding of a legal provision.⁷ That knowledge is not deduced from survey data but is stipulated according to the level reasonably expected of a diligent member of the relevant group.⁸

Jurisprudence has produced numerous models of legal agents. Developed within legal doctrine, legal theory, and the philosophy of law—or as a by-product of judicial work—these models share a common core that closely resembles the *homo oeconomicus* paradigm. For roughly two centuries, the dominant schools of jurisprudence have treated the addressee of legal norms as a calculating agent: fully informed, instrumentally rational, self-interested, and exquisitely sensitive to incentives. This assumption is most visible in theories that regard coercion, or the fear thereof, as the engine of law's normativity.

3. Juridical models of rational legal agents

Models of rational legal agents can be found in jurisprudence, legal doctrine, and in the practice of law application. The objective of this part of the study is to analyze judicial models that constitute a measure of lawful behavior. The first example of a human model that has explicitly influenced the formulation of laws by judges and legislatures is the bad man theory.

3.1. Bad and good man theory

According to the approach to law defined and described 'from the point of view of a bad man' presented by the American realist, U.S. Judge O.W. Holmes, the subject of law is an amoral, calculating agent who estimates when the sanction-imposing state apparatus will be

⁴ Gizbert-Studnicki (n 2) 101; Agnieszka Bielska-Brodziak, *Śladami prawodawcy faktycznego. Materiały legislacyjne jako narzędzie wykładni prawa* (Wolters Kluwer 2017) 79; Wiecha (n 1) 35.

⁵ Wiecha (n 1) 36. Author's translation.

⁶ Gizbert-Studnicki (n 2) 86; Bronisław Wróblewski, 'Język prawny i prawniczy' (1948) 3 *Prace Komisji Prawniczej* 115.

⁷ Agnieszka Choduń, *Aspekty językowe derywacyjnej koncepcji wykładni prawa* (Wydawnictwo Naukowe Uniwersytetu Szczecińskiego 2018) 50; Fuller (n 1) 14.

⁸ Wiecha (n 1) 36.

activated against him.⁹ Holmes, sometimes called a social Darwinist,¹⁰ presented the view that man adapts to the changing law in a way that resembles adaptation to a changing environment, which takes place through evolution.¹¹ Such a bad man model can be compared to *homo oeconomicus*, because, like him, he also makes a cost–benefit analysis (in the sense of what he can gain and what punishment he faces if he breaks the law). Such a person has clear preferences and makes choices to achieve his goals.¹²

Notably, these goals are material in nature, and any ethical considerations of the presented options are not determinative for the bad man.¹³ Alschuler characterizes the bad man as follows:

To a Holmesian bad man, law is a system of prices, and only material prices matter. The law's price may include damages, an injunction, a contempt citation, a fine, a prison term, or even death by hanging. Nevertheless, a man tough enough to pay the price always has the option of noncompliance with the law's directives.¹⁴

To better illustrate the model of behavior of the bad man, one can compare it with the 'good man' model;

When deciding whether to obey a particular law, for example, the good man will not look at the penalty that may be imposed in the case of violation. Rather, the good man will look to the rightness or wrongness of the action at issue and will undertake just actions even where it is unprofitable to do so (e.g., performing a

⁹ Oliver W Holmes, 'The Path of the Law' (1897) 10 Harvard Law Review 457. <<https://doi.org/10.2307/1322028>> accessed 23 August 2025

¹⁰ John M Kang, 'Prove Yourself: Oliver Wendell Holmes and the Obsessions of Manliness' (2016) 118 West Virginia Law Review 1067, 1069. <<https://researchrepository.wvu.edu/cgi/viewcontent.cgi?article=1098&context=wvlr>> accessed 20 November 2024

¹¹ Jerzy Oniszczyk, *Filozofia i teoria prawa* (2 edn, Beck 2012) 435.

¹² Yet this is a descriptive stance rather than a normative endorsement: Holmes did not prescribe that legal subjects should behave in this way, but used the figure as an analytical device.

¹³ Thomas C Grey, 'Holmes and Legal Pragmatism' (1989) 41 Stanford Law Review 787. <<https://doi.org/10.2307/1228740>> accessed 20 November 2024

¹⁴ Albert W Alschuler, 'The Descending Trail: Holmes' Path of the Law One Hundred Years Later' (1997) 49 Florida Law Review 353, 412. <<https://scholarship.law.ufl.edu/flr/vol49/iss3/1>> accessed 20 November 2024

losing contract) while violating unjust laws without regard to the penalty imposed (e.g., Jim Crow laws).¹⁵

The motivation for undertaking lawful behavior differs between bad and good men. The former obeys the law to avoid sanctions, the latter because of moral values such as a sense of rightness, goodness, and justice.¹⁶ In the case of tort law, a good person will not commit a violation of the law because he is not interested in harming anyone at all. In contrast, a person behaving in accordance with a bad man model will make a calculation about the consequences of committing an offense taking into account the broader context.¹⁷ A bad man's course of action and calculation can be discerned most explicitly in the case of contract law and tort law.¹⁸ Such an agent, if he honors contracts (i.e., obeys the law) does so out of consideration for the profits he can make and the losses he can avoid.¹⁹ A bad person follows the motto that sometimes it is profitable to fail to honor a contract, especially if economic considerations lead to such a conclusion.²⁰ A good person, on the other hand, does not take these factors into account, and keeps contracts due to the internalization of the moral principle of keeping one's word.²¹

This kind of distinction can affect the legislator when formulating a normative act as well.²² Depending on which type of legal agent model the regulator has in mind, the regulation will turn out to have a different content;

For instance, a lawmaker with the good man before his mind would likely attempt to “establish wholesome laws in a state” in order to make “his citizens virtuous,” whereas a legislator with the bad man before his mind would not worry much about appealing to his constituent’s hearts by enacting laws to make his citizens more

¹⁵ Marco Jimenez, ‘Finding the Good in Holmes's Bad Man’ (2011) 79 Fordham Law Review 2069, 2079. <<https://ir.lawnet.fordham.edu/flr/vol79/iss5/9>> accessed 20 November 2024

¹⁶ Morris R Cohen, ‘The Basis of Contract’ (1933) 46 Harvard Law Review 553. <<https://doi.org/10.2307/1331491>> accessed 20 November 2024

¹⁷ David Luban, ‘The bad man and the good lawyer: A centennial essay on Holmes’s “The path of the law”’ (1997) 72 New York University Law Review 1547. <<https://www.nyulawreview.org/wp-content/uploads/2018/08/NYULawReview-72-6-Luban.pdf>> accessed 20 November 2024

¹⁸ Jimenez (n 15).

¹⁹ Duncan Kennedy, ‘Form and Substance in Private Law Adjudication’ (1976) 89 Harvard Law Review 1685. <<https://doi.org/10.2307/1340104>> accessed 20 November 2024

²⁰ Rebecca Stone, ‘Economic analysis of contract law from the internal point of view’ (2016) 116 Columbia Law Review 2005. <<http://www.jstor.org/stable/44028184>> accessed 20 November 2024

²¹ Charles Fried, *Contract as Promise: A Theory of Contractual Obligation* (2nd edn, Oxford University Press 2015).

²² Jimenez (n 15).

virtuous, but would likely appeal to their minds by attaching sufficiently large penalties to laws deemed important enough to enforce.²³

According to Holmes, law should be defined as a prediction of a court's decision about punishment based on a bad man's *modus operandi*.²⁴ The bad man theory has had a profound impact on the design of contract law in the U.S.:

Today, the most ardent supporters of Holmes's theory are those working within the law and economics paradigm, who have applied Holmes's bad man view of contracts with particular force to the modern theory of efficient breach,²⁵ which acts as the bad man's shibboleth in distinguishing those who would invoke morality when determining one's contractual obligations from those who would not. For instance, the strongest proponents of efficient breach theory not only acknowledge, as a descriptive point, the promisor's right to breach a contract where doing so is efficient, but even go so far as to claim that the law should encourage, as a normative matter, such breaches.²⁶

Awareness of stable preferences, deliberate plan-seeking, and cost-benefit calculation make this legal-agent model closely resemble *homo oeconomicus*.²⁷

H.L.A. Hart introduced the term 'puzzled man' to describe someone trying to comprehend the law in order to decide on the right course of action, in contrast to Justice

²³ *ibidem* 2079.

²⁴ 'If you want to know the law and nothing else, you must look at it as a bad man, who cares only for the material consequences which such knowledge enables him to predict, not as a good one, who finds his reasons for conduct, whether inside the law or outside of it, in the vaguer sanctions of conscience... The prophecies of what the courts will do in fact, and nothing more pretentious, are what I mean by the law.' See: Holmes (n 9) 3-4. According to Holmes, from the 'bad man's' vantage point law is a prediction of what courts will do in fact rather than a set of moral commands; the emphasis is on forecasting judicial action, not on moral reasons.

²⁵ Efficient breach theory might be expressed as a following prescription: '...contractual obligations should be performed only when the net cost of performance to the promisor is less than its net benefit to the promisee.' See: Ori Katz, 'Attitude Theories of the Law' (2021) SSRN. <<https://ssrn.com/abstract=3886554>> accessed 10 June 2025

²⁶ Jimenez (n 15) 2079, 2086. Influential critiques argue that 'efficient breach' rests on contestable assumptions about remedies and party behavior. See: Daniel Markovits and Alan Schwartz, 'The Myth of Efficient Breach: New Defenses of the Expectation Interest' (2011) 97 Virginia Law Review 1939. <<https://www.jstor.org/stable/23080087>> accessed 1 October 2025

²⁷ Robert W Gordon, 'The Path of the Lawyer' (1997) 110 Harvard Law Review 1013. <<https://doi.org/10.2307/1342110>> accessed 20 November 2024

Holmes's idea of the 'bad man.'²⁸ Hart coined this term to describe an individual who seeks to 'do what is required,' yet remains uncertain about what that entails.²⁹ Hart does not provide a particularly clear explanation of his interpretation of the puzzled individual, implying that this person relies on legal guidance and utilizes the authority granted by the law to organize their life and manage their affairs.³⁰ Specifically, it remains ambiguous whether Hart envisioned the puzzled individual as someone striving to fulfill moral obligations or legal ones.³¹ According to this theory, rational action of a legal agent is contingent upon the availability and clarity of norms; without them, even virtuous citizens may go astray.

3.2. Reasoned offender model

Within sociological criminology, offender conduct is frequently analysed through the lens of rational choice theory (also termed the economic approach to crime or the rational choice model of offending).³² This theory, first advanced by Becker, rests on an economic analysis of offender behavior analogous to the analysis applied to market actors.³³ Becker assumed that the offender behaves as a rational utility maximiser.³⁴ Such an agent, before breaching the law, typically calculates and weighs available options by conducting a cost–

²⁸ Herbert LA Hart, *The concept of law* (2 ed, Oxford University Press 1994) 40; Massimo La Torre, 'The Hierarchical Model and H. L. A. Hart's Concept of Law' (2013) 21 *Revus* 141. <<https://doi.org/10.4000/revus.2746>> accessed 9 June 2025

²⁹ Hart (n 28) 40.

³⁰ *ibidem* 41.

³¹ Mark Greenberg, 'How to Explain Things with Force' (2016) 129 *Harvard Law Review* 1932, 1939. <<https://harvardlawreview.org/print/vol-129/how-to-explain-things-with-force/>> accessed 9 June 2025

³² Gary S Becker, 'Crime and punishment: an economic approach' (1968) 76 *Journal of Political Economy* 169. <<https://www.jstor.org/stable/1830482>> accessed 22 November 2024; Isaac Ehrlich, 'Participation in illegitimate activities: an economic analysis' in Gary S Becker and William M Landes (eds), *Essays in the Economics of Crime and Punishment* (Columbia University Press 1974) 63. <<https://www.nber.org/system/files/chapters/c3627/c3627.pdf>> accessed 22 November 2024; Erling Eide, Paul H Rubin and Joanna M Shepherd, 'Economics of Crime' (2006) 2 *Foundations and Trends® in Microeconomics* 205. <[10.1561/07000000014](https://doi.org/10.1561/07000000014)> accessed 22 November 2024; Peter Schmidt and Ann D Witte, *An Economic Analysis of Crime and Justice: Theory, Methods, and Applications* (Academic Press 1984); Steven D Levitt and Sudhir Alladi Venkatesh, 'An economic analysis of a drug-selling gang's finances' (2000) 115 *The Quarterly Journal of Economics* 755. <<https://pricetheory.uchicago.edu/levitt/Papers/LevittVenkateshAnEconomicAnalysis2000.pdf>> accessed 22 November 2024; Raymond Paternoster and Greg Pogarsky, 'Rational Choice, Agency and Thoughtfully Reflective Decision Making: The Short and Long-Term Consequences of Making Good Choices' (2009) 25 *Journal of Quantitative Criminology* 103. <<https://www.researchgate.net/publication/225760176>> accessed 22 November 2024; Maude Beaudry-Cyr, 'Rational Choice Theory', *The Encyclopedia of Crime and Punishment* (2015) 1. <<https://doi.org/10.1002/9781118519639.wbecpx038>> accessed 28 November 2024; Alan Mitchell Polinsky and Steven Shavell, 'The economic theory of public enforcement of law' (2000) 38 *Journal of Economic Literature* 45. <<https://www.jstor.org/stable/2565359>> accessed 23 November 2024

³³ Becker (n 32).

³⁴ *ibidem* 170.

benefit analysis that contrasts anticipated costs—punishment and the attendant economic, social, and physical burdens³⁵—with expected gains, chiefly monetary³⁶ but also the thrill of the act³⁷ or the shorter time needed to obtain money.³⁸

Eide and his colleagues formalise this view in a model of individual rational behavior in which: ‘a criminal act is preferred and chosen if the total payoff, including the expected cost of sanctions and other costs, is higher than that of legal alternatives.’³⁹

According to McCarthy,

...the decision to offend is influenced by people’s preferences, their attitudes toward risk and time discounting, and their estimates of an illegal opportunity’s availability, costs, and benefits versus a legitimate opportunity’s availability, costs, and potential for realizing the same or comparable returns.⁴⁰

McCarthy also cautions that the mere gathering and consideration of information do not guarantee that the ensuing deliberation is logically consistent, meticulous, or aimed at maximising utility.⁴¹ Irrespective of the offender’s competencies and other personal attributes, rational choice theory nevertheless portrays offenders as autonomous agents who make purposive choices.⁴²

³⁵ Bill McCarthy, ‘New Economics of Sociological Criminology’ (2002) 28 Annual Review of Sociology 417. <[10.1146/annurev.soc.28.110601.140752](https://doi.org/10.1146/annurev.soc.28.110601.140752)> accessed 22 November 2024

³⁶ ibidem; Bill McCarthy and John Hagan, ‘When crime pays: capital, competence and criminal success’ (2001) 79 Social Forces 1035. <<https://www.jstor.org/stable/2675617>> accessed 25 November 2024; Paternoster and Pogarsky (n 32) 104; Erling Eide, ‘Economics of criminal behavior’, *Encyclopedia of law and economics* (Edward Elgar 2000) 345.

³⁷ McCarthy (n 35) 428.

³⁸ Jeffrey Grogger, ‘Market wages and youth crime’ (1998) 16 Journal of Labor Economics 756. <<https://doi.org/10.1086/209905>> accessed 25 November 2024

³⁹ Eide, Rubin and Shepherd (n 32).

⁴⁰ McCarthy (n 35) 422.

⁴¹ ibidem.

⁴² Daniel S Nagin, ‘Moving choice to center stage in criminological research and theory’ (2007) 45 Criminology 259. <[10.1111/j.1745-9125.2007.00078.x](https://doi.org/10.1111/j.1745-9125.2007.00078.x)> accessed 27 November 2024; Daniel S Nagin and Raymond Paternoster, ‘Personal capital and social control: the deterrence implications of a theory of individual differences in offending’ (1994) 32 Criminology 581. <<https://doi.org/10.1111/j.1745-9125.1994.tb01166.x>> accessed 27 November 2024

Researchers in this field analyse a range of variables that may raise or lower crime rates, such as the acquisition⁴³ or loss⁴⁴ of legitimate income, wage reductions,⁴⁵ drug use,⁴⁶ changes in one's social circle⁴⁷ (and the resulting social sanctions),⁴⁸ specialisation in particular criminal activities,⁴⁹ school attendance,⁵⁰ and other factors. Comparable studies have explored whether increasing the severity of sanctions and the rate of detection can reduce the incidence of offences subject to those stricter penalties—the central hypothesis of the economic theory of crime.⁵¹ As Eide and his co-authors remark, '[a]ssuming that individual preferences are constant, the model can be used to predict how changes in the probability and severity of sanctions and in various socio-economic factors may affect the amount of crime.'⁵² This premise holds that before committing an offence, a prospective criminal considers the sanction

⁴³ Pierre Tremblay and Carlo Morselli, 'Patterns in criminal achievement: Wilson and Abrahamse revisited' (2000) 38 *Criminology* 633. <<https://doi.org/10.1111/j.1745-9125.2000.tb00901.x>> accessed 26 November 2024

⁴⁴ Jeffrey Grogger, 'Certainty vs. severity of punishment' (1991) 29 *Economic Inquiry* 297. <<https://doi.org/10.1111/j.1465-7295.1991.tb01272.x>> accessed 23 November 2024

⁴⁵ Grogger (n 38).

⁴⁶ Christopher Uggen and Melissa Thompson, 'The socioeconomic determinants of ill-gotten gains: within-person changes in drug use and illegal earnings' (2003) 109 *American Journal of Sociology* 146. <<https://doi.org/10.1086/378036>> accessed 25 November 2024

⁴⁷ Mark Warr, *Companions in Crime: The Social Aspects of Criminal Conduct* (Cambridge University Press 2002); Liliana E Pezzin, 'Earnings prospects, matching effects, and the decision to terminate a criminal career' (1995) 11 *Journal of Quantitative Criminology* 22. <<https://doi.org/10.1007/BF02221299>> accessed 26 November 2024

⁴⁸ Wanda D Foglia, 'Perceptual deterrence and the mediating effects of internalized norms among inner-city teenagers' (1997) 34 *Journal of Research in Crime and Delinquency* 414. <[10.1177/0022427897034004002](https://doi.org/10.1177/0022427897034004002)> accessed 25 November 2024

⁴⁹ Jeffrey Fagan, 'Women and drugs revisited: female participation in the cocaine economy' (1994) 24 *Journal of Drug Issues* 179. <<https://doi.org/10.1177/002204269402400>> accessed 26 November 2024

⁵⁰ Paternoster and Pogarsky (n 32) 118.

⁵¹ Grogger (n 38); Lana Friesen, 'Certainty of Punishment versus Severity of Punishment: An Experimental Investigation' (2012) 79 *Southern Economic Journal* 399. <<http://www.jstor.org/stable/41638882>> accessed 23 November 2024; Polinsky and Shavell (n 32); Michael K Block and Vernon E Gerety, 'Some experimental evidence on differences between student and prisoner reactions to monetary penalties and risk' (1995) 24 *Journal of Legal Studies* 123. <<https://www.jstor.org/stable/724592>> accessed 23 November 2024; Lisa R Anderson and Sarah L Stafford, 'Punishment in a regulatory setting: Experimental evidence from the VCM' (2003) 24 *Journal of Regulatory Economics* 91. <<https://doi.org/10.1023/A:1023952115422>> accessed 23 November 2024; Raymond Paternoster and others, 'Estimating perceptual stability and deterrent effects: the role of perceived legal punishment in the inhibition of criminal involvement' (1983) 74 *Journal of Criminal Law and Criminology* 270. <<https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=6364&context=jclc>> accessed 27 November 2024; Kristen Underhill, 'Broken Experimentation, Sham Evidence-Based Policy' (2020) 38 *Yale Law & Policy Review* 150. <https://scholarship.law.columbia.edu/faculty_scholarship/3276> accessed 27 January 2025; Low penalty severity often had no effect on compliance. For further discussion, see: Paul H Robinson and John M Darley, 'The Utility of Desert' (1997) 91 *Northwestern University Law Review* 453. <https://scholarship.law.upenn.edu/faculty_scholarship/604> accessed 23 August 2025

⁵² Eide, Rubin and Shepherd (n 32).

that attaches to it and the likelihood that the authorities will secure a conviction (enforcement efficacy and the certainty of punishment). Furthermore, the rational-choice framework assumes that preferences remain stable over time.⁵³ Models of criminal decision making likewise posit rational deliberation in selecting the target of an offence.⁵⁴

Critics argue that the rational choice theory portrays criminals as individuals who gather all necessary information and consider it thoroughly and logically before taking action (assumptions that criminals may have reasonable expectations about crime's financial returns).⁵⁵ These scholars believe that this theory portrays criminals through lenses of employment studies;⁵⁶ they see crime as an illegal alternative to regular jobs,⁵⁷ where offenders can earn more money than through legal employment.⁵⁸ They suggest that these criminals manage their earnings wisely instead of spending it foolishly on things like gambling, partying, or buying expensive clothes.⁵⁹ Although several scholars emphasise fundamental differences between behaviors aimed at capital accumulation in the labour market and those directed toward criminal capital accumulation, they nonetheless share an analytical concern with intertemporal choice. Under the rational-choice framework, persons who earn their income legally are assumed to be future-oriented agents, willing to defer gratification, to plan their expenditures, and to optimize outcomes over time.⁶⁰ Criminals, by contrast, are often depicted as more present-oriented, drawn by the lure of 'fast money'; such conduct departs from the

⁵³ ibidem 208; Becker (n 32). However, contemporary evidence emphasizes perceptions of certainty, context, and procedural legitimacy rather than time-invariant utilities, see: Daniel S Nagin, 'Deterrence in the Twenty-First Century' (2013) 42 *Crime and Justice in America 1975-2025* 199.

<<https://doi.org/10.1086/670398>> accessed 16 June 2025; Tom R Tyler 'Procedural Justice, Legitimacy, and the Effective Rule of Law' (2003) 30 *Crime and Justice* 283.

<<https://doi.org/10.1086/652233>> accessed 1 October 2025

⁵⁴ Paul J Brantingham and Patricia L Brantingham, 'A Theoretical Model of Crime Site Selection' in Marvin D Krohn and Ronald L Akers (eds), *Crime, Law and Sanctions: Theoretical Perspectives* (1978 Sage 1978); Dermot P Walsh, *Break-Ins: Burglary from Private Houses* (Constable 1980).

⁵⁵ McCarthy and Hagan (n 36); Levitt and Venkatesh (n 32).

⁵⁶ Neal Shover, *Great Pretenders: Pursuits and Careers of Persistent Thieves* (Routledge 1996); Peter Letkeman, *Crimes as Work* (Englewood Cliffs Prentice Hall 1973).

⁵⁷ Gordon P Waldo, *Career Criminals* (Sage 1983); James A Inciardi, *Careers in Crime* (Rand McNally 1975).

⁵⁸ McCarthy and Hagan (n 36); Peter H Reuter and others, *Money from Crime: A Study of the Economics of Drug Dealing in Washington, D.C.* (RAND 1990); Eide, Rubin and Shepherd (n 32) 206.

⁵⁹ Michael R Gottfredson and Travis Hirschi, *A General Theory of Crime* (Stanford University Press 1990).

⁶⁰ Thomas A Loughran and others, 'The Returns to Criminal Capital' (2013) 78 *American Sociological Review* 925, 929. <<https://journals.sagepub.com/doi/pdf/10.1177/0003122413505588>> accessed 25 November 2024

strict rational-choice model.⁶¹ Critics therefore argue that individual decision making cannot be captured solely by a cost–benefit calculation based on personal expected utilities.⁶²

Psychologically informed theories of criminal behavior likewise stress that offenders' decisions are not always the result of fully rational deliberation.⁶³ Rather, those decisions are frequently shaped by selectively processed information,⁶⁴ cognitive biases, and heuristic shortcuts.⁶⁵

3.3. Reasonable Person Standard

The so-called reasonable person standard, set forth by Baron Edward Hall Alderson in the 1856 case of *Blyth v. Birmingham Waterworks Co.* has gained popularity in the American judiciary. This concept is frequently applied in civil negligence cases.⁶⁶ It is characterized as a legal standard for lawful behavior.⁶⁷ In legal assessments, the conduct of each individual involved is evaluated against the actions that a hypothetical, reasonable person would undertake under identical circumstances.⁶⁸ In legal practice, this model serves as a benchmark for judges to determine whether the defendant exercised the level of care and caution that an

⁶¹ John H Laub and Robert J Sampson, *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70* (Harvard University Press 2003).

⁶² Pamela Lattimore and Ann Witte, 'Models of decision making under uncertainty: The criminal choice: Rational Choice Perspectives on Offending' in Derek B Cornish and Ronald V Clarke (eds) *The Reasoning Criminal Rational Choice Perspectives on Offending* (1st ed, Routledge 2017) 129.

⁶³ Jerry S Wiggins, *Personality and Prediction: Principles of Personality Assessment* (Addison-Wesley 1973); Józef Koźielecki, *Psychological Decision Theory* (Reidel 1981); Derek B Cornish, *Gambling: A Review of the Literature and Its Implication for Policy and Research* (Home Office Research Study no. 42 1978).

⁶⁴ Paul Slovic and Sarah Lichtenstein, 'The Relative Importance of Probabilities and Payoffs in Risk-Taking' (1968) 78 *Journal of Experimental Psychology* 1. <<https://doi.org/10.1037/h0026468>> accessed 23 August 2025

⁶⁵ Daniel Kahneman, Paul Slovic, and Amos Tversky, *Judgment under uncertainty: Heuristics and biases* (Cambridge University Press 1982); Amos Tversky and Daniel Kahneman, 'Judgment under Uncertainty: Heuristics and Biases' (1974) 185 *Science* 1124. <<http://www.jstor.org/stable/1738360>> accessed 21 November 2024

⁶⁶ Vickie L Bajtelsmit and Paul D Thistle, 'The Reasonable person negligence standard and liability insurance' (2008) 75 *The Journal of Risk and Insurance* 815. <<https://www.jstor.org/stable/25145311>> accessed 20 November 2024

⁶⁷ Jillaine Seymour and Mayo Moran, 'Review of Rethinking the Reasonable Person: An Egalitarian Reconstruction of the Objective Standard' (2004) 63 *The Cambridge Law Journal* 771. <<https://www.jstor.org/stable/4509147>> accessed 21 November 2024 Mayo Moran, 'The reasonable person: A conceptual biography in comparative perspective' (2010) 14 *Lewis & Clark Law Review* 1233. <<https://law.lclark.edu/live/files/7230-lcb144art1moranpdf>> accessed 21 November 2024

⁶⁸ Michael J De Vinne, 'The Reasonable Person as Living Fossil' (2010) 37 *Litigation* 15. <<https://www.jstor.org/stable/25801830>> accessed 21 November 2024

average person would in the same circumstances.⁶⁹ The classic articulation of the Reasonable Person Standard was provided as the following definition of negligence:

[...] the omission to do something which a reasonable man, guided upon those considerations which ordinarily regulate the conduct of human affairs, would do, or doing something which a prudent and reasonable man would not do.⁷⁰

This model view of the legal agent assumes some level of his rationality. Thus, the legislator and the bodies applying the law make certain assumptions about the behavior and thinking of the legal agents by attributing to them the characteristics of reason and logical thinking.

The judge evaluates the behavior of the case participant through the prism of the standard in question. The reasonable person test is considered an objective standard.

A variety of conceptualizations concerning what negligent liability should encompass has been developed within legal scholarship. The most prevalent among these are: (1) the Reasonable Person Standard as a test of foreseeability; (2) cost–benefit assessments such as the Hand Formula; and (3) the Reasonable Person Standard as a basis for evaluating community norms.⁷¹ The third conceptualization will not be discussed in this study due to its limited scope. In the first conceptualization, it is suggested that juries assess whether the injury would have been foreseeable to others based on a combination of the defendant's actions and the prevailing circumstances.

3.3.1. Learned Hand formula

In U.S. tort law, courts often invoke Judge Learned Hand's risk–utility test from *United States v. Carroll Towing Co.*:⁷² negligence exists when the burden of taking precautions (B) is less than the probability of harm (P) multiplied by the magnitude of loss (L) — i.e., $B < P \times L$. It has been described by Grossman et al. as follows:

⁶⁹ Henry T Terry, 'Negligence' (1915) 29 Harvard Law Review 40. <<https://doi.org/10.2307/1325735>> accessed 21 November 2024

⁷⁰ *Blyth v Birmingham Waterworks Co* (1856) 11 Exch 781.

⁷¹ Ashley M Votruba, 'Will the Real Reasonable Person Please Stand Up? Using Psychology to Better Understand and Apply the Reasonable Person Standard' (2013) 45 Arizona State Law Journal 703. <<https://digitalcommons.unl.edu/psychfacpub/907>> accessed 21 November 2024

⁷² *United States v. Carroll Towing Co.*, 159 F.2d 169, 173 (2d Cir. 1947).

The formula instructs potential tort parties to base their levels of precaution on three variables: (1) the probability, *P*, that an accident will occur; (2) the magnitude, *L*, of resulting harm, if any accident occurs, and (3) the cost of precautions, *B*, that would reduce the expected harm. Parties are supposed to factor these variables into a comparative benefit-cost analysis, prior to engaging in activities that might result in costly accidents, to determine efficient levels of care.⁷³

To make it clear, if the cost of the accident (the monetary value of the damage, *L*), multiplied by the probability of its occurrence, *P* exceeds the cost of prevention, *B*, then the actor should take the precaution (failure to do so is negligent). Conversely, if *B* exceeds *P*×*L*, the actor need not take the precaution.⁷⁴

The above model is used by the courts for *ex post* analysis of misconduct indicators, and at the same time the model assumes that the parties involved in the proceedings have analyzed these factors before committing the misconduct.⁷⁵ Legal theorists highlight a significant issue: it is challenging to define the behavior of a 'reasonable person' under specific circumstances.⁷⁶ Consequently, the jury's decision often becomes a substantive law applicable to the case.⁷⁷ Another concern is the rigid, legalistic definitions of terms such as 'reasonable man,' 'risk,' and 'burden of liability,' which are central to judicial decision-making in negligence cases. However, the way jurors comprehend these concepts or the psychological validity of the ethical-logical model articulating them has received scant attention.⁷⁸

Legal practitioners and researchers have raised critical concerns in the literature⁷⁹ regarding the difficulties of accurately estimating, both *ex post* and *ex ante*, the probability of

⁷³ Peter Z Grossman, Reed W Cearley and Daniel H Cole, 'Uncertainty, insurance and the Learned Hand formula' (2006) 5 Law, Probability and Risk 1, 2. <<https://doi.org/10.1093/lpr/mgl012>> accessed 21 November 2024

⁷⁴ This dovetails with deterrence evidence: for compliance, the certainty of detection tends to matter far more than the severity of sanctions. In other words, marginal increases in *P* (apprehension probability) typically produce stronger preventive effects than comparable increases in sanction severity (*L* or its sanction proxy).

⁷⁵ Keith N Hylton, 'Information and Causation in Tort Law: Generalizing the Learned Hand Test for Causation Cases' (2015) 7 Journal of Tort Law 35. <[10.1515/jtl-2015-0021](https://doi.org/10.1515/jtl-2015-0021)> accessed 21 November 2024

⁷⁶ John Gardner, 'The Mysterious Case of the Reasonable Person' (2001) 51 The University of Toronto Law Journal 273. <<https://doi.org/10.2307/825941>> accessed 21 November 2024

⁷⁷ Edward Green, 'The Reasonable Man: Legal Fiction or Psychosocial Reality?' (1968) 2 Law & Society Review 241. <<https://doi.org/10.2307/3052783>> accessed 21 November 2024

⁷⁸ Eugenio Battesini, 'Incremental Learned Hand Standard, Degrees of Negligence and Allocation of Damages: a Comparative Tort Law and Economics Approach' (2020) 11 Economic Analysis of Law Review 48. <<https://doi.org/10.31501/ealr.v11i1.11602>> accessed 21 November 2024

⁷⁹ Barbara Ann White, 'Risk-Utility Analysis and the Learned Hand Formula: A Hand that Helps or a Hand that Hides?' (1990) 32 Arizona Law Review 77. <<https://doi.org/10.2139/ssrn.1478109>>

an accident and subsequent damage.⁸⁰ The legal standard requires parties involved to conduct an analysis before an accident occurs, leading to a conclusion that they had anticipated the possibility of an accident and had implemented all necessary safeguards to prevent it and minimize harm. This analysis is structured as a cost–benefit analysis and necessitates the consideration of a broad array of variables that could influence the elements of the formula.⁸¹ Thus, it requires legal agents to know these elements, i.e., to have a substantial degree of knowledge, to be able to estimate the risk, to weigh the values and to make predictions. The problem is,

choices are made frequently with incomplete information. People may believe they have adequate information when they do not, they have imperfect memories, and they often miscalculate (e.g., ignoring implicit and opportunity costs while including unimportant sunk ones). As well, information does not guarantee that people will make rational choices: Information is simply data, and rational choice involves much more.⁸²

Often the court has a problem estimating all these factors, because access to the knowledge required for such assessments is limited, or the parties cannot provide such information to the court at all, because they do not have it themselves.⁸³ In such cases, the formula in question is viewed as having little real value in adjudicating the obligation to pay compensation.⁸⁴

accessed 21 November 2024; Simon Stern, 'From Clapham to Salina: Locating the Reasonable Man' (2023) 36 Law & Literature 391. <<https://doi.org/10.1080/1535685X.2022.2157101>> accessed 21 November 2024; Mayo Moran, 'The reasonable person: A conceptual biography in comparative perspective' (2010) 14 Lewis & Clark Law Review 1233. <<https://law.lclark.edu/live/files/7230-lcb144art1moranpdf>> accessed 21 November 2024; Seymour and Moran (n 67).

⁸⁰ Hylton (n 75).

⁸¹ Gabriel Weil, 'Efficiency, Fairness, and the Externalization of Reasonable Risks: The Problem with the Learned Hand Formula' (2023) 75 South Carolina Law Review 155. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4466197> accessed 21 November 2024; Seymour and Moran (n 67).

⁸² McCarthy (n 35) 420.

⁸³ Riaz Tejani, 'Efficiency Unbound: Processual Deterrence for a New Legal Realism' (2016) 6 UC Irvine Law Review 207. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2929045> accessed 21 November 2024

⁸⁴ A consistent finding from deterrence research is that enhancing the certainty of apprehension has a more robust effect on behavior than increasing the severity of penalties. To the extent that the Hand test presupposes that legal agents will 'know' and use P and L, policy designs that make detection more likely (or more salient) are empirically more realistic levers than simply escalating sanctions. (See also 5.4 for a fuller discussion and references.)

As research and jurisprudential practice have shown, the formula assumes the ability to collect and estimate data that legal agents simply do not have.

Before the fact of an accident, individuals often do not know, even within a rough approximation, the probability that they will have an accident. Nor do they know the likely harm should an accident occur. That is to say, they do not possess the information the Learned Hand formula requires them to possess in order to perform the requisite *ex ante* calculations.⁸⁵

Furthermore, criticism of the Learned Hand formula concerns the fact that it requires legal agents to calculate, without providing them with information on how this calculation is supposed to be carried out.⁸⁶ Meanwhile, after an accident, individuals are held accountable according to this required calculation.⁸⁷ Grossman et al. illustrate this issue with the following example:

An automobile driver has a lot of decisions to make: what brand and model of car to drive, what performance and safety equipment to purchase, what routes to take, what time of day to drive (or not to drive), how quickly or slowly to drive under various weather conditions and how to drive given the perceived behaviour of other drivers and non-drivers (e.g. pedestrians). Each of these decisions can bear on the probability of accidents, *P*, and the magnitude of harm, *L*, resulting from an accident. It is doubtful that the tort system, by itself, provides individual drivers with the information they would need to make such choices efficiently.⁸⁸

Only an omniscient observer could perform such a task.⁸⁹ In this study, however, the more interesting aspect is the view of the model concept of the legal agent, which assumes a number of characteristics of the legal agents that constitute a reference point in the process of applying the law.

⁸⁵ Grossman, Cearley and Cole (n 73) 2.

⁸⁶ Stephen G Gilles, 'The Invisible Hand Formula' (1994) 80 Virginia Law Review 1015. <<https://doi.org/10.2307/1073624>> accessed 22 November 2024

⁸⁷ Grossman, Cearley and Cole (n 73).

⁸⁸ *ibidem* 18.

⁸⁹ Scholars have also argued that the 'reasonable person' often encodes majoritarian vantage points, raising equality concerns; this strengthens the chapter's claim that the model idealizes rationality. See: Seymour and Moran (n 67).

From the perspective of research on the decision-making process of individuals and bounded rationality, it is evident that the formula in question assumes an idealized image of the legal agent. To demonstrate this, let us compare idealistic *homo oeconomicus* to a model of the recipient of the law based on the theory of the bad man and the Learned Hand formula.

<i>homo oeconomicus</i>	bad man model & Learned Hand formula
the economic agents are motivated to maximize the expected utility	the agent is motivated to maximize the expected profit and minimize or avoid sanction
the agent has only selfish motives in a narrow sense, that is, no consideration of the utility that others maximize	the agent is amoral and selfish
agent tries to earn a value that is the result of the utility and the probability of achieving it	the agent tries to earn a value that is the result of the material profit and the probability of achieving it
agent acts on the basis of accurate and complete information and has unlimited possibilities to process it	the agent acts on the basis of accurate and complete information and has unlimited possibilities to process it
agent has preferences that are consistent over time	the agent knows his preferences and acts accordingly
he calculates using cost–benefit analysis	he calculates using cost–benefit analysis
he operates within the framework of logical thinking	he operates within the framework of logical thinking
he assesses the risk	he assesses the risk by comparing the probability of an accident occurring, the cost of prevention and the monetary value of damages
he predicts	he predicts in order to maximize the profit and avoid losses
agent acts in a rational way	agent acts in a rational way

Table 1. Comparison of the *homo oeconomicus* model to the conduct of an agent following the bad man model and Learned Hand formula.

3.4. Due care model in Polish civil law

An example of the legislator’s presumption of the rationality of legal agents is reflected in the due care model which has evolved within the doctrine of Polish civil, commercial,

medical, and tax law, and other branches of law, and has been particularly shaped through judicial practice. As a rule, due care is understood as the diligence generally required in dealings of a given kind. The standard of it is objective in nature, and in turn, its application in practice consists first in the selection of a model that establishes the optimal course of conduct under the given circumstances, appropriately concretized and socially approved, and then in comparing the behavior of the legal agent with such a pattern of conduct.⁹⁰

An individual acting in accordance with the due care model optimizes his decisions, anticipates, considers all possible options of how the situation may develop, and considers the possible consequences of his actions.⁹¹ Driven by his own interests, he shall take into account the consequences of his acts affecting third parties. The agent is capable of estimating risks and preventing them.⁹² To accuse a legal agent of behavior inconsistent with the due care model, the degree of inconsistency of its behavior with the model is estimated, but also the possibility of predicting the consequences of an action conditioned by the life experience of the legal agent. The measure of the behavior of a legal agent, the essence of which is the failure to exercise due care, cannot be formulated at the level of unenforceable duties, detached from experience, professional rules, specific circumstances or type of interaction.⁹³

Legislators presume that every legal agent can and should adhere to the standard of due care. Ignoring basic, elementary precautions that are evident to most reasonable individuals constitutes gross negligence.⁹⁴ The level of these precautions' elementariness and their obviousness are judged according to the specifics of the situation, which relate not only to the legal agent itself but predominantly to the objective events leading to the damage.⁹⁵

To clarify and objectify the standard of the due care model, judicial authorities often refer to the principles of art, skill, or technique.⁹⁶ The assessment of the degree of diligence must not be arbitrary; it requires verifiable standards. The due care model is typically more stringent when applied to agents considered professional, such as entrepreneurs.⁹⁷ In tax law jurisprudence, due care is defined by considering the professional nature of the business activity. This definition underpins the heightened expectations placed on entrepreneurs regarding their skill, knowledge, meticulousness, reliability, preventative measures, and

⁹⁰ Mieczysław Sośniak, *Należyta staranność* (Uniwersytet Śląski 1980).

⁹¹ Postanowienie Krajowej Izby Odwoławczej z dnia 30 września 2020, KIO 2095/20

⁹² Postanowienie Sądu Najwyższego, II FZ 37/23

⁹³ Wyrok Sądu Najwyższego z 10 marca 2004, IV CK 151/03

⁹⁴ Wyrok Sądu Apelacyjnego w Białymstoku z dnia 24 maja 2019, I ACa 102/19

⁹⁵ Małgorzata Balwicka-Szczyrba and Anna Sylwestrzak, *Kodeks cywilny. Komentarz* (LEX, 2023).

⁹⁶ Wyrok Sądu Najwyższego z dnia 26 kwietnia 2022, II CSKP 585/22

⁹⁷ Wyrok Sądu Okręgowego w Łodzi z dnia 9 czerwca 2022, X GC 861/20

foresight.⁹⁸ It also encompasses an understanding of applicable laws and their implications for business operations. Furthermore, the boundaries of due care are defined by the principles of prudence and reasonableness.⁹⁹

<i>homo oeconomicus</i>	agent acting in accordance with the due care model
agent acts on the basis of accurate and complete information and has unlimited possibilities to process it	legal agent makes decisions on the basis of a range of collected and considered information
he calculates using cost–benefit analysis	he estimates the outcomes of a multitude of options
he operates within the framework of logical thinking	he bases his reasoning on logic
he assesses the risk	he is capable of estimating risks and preventing them
he predicts	he considers all possible options of how the situation may develop, and considers the possible consequences of his actions
agents act in a rational way	he is rational

Table 2. Comparison of the *homo oeconomicus* model to the conduct of an agent following the due care model in Polish civil law

4. Attitudes towards law and compliance theory

This section explores the psychological and sociological dimensions of individuals' attitudes toward the law, situating them within the broader framework of compliance theory. The analysis distinguishes two overarching orientations toward law—fundamental and purposive—each characterised by different motivational logics. The former reflects legalism

⁹⁸ Wyrok Wojewódzkiego Sądu Administracyjnego w Olsztynie z dnia 20 października 2022, I SA/OI 539/22

⁹⁹ Kacper Kanka, 'Możliwość wydania interpretacji indywidualnej w przedmiocie oceny dochowania należytej staranności – analiza orzecznictwa sądów administracyjnych, Ordynacja Podatkowa' (2021) *Przegląd Podatkowy* 2021/5, 49; See also: Ewa Pietrzyk-Rott, 'Klauzula generalna rozsądku w prawie prywatnym' (Wydawnictwo CH Beck 2007); Kevin P Tobia, 'How People Judge What Is Reasonable' (2018) 70 *Alabama Law Review* 293. <<https://ssrn.com/abstract=3108236>> accessed 6 October 2025; Lucien Baumgartner and Markus Kneer, 'The Meaning of 'Reasonable': Evidence From a Corpus-Linguistic Study' in Kevin P Tobia (ed), *The Cambridge Handbook of Experimental Jurisprudence* (Cambridge University Press 2025); Maria Pawińska, 'Deciphering Assumptions in Lawmaking: Towards a More Human-Centric Approach' (2024) 7 *European journal of behavioral sciences* 23. <[10.33422/ejbs.v7i3.1110](https://doi.org/10.33422/ejbs.v7i3.1110)> accessed 6 October 2025

and respect for authority, grounded in the recognition of legitimate sources of law. The latter, rooted in purposive reasoning, encompasses conformist and opportunistic attitudes, in which adherence to norms is instrumental and contingent upon individual goals or social expectations. The aim is to demonstrate how, long before the rise of behavioral economics, legal thinkers explained obedience as the joint product of instrumental rationality and socially embedded norms.

The attitude towards law is defined as a set of enduring dispositions¹⁰⁰ that evaluate legal norms and elicit emotional responses based on beliefs about law, along with stable behavioral tendencies in legal situations.¹⁰¹ This perspective comprises three main elements: the cognitive aspect (understanding of the law), the emotional-evaluative aspect (evaluation of the law), and the behavioral aspect (willingness to act in line with the law).¹⁰²

Leon Petrażycki's early twentieth-century psychological theory of law foregrounds psychologism, pluralism, and anti-statism.¹⁰³ He can be regarded as a precursor of the second generation of behavioural law and economics. In his view, law is an ethical, emotional experience of an imperative–attributive nature: the legal agent experiences an internal prohibition against a specific act vis-à-vis another agent, coupled with the conviction that the latter is entitled to demand that act as a matter of right.¹⁰⁴ Petrażycki's focus on the

¹⁰⁰ Russel H Fazio, 'Attitudes as object-evaluation associations of varying strength' (2007) 25 Social Cognition 603. <[doi:10.1521/soco.2007.25.5.603](https://doi.org/10.1521/soco.2007.25.5.603)> accessed 23 August 2025

¹⁰¹ Grażyna Skąpska, *Spółeczne podłoże postaw wobec prawa* (Zakład Narodowy im. Ossolińskich 1981).

¹⁰² Michael J Rosenberg and Carl I Hovland, 'Cognitive, affective, and behavioral components of attitudes' in Michael J Rosenberg and Carl I Hovland (eds), *Attitude Organization and Change: An Analysis of Consistency among Attitude Components* (Yale University Press 1960); Mark P Zanna and John K Rempel, 'Attitudes: A new look at an old concept' in Daniel BarTal and Arie W Kruglanski (red), *The social psychology of attitudes* (Cambridge University Press 1988) 315; Alice H Eagly and Shelly Chaiken, *The psychology of attitudes* (Harcourt Brace Jovanovich College Publishers 1993); Kei-Leo Brousmiche and others, 'From Beliefs to Attitudes: Polias, a Model of Attitude Dynamics Based on Cognitive Modeling and Field Data' (2016) 19 Journal of Artificial Societies and Social Simulation 2. <<https://www.jasss.org/19/4/2.html>> accessed 10 June 2025

¹⁰³ Krzysztof Motyka, 'Leon Petrażycki. Challenge to Legal Orthodoxy' (2007) Towarzystwo Naukowe Katolickiego Uniwersytetu Lubelskiego Jana Pawła II, 22, 28. <https://www.academia.edu/32479728/Leon_Petra%C5%BCycki_Challenge_to_Legal_Orthodoxy_Lublin_Towarzystwo_Naukowe_Katolickiego_Uniwersytetu_Lubelskiego_Jana_Paw%C5%82a_II_200> accessed 23 August 2025; Jan Woleński, 'Zbiór rozpraw o Leonie Petrażyckim' (1983) 10 Studia Filozoficzne 164, 169; Jan Woleński 'Metodologiczne dążenia Petrażyckiego a współczesne teorie nauki' in Kazimierz Opalek (ed), *Z zagadnień teorii prawa i teorii nauki Leona Petrażyckiego* (Państwowe Wydawnictwo Naukowe 1969) 163; Kazimierz Opalek, *Problemy metodologiczne i nauki prawa* (Państwowe Wydawnictwo Naukowe 1962) 116.

¹⁰⁴ Leon Petrażycki, *Teoria państwa i prawa* (vol 1, Państwowe Wydawnictwo Naukowe 1960) 70; Jerzy Stelmach and Ryszard Sarkowicz, *Filozofia prawa XIX i XX wieku* (Wydawnictwo Uniwersytetu Jagiellońskiego 1999) 94. Jerzy Lande, *Studia z filozofii prawa* (Państwowe Wydawnictwo Naukowe 1959) 592. Eugeniusz Jarra articulated a similar view regarding the two-sided operation of norms conceived as emotional experiences. See: Eugeniusz Jarra, *Ogólna teoria prawa* (Nakład Gebethnera i Wolfa 1922) 205.

psychological foundations of law and on the empirical study of legal norms anticipates the approach later developed within behavioural legal and economic scholarship.¹⁰⁵

We distinguish between two types of attitudes: the fundamental attitude, which prioritizes legalism and compliance with norms out of respect for authority, and the purposive attitude, which is driven by conformity or opportunism.¹⁰⁶

4.1. Fundamental attitude¹⁰⁷

Legalism is marked by a commitment to follow all legal standards, irrespective of their nature, perceiving law and social order as vital for safety and protection. Legalism is not a monolithic concept; it encompasses material legalism (a commitment to just norms),¹⁰⁸ formal legalism (a commitment to the norms of the legal system—what Schauer calls obeying the law

¹⁰⁵ Radosław Zyzik, 'Czy Leon Petrażycki był prekursorem behawioralnej ekonomicznej analizy prawa?' (2017) 1 Forum Prawnicze 21. <<https://forumprawnicze.eu/wp-content/uploads/2017/07/fp39-Zyzik.pdf>> accessed 6 October 2025

¹⁰⁶ Małgorzata Stefaniuk, 'Postawy wobec prawa' in Anna Kociołek-Pęksa and Mateusz Stępień (eds), *Leksykon socjologii prawa* (C.H. Beck 2013) 229; Maria Borucka-Arctowa, 'Legalizm a konformizm i oportunizm' (1964) 2 Ruch Prawniczy, Ekonomiczny i Socjologiczny 239. <<http://hdl.handle.net/10593/18753>> accessed 6 October 2025

¹⁰⁷ Petrażycki's 'motywacja zasadnicza' [author's translation].

¹⁰⁸ Many authors have demonstrated that people are motivated by fairness rather than self-interest. See: Tom R Tyler, *Why people obey the law: Procedural justice, legitimacy, and compliance* (Yale University Press 1990); Ray Paternoster and Sally Simpson, 'Sanction threats and appeals to morality: Testing a rational choice model of corporate crime' (1996) 30 Law and Society Review 549. <<https://doi.org/10.2307/3054128>> accessed 22 September 2025; Robinson and Darley (n 51). Reviews of COVID-19 and public-health data indicate that individuals complied mainly when rules were perceived as legitimate and fair, rather than when penalties loomed large. See: Tom R Tyler and Avital Mentovich, *Mechanisms of Legal Effect: Procedural Justice Theory* (Center for Public Health Law Research 2023). <<https://phlr.temple.edu/learn-legal-epidemiology/theory-methods-literature/mechanisms-legal-effect-procedural-justice-theory>> accessed 13 July 2025. The belief in the legitimacy and fairness of legal rules enhances compliance. See: Glenn D Walters and Colin P Bolger, 'Procedural justice perceptions, legitimacy beliefs, and compliance with the law: a meta-analysis' (2019) 15 Journal of Experimental Criminology 341. <<https://doi.org/10.1007/s11292-018-9338-2>> accessed 6 October 2025; Research in political science has shown that transparency is positively correlated with trustworthiness and has a significant impact on compliance and policy satisfaction. See: Tom R Tyler, 'Trust and democratic governance' in Valerie Braithwaite and Margaret Levi (eds), *Trust and Governance* (Russell Sage Foundation 1998) 269. <<https://www.jstor.org/stable/10.7758/9781610440783.15>> accessed 6 November 2024; Heungsik Park and John Blenkinsopp, 'The roles of transparency and trust in the relationship between corruption and citizen satisfaction' (2011) 77 International Review of Administrative Sciences 254, 269. <<https://journals.sagepub.com/doi/pdf/10.1177/0020852311399230>> accessed 6 November 2024

qua law),¹⁰⁹ and instrumental legalism (a commitment to norms that serve important social objectives).¹¹⁰

Within compliance theory, it is argued that individuals follow a norm when they recognise its source as legitimate—that is, when they acknowledge a legitimate lawgiver.¹¹¹ The compliance here is based on a sense of authority, a concept that Joseph Raz has also emphasized in his legal theory.¹¹² Raz asserts that law inherently claims the right to be an authority: it demands obedience precisely because it supersedes peoples' primary deliberations regarding what actions should be taken.¹¹³ However, authority is justified only when the law 'serves' its subjects, assisting them in better achieving objective reasons for action than they would be able to accomplish independently – hence the term service conception of authority.¹¹⁴ In case of legalistic attitude, the law can influence individuals even without legitimising its authority through the threat of sanctions. Experimental findings further indicate that social norms are observed even in entirely anonymous contexts, where there is no possibility of detection or punishment.

Petrażycki further distinguishes between intuitive law, experienced by the legal agents as an internally felt set of just and binding norms, and positive law, which denotes the codified norms embedded in the institutional organisation of the state. While positive law may perform an educative function,¹¹⁵ intuitive law possesses a wholly autonomous nature, independent of any external authority.¹¹⁶ Intuitive law is followed on the basis of personal conviction and intuition. In such cases, following the law happens without legitimising its authority through the threat of sanctions. Experimental findings further indicate that social norms are observed even in entirely anonymous contexts, where there is no chance of detection or punishment.¹¹⁷

¹⁰⁹ Frederick Schauer, *The Force of Law* (Harvard University Press 2015). Mark Greenberg illustrates this approach in the following way: 'When most people do not engage in cannibalism or sex with animals, they are acting consistently with the law, but the law has no impact on their behavior because they do not desire to engage in the prohibited activities. They would have acted in the same way even if there were no legal prohibition. They therefore are not obeying the law *qua* law.' See: Greenberg (n 31)1939.

¹¹⁰ *ibidem* 229-230.

¹¹¹ Rosaria Conte and Cristiano Castelfranchi, 'The mental path of norms' (2006) 19 *Ratio Juris* 501, 503, 504. <https://www.researchgate.net/publication/228282115_The_Mental_Path_of_Norms> accessed 24 March 2025

¹¹² Joseph Raz, *The Authority of Law: Essays on Law and Morality* (Oxford University Press 1979).

¹¹³ Tomasz Kozłowski, 'Autorytatywna wykładnia prawa' in Piotr Winczorek (ed), *Teoria i praktyka wykładni* (Liber 2005) 35.

¹¹⁴ Oniszczyk (n 11) 408.

¹¹⁵ Leon Petrażycki, *Teoria państwa i prawa w związku z teorią moralności* (vol 2, Państwowe Wydawnictwo Naukowe 1960) 664.

¹¹⁶ Oniszczyk (n 11) 457.

¹¹⁷ Ernst Fehr and Urs Fischbacher, 'Social Norms and Human Cooperation' (2004) 8 *Trends in Cognitive Sciences* 185. <<https://doi.org/10.1016/j.tics.2004.02.007>> accessed 21 March 2025;

4.2. Purposive attitude¹¹⁸

Petrażycki's purposive stance sees legal norms as tools for achieving goals, followed only when they help the legal agents reach their objectives. Within this group of attitudes, two subtypes can be distinguished: conformism and opportunism.

4.2.1. Conformism

Conformism is the adjustment of behaviour or beliefs to align with those of dominant cultural or peer groups, driven by imitation and the desire for acceptance. It is categorized into internal conformism, where adherence aligns with personal values, and external conformism, which follows norms without internalizing them.¹¹⁹

4.2.2. Opportunism

Opportunism, on the other hand, is based on a calculation of profits and losses, whether material, political, or related to prestige, concerning the willingness to adhere to norms. Legislators often impose severe penalties in regulations, taking into account the calculations made by the opportunistic agent. More generally, scholars concur that people are motivated to obey the law more by the certainty of punishment—namely, the likelihood that the offence will be detected—than by the severity of the sanction.¹²⁰ As Andrighetto and Castelfranchi caution,

the observations reported here are not intended to suggest that punishment has little or no influence in motivating individuals to respect norms. It is undoubtedly important in the initial development of the norm, in its emergence, but once the norm is established and stabilised, there are many other factors which explain or determine conformity to the said norm.¹²¹

Donald C Langevoort, 'Behavioral Ethics, Behavioral Compliance' (2015) Georgetown University Law Center. <<https://scholarship.law.georgetown.edu/facpub/1507>> accessed 9 July 2025

¹¹⁸ Petrażycki's 'motywacja celowościowa' [author's translation].

¹¹⁹ Borucka-Arctowa (n 106) 242, 345.

¹²⁰ National Institute of Justice, 'Five Things About Deterrence' (*nij.ojp.gov*, 5 June 2016). <<https://nij.ojp.gov/topics/articles/five-things-about-deterrence>> accessed 8 June 2025; Nagin (n 53).

¹²¹ Giulia Andrighetto and Cristiano Castelfranchi, 'Norm Compliance: The Prescriptive Power of Normative Actions' (2013) 2 *Paradigmi* 139, 140. <https://www.researchgate.net/publication/269677144_Norm_Compliance_The_Prescriptive_Power_of_Normative_Actions> accessed 21 March 2025

Deterrence theory maintains that the degree of legal compliance is shaped by emotions, notably fear, shame, guilt, greed, and the desire for prestige.¹²² Some researchers argue that fear can motivate individuals to follow the recommended course of action;¹²³ however, fear appeals may backfire and lead to the opposite outcome—noncompliance.¹²⁴

The social conformity theory of compliance posits that individuals display a semi-conformist, semi-opportunistic attitude toward the law. Legal agents have conditional preferences regarding adherence to norms; their decision to comply with a norm is influenced by their expectations about the behaviour of others relevant to the situation.¹²⁵ Compliance often occurs when a person is in a setting where others are observing the law.¹²⁶

Bicchieri explains that following a norm is shaped by two kinds of expectations: empirical and normative. Empirical expectations refer to the idea that many people in similar situations adhere to the norm, whereas normative expectations stem from the belief that a significant number of individuals believe that people ought to follow the norm and may either reward or punish them for their decisions.¹²⁷ Unlike the traditional rational-choice model, this approach suggests that individuals do not make decisions about conforming to social norms in a vacuum, solely to evade punishment or gain rewards. Instead, their choices are influenced by the actions of others and the expectations of what should be done.¹²⁸

Research findings from the fields of psychology, sociology, and ethnography have demonstrated that obedience is driven not by the inherent qualities of the norms, like their prescriptive nature, but by external factors, such as rewards or punishments linked to following

¹²² Borucka-Arctowa (n 106) 245.

¹²³ Carl Iver Hovland, Irving Lester Janis and Harold H Kelley, *Communication and persuasion* (Yale University Press 1953); Kim Witte and Mike Allen, 'A meta-analysis of fear appeals: Implications for effective public health campaigns' (2000) 27 *Health Education & Behavior* 591. <[10.1177/109019810002700506](https://doi.org/10.1177/109019810002700506)> accessed 11 September 2025;

¹²⁴ See more in Chapter IV.

¹²⁵ Cristina Bicchieri, *The Grammar of Society. The Nature and Dynamics of Social Norms*. (Cambridge University Press 2006); Cristina Bicchieri, 'Norms, Preferences, and Conditional Behavior' (2010) 9 *Politics, Philosophy and Economics* 297. <<https://doi.org/10.1177/1470594X1036927>> accessed 21 March 2025; Tyran and Feld (n 137).

¹²⁶ Individuals are inclined to dispose of waste far less in a clean environment compared to a littered one. See: Robert M Krauss, Jonathan L Freedman and Morris Whitcup, 'Field and Laboratory Studies of Littering' (1978) 14 *Journal of Experimental Social Psychology* 109. <[https://doi.org/10.1016/0022-1031\(78\)90064-1](https://doi.org/10.1016/0022-1031(78)90064-1)> accessed 11 September 2025; Robert B Cialdini, Raymond R Reno and Carl A Kallgren, 'A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places' (1990) 58 *Journal of Personality and Social Psychology* 1015. <<https://doi.org/10.1037/0022-3514.58.6.1015>> accessed 11 September 2025

¹²⁷ Bicchieri (n 125) 298.

¹²⁸ Salomon E Asch, 'Opinions and Social Pressure' (1955) 193 *Scientific American* 1. <<https://pdodds.w3.uvm.edu/teaching/courses/2009-08UVM-300/docs/others/everything/asch1955a.pdf>> accessed 30 June 2025

or breaking the norms.¹²⁹ This formulation of compliance theory portrays legal agents as calculating agents, following legal norms only if the results of a decision to be obedient brings beneficial results. As noted by Fehr and others;

The group members might obey the norm voluntarily if their individual goals are in line with the normatively required behaviour, or they might be forced to obey the norm because their individual goals differ from the normatively required behavior, in which case the enforcement of the norm presupposes that norm violations are punished.¹³⁰

The decision whether to follow or not to follow the law is based on calculation, this time however, the calculation contains the component of social norm. The main goal, which is to maximise utility, remains relevant. If one decides to obey law based on empirical expectations, one does so to avoid mistake by doing otherwise (according to the assumption that the majority do what is best) and if one decides to obey law based on normative expectation, one does so to avoid social sanctions (ostracism).¹³¹ Both fears are rational and serve to protect the agent from the adverse consequences of specific behaviors.

The aforementioned attitudes toward the law and the principal frameworks of compliance research are widely acknowledged in the academic literature. Some illustrative examples are provided below.

Herbert Kelman, drawing on social-psychological research, distinguishes three modes of normative orientation toward legal rules: compliance, identification, and internalisation. He defines compliance as a situation when ‘an individual accepts influence because he hopes to achieve a favorable reaction from another person or group.’¹³² A person engages in the induced behavior not due to a belief in its substance, but rather because he anticipates receiving certain rewards or approval while evading particular punishments or disapproval through conformity. Identification on the other hand occurs when a person conforms to form or maintain a meaningful connection with others, which can involve adopting their roles or developing

¹²⁹ Andrighetto and Castelfranchi (n 121) 140.

¹³⁰ Fehr and Fischbacher (n 117).

¹³¹ Herbert C Kelman, ‘Compliance, Internalization, and Identification: Three Processes of Attitude Change’ (1958) 2 *Journal of Conflict Resolution* 51, 53.
<https://hckelman.scholars.harvard.edu/sites/g/files/omnuum10576/files/hckelman/files/Compliance_identification_and_internalization.pdf> accessed 30 June 2025

¹³² *ibidem*.

reciprocal relationships. The individual genuinely believes in the responses he adopts through identification; however, the specific content of these responses is largely irrelevant. The behavior is driven by the desire for the relationship, and satisfaction comes from the act of conforming itself.¹³³ And finally, internalization can be defined as the process by which an individual embraces influence due to the inherent satisfaction derived from the content of the resulting behavior—the ideas and actions that constitute it. The individual adopts this behavior as it aligns with his personal value system.¹³⁴ The author contends that the efficiency of influence will depend on three determinants: the significance of the expected effect, the relative strength of the influencing agent (if the agent has the capability of using force - the response to the influence takes form of compliance, if the agent is attractive - the response takes form of identification, and if the agent is perceived as credible - it will lead to identification), and the dominance of the induced response.¹³⁵ As a result, the process influenced by an agent (government, institutional powers) is described as follows: (1) a person complies with an induced response mainly when monitored by the influencer; (2) a person responds through identification primarily when their relationship with the influencer is significant; and (3) a person internalizes an induced response based on the issue's relevance, regardless of monitoring or relationship significance.¹³⁶

Tyran and Feld refine this discussion by identifying three distinct orientations toward legal rules: (1) unconditional compliers, who obey irrespective of whether sanctions are threatened; (2) deterrence-oriented actors, who comply solely in order to avoid punishment; and (3) conditional cooperators, who follow the rules when they observe that others do so as well.¹³⁷

Max Weber contends that people acknowledge the legitimacy of a social order on the basis of two broad classes of motivation. The first is internal. Within it he distinguishes three distinct sources. An affective motive rests on instinctive or intuitive attachment: the order ‘feels right’ and is endorsed almost reflexively. A rational-value motive arises when individuals see the order as the authentic embodiment of ultimate ethical or aesthetic principles and therefore regard it as intrinsically binding. Finally, a religious motive is present when believers are

¹³³ *ibidem* 53.

¹³⁴ *ibidem*.

¹³⁵ *ibidem* 51, 53, 54.

¹³⁶ *ibidem*.

¹³⁷ Jean-Robert Tyran and Lars P Feld, ‘Why People Obey the Law: Experimental Evidence from the Provision of Public Goods’ in Tom R Tyler (ed), *Why People Obey the Law* (Princeton University Press 2006).

convinced that their salvation is conditional upon obedience to the order. The second class is external. It concerns calculated anticipations of concrete advantages or, conversely, anxieties about sanctions and social disapproval. For Weber, legitimacy is durable when these inner commitments and outer incentives converge, reinforcing one another to sustain the authority of the prevailing norm.¹³⁸ Max Weber held that obedience to law stems from a belief in the legality of abstract norms and the impersonal character of authority.¹³⁹ In his theory of legal compliance he distinguished three sources of legitimacy for rules: traditional,¹⁴⁰ charismatic,¹⁴¹ and legal-rational.¹⁴² As he observed,

Of course, the “legitimacy” of rule can only be viewed as the Chance of being regarded with a relevant degree of respect, and in practice being so treated. It is far from the case that all compliance with rule is primarily, or even always, oriented to this belief. Compliance can be feigned by an individual or by an entire group purely opportunistically, can be practised out of purely material self-interest, or simply accepted as unavoidable out of individual weakness and helplessness.¹⁴³

Feldman distinguishes 4 main classic approaches to regulation that goes hand in hand with compliance assumptions: (1) ruling through incentives (understood as fines, sanctions, or punishments) targeted toward calculating agents,¹⁴⁴ (2) ruling through morality and fairness (based on concepts such as procedural and distributive justice) targeted toward ‘moral’ individuals,¹⁴⁵ (3) expressive function of the law ‘assumes that the dominant compliance

¹³⁸ Max Weber, *Economy and Society* (Harvard University Press 2019) 111, 339.

¹³⁹ *ibidem* 339.

¹⁴⁰ ‘an everyday belief in the sanctity of long-established traditions and the legitimacy of those whose authority derives from these traditions (traditional rule).’ See: Weber (n 138) 342.

¹⁴¹ ‘the exceptional sanctity or heroic qualities or exemplary character of a person, and of the orders that this person proclaims or creates (charismatic rule).’ See: *ibidem*.

¹⁴² ‘a belief in the legality of statutory orders and the right of those appointed to exercise rule to give directions (legal rule).’ See: *ibidem* 341.

¹⁴³ *ibidem* 340.

¹⁴⁴ This type of rules should be targeted toward Petrażycki’s opportunist, Herbert Kelman’s subject of compliance, Tyran and Feld deterrence-oriented actor, Max Weber’s calculating actor anticipating gains or losses, Holmesian bad man, or reasoned offender model.

¹⁴⁵ This type of rules should be targeted toward Max Weber’s actors following the law based on rational-value motivations or toward Holmesian good man.

motivation of individuals is to fit the social norm,¹⁴⁶ and (4) following the law just because it is law and it shall be obeyed, no matter the constant of it.¹⁴⁷

The theories discussed above reveal a coherent conceptual core despite their disciplinary diversity. Each highlights that compliance emerges from the interplay of cognitive recognition, emotional attachment, and social interdependence. Whether in Petrażycki's psychological account, Raz's service conception of authority, Bicchieri's expectation-based model, or Weber's typology of legitimacy, the common assumption is that law influences behaviour most effectively when it is perceived as legitimate, normatively justified, and socially reinforced. Fear of sanctions, imitation of others, respect for authority, and internalised moral convictions function together as complementary—rather than competing—mechanisms of compliance.

Taken together, these theories enrich and extend the earlier-discussed judicial models by shifting the focus from judicial viewpoint on legal subjects to the motivational structures of ordinary legal subjects.

5. Law compliance assumptions

This section distills the core assumptions that traditional jurisprudence and compliance theory make about why people obey the law. Drawing on the judicial models and attitudinal frameworks analyzed above it identifies two recurring premises. First, effective compliance presupposes a cognitive encounter with the rule: agents must notice, understand, and consciously process the norm before it can guide conduct. Second, once a norm is mentally 'activated,' the choice to follow it is explained by a rational thought process.

5.1. Understanding

While the theories discussed so far capture the psychological, social, and emotional foundations of legal compliance, they do not exhaust the full range of conditions identified within compliance theory. Researchers also emphasise the cognitive dimension of obedience, highlighting that the effectiveness of legal norms depends on individuals' awareness and understanding of the law. Moreover, compliance scholarship has long been shaped by the

¹⁴⁶ Yuval Feldman, *The Law of Good People: Challenging states' ability to regulate human behavior* (Cambridge University Press 2018) 62. Those rules should be targeted toward Petrażycki's conformist, Kelmans's subject of identification, or Tyran and Feld's conditional cooperator.

¹⁴⁷ The last approach is similar to Petrażycki's legalism, the Schauer's obedience toward law *qua* law, or Tyran and Feld's unconditional complier attitude.

assumption of rationality, rooted in rational choice theory, which for decades dominated analyses of how and why legal agents choose to follow legal rules.

It is widely recognized that norms are adhered to as a result of a cognitive process grounded in knowledge, understanding, rationality, and motivation.¹⁴⁸ As Conte and Castelfranchi emphasize,

[i]t is fundamental to recognise that a norm cannot really operate as a norm and be effective without being held, if only transitorily, in the minds of the agents... [S]uch a theory cannot ignore how a norm is perceived and represented in the minds of the agents, and how this internal representation affects their behaviour, usually consisting of deliberate, reason-based, and intentional actions.¹⁴⁹

Professor Opalek highlights that following a legal norm requires intentional application, meaning individuals must be aware of their obligations under specific norms and act deliberately.¹⁵⁰ A key condition for legal compliance is the awareness of the law by its addressees, who must recognize the validity and content of legal norms. This awareness is gained through official publications, media updates, professional legal services, and everyday interactions. Opalek's theory on psychological experiences related to norms emphasizes that understanding the norm is essential for its perception; without this understanding, the related psychological experiences cannot occur.¹⁵¹

Notably, Ziemiński specifies that a norm is only an order to conduct brought to the consciousness of the legal agent. He argues that '[i]t would be irrational to prohibit someone's behavior, or to impose an order for behavior beyond one's control, because this only jeopardizes the authority of the legislator unnecessarily.'¹⁵² The only exception to this rule, Ziemiński points out, is pathological legislation, in which the legislator uses an impossible norm only as a pretext to impose sanctions on certain addressees of the law.

¹⁴⁸ Zygmunt Ziemiński, *Problemy Podstawowe Prawoznawstwa* (Państwowe Wydawnictwo Naukowe 1980) 122; Jerzy Wróblewski, *Zasady tworzenia prawa* (Państwowe Wydawnictwo Naukowe 1989) 8; Conte and Castelfranchi (n 111) 503; Kazimierz Opalek, *Studia z teorii i filozofii prawa* (Wydawnictwo Uniwersytetu Jagiellońskiego 1997); Benjamin van Rooij, 'Do People Know the Law? Empirical Evidence about Legal Knowledge and Its Implications for Compliance' in B van Rooij and DD Sokol (eds), *The Cambridge Handbook of Compliance* (Cambridge University Press 2021) ch 32.

¹⁴⁹ Conte and Castelfranchi (n 111) 503.

¹⁵⁰ Opalek (n 148).

¹⁵¹ *ibidem*.

¹⁵² Ziemiński (n 148) 122 [author's translation].

Wróblewski grasped the functioning of the rules of law in a very similar way, indicating that a legal rule can operate only when it is understood by the legal agents and when its content is taken into account in the mental processes of the legal agents.¹⁵³

HLA Hart also emphasized that the law is understood through language (by familiarizing oneself with the rule and engaging in reflection about it).¹⁵⁴ Genuine knowledge of law, he argued, entails experiencing its content and adopting the internal point of view toward the norm—particularly in the case of lawyers.¹⁵⁵

As social psychologists Smith and Mackie argue, ‘Norms must be brought to mind before they can guide behavior. They can be activated by deliberate reminders or by subtle cues, such as observations of other people’s behavior.’¹⁵⁶ Hence, a norm cannot exert influence until the agent becomes aware of its existence.

Essentially, for norms to be impactful, they need to be acknowledged as such; this is their main purpose.¹⁵⁷ For autonomous agents to either undertake or refrain from a particular action, it is insufficient for them to simply believe that another party desires that action. They must also possess the intention to pursue that action as a goal.¹⁵⁸ For a norm to be effective, it must be appropriated as a personal belief.¹⁵⁹ A norm can be observed only when the agent transforms it into the conviction that a given act is prohibited, required, or permissible in a particular context and community. More precisely, the agent’s reasoning must invoke the proposition that ‘there is a norm that forbids, mandates, or allows.’

Joseph Raz, however, maintained that individuals who act in accordance with rules need not be consciously aware of those rules as legal norms.¹⁶⁰ In particular, a person exhibiting a conformist attitude toward the law need not know the rules; it is often sufficient simply to imitate what the majority of people do.¹⁶¹

5.2. Rationality, reason, and common sense

In a manner analogous to judicial models, studies within the field of compliance theory underscore the assumption that legal agents are expected to act rationally. At the height of its

¹⁵³ Wróblewski (n 148) 8.

¹⁵⁴ Oniszcuk (n 11) 397.

¹⁵⁵ *ibidem* 399.

¹⁵⁶ Eliot R Smith and Diane M Mackie, *Social Psychology* (2nd ed, Psychology Press 2000) 377.

¹⁵⁷ Conte and Castelfranchi (n 111) 504.

¹⁵⁸ Rosaria Conte and Cristiano Castelfranchi, *Cognitive and social action* (Garland Science 1995).

¹⁵⁹ Conte and Castelfranchi (n 111) 504.

¹⁶⁰ Oniszcuk (n 11) 410.

¹⁶¹ Borucka-Arctowa (n 106) 244.

prominence, rational choice theory was ‘on the verge of becoming for the 1980s and 1990s what neo-Marxist perspectives were in the 1970s, as it spread... to virtually all social science disciplines and law.’¹⁶² Generally, research within the fields of economic and social sciences interprets adherence to norms through the lens of rational choice, viewing it as the approach an individual employs to optimize her own utility. Consequently, the decision to comply with a social norm, such as yielding one’s seat on a bus to an elderly person, is regarded as the rational decision people must undertake to evade penalties or to secure benefits (here in the form of social approval).¹⁶³ When analyzing axioms of compliance theory and juridical models of legal agents, rationality is required of the legal agent, and so regulations are formulated, tailored for rational recipients. Some authors suggest that criminal behavior should be viewed as a product of rational choices rather than just psychological and social factors.¹⁶⁴ According to them, this perspective supports the development of models that serve to analyze current policies, and to identify effective policy initiatives. While these models may not provide complete descriptive value, they can still effectively meet important research and policy goals.¹⁶⁵

Legal agents are attributed with logical thinking, acting in accordance with conscious thoughts based on rational judgments. Wróblewski himself expressed the view that ‘in modern culture, it is expected that a person’s practices founded on the conscious decisions he makes, should be rational.’¹⁶⁶

¹⁶² Ronald L Akers, ‘Rational Choice, Deterrence, and Social Learning Theory in Criminology: The Path Not Taken’ (1990) 81 *The Journal of Criminal Law and Criminology* (1973-) 653. <<https://doi.org/10.2307/1143850>> accessed 16 June 2025

¹⁶³ Andrighetto and Castelfranchi (n 121) 140.

¹⁶⁴ Ronald V Clarke and Derek B Cornish, ‘Modeling Offenders’ Decisions: A Framework for Research and Policy’ (1985) 6 *Crime and Justice* 147. <<http://www.jstor.org/stable/1147498>> accessed 11 June 2025; Derek B Cornish and Ronald V Clarke, *The Reasoning Criminal: Rational Choice Perspectives On Offending* (Transaction Publishers 2014); Kirk Williams and Richard Hawkins, ‘The Meaning of Wife Assault’ (1989) 27 *Criminology* 163. <[10.1111/j.1745-9125.1989.tb00867.x](https://doi.org/10.1111/j.1745-9125.1989.tb00867.x)> accessed 11 September 2025; Steven Klepper and Daniel Nagin, ‘The Deterrent Effect of Perceived Certainty and Severity of Punishment Revisited’ (1989) 27 *Criminology* 721. <<https://doi.org/10.1111/j.1745-9125.1989.tb01052.x>> accessed 11 September 2025; Raymond Paternoster, ‘Decisions to Participate in and Desist From Four Types of Common Delinquency: Deterrence and the Rational Choice Perspective’ (1989) 23 *Law and Society Review* 7. <[10.2307/3053879](https://doi.org/10.2307/3053879)> accessed 11 September 2025; Raymond Paternoster, ‘Absolute and Restrictive Deterrence in a Panel of Youth: Explaining the Onset, Persistence/Desistance, and Frequency of Delinquent Offending’ (1989) 36 *Social Problems* 289. <<https://doi.org/10.2307/800696>> accessed 11 September 2025; Irving Piliavin, Rosemary Gartner, Craig Thornton and Ross L Matsueda, ‘Crime, Deterrence and Rational Choice’ (1986) 51 *American Sociological Review* 101. <<https://doi.org/10.2307/2095480>> accessed 11 September 2025

¹⁶⁵ Clarke and Cornish (n 164).

¹⁶⁶ Wróblewski (n 148) 45.

6. Theoretical and philosophical assumptions about compliance

Conventional jurisprudence frames law as a set of prescriptions for correct behavior.¹⁶⁷ Citizens are expected to comply either to avoid sanctions, out of respect, or because they regard the norm as substantively just. The definition of law as ‘a set of rules backed by sanctions’ stands at the core of legal positivism.¹⁶⁸ Austin located compliance in a habit of obedience;¹⁶⁹ Bentham treated legal influence as a calculus of pleasures and pains,¹⁷⁰ insisting that punishment must be ‘useful’ by deterring misconduct, and that compliance consists in rational choices aimed at minimising suffering.¹⁷¹ Kelsen urged that to understand law in its pure structure, it is essential to note that it is a simple structure of coercion, a hierarchically organised system of norms that specifies the conditions under which state organs are authorised to impose sanctions.¹⁷²

Durkheim explained compliance by reference to social pressure: the ‘social fact’ exerts an external influence on individuals and shapes their conduct.¹⁷³ Law, he argued, is the paradigmatic social fact; norms operate above the individual and acquire the collective’s moral authority. In a ‘primitive’ society, mechanical solidarity—marked by similar ways of acting and thinking and by a common collective conscience—underwrites social order.¹⁷⁴ A moral norm differs from a legal one in that disobedience to the former triggers diffuse moral sanctions ‘administered by everybody without distinction,’¹⁷⁵ whereas violations of legal norms are punished by an institutional body.

Hart maintained that laws are normatively binding not solely because they are backed by state coercion but also because society recognises them as such by means of the rule of recognition.¹⁷⁶ Law, as a social phenomenon, requires an attitude of voluntary acceptance and observance.¹⁷⁷ The source of authority lies not in the coercive power of the state but in the

¹⁶⁷ David Lyons, ‘Logic and Coercion in Bentham’s Theory of Law’ (1972) 57 Cornell Law Review 335. <https://scholarship.law.bu.edu/faculty_scholarship/2583> accessed 14 June 2025

¹⁶⁸ John Austin, *The Province of Jurisprudence Determined* (1832 Campbell & Thomas) 23.

¹⁶⁹ Oniszcuk (n 11) 396.

¹⁷⁰ Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (1789) Ch 4 §1.

¹⁷¹ Jeremy Bentham, *Of Laws in General* (The Athlone Press 1970).

¹⁷² Oniszcuk (n 11) 373.

¹⁷³ Emile Durkheim, *The Rules of Sociological Method* (The Free Press 1982) 59.

¹⁷⁴ Emile Durkheim, *De la division du travail social* (8th edition, Presses Universitaire de France 1893).

¹⁷⁵ Devyani Prabhat, ‘Reflecting on Durkheim and His Studies on Law through Cancellation of British Citizenship’ in Andreas Pettenkofer and Hans Joas (eds), *OUP Handbook on Emile Durkheim* (Oxford University Press 2021) 5.

¹⁷⁶ Hart (n 28) 76.

¹⁷⁷ *ibidem* 271.

public's endorsement of norms that embody a positively valued way of life.¹⁷⁸ The crucial distinction is between conduct motivated by fear of sanctions and conduct motivated by a sense of obligation. The latter reflects the internal point of view: legal agents (especially officials) treat the rule as a guide to proper conduct and criticise deviations.¹⁷⁹ For a norm to become law, the agent must adopt a critical-reflective stance toward it;¹⁸⁰ social acceptance determines what counts as law, and its absence renders a system invalid—even if the populace still fears it. This distinction separates legality from brute force.¹⁸¹

Rawls addressed the normative quality of law through the idea of the original position, a hypothetical state in which persons, behind a veil of ignorance, are unaware of their social status or personal attributes.¹⁸² In such a state, individuals would choose principles of justice that are fair and impartial, rather than ones that would benefit themselves at the expense of others.¹⁸³ He defined law as 'A legal system is a coercive order of public rules addressed to rational persons for the purpose of regulating their conduct and providing the framework for social cooperation.'¹⁸⁴ Because law relies on coercion, its legitimacy becomes a central question. Rawls articulated the liberal principle of legitimacy: political power is justified only when exercised in accordance with a constitution whose essential elements all citizens can reasonably endorse. Coercion is permissible only where every reasonable citizen could regard it as warranted.¹⁸⁵

The economic approach to law, which matured in the second half of the twentieth century, treats both law-maker and legal agent as *homo oeconomicus* and posits economic efficiency as law's chief aim.¹⁸⁶ Individuals pursue pleasure through rational undertakings. Scholars in this tradition drew on legal realism and sociological jurisprudence (including social engineering). Richard A. Posner introduced the notion of 'nonlegal mechanisms of cooperation,' encompassing norms enforced by 'gossip, disapproval, ostracism, and

¹⁷⁸ Oniszcuk (n 11) 397.

¹⁷⁹ Marek Zirk-Sadowski, *Wprowadzenie do filozofii prawa* (Wolters Kluwer 2021) 191.

¹⁸⁰ *ibidem*.

¹⁸¹ Hart (n 28) 113.

¹⁸² John Rawls, *A Theory of Justice* (rev edn, Harvard University Press 1999) 15–19.

¹⁸³ Leif Wenar, 'John Rawls' *The Stanford Encyclopedia of Philosophy* (Summer edn 2021).
<<https://plato.stanford.edu/archives/sum2021/entries/rawls/>> accessed 15 June 2025

¹⁸⁴ Rawls (n 182) 235–243.

¹⁸⁵ Wenar (n 183).

¹⁸⁶ Oniszcuk (n 11) 472.

violence.’¹⁸⁷ Cooperation enhances compliance,^{188 189} and social norms serve as powerful motivators.¹⁹⁰

Ronald Dworkin, reflecting on law’s nature, observed that governments pursue various objectives—above all, retaining power—and to that end wield a monopoly on collective force.^{191 192}

7. Conclusions

This chapter has shown that jurisprudence, much like economics, has long relied—and continues to rely—on a rationalist model of human conduct. Just as neoclassical economics centered its analyses on the *homo oeconomicus*—an omniscient optimizer of utility—legal theory and doctrine assumed that legal agents were rational individuals, fully informed and capable of weighing costs against benefits. Across these diverse theories and models compliance ultimately hinges on a common sequence of cognitive and motivational steps. First, the norm must be brought to mind through conscious, deliberative (Kahneman’s System 2) engagement with the rule’s language. Second, the agent must comprehend the norm and evaluate it. Third, the decision to comply may rest on one or more considerations: (1) an assessment of the rule’s moral soundness; (2) respect for the law-giver’s authority; (3) fear of formal sanctions; (4) the desire for social approval or avoidance of ostracism; or (5) instrumental calculations of personal advantage. Whether framed in psychological, sociological, economic, or doctrinal terms, all accounts converge on the view that legal obedience is conditioned by cognition, evaluation, and motivation. The findings of this chapter demonstrate, however, that these juridical constructs, like their economic counterparts, are increasingly unable to account for the empirical realities of human behavior.

A review of compliance theories further underscores this tension. Traditional accounts presupposed awareness, comprehension, and conscious cost–benefit evaluation as prerequisites

¹⁸⁷ Eric Posner, *Law and Social Norms* (Harvard University Press 2009).

¹⁸⁸ Elinor Ostrom, ‘Collective Action and the Evolution of Social Norms’ (2000) 14 *Journal of Economic Perspectives* 137. <<https://www.jstor.org/stable/2646923>> accessed 12 September 2025

¹⁸⁹ Urs Fischbacher, Simon Gächter and Ernst Fehr, ‘Are people conditionally cooperative? Evidence from a public goods experiment’ (2001) 71 *Economics Letters* 397. <[https://doi.org/10.1016/S0165-1765\(01\)00394-9](https://doi.org/10.1016/S0165-1765(01)00394-9)> accessed 30 June 2025

¹⁹⁰ Tyran and Feld (n 137).

¹⁹¹ Ronald Dworkin, *Law’s Empire* (Harvard University Press 1986) 93.

¹⁹² For clarity, the author adds that the legitimacy of governmental action ends where state coercion violates human dignity. See: Ronald Dworkin, *Sovereign Virtue: The Theory and Practice of Equality* (Harvard University Press 2000) 1; Ronald Dworkin, *Is Democracy Possible Here? Principles for a New Political Debate* (Princeton University Press 2006) 161; Ronald Dworkin, *Justice for Hedgehogs* (Harvard University Press 2011) 372.

for legal obedience. Yet empirical research shows that compliance is often shaped by non-rational drivers: legitimacy, morality, habit, social norms, and in some cases even ignorance of the law. The assumption that citizens obey primarily out of fear of sanctions proves both descriptively fragile and normatively incomplete. This brings jurisprudence into direct alignment with the critique that behavioral economists have directed against the neoclassical paradigm: both disciplines overestimated the reach of rationality, underestimated bounded cognition, and underexplored the role of heuristics, biases, and context.

The trajectory traced across the first three chapters thus forms a coherent line of argument. Chapter I exposed the rise and limits of *homo oeconomicus* in economics; Chapter II deconstructed and redefined the notion of *nudge* as a regulatory instrument designed to accommodate bounded rationality; Chapter III demonstrated that legal theory itself has long rested on equally rationalist premises when constructing the image of the legal agent and explaining compliance. Together, these chapters reveal a deep structural analogy: the conceptual evolution from rationalist to behavioral models in economics finds its counterpart in the evolution of jurisprudence and compliance theory.

This intellectual movement sets the stage for Chapter IV. Having established that the rationalist model of the legal agent is inadequate, the next chapter turns to behavioral compliance theory and to new models of legal agents—the *vulnerable consumer*, *homo myopicus*, *the optimistic borrower*, *the boundedly rational actor*, and *homo heuristicus*. Each of these models identifies specific, predictable departures from rationality, and each carries implications for legal design. Chapter IV therefore completes the analogy with economics by showing how law, like economics, must transition from the abstract rational agent to empirically grounded, psychologically informed models of human behavior. In doing so, it argues for a jurisprudence that not only acknowledges cognitive limits but also incorporates behavioral tools—nudges, boosts, salience cues, defaults—into the legislator’s toolbox.

Chapter IV

Behavioral Compliance Theory and models of legal agents based on behavioral insights.

Since the world is made up of Humans, not Econs, both objects and environments should be designed with Humans in mind.

~Richard Thaler and Cass Sunstein¹

1. Introduction

It has long been argued in economic theory that ‘adequate assumptions about the behaviour of individuals are of eminent importance, especially for legal policy.’² If the legislature conceives its addressee as the textbook *homo oeconomicus*—fully informed, utility-maximising, and responsive to marginal incentives—then the classic arsenal of bans and mandates buttressed by sanctions, taxes or detailed disclosures directed at System 2 reasoning will be considered by lawmakers as sufficient. These techniques—often referred to as *command-and-control*,³ or, more simply, *conventional regulation*⁴—presuppose deliberative calculation and treat compliance as a conscious cost–benefit choice. This chapter interrogates the adequacy of the rationalist model of legal agents and explores how behavioral insights have

¹ Richard H Thaler, Cass R Sunstein and John P Balz, ‘Choice architecture’ in Eldar Shafir (ed), *The Behavioral Foundations of Public Policy* (Princeton University Press 2013) 428, 429.

<<https://www.jstor.org/stable/j.ctv550cbm.31>> accessed 4 October 2024

² Anne van Aaken, ‘Constitutional Limits to Nudging: A Proportionality Assessment’ (2015) University of St. Gallen Law School, Law and Economics Research Paper Series, Working Paper No. 2015-03. <https://www.researchgate.net/publication/314541952_Constitutional_Limits_to_Nudging_A_Proportionality_Assessment> accessed 18 June 2025

³ Fredrik Carlsson, Christina Gravert, Olof Johansson-Stenman and Verena Kurz, ‘Nudging as an Environmental Policy Instrument’ (2020) 756 Working Paper in Economics 1. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3711946> accessed 5 September 2024; William Kip Viscusi, ‘Nudges Versus Financial Incentives’ in Cass R Sunstein and Lucia A Reisch (eds), *Research Handbook on Nudges and Society* (Edward Elgar Publishing 2023) 189; Robert Baldwin, ‘From regulation to behaviour change: giving nudge the third degree’ (2014) 77 *The Modern Law Review* 831, 834, 837. <<http://eprints.lse.ac.uk/64343/1/From%20Regulation.pdf>> accessed 22 August 2024;

⁴ Peter Charles John, Graham Smith and Gerry Stoker, ‘Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour’ (2009) 80 *The Political Quarterly* 361, 363. <https://www.researchgate.net/publication/230361341_Nudge_Nudge_Think_Think_Two_Strategies_for_Changing_Civic_Behaviour> accessed 23 August 2024; Sanchayan Banerjee and Peter Charles John, ‘Nudge and Nudging in Public Policy’ (2022) SSRN Electronic Journal 1.

<https://www.researchgate.net/publication/366871003_Nudge_and_Nudging_in_Public_Policy> accessed 29 August 2024; Cass R Sunstein and Lucia A Reisch, ‘Automatically Green: Behavioral Economics and Environmental Protection’ (2013) 38 *Harvard Environmental Law Review* 127. <https://www.researchgate.net/publication/256056706_Automatically_Green_Behavioral_Economics_and_Environmental_Protection> accessed 6 September 2024

given rise to new models of the legal agent. It asks, first, whether contemporary legal systems can still rely on the abstract rational addressee or whether regulation shall be tailored also with the factual addressee in mind—citizens whose bounded rationality, cognitive biases, and situational pressures systematically shape behavior. In doing so, the chapter maps the emergence of several empirically grounded and behaviorally informed models of legal agents: the vulnerable consumer, *homo myopicus*, the optimistic borrower, the boundedly rational actor, and *homo heuristicus*. Each model highlights a distinct cognitive limitation—whether it be short-sightedness, optimism bias, loss aversion, or reliance on heuristics—and in turn legitimises particular regulatory responses, from default rules and salience cues to transparency requirements and competence boosts.

The second set of questions concerns compliance theory itself. Does obedience to law necessarily presuppose knowledge of the norm, fear of sanction, and cost–benefit calculation? Or can compliance occur without deliberation, knowledge, or even awareness? Drawing on extensive empirical evidence, the chapter examines the limits of the classical compliance triad and analyses alternative mechanisms such as social-norm feedback, moral cues, hypermotivation, and automatic adherence triggered by defaults. This inquiry also considers whether sanctions may in some contexts reduce rather than increase compliance, through phenomena such as defensive avoidance or crowding-out of intrinsic motivation.

Finally, the chapter addresses the normative and practical implications of these insights. If citizens are not perfectly rational agents but context-dependent actors shaped by heuristics and biases, are traditional command-and-control instruments—prohibitions, mandates, and sanctions—sufficient to secure compliance? Or do they require supplementation by behavioral instruments that structure choice environments in ways more attuned to actual human cognition? This leads to the critical appraisal of conventional regulatory tools and to the central thesis of the chapter: that effective twenty-first-century regulation requires a hybrid approach, combining calibrated deterrence with behaviorally informed design.

2. New models of legal agents

Including the factual addressee model as a reference point within model conceptions of the legal agent is a prerequisite for the legislator’s effective use of behavioural instruments in regulation. Over the last twenty-five years legislators and courts have replaced the abstract *homo oeconomicus* with a family of empirically grounded models of legal agents whose cognitive limits are systematic rather than random. Although the labels vary—vulnerable

consumer,⁵ *homo myopicus*,⁶ optimistic borrower,⁷ boundedly-rational actor⁸ and *homo heuristicus*⁹—all models share three premises: (1) agents depart from perfect information-processing in predictable directions; (2) those departures can be exploited by market counterparties; and (3) the law may legitimately respond with techniques that minimise welfare loss without imposing unnecessary liberty costs. What distinguishes the models is the type of departure they foreground and, consequently, the regulatory architecture they legitimise.

The ‘vulnerable consumer’ arose in EU consumer law as an adaptation of the ‘average consumer’ standard.¹⁰ As Jabłowska and Bouwman explain:

Traditionally, the average consumer has been understood as a person who is “reasonably well-informed and reasonably observant and circumspect”. But what exactly does this mean? Does the average consumer notion approximate a perfectly rational *homo economicus* or can it accommodate behavioural findings on bounded rationality? In *Compass Banca*, this question was expressly put forward to the Court of Justice.¹¹

On 14 November 2024, the Court of Justice delivered a pivotal judgment in the *Compass Banca* case.¹² The Court elaborated on the definition of the average consumer to encompass the effects of cognitive biases and constraints in decision-making. It stressed that

⁵ The notion of a vulnerable consumer is included in the updated consumer agenda which is the European Commission's strategy for consumer policy, adopted in November 2020. See: Nikolina Šajn, ‘Vulnerable consumers’ (2021) European Parliamentary Research Service, PE 690.619, 1, 2. <[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690619/EPRS_BRI\(2021\)690619_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690619/EPRS_BRI(2021)690619_EN.pdf)> accessed 9 June 2025

⁶ Douglas G Baird, Richard A Epstein and Cass R Sunstein, ‘Introduction to Symposium: Homo Economicus, Homo Myopicus, and the Law and Economics of Consumer Choice’ (2006) 73 University of Chicago Law Review 1. <<http://www.jstor.org/stable/4495540>> accessed 17 June 2025

⁷ Oren Bar-Gill, ‘Seduction by Plastic’ (2004) American Law & Economics, Association Annual Meetings, Paper 12. <<http://law.bepress.com/alea/14th/art12>> accessed 18 June 2025

⁸ Cass R Sunstein, Christine Jolls and Richard H Thaler, ‘A Behavioral Approach to Law and Economics’ (1998) 50 Stanford Law Review 1471. <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=12172&context=journal_articles> accessed 26 October 2023

⁹ Gerd Gigerenzer and Henry Brighton, ‘Homo Heuristicus: Why Biased Minds Make Better Inferences’ (2009) 1 Topics in Cognitive Science 107. <<https://doi.org/10.1111/j.1756-8765.2008.01006.x>> accessed 19 June 2025

¹⁰ The average consumer ‘has been subject to criticism for being too high and not corresponding to actual consumer behaviour (which is not always rational).’ See: Šajn (n 5) 2.

¹¹ Agnieszka Jabłowska and Tom Bouwman, ‘Cognitive biases of the average consumer’ (ConsumerID 22 November 2024) <<https://consumerid.eu/blogs/the-cognitive-biases-of-the-average-consumer>> accessed 9 June 2025

¹² *Compass Banca SpA v Autorità Garante della Concorrenza e del Mercato* (Case C-646/22, Judgment 14 November 2024) CELEX 62022CJ0646.

consumer behaviour should be evaluated realistically, taking into account elements such as bounded rationality and heuristic decision-making. The Court held that it must be examined whether certain consumers derive less benefit from competitive markets owing to behavioral biases. Practices that exploit these biases may violate the Unfair Commercial Practices Directive (UCPD)¹³ if they significantly distort consumer consent. Furthermore, the Court highlighted the necessity of clear and transparent information to avert misleading impressions, especially regarding product bundling. This ruling enhances protections against manipulative strategies, including dark patterns, across both traditional and digital marketplaces.¹⁴ The Court also pinpointed several behavioral biases, such as framing and inertia, that may limit consumers' capacity to make rational choices; firms can leverage these biases to impose higher prices.¹⁵

The response to the necessity of safeguarding consumers against unfair marketing practices was the issuance of the Omnibus Directive,¹⁶ which subsequently led to the Polish implementation of the 'Omnibus Act'.¹⁷ In cases involving vulnerable consumers, decisions are also issued by the President of UOKiK.¹⁸

¹³ Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council ('Unfair Commercial Practices Directive').

¹⁴ Fair Patterns, 'European Court of Justice: Compass Banca and the notion of "average consumer"' (Fairpatterns.com, November 2024). <<https://www.fairpatterns.com/regulations/european-court-of-justice-compass-banca-and-the-notion-of-average-consumer>> accessed 23 September 2025; Jabłonowska and Bouwman (n 11).

¹⁵ Šajn (n 5) 2. There are two main approaches to identifying vulnerable consumers: the first focuses on individual traits that increase vulnerability risk, such as low socio-economic status, limited education, language barriers, or minority status. The second approach suggests that any consumer can become vulnerable due to the interplay of personal characteristics, situational factors, and the economic environment. In the context of the discussed concept, the contributions of behavioral economists are taken into account, who have examined whether certain consumers derive less benefit from competitive markets due to 'behavioral biases'.

¹⁶ Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules.

¹⁷ Ustawa z dnia 1 grudnia 2022 r. o zmianie ustawy o prawach konsumenta oraz niektórych innych ustaw (Dz.U. 2022 poz. 2581) – entered into force on 1 January 2023. The Act amends, among others: (1) the Act on Counteracting Unfair Commercial Practices – adding a catalogue of prohibited practices corresponding to dark patterns (e.g. fake reviews, covert placement of offers, 'bait-and-switch' pricing); (2) the Act on Price Information for Goods and Services – introducing the obligation to indicate the 'lowest price from the last 30 days' during sales; (3) the Consumer Rights Act – imposing the duty to disclose whether the seller applies 'personalised pricing' based on automated profiling.

¹⁸ See for example: Urząd Ochrony Konkurencji i Konsumentów, 'Niekończące się „promocje” – decyzja Prezesa UOKiK' (*Uokik.gov.pl*, 27 May 2025). <<https://uokik.gov.pl/niekonczace-sie-promocje-decyzja-prezesa-uokik>> accessed 23 September 2025

Homo myopicus emerged as an analytical construct at the 2006 Chicago symposium ‘Homo Economicus, Homo Myopicus and the Law and Economics of Consumer Choice,’¹⁹ where legal scholars and economists observed that in many areas of law, regulations are addressed to individuals exhibiting present bias and procrastination rather than to the perfectly rational ‘economic man.’ In developing the new model of *homo myopicus*, the scholars drew on the quasi-hyperbolic discounting framework proposed by O’Donoghue and Rabin.²⁰ The authors distinguish ‘naïve agents,’ who mistakenly assume that their future selves will behave in a time-consistent manner and therefore fail to anticipate self-control problems such as procrastination, over-borrowing, or under-saving. ‘Sophisticated agents’ on the other hand correctly foresee that their future selves will still be present-biased and therefore may adopt commitment devices or welcome legal rules—defaults, cooling-off periods, borrowing caps—that help them curb those future impulses.²¹ By separating “naïfs” from “sophisticates,” the model explains why the same law (e.g. an automatic-enrolment default or a limit on balloon-payment loans) can help citizens who are prone to short-sighted mistakes while leaving the fully informed and self-controlled free to opt out.

The model suggests that people place extra value on the present compared to the future: they heavily favour immediate rewards and downplay future costs and benefits, even when the delay is very short. In other words, *homo myopicus* is subject to present bias—that is, he undervalues distant costs and benefits—and consequently tends to save too little or to incur excessive debt.²²

The regulatory response therefore privileges embedded commitment devices over ex-post information.²³ Auto-enrolment under the Pensions Act 2008 and Benartzi-Thaler’s ‘Save More Tomorrow’ programme exploit inertia by making participation the default and exit frictionless;²⁴ empirical evaluations report participation rates rising from roughly forty to eighty per cent without coercing the fully self-controlled. In consumer credit, the U.S. Credit

¹⁹ Baird, Epstein and Sunstein (n 6).

²⁰ Ted O’Donoghue and Matthew Rabin, ‘Doing It Now or Later’ (1999) 89 *American Economic Review* 103. <<http://www.jstor.org/stable/116981>> accessed 17 June 2025

²¹ Ted O’Donoghue and Matthew Rabin, ‘Choice and Procrastination’ (2001) 116 *Quarterly Journal of Economics* 121, 124–29. <<https://doi.org/10.1162/003355301556365>> accessed 5 July 2025

²² *ibidem* 105–06.

²³ Pierce Reiten, ‘Behavioral Economics and Retirement Savings: The Success of the UK’s Auto-Enrolment Pension Scheme’ (*Economicsonline.co*, 23 January 2025). <<https://www.economicsonline.co.uk/all/behavioral-economics-and-retirement-savings-the-success-of-the-uks-auto-enrolment-pension-scheme.html/>> accessed 21 September 2025

²⁴ Richard H Thaler and Shlomo Benartzi, ‘Save More Tomorrow: Using behavioral economics to increase employee savings’ (2004) 112 *Journal of Political Economy* 164. <<https://doi.org/10.1086/380085>> accessed 3 September 2024

CARD Act 2009²⁵ juxtaposes commitment and salience: a mandatory ‘36-month minimum-payment’ disclosure renders the long-run cost vivid, while prohibitions on so-called trip-wire fees,²⁶ supplemented by the CFPB’s 2025 two-attempt rule in payday lending, remove price schedules whose profitability depends on myopic optimism.²⁷ Where temporal misperception is acute, legislators add cool-off windows—for example the three-day rescission right in door-to-door sales²⁸—allowing the deliberative ‘planner’ to revisit the impulsive act of the ‘doer.’²⁹

Taken together, these measures illustrate a distinctive jurisprudence: rather than correcting preferences, the law re-structures the temporal architecture of choice so that short-sighted citizens reap tangible welfare gains, while those already capable of intertemporal optimisation retain full freedom to depart.

Bar-Gill’s ‘optimistic borrower’ shifts the behavioral spotlight from time-inconsistent procrastination to systematic under-estimation of risk. In empirical studies of credit-card and later mortgage contracts Bar-Gill demonstrates that many consumers discount the probability of job loss, illness or house-price decline and over-rate their capacity to refinance or repay before teaser-rate resets.³⁰ Lenders capitalise on this optimism by front-loading attractiveness—zero annual fees, headline teaser rates, rewards programmes—while burying cost in the tail through high late-payment and over-limit fees, step-up interest margins and even negative amortisation schedules.³¹ The result, he argues, is a market for ‘unsafe credit’ whose profitability depends on borrowers’ failure to process contingencies embedded in small print.³²

Because disclosure alone cannot neutralise structural biases, U.S. mortgage regulation re-allocates screening responsibility from the borrower to the creditor. Under Regulation Z’s

²⁵ Sumit Agarwal, Souphala Chomsisengphet, Neale Mahoney and Johannes Stroebe, ‘Regulating Consumer Financial Products: Evidence From Credit Cards’ (2015) 130 *The Quarterly Journal of Economics* 111. <<https://www.jstor.org/stable/26372597>> accessed 17 June 2025

²⁶ Credit Card Accountability Responsibility and Disclosure Act of 2009, Pub. L. No. 111-24, 123 Stat. 1734, codified in relevant part to 15 U.S.C. §§ 1601-1667f, 1681 et seq. and 1693 et seq.

²⁷ Consumer Financial Protection Bureau, ‘New protections for payday and installment loans take effect March 30’ (*Consumerfinance.gov*, 10 January 2025). <<https://www.consumerfinance.gov/about-us/blog/new-protections-for-payday-and-installment-loans-take-effect-march-30/>> accessed 17 June 2025

²⁸ *Cooling-Off Rule Concerning Door-to-Door Sales*, 16 CFR pt 429 (US, 2025).

²⁹ Colin Camerer and others, ‘Regulation for Conservatives: Behavioral Economics and the Case for “Asymmetric Paternalism”’ (2003) 151 *University of Pennsylvania Law Review* 1211, 1249–53. <https://scholarship.law.upenn.edu/penn_law_review/vol151/iss3/15> accessed 12 September 2025

³⁰ Bar-Gill (n 7); Oren Bar-Gill, *Seduction by Contract: Law, Economics, and Psychology in Consumer Markets* (Oxford University Press 2012) ch 2.

³¹ Bar-Gill (n 7).

³² Oren Bar-Gill and Elisabeth Warren, ‘Making Credit Safer’ (2008) 157 *University of Pennsylvania Law Review* 1. <<https://www.law.upenn.edu/live/files/112-bar-gillwarren157upalrev12008pdf>> accessed 19 June 2025

ATR/QM rule,³³ creditors must consider and verify eight enumerated underwriting factors—such as income and assets, employment status, the monthly payment on the covered transaction (calculated under the fully-indexed/introductory-rate rules), other simultaneous obligations, and the consumer’s DTI or residual income—and retain evidence of this assessment.³⁴ Complementarily, the CFPB’s Payday Rule identifies certain payment-withdrawal practices as unfair or abusive, including initiating further payment transfers after two consecutive failed attempts without new authorisation, and imposes advance-notice requirements.³⁵

In mortgage and short-term credit alike, design constraints and lender liability replace the fragile hope that optimistic consumers will absorb ever more information. Bar-Gill further advocates targeted bans on unsolicited offers—as already adopted in several EU jurisdictions—and aggregate-cost disclosures that simulate a borrower’s typical (not idealised) usage profile. The underlying normative move is clear: where optimism bias is predictable and exploitable, welfare maximisation requires shifting verification costs and legal risk to the party best placed to internalise them.

Camerer, Issacharoff, Loewenstein, O’Donoghue and Rabin advance the doctrine of asymmetric paternalism, a framework that has begun to guide legislative choice. Following Camerer et al., a proposed rule should pass an asymmetric-paternalism two-ledger assessment: it must generate substantial benefits for error-prone actors while imposing only negligible costs on fully rational actors.³⁶ Because this standard privileges freedom-preserving design, the resulting toolkit consists of low-intrusion interventions rather than outright mandates: default settings that exploit inertia, frictionless opt-out rights, narrowly-targeted fee caps, and cooling-off periods that allow deliberation to overtake impulse. Salience-enhancing disclosure boxes—

³³ Minimum standards for transactions secured by a dwelling 12 CFR § 1026.43 (US, 2025).

³⁴ Consumer Financial Protection Bureau, ‘Ability-to-Repay and Qualified Mortgage Rule. Small Entity Compliance Guide’ (v 3.1, April 2021). <<https://www.consumerfinance.gov/rules-policy/final-rules/qualified-mortgage-definition-under-truth-lending-act-regulation-z-general-qm-loan-definition-delay-mandatory-compliance-date/>> accessed 21 September 2025

³⁵ Bureau of Consumer Financial Protection, ‘Payday, Vehicle Title, and Certain High-Cost Installment Loans’ (Final Rule) 85 Fed Reg 44382 (22 July 2020). <<https://www.consumerfinance.gov/rules-policy/regulations/1041/1/>> accessed 21 September 2025

³⁶ Column A aggregates the welfare gains accruing to error-prone, boundedly-rational actors; Column B records any liberty costs imposed on error-resistant, fully informed actors. A measure passes only where the net of column A is positive and the net of column B is negligible. Put differently, regulation is justified if it delivers material benefits to predictable error-makers while leaving the rational minority essentially unharmed. See: Camerer and others (n 29) 1220. In scholarship, Camerer et al.’s asymmetric paternalism is often invoked as a policy desideratum—large gains for error-prone consumers with minimal burdens on those who choose optimally—but it does not establish a general doctrine of lighter proportionality review.

especially where sellers have ‘shrouded’ key price elements—likewise qualify, for they debias the inattentive without burdening the attentive.³⁷

Regulatory practice at both the Consumer Financial Protection Bureau and the UK Financial Conduct Authority increasingly incorporates statutory cost-benefit and impact analyses. These assessments often consider distributional effects and consumer vulnerability. Constitutional scholars in the United States and the European Union have accordingly suggested that rules satisfying the Camerer criterion should attract a lighter proportionality review: where freedom of option remains effectively intact, the burden of proving unconstitutionality ought to rest more heavily on the challenger.³⁸

The next model crafted thanks to psychological and behavioral research is called the ‘boundedly-rational actor.’ Before examining its features, it is helpful to begin with the classical benchmark against which that model is defined—Coase’s theorem.³⁹ The theorem assumes that where transaction costs are zero, property rights clearly defined and parties perfectly rational, the initial allocation of those rights is irrelevant, for the parties will bargain to the cost-minimising outcome.⁴⁰ Brown demonstrates the practical application of the theorem through the example of parents confronting high medical bills caused by industrial pollution: if the firm holds the right to emit, the parents could—absent government intervention—offer the firm a payment lower than their expected healthcare costs in exchange for abatement, thereby producing joint gains.⁴¹ The theorem inspired market-based regulation, notably emissions-trading schemes that assume efficient reallocation once transferable rights are created.⁴²

Behavioral evidence, however, undermines this neutral-allocation claim. Kahneman and Tversky’s findings on loss aversion and the endowment effect show that individuals value

³⁷ Xavier Gabaix and David Laibson, ‘Shrouded Attributes, Consumer Myopia, And Information Suppression In Competitive Markets’ (2005) National Bureau Of Economic Research, Working Paper 11755, 1. <<http://www.nber.org/papers/w11755>> accessed 18 June 2025

³⁸ Mark Schweizer, ‘Nudging and the Principle of Proportionality: Obligated to Nudge?’ in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016); Van Aaken (n 2); Cass R Sunstein, ‘Nudges vs Shoves’ (2014) 127 Harvard Law Review Forum 210, 216–18. <<http://harvardlawreview.org/2014/04/nudges-vs-shoves/>> accessed 5 July 2025

³⁹ Steven G Medema, ‘HES Presidential Address: The Coase Theorem Lessons For The Study Of The History Of Economic Thought’ (2011) 33 Journal of the History of Economic Thought 1. <<https://doi.org/10.1017/S105383721000060X>> accessed 19 June 2025

⁴⁰ Ronald H Coase, ‘The Problem of Social Cost’ (1960) 3 The Journal of Law & Economics 1. <<http://www.jstor.org/stable/724810>> accessed 19 June 2025

⁴¹ Jennifer L Brown, ‘The Coase Theorem’ (*Britannica*, 2 February 2024). <<https://www.britannica.com/money/environmental-economics/The-Coase-theorem>> accessed 19 June 2025

⁴² *ibidem*.

what they already possess far more than identical entitlements they lack; relinquishing a right feels like a loss, acquiring it only a modest gain.⁴³ Where such asymmetries persist, Coasian bargaining stalls and initial entitlements matter—a point emphasised by Jolls.⁴⁴

Building on this insight, Sunstein and Jolls formulate the model of the boundedly-rational actor.⁴⁵ Citizens are subjects to predictable heuristics and biases—endowment, status-quo preference, over-optimism, framing effects—yet are neither wholly undisciplined nor purely self-interested.⁴⁶ Recognising these traits reshapes legal design. In environmental regulation, negligence doctrine and risk assessment, the choice of default rules becomes a policy lever rather than a neutral starting point; legislators may engage in ‘debiasing through law,’ redesigning procedures, disclosures or liability rules to mitigate systematic error, or—where debiasing would be too costly—accommodating those errors when allocating rights and duties.⁴⁷

Turning to the *homo heuristicus* framework introduced by Gigerenzer and Brighton, the model depicts citizens not as imperfect optimisers but as agents equipped with an ‘adaptive toolbox’ of fast-and-frugal heuristics—recognition, take-the-best, 1/N diversification, and compact decision trees.⁴⁸ Faced with uncertainty, such actors deliberately ignore most data and compute only what is required to extract the cue that best predicts an outcome. The economy of cognition reduces noise, curbs over-fitting and often yields higher accuracy than full optimisation when information is costly or unreliable.⁴⁹

For legal design the message is stark: complex rules may degrade, rather than improve, real-world decision quality. Where the margin for error is narrow—minimum age for alcohol sales, VAT thresholds—Gigerenzer and Engel advocate crisp binary criteria.⁵⁰ In domains that

⁴³ Christine Jolls, ‘Behavioral Law and Economics’ (2007) National Bureau Of Economic Research, Working Paper 12879. <https://www.nber.org/system/files/working_papers/w12879/w12879.pdf> accessed 19 June 2025; Daniel Kahneman and Amos Tversky, ‘Prospect Theory: An Analysis of Decision under Risk’ (1979) 47 *Econometrica* 263. <<https://doi.org/10.2307/1914185>> accessed 19 June 2025

⁴⁴ Jolls (n 43).

⁴⁵ Christine Jolls and Cass R Sunstein, ‘Debiasing Through Law’ (2006) 35 *Journal of Legal Studies* 199. <<https://doi.org/10.1086/500096>> accessed 29 November 2024

⁴⁶ *ibidem*.

⁴⁷ *ibidem*; Christine Jolls, ‘Product Warnings, Debiasing, and Free Speech: The Case of Tobacco Regulation’ (2013) 169 *Journal of Institutional and Theoretical Economics* 53. <[0.2307/23354770](https://doi.org/10.2307/23354770)> accessed 6 December 2024; Sunstein, Jolls and Thaler (n 8);

⁴⁸ Gigerenzer and Brighton (n 9).

⁴⁹ Henry Brighton and Gerd Gigerenzer, ‘Homo Heuristicus: Less-is-More Effects in Adaptive Cognition’ (2012) 19 *The Malaysian journal of medical sciences* 6. <<https://pmc.ncbi.nlm.nih.gov/articles/PMC3629675/>> accessed 19 June 2025

⁵⁰ Gerd Gigerenzer and Christoph Engel, *Heuristics and the law* (MIT Press in cooperation with Dahlem University Press 2006).

rely on probabilistic communication, heuristics based on natural frequencies (1 in 1000) outperform percentages (0.1%); bioethics committees and the US FDA now recommend this format in risk disclosures.⁵¹ Rejecting paternalistic nudging, Gigerenzer proposes boosts that build risk literacy: citizens learn to deploy the right heuristic instead of being steered by hidden choice architecture.⁵² Consistent with this approach, both the European Union and the OECD have begun to incorporate boosts into policy guidance, for example through traffic-light nutrition labels and simplified cost dashboards for consumer credit.⁵³ The implication is that law should scaffold good heuristics rather than fight them: simplicity, salient cues and competence-enhancing feedback frequently outperform elaborate mandates directed at a fictitious maximiser.

Despite their differences, the models converge on a pluralistic normative agenda. Where errors are mild and heterogeneity large, policy-makers prefer costless defaults, salience cues and competence boosts; where biases are deep or third-party harms salient, they impose screening duties, caps or outright bans. Behavioral jurisprudence thus enriches, rather than replaces, classical command-and-control: it equips legislators with a spectrum of calibrated tools that respect autonomy while correcting predictable failures of cognition and self-control.

3. Toward a Behavioral Compliance Theory

As elaborated in the previous chapter, what we call traditional compliance theory presumes that citizens recognise a rule, grasp its content, weigh costs, benefits or moral duties, and then choose whether to obey. This ‘rational–reflective pipeline’ rests on three axioms: cognitive access, deliberative evaluation and conscious choice. Behavioral evidence now shows each axiom to be insufficient. Compliance can occur—and often does—without awareness, deliberation or fear of punishment. A behaviorally informed theory therefore relaxes the cognition requirement, decouples obedience from sanctions, embeds bounded

⁵¹ Gerd Gigerenzer, Wolfgang Gaissmaier, Elke Kurz-Milcke, Lisa M Schwartz and Steven Woloshin, ‘Helping Doctors and Patients Make Sense of Health Statistics’ (2008) 8 *Psychological Science In The Public Interest* 53. <[10.1111/j.1539-6053.2008.00033.x](https://doi.org/10.1111/j.1539-6053.2008.00033.x)> accessed 19 June 2025

⁵² Tim Adams, ‘Nudge economics: has push come to shove for a fashionable theory?’ *The Guardian* (1 June 2014). <<https://www.theguardian.com/science/2014/jun/01/nudge-economics-freakonomics-daniel-kahneman-debunked>> accessed 19 June 2015

⁵³ Storcksdieck Genannt Bonsmann and others, ‘Front-of-pack nutrition labelling schemes: a comprehensive review’ (2020) Publications Office of the European Union. <<https://publications.jrc.ec.europa.eu/repository/handle/JRC113586>> accessed 13 September 2025; European Commission, ‘Nutrition labelling.’ <https://food.ec.europa.eu/food-safety/labelling-and-nutrition/food-information-consumers-legislation/nutrition-labelling_en> accessed 19 June 2025; OECD, ‘Smarter Financial Education: Key lessons from behavioural insights for financial literacy initiatives’ (2019) <<https://lib.hbfu.edu.cn/res/upload/file/20210420/1618889312055007195.pdf>> accessed 13 September 2025

rationality and situates effectiveness in the architecture of choice rather than the will of the addressee.⁵⁴

A growing group of researchers is making direct comparisons between traditional views of obedience (often based on deterrence theory) and a behavioral perspective, employing terms such as behavioral compliance,⁵⁵ behaviorally informed regulation,⁵⁶ and Behavioral Compliance Theory.⁵⁷ Behavioral compliance theory is gaining popularity in academic and professional circles due to the increasing understanding of biases and heuristics affecting legal agents and due to an extensive research that enriches previous assumptions regarding compliance.⁵⁸ The classical model (knowledge + fear + calculation) only captures part of obedience; actual behaviors are heavily influenced by bounded rationality, excessive optimism, and cognitive shortcuts. Behavioral law compliance advocates for a broader range of regulatory tools, including default options, descriptive norms, reputational 'shame penalties,'⁵⁹ and 'feedback at the moment of decision.'⁶⁰ Furthermore, the concept of compliance gradability (partial, apparent, conditional compliance)⁶¹ arises—an aspect that was largely neglected in the

⁵⁴ Chris Mills, 'The Choice Architect's Trilemma' (2018) 24 *Res Publica* 395.

<<https://doi.org/10.1007/s11158-017-9363-4>> accessed 16 August 2025

⁵⁵ Donald C Langevoort, 'Behavioral Ethics, Behavioral Compliance' (2015) Georgetown University Law Center. <<https://scholarship.law.georgetown.edu/facpub/1507>> accessed 9 July 2025

⁵⁶ Michael S Barr, Sendhil Mullainathan and Eldar Shafir, 'The Case for Behaviorally Informed Regulation' in David Moss and John Cisternino (eds), *New Perspectives on Regulation* (The Tobin Project 2009); Yuval Feldman and Yotam Kaplan, 'Behavioral Ethics as Compliance' in Benjamin van Rooij and Daniel Sokol (eds), *The Cambridge Handbook of Compliance* (Cambridge University Press 2021).

⁵⁷ Daniel Peat, Veronika Fikfak, Eva van der Zee, 'Behavioural Compliance Theory' (2022) 13 *Journal of International Dispute Settlement* 167. <researchprofiles.ku.dk> accessed 13 September 2025

⁵⁸ *ibidem*; Langevoort (n 55); Barr (n 56); Feldman and Kaplan (n 56); Todd Haugh, 'Harmonizing Governance, Risk Management, and Compliance Through the Paradigm of Behavioral Ethics Risk' (2019) 21 *University of Pennsylvania Journal of Business Law* 873. <scholarship.law.upenn.edu> accessed 13 September 2025; Derek J Ireland, 'Behavioral Economics, Regulatory Compliance and Performance, and the Compliance Continuum' (2024) SSRN.

<<http://dx.doi.org/10.2139/ssrn.4952636>> accessed 13 September 2025; Langevoort (n 55).

⁵⁹ See, for example, the Kampala property-tax RCT: SMS messages announcing the forthcoming publication of delinquent taxpayers' names increased payments among roughly 65,000 recipients (a "naming and shaming" experiment). See: Priya Manwaring and Tanner Regan, 'Public Disclosure and Tax Compliance: Evidence from Uganda' (2023) Center for Economic Performance, discussion paper no 1937. <<https://cep.lse.ac.uk/pubs/download/dp1937.pdf>> accessed 9 July 2025

⁶⁰ See, for example, Dynamic Speed Feedback Signs—displays showing 'YOUR SPEED IS ... SLOW DOWN' reduce average driving speeds by 2–4 mph (meta-analysis of 57 studies): Donald L Fisher and others, 'Effectiveness of dynamic speed feedback signs. Volume I: Literature review and meta-analysis' (2021) National Highway Traffic Safety Administration. <<https://rosap.nhtl.bts.gov/view/dot/57513>> accessed 9 July 2025

⁶¹ Henrik D Kugelberg and Zofia Stemplowska, 'Partial Compliance Theory' in David Copp, Connie Rosati and Tina Rulli (eds), *The Oxford Handbook of Normative Ethics* (Oxford University Press forthcoming). <<https://philarchive.org/archive/KUGPCT>> accessed 13 September 2025; Barry Bozeman, 'Rules Compliance Behavior: A Heuristic Model' (2022) 5 *Perspectives on Public Management and Governance* 36. <<https://doi.org/10.1093/ppmgov/qvab028>> accessed 13 September 2025

traditional model. The following section discusses the findings that prompted a paradigm shift from traditional compliance theory toward behavioral compliance theory.

3.1. Crowding-out effect

Traditional compliance theory posits that agents engage in a cost-benefit analysis, calculating to ensure that the decision-making process yields the maximum benefits and the minimum losses (avoiding penalties and fines). Research indicates that there are numerous exceptions to this principle. One such exception is the phenomenon of crowding-out, where an external incentive (reward or punishment) diminishes existing intrinsic motivation, thereby reducing the subject's willingness to engage in the desired behavior, contrary to what classical economics would predict – that it would enhance such motivation.⁶² In certain instances, incentives work in the short term, but motivation may decline once they are withdrawn.⁶³

3.2. Fear of sanction does not always work

The fear of sanctions does not always function as an efficient motivator to comply with regulations. Fear appeals may backfire, a heightened sense of fear provokes defensive avoidance, a response whereby recipients of the message withdraw from it, seek to limit their exposure to it, and/or disparage the message due to its excessive frightfulness.⁶⁴ The imposition

⁶² Anne Karing, Juliette Finetti and Zachary Kuloszewski, 'Incentives and Motivation Crowd-Out: Experimental Evidence from Childhood Immunization' (2024) Becker Friedman Institute Working Paper.

<https://files.givewell.org/files/DWDA%202009/Interventions/Immunization/Karing_Finetti_and_Kuloszewski_2024_Incentives.pdf> accessed 13 September 2025

⁶³ Alison Buttenheim and others, 'Do incentives crowd out motivation? A feasibility study of a community vector-control campaign in Peru' (2021) 49 *Behavioural Medicine* 1.

<[10.1080/08964289.2021.1977603](https://doi.org/10.1080/08964289.2021.1977603)> accessed 13 September 2025; Nadja Zeiske, Ellen van der Werff and Linda Steg, 'The effects of a financial incentive on motives and intentions to commute to work with public transport in the short and long term' (2021) 78 *Journal of Environmental Psychology* 101718. <<https://doi.org/10.1016/j.jenvp.2021.101718>> accessed 13 September 2025; Maoliang Ling and Lin Xu, 'How and when financial incentives crowd out pro-environmental motivation: A longitudinal quasi-experimental study' (2021) 78 *Journal of Environmental Psychology* 101715.

<<https://doi.org/10.1016/j.jenvp.2021.101715>> accessed 13 September 2025; Manish Saini, Nishant Uppal and Joshua L Howard, 'Perceived financial incentive salience and its undermining effect: a moderated-mediation model' (2024) 98 *Journal of Occupational and Organizational Psychology* e70000. <<https://doi.org/10.1111/joop.70000>> accessed 13 September 2025; Tobias Vorlauffer, Inga Steimanis and Julia Plassenberg, 'Payment for ecosystem services and crowding of conservation behavior: a meta-analysis of lab-in-the-field experiments' (2025) 74 *Ecosystem Services* 101750.

<<http://www.sciencedirect.com/science/article/pii/S2212041625000543>> accessed 13 September

⁶⁴ Kaylene L Higbee, 'Fifteen years of fear arousal: Research on threat appeals: 1953-1968' (1969) 72 *Psychological Bulletin* 426. <<https://doi.org/10.1037/h0028430>> accessed 14 September 2025; Irving L Janis, 'Effects of Fear Arousal on Attitude Change: Recent Developments in Theory and Experimental Research' (1967) 3 *Advances in Experimental Social Psychology* 166.

<[https://doi.org/10.1016/S0065-2601\(08\)60344-5](https://doi.org/10.1016/S0065-2601(08)60344-5)> accessed 14 September 2025; Irving L Janis and Seymour Feshbach, 'Effects of fear-arousing communications' (1953) 48 *Journal of Abnormal and Social Psychology* 78. <<https://doi.org/10.1037/h0060732>> accessed 14 September 2025

of punishment can prove counterproductive as well: sanctions may paradoxically reinforce the very behaviour they are intended to suppress.⁶⁵ Just and Wansink emphasise that coercive methods can yield opposite-to-intended outcomes, such as behavioral compensation or resilience.⁶⁶ The lawmaker's lack of trust in the legal agents, communicated through stringent regulations, acts as a self-fulfilling prophecy—agents, upon observing severe penalties for certain behaviors, may conclude that non-compliance is widespread.⁶⁷ Deterrence theory posits, as discussed in Chapter III, that the severity of sanctions and the likelihood of detection influence the decisions of people and can dissuade them from committing prohibited acts. However, there are studies that refute this assertion.⁶⁸ The interplay of hyperbolic discounting and present-bias indicates that if an offender must 'wait' for punishment (with the verdict being rendered years later and imprisonment commencing at a later date), the deterrent effect of harsh sanctions diminishes.⁶⁹ The intention to violate the law increases more rapidly when the benefits of the prohibited act are temporally closer.⁷⁰ People engaging in prohibited acts often exhibit overconfidence, and struggle to accurately calculate the likelihood of detection.⁷¹ The fear of punishment may therefore not activate compliance at all. In many cases, sanctions prove neither necessary nor sufficient. It is by no means a new discovery in compliance theory

⁶⁵ Uri Gneezy and Aldo Rustichini, 'A Fine Is a Price' (2000) 29 *Journal of Legal Studies* 1, 7–8. <<https://doi.org/10.1086/468061>> accessed 6 July 2025

⁶⁶ David R Just and Brian Wansink, 'Better school meals on a budget: using behavioral economics and food psychology to improve meal selection' (2009) 24 *Choices* 1, 2. <https://www.choicesmagazine.org/UserFiles/file/article_87.pdf> accessed 9 November 2024

⁶⁷ Juan P Mendoza, Jacco L Wielhouwer and Erich Kirchler, 'The backfiring effect of auditing on tax compliance' (2017) 62 *Journal of Economic Psychology* 284. <<https://doi.org/10.1016/j.joep.2017.07.007>> accessed 14 September;

⁶⁸ Damon M Petrich and others, 'Custodial Sanctions and Reoffending: A Meta-Analytic Review' (2021) 50 *Crime and Justice* 353. <<https://doi.org/10.1086/715100>> accessed 14 September 2025; Timothy C Barnum and Daniel S Nagin, 'Deterrence and Sanction Certainty Perceptions' (2023) *Oxford Research Encyclopedia of Criminology and Criminal Justice*. <<https://doi.org/10.1093/acrefore/9780190264079.013.248>> accessed 13 July 2025; David Brown, 'Do Harsher Punishments Deter Crime?' (UNSW Newsroom, 16 July 2020) <https://www.unsw.edu.au/newsroom/news/2020/07/do-harsher-punishments-deter-crime> accessed 13 July 2025

⁶⁹ Travis C Pratt and Jillian J Turanovic, 'Celerity and Deterrence' in Daniel S Nagin, Francis T Cullen and Cheryl Lero Jonson (eds) *Deterrence, Choice, and Crime* (Volume 23, 1st edn, Routledge 2018); Murat C Mungan and Jonathan Klick, 'Discounting and Criminals' Implied Risk Preferences' (2015) 11 *Review of Law and Economics* 19. <<https://www.law.upenn.edu/live/files/8891-11rle19pdf>> accessed 9 July 2025; Ann J Abramowitz and Susan G O'Leary, 'Effectiveness of Delayed Punishment in an Applied Setting' (1990) 21 *Behavior Therapy* 231. <[https://doi.org/10.1016/S0005-7894\(05\)80279-5](https://doi.org/10.1016/S0005-7894(05)80279-5)> accessed 14 September 2025

⁷⁰ Thomas A Loughran, Ray Paternoster and Douglas Brian Weiss, 'Hyperbolic Time Discounting, Offender Time Preferences and Deterrence' (2012) 28 *Journal of Quantitative Criminology* 607. <[10.1007/s10940-011-9163-5](https://doi.org/10.1007/s10940-011-9163-5)> accessed 9 July 2025

⁷¹ Kahneman and Tversky (n 43); Thomas Loughran, Ray Paternoster, Alex R Piquero and Jeffrey Fagan, '"A Good Man Always Knows His Limitations": Overconfidence in Criminal Offending' (2013) 50 *Journal Of Research In Crime & Delinquency* 327. <https://scholarship.law.columbia.edu/faculty_scholarship/1680> accessed 30 June 2025

research that, in many cases, people adhere to norms without any awareness of potential punishment.⁷² Obedience, which is grounded in respect, a sense of moral duty, or fairness, constitutes essential elements of conventional compliance theory. The contributions of behavioral insights have introduced entirely new methods of influence that are based on psychological principles. For example, a single sentence invoking local tax-paying norms raised timely HMRC payments by 15% without altering penalties.⁷³ Opower's monthly reports comparing energy use with neighbors result in an average 2% reduction in consumption, driven by social comparison rather than penalties.⁷⁴ In a study with 13 million borrowers, two simple behaviorally designed emails decreased the chance of 60-day delinquency by 0.4 to 0.6 %, without using late fees or collections.⁷⁵ Social proof, framing and moral licensing can outweigh marginal deterrence.

3.3. Legal ignorance diminishes compliance

Deterrence theory is founded on the premise that the law operates through a transparent and deliberative process. Individuals adhere to it due to this deliberative process and their comprehension of it. Research, which includes a meta-analysis of over 60 studies from various legal fields, indicates that both laypersons and professionals consistently confuse or overlook the content of legal norms; the authors conclude that 'ignorance and misunderstanding of the law are common across domains,' which means that an increase in the severity of sanctions does not linearly translate to compliance.⁷⁶ Studies conducted by Truelove et al. have also demonstrated that a lack of knowledge regarding legal regulations (specifically, the penalties associated with using a mobile phone while driving) diminishes compliance.⁷⁷ Similar

⁷² Joseph Raz, *Practical Reason and Norms* (Oxford University Press 1999).

⁷³ The Decision Lab, 'How normative messaging increased tax compliance by 15%'

(thedecisionlab.com, 23 January 2022).

<<https://thedecisionlab.com/intervention/how-normative-messaging-increased-tax-compliance-by-15>> accessed 14 September 2025 See also: Michael Hallsworth and others, 'The behavioralist as tax collector: Using natural field experiments to enhance tax compliance' (2017) 148 *Journal of Public Economics* 14. <<https://doi.org/10.1016/j.jpubeco.2017.02.003>> accessed 1 October 2025

⁷⁴ Hunt Allcott and Todd Rogers, 'Opower: Evaluating the Impact of Home Energy Reports on Energy Conservation in the United States' (povertyactionlab.org, 8 March 8 2017).

<<https://www.povertyactionlab.org/evaluation/opower-evaluating-impact-home-energy-reports-energy-conservation-united-states>> accessed 14 September 2025

⁷⁵ Robert Kuan and others, 'Behavioral nudges prevent loan delinquencies at scale: A 13-million-person field experiment' (2025) 122 *PNAS* e2416708122. <<https://doi.org/10.1073/pnas.2416708122>> accessed 14 September 2025

⁷⁶ Benjamin van Rooij, 'Do People Know the Law? Empirical Evidence about Legal Knowledge and Its Implications for Compliance' in Benjamin van Rooij and Daniel Sokol (eds), *The Cambridge Handbook of Compliance* (Cambridge University Press 2021).

⁷⁷ Verity Truelove, James E Freeman, Laura Mills and Sherrie-Anne Kaye, 'Does Awareness of Penalties Influence Deterrence Mechanisms? A Study of Young Drivers' Awareness and Perceptions

conclusions were reached by authors who conducted representative survey research in Slovakia, revealing a low level of awareness regarding the fundamental limits of criminal liability.⁷⁸ The authors assert that this gap correlates with a higher acceptance of risky behaviors, thereby confirming the principle that ignorance of the law adversely affects compliance. A review of 120 works in the field of 'perceptual deterrence' was conducted by Apel.⁷⁹ The author summarizes that respondents are generally but imperfectly aware of punishments, and that over- or underestimation of sanctions is the norm rather than the exception. Other studies also corroborate the existence of ignorance or a weak understanding of the law.⁸⁰

3.4. Hypermotivation

In the context of psychological and behavioral research on compliance, entirely new motives for adhering to or violating the law have been discovered, which differ significantly from traditional doctrine. One such motive is hypermotivation, a phenomenon examined by Rick and Loewenstein, defined as the desperate, loss-driven state that short-circuits ordinary moral restraints and makes otherwise honest people willing to cheat, steal and lie as the only perceived way out.⁸¹ The urgent need to escape loss narrows attention, crowds out moral constraints and fuels self-serving rationalisations. People can then talk themselves into behaviour they would otherwise condemn.⁸² This discovery holds significance for the formulation of public policies, particularly those that pertain to individuals in crisis situations, such as debt (good policy in that case is to provide a professional debt counselling).

of the Punishment Applying to Illegal Phone Use While Driving' (2021) 78 Transportation Research Part F: Traffic Psychology & Behaviour 194. <[10.1016/j.trf.2021.02.006](https://doi.org/10.1016/j.trf.2021.02.006)> accessed 13 July 2025

⁷⁸ Magdalena Ondicová and Gabriela Horková, 'Low Legal Awareness as a Criminogenic Factor' (2020) 24 ASEJ—Scientific Journal of Bielsko-Biala School of Finance and Law 21. <<https://doi.org/10.19192/wsfp.sj3.2020.4>> accessed 13 July 2025

⁷⁹ Robert Apel, 'Sanctions, Perceptions, and Crime' (2022) 5 Annual Review of Criminology 205. <<http://dx.doi.org/10.1146/annurev-criminol-030920-112932>> accessed 13 July 2025

⁸⁰ The author uses the term reasonably ignorant actor to describe legal ignorance here: Stewart E Sterk, 'Accommodating Legal Ignorance' (2020) 42 Cardozo Law Review 213. <<https://ssrn.com/abstract=3796458>> accessed 13 July 2025; See more about normative ignorance here: Piotr Bystranowski, 'Ignorance of Law Does Not Excuse: A New Empirical Account' (pre-print, Oct 2024) <[10.13140/RG.2.2.13172.97925](https://doi.org/10.13140/RG.2.2.13172.97925)> accessed 13 July 2025

⁸¹ Scott Rick and George Loewenstein, 'Commentaries and Rejoinder To "The Dishonesty Of Honest People"' (2008) XLV Journal of Marketing Research 645. <<https://scottrick.com/wp-content/uploads/2019/07/Hypermotivation.pdf>> accessed 9 July 2025

⁸² *ibidem*.

3.5. Understanding is not necessary for compliance

A legal rule can operate with great efficiency when it is not understood or even noticed by the legal agents. Acting in accordance with the legislator's intent without a conscious decision or thought process is achievable through the use of default options or environmental cues, which elicit an automatic, reflexive response to stimuli. For instance, automatic enrolment lifted UK pension participation from 55% in 2012 to 88% in 2023 and 89% in 2024,⁸³ while 26% of enrollees could not name their contribution rate.⁸⁴ Here compliance flowed from status-quo bias and inertia, not necessarily understanding. A visual or emotional stimulus triggers action more swiftly than the analysis of a regulation. If we understand compliance as a de facto adherence to a norm, numerous well-documented behavioral mechanisms demonstrate that a conscious understanding of the law is merely one pathway to this end—and not necessarily the most effective. The contemporary legislator increasingly ‘codes’ the desired response within the decision-making environment, allowing System 1 to handle the remainder of the task. Traditional regulations shift the burden of understanding onto the citizen; nudging transfers it back to the system designer.

Classical premises are not discarded but supplemented: what a rule commands matters less than how it materialises in human perception.⁸⁵ In short, twenty-first-century compliance is secured as much by automaticity, salience and social influence as by knowledge, calculation and conviction.

To sum up, Behavioral Compliance Theory demonstrates that there are numerous systematic exceptions to the following traditional assumptions of compliance theory:

- (1) that people need to know and understand the law in order to obey it;
- (2) that people follow the law primarily because they fear sanctions;
- (3) that individuals decide whether to comply by consciously weighing costs and benefits;
- (4) that punishment is necessary to reinforce the norm;

⁸³ Department for Work and Pensions, ‘Workplace pension participation and savings trends of eligible employees: 2009 to 2023’ (Gov.uk, 31 July 2024).

<<https://www.gov.uk/government/statistics/workplace-pension-participation-and-savings-trends-2009-to-2023/workplace-pension-participation-and-savings-trends-of-eligible-employees-2009-to-2023>> accessed 1 October 2025; Department for Work and Pensions, ‘Workplace pension participation and savings trends of eligible employees: 2009 to 2024’ (Gov.uk, 5 August 2025). <<https://www.gov.uk/government/statistics/workplace-pension-participation-and-savings-trends-2009-to-2024/workplace-pension-participation-and-savings-trends-of-eligible-employees-2009-to-2024>> accessed 1 October 2025

⁸⁴ Standard Life, ‘A quarter of workers unaware how much they pay into their workplace pension’ (Standardlife.co.uk, 24 October 2022). <<https://www.standardlife.co.uk/about/press-releases/auto-enrolment-anniversary-research>> accessed 6 July 2025

⁸⁵ Sunstein and Reisch (n 4).

(5) that compliance results from perceiving the lawgiver as a legitimate authority, obeyed out of fear and respect; and
(6) that individuals follow the law because they consciously agree with its objectives.

The subsequent section analyses the weaknesses of what will hereafter be referred to as ‘traditional regulations’⁸⁶—rules implemented without the legislature’s intentional use of empirical knowledge derived from behavioral insights.⁸⁷

4. Limitations of traditional regulations

As noted by Wells, ‘[t]here is increasing doubt that the traditional levers of public policy, regulation and economic instruments (taxes and expenditure) are sufficient tools of government to achieve a desired set of outcomes.’⁸⁸ There are several reasons that support the assertion that conventional regulatory tools are insufficient. In the following section, we outline the limitations associated with conventional regulatory instruments.

4.1. The Crude ‘Stick-and-Carrot’ Logic

Traditional tools are based on a simplistic and paternalistic belief that citizens shall be frightened, dominated, or enticed with financial gain to motivate them towards specific behaviors. Incentives appealing to fear, guilt, shame, or greed are frequently simplistic—if not crude⁸⁹—mechanisms, particularly when contrasted with the more refined and nuanced behaviorally informed regulatory instruments developed in recent years. As John and others observe, to elicit compliance, ‘[s]imply providing people rules to follow may not be enough.’⁹⁰

⁸⁶ ...otherwise referred to as ‘conventional regulatory tools,’ ‘command-and-control instruments,’ ‘main policy tools,’ ‘information based policies,’ or similar.

⁸⁷ It is worth noting that research conducted by the Polish Economic Institute in 2019 revealed that Polish public institutions make only moderate use of behavioral techniques. Moreover, they do not carry out experimental evaluations to test the effectiveness of such interventions, despite this being one of the core principles of the behavioral approach. Behavioral innovations within the Polish public administration therefore emerge in an organic rather than an institutionalised manner. This kind of non-expert application of behavioral insights in public policy occupies an intermediate position between traditional regulation and behaviorally informed regulation. See: Polski Instytut Ekonomiczny, ‘Prościej, taniej i skuteczniej, czyli jak ekonomia behawioralna wspiera polityki publiczne w Polsce’ (Polski Instytut Ekonomiczny 2019). <<https://pie.net.pl/co-druga-jednostka-z-sektora-publicznego-korzysta-z-rozwiazan-ekonomii-behawioralnej/>> accessed 7 October 2025

⁸⁸ Peter Wells, ‘A Nudge One Way, A Nudge the Other: Libertarian Paternalism as Political Strategy’ (2010) 4 People Place and Policy Online 111. <<https://pdfs.semanticscholar.org/42dd/f6da25c8be757d3d3cc5156801008431c062.pdf>> accessed 1 September 2024

⁸⁹ John, Smith and Stoker (n 4) 363.

⁹⁰ *ibidem*.

Citing the words of Mols and others,⁹¹ Schneider expresses the view that ‘...nudging represents a new mode of governance, one which is distinct from rule through hierarchy, persuasion, markets, or networks.’⁹² Loewenstein also emphasizes the inadequacy of traditional policy frameworks: ‘[t]he main policy tools suggested by conventional economics, providing information or changing prices, only partially address ... problems because they fail to exploit what is known about human motivation and behavior change.’⁹³ According to Hansen and Jespersen, the limitations of traditional tools arise from their reliance on conventional economics, particularly the neoclassical assumption regarding the rationality of legal entities;

[t]he baseline is no longer that citizens are always capable of acting according to what is in their own interests as judged by themselves. Hence the relevant baseline in evaluating a policy measure is no longer an idealized world inhabited by perfectly rational citizens. Rather, a given measure should be evaluated relative to existing alternatives in the toolbox of public policymaking and the reflected preferences of the citizens that policymaking is devised to serve.⁹⁴

As noted by Broude,

[e]conomic analysis and rational choice have made significant inroads into the study of international law and institutions in the last decade, relying upon standard assumptions of perfect rationality of states and decisionmakers. This approach is inadequate, both empirically and in its tendency toward outdated formulations of political theory.⁹⁵

⁹¹ Frank Mols, S Alexander Haslam, Jolanda Jetten and K Steffens Niklas, ‘Why a Nudge is Not Enough: A Social Identity Critique of Governance by Stealth’ (2015) 54 *European Journal of Political Research* 81. <<https://doi.org/10.1111/1475-6765.12073>> accessed 9 January 2025

⁹² Suzanne Schneider, ‘Technocracy without society: a critique of nudging as an approach to managing risk’ (2024) *International Review Of Applied Economics* 1, 4. <<https://doi.org/10.1080/02692171.2024.2384457>> accessed 8 January 2025

⁹³ George Loewenstein, Troyen Brennan and Kevin G Volpp, ‘Asymmetric Paternalism to Improve Health Behaviors’ (2007) 298 *JAMA* 3415. <<https://jamanetwork.com/journals/jama/article-abstract/209557>> accessed 28 December 2024

⁹⁴ Pelle Guldberg Hansen and Andreas Maaløe Jespersen, ‘Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy’ (2013) 4 *European Journal of Risk Regulation* 3, 12. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024

⁹⁵ Tomer Broude, ‘Behavioral International Law’ (2015) 163 *University of Pennsylvania Law Review* 1099. <<https://www.jstor.org/stable/24752762>> accessed 28 February 2025

Marteau et al. highlight that policies solely based on information provision are insufficient:

We propose that the potential for information based interventions is fundamentally limited, given that it is based on a view of human behavior that is at odds with psychological and neuroscientific evidence that much human behavior is not actually driven by deliberation upon the consequences of actions, but is automatic, cued by stimuli in the environment, resulting in actions unaccompanied by conscious reflection.⁹⁶

As a consequence of adopting the rational choice theory as a reference point, the legislator bases the mechanism of the norm on the provision of information.⁹⁷ Traditional interventions designed to modify behavior are thus structured to enhance the perceived value of the preferred choice, either by informing individuals about the current costs and benefits associated with a specific behavior or by establishing new incentive frameworks through subsidies, tax credits, penalties, or comparable economic strategies. Consequently, interventions emphasize strategies such as informational campaigns that seek to alter behavior by transforming individuals' beliefs or attitudes.⁹⁸ According to Levin and Milgrom, the imperfect information environment influences decision-making processes and complicates the presumed direct correlation between awareness of legal provisions and adherence to them.⁹⁹ This phenomenon is well illustrated by a comparative analysis of the tools regulating credit data. The issue was addressed through a behavioral intervention targeting predatory lending and misleading loan terms stemming from a lack of transparency in credit information. Traditional methods like the Truth in Lending Act (TILA)¹⁰⁰ failed to protect consumers from

⁹⁶ Theresa M Marteau, Gareth J Hollands and Paul C Fletcher, 'Changing Human Behavior to Prevent Disease: The Importance of Targeting Automatic Processes' (2012) 337 *Science* 1492. <[10.1126/science.1226918](https://doi.org/10.1126/science.1226918)> accessed 11 December 2024

⁹⁷ *ibidem* 1493.

⁹⁸ Stephanie Mertens and others, 'The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains' (2022) 119 *PNAS* 1. <<https://doi.org/10.1073/pnas.2107346118>> accessed 16 December 2024

⁹⁹ Jonathan D Levin and Paul R Milgrom, 'Introduction to Choice Theory' (*Stanford.edu*, 2004). <<https://web.stanford.edu/~jdlevin/Econ%20202/Choice%20Theory.pdf>> accessed 20 November 2024

¹⁰⁰ Truth in Lending Act, Pub. L. 90-321, 82 Stat. 146 (1968), 15 USC §1601. It is a U.S. federal law designed to protect consumers by requiring lenders to disclose credit terms and costs, promoting informed choices and reducing deceptive lending. Enacted in 1968 TILA mandates clear information on loans, including the annual percentage rate (APR) and finance charges. Lenders must provide essential loan terms before consumers accept credit, covering APR, finance charges, and payment

irrational financial decisions due to misunderstandings of credit offers. The Schumer Box,¹⁰¹ an amendment to TILA, recognized that decision-making is influenced by readily available information, often leading to the neglect of complex details.¹⁰² The Schumer Box simplified credit information presentation, ensuring consumers received clear, concise data for quick comparisons of credit card offers.¹⁰³ Detailed comparisons of both regulations are shown in the table below.

Comparative aspect	TILA (1968)	Schumer Box (1988)
Type of regulation	command-and-control (disclosure), negative tool (prohibition), ¹⁰⁴ stick ¹⁰⁵	behavioral tool, boost, provision of information, simplification, salience, ¹⁰⁶ heuristic-blocking ¹⁰⁷ and heuristic-triggering, ¹⁰⁸

schedules. TILA standardizes the calculation and disclosure of borrowing costs, making it easier for consumers to compare loan offers. TILA allows consumers to cancel certain credit transactions, like home equity loans, within a specified period (usually three days) if it involves a lien on their primary residence. TILA applies to various consumer credit types, including closed-end (mortgages, auto loans) and open-end credit (credit cards, home equity lines). The Consumer Financial Protection Bureau (CFPB) oversees TILA's rulemaking and enforcement. Standardized disclosures make it easier for consumers to compare loan offers.

¹⁰¹ Fair Credit and Charge Card Disclosure Act of 1988, Pub. L. 100-583, 102 Stat. 2960 (1988) [Schumer Box].

¹⁰² Christopher K Hsee and Jiao Zhang, 'General evaluability theory' (2010) 5 Perspectives on Psychological Science 343. <[10.1177/1745691610374586](https://doi.org/10.1177/1745691610374586)> accessed 14 September 2025; Anuj K Shah, Daniel M Oppenheimer, 'Easy does it: The role of fluency in cue weighting' (2007) 2 Judgment and Decision Making 371.

<https://www.researchgate.net/publication/5140633_Easy_Does_It_The_Role_of_Fluency_in_Cue_Weighting> accessed 14 September 2025

¹⁰³ Jason Steele, 'What is a Schumer Box? Understanding Your Credit Card Terms' (*Business Insider*, 13 December 2024). <<https://www.businessinsider.com/personal-finance/credit-cards/credit-card-terms-conditions-schumer-box?IR=T>> accessed 14 September 2025; Julia Kagan, 'Schumer Box: What it is and How it Works' (*Investopedia*, 7 October 2024).

<<https://www.investopedia.com/terms/s/schumer-box.asp>> accessed 21 June 2025

¹⁰⁴ John Brigham and Dan W Brown, *Political Implementation: Penalties or Incentives?* (Sage Publications 1980).

¹⁰⁵ Marie-Louise Bemelmans-Videc, Ray Rist and Evert Vedung, *Carrots, Sticks and Sermons: Policy Instruments and Their Evaluation (Comparative Policy Evaluation)* (Routledge 2017).

¹⁰⁶ Matthew D Hilchey, Matthew Osborne and Dilip Soman, 'Does the visual salience of credit card features affect choice?' (2023) 7 Behavioural Public Policy 291.

<https://ideas.repec.org/a/cup/bpubpo/v7y2023i2p291-308_4.html> accessed 15 September 2025

¹⁰⁷ The entire intervention consists in interrupting misleading mental shortcuts (for example, fixation on the teaser rate while ignoring fees) by creating a checklist that the consumer must read—this is a classic example of a 'checklist'/side-by-side comparison, identified by Barton & Grüne-Yanoff as heuristics-blocking. More about heuristic-triggering nudges here: Adrien Barton and Till Grüne-Yanoff, 'From Libertarian Paternalism to Nudging—and Beyond' (2015) 6 Review of Philosophy and Psychology 341, 343. <<https://link.springer.com/article/10.1007/s13164-015-0268-x>> accessed 11 December 2024

¹⁰⁸ The graphic design in the form of a table deliberately activates the saliency heuristic—structuring the most important information induces cognitive offloading. More about heuristic-triggering nudges here: Barton and Grüne-Yanoff (n 107) 343.

		transparent nudge type 2 ¹⁰⁹
The aim of the intervention	providing the borrower with detailed information regarding the terms of the loan	facilitating a rapid comparison of loan conditions ¹¹⁰
The way of delivering information	comprehensive documentation in written form of credit agreements	concise table ("box") on the credit card application page
Cognitive system targeted by intervention	it triggers System 2 – rational, analytical, the documentation necessitates conscious analysis of a substantial amount of information	it triggers System 2 ¹¹¹ and System 1 ¹¹² – simplifies analysis and supports rapid, intuitive comparison of offers
Assumptions regarding legal agent	complete rationality, the ability to optimize and process information analytically	bounded rationality, information overload, ¹¹³ omission of certain information ¹¹⁴
Effectiveness	average or low effectiveness - consumers do not read all the data, overlook details, and struggle to comprehend. ¹¹⁵	increased effectiveness - consumers make better credit decisions, committing fewer errors. ¹¹⁶

Table 1. Comparison of Standard and Behavioral Policies.

¹⁰⁹ This type of nudge engages reflection—the decision follows an analysis of the table, and the policy-maker's goal (to facilitate comparison) is immediately visible and understandable to the nudgee. More about this type of nudge here: Hansen and Jespersen (n 94) 20.

¹¹⁰ Jesseca RI Taylor and Michael S Wogalter, 'Formatted Text Improves the Communication of Credit Card Information: Effects on Response Time' (2011) 55 Proceedings of the Human Factors and Ergonomics Society Annual Meeting 1298.

<<https://journals.sagepub.com/doi/abs/10.1177/1071181311551270>> accessed 15 September 2025

¹¹¹ Cass R Sunstein, 'People Prefer System 2 Nudges (Kind Of)' (2016) 66 Duke Law Journal 121.

<<https://scholarship.law.duke.edu/dlj/vol66/iss1/3>> accessed 5 December 2024

¹¹² ibidem.

¹¹³ Federal Reserve Banks, 'The Regulation Z Amendments for Open-End Credit Disclosures: Part Two' (*Consumer Compliance Outlook*, Second Quarter 2009).

<https://www.consumercomplianceoutlook.org/2009/second-quarter/q2_02/> accessed 15 September 2025

¹¹⁴ Randall S Kroszner, speech 'Creating More Effective Consumer Disclosures' (George Washington University School of Business, Financial Services Research Program Policy Forum, Washington, D.C., 23 May 2007).

<<https://www.federalreserve.gov/newsevents/speech/kroszner20070523a.htm>> accessed 15 September 2025

¹¹⁵ Federal Reserve Board, 'Design and Testing of Effective Truth in Lending Disclosures' (*Federalreserve.gov*, 16 May 2007).

<<https://www.federalreserve.gov/dcca/regulationz/20070523/Execsummary.pdf>> accessed 15 September 2025

¹¹⁶ United States Government Accountability Office, 'Credit Cards. Increased Complexity in Rates and Fees Heightens Need for More Effective Disclosures to Consumers' (*Gao.gov*, September 2006).

<<https://www.gao.gov/assets/gao-06-929.pdf>> accessed 15 September 2025

The analysis above shows that behavioral regulation facilitates a more efficient communication of information to recipients by leveraging insights into the shortcomings of the human cognitive system.

Embracing the theory of bounded rationality enables legislators to choose more advanced methods for addressing the growing complexity of regulatory challenges. A comparable outcome arises from the legislation's incorporation of the idea of ecological rationality. Schmidt illustrates the effectiveness of adopting a more suitable viewpoint on rationality as follows:

I defend an unorthodox, ecological view of rationality: rationality is about using decision-making procedures that match one's environment and psychological makeup. Good public policy nudges facilitate such a match by adjusting choice environments to a person's decision-making procedure. Such policies can do so either directly or by preventing private actors from creating ill-matched environments.¹¹⁷

4.2. Context and cognition blind-spot

Prohibitions, mandates, and traditional financial incentives operate within a '0-1' logic, compelling compliance through either punishment or reward,¹¹⁸ which prevents them from gradually modulating behaviors or accounting for individual differences.¹¹⁹ By neglecting heuristics, attentional limits and choice architecture, standard regulation mis-specifies how decisions are actually made.

Individuals do not always recognize that a specific regulation applies to their situation (see Puzzled Man in the previous Chapter or legal ignorance in the section above), or due to attention shortage, they require an additional prompt to comply with the rules. A nudge that simplifies life offers significant advantages in a world filled with excessive stimuli and

¹¹⁷ Andreas T Schmidt, 'Getting Real on Rationality—Behavioral Science, Nudging, and Public Policy' (2019) 129 *Ethics* 511, 512. <<https://doi.org/10.1086/702970>> accessed 9 November 2024

¹¹⁸ ...understood within a broader context that includes purely social sanctions, such as ostracism, and positive social incentives, such as prestige.

¹¹⁹ Herald Schmidt, Kristin Voigt and Daniel Wikler, 'Carrots, Sticks, and Health Care Reform - Problems with Wellness Incentives' (2010) 362 *The New England Journal of Medicine* e3. <[10.1056/NEJMp0911552](https://doi.org/10.1056/NEJMp0911552)> accessed 12 November 2024; Mertens and others (n 100); Yuval Feldman, *The Law of Good People: Challenging states' ability to regulate human behavior* (Cambridge University Press 2018) 70.

attention overload.¹²⁰ In light of the extensive body of experiments and implementations, it is difficult to overlook the fact that there exists a wide array of tools that address various regulatory issues in a more nuanced, contextual, and appropriate manner.¹²¹ Therefore, when one incorporates insights from behavioral economics into the existing neoclassical assumptions regarding the nature of legal recipients, the legislator's perspective on the motivations, behaviors, and decisions of legal entities is broadened.¹²² Consequently, the selection of regulatory measures becomes more diversified; the more knowledge the legislator has about legal entities, the more accurately he can formulate legal provisions.¹²³ The following comparative analysis of traditional and behavioral regulations concerning predatory cost practices in short-term loans (which impose excessive financial burdens on weaker consumers) illustrates that tailoring rules 'to fit' the factual legal agent is an effective solution. Standard regulation, usury laws (interest-rate caps), are aimed at lenders which indirectly protect borrowers from excessive increases in loan costs by establishing an upper limit for APR (prohibition of Triple-digit APRs).¹²⁴ If a lender sets an APR higher than the permitted level, such an agreement becomes invalid or unenforceable.¹²⁵ Behavioral regulation on the other hand, the CFPB's 'Two-strikes' rule, targets payday and high-cost installment lenders that

¹²⁰ Sendhil Mullainathan and Eldar Shafir, *Scarcity: Why Having Too Little Means So Much* (Times Books 2013) 206–210.

¹²¹ For instance, emphasizing a specific issue can enhance its prominence, but this may lead to negative consequences, such as reduced focus on other important matters or an overemphasis on a single solution to the detriment of other options (the single action bias). See: Elke U Weber, 'Perception and expectation of climate change: precondition for economic and technological adaptation' in Max H Bazerman, David M Messick, Ann E Tenbrunsel and Kimberly A Wade-Benzoni (eds), *Environment, ethics, and behavior: The psychology of environmental valuation and degradation* (The New Lexington Press/Jossey-Bass Publishers 1997) 339; Elke U Weber, 'Experience-based and description-based perceptions of long-term risk: why global warming does not scare us (yet)' (2006) 70 *Climatic Change* 103, 115. <[10.1007/s10584-006-9060-3](https://doi.org/10.1007/s10584-006-9060-3)> accessed 9 November 2024; Patricia W Linville and Gregory W Fischer, 'Preferences for separating or combining events' (1991) 60 *Journal of Personality and Social Psychology* 5. <<https://doi.org/10.1037/0022-3514.60.1.5>> accessed 9 November 2024; Adam Oliver, Geof Rayner and Tim Lang, 'Is nudge an effective public health strategy to tackle obesity?' (2011) 342 *British Medical Journal* 898. <<https://www.jstor.org/stable/41150305>> accessed 17 August 2024

¹²² Alberto Alemanno and Alessandro Spina, 'Nudging Legally: On the Checks and Balances of Behavioral Regulation' (2014) 12 *International Journal of Constitutional Law* 429. <<https://doi.org/10.1093/icon/mou033>> accessed 6 February 2025

¹²³ Feldman (n 119) 70.

¹²⁴ Will Kenton, 'What Are Usury Laws?' (*Investopedia.com*, 16 January 2024). <<https://www.investopedia.com/terms/u/usury-laws.asp>> accessed 15 September 2025; Meaghan McCabe, 'Whitehouse, Colleagues Introduce Bill to Shield Americans from Sky-High Credit Card Interest Rates' (*Whitehouse.senate.gov*, 14 June 2023). <<https://www.whitehouse.senate.gov/news/release/whitehouse-colleagues-introduce-bill-to-shield-americans-from-sky-high-credit-card-interest-rates/>> accessed 15 September 2025

¹²⁵ Raychelle Heath and Daniella Ramirez, 'What are usury laws and maximum interest rates?' (*Bankrate.com*, 12 March 2025). <<https://www.bankrate.com/credit-cards/zero-interest/does-law-cap-credit-card-interest-rates/>> accessed 15 September 2025

electronically debit borrowers' bank accounts, prohibiting lenders from making more than two consecutive automatic attempts to withdraw loan payments without obtaining new, specific authorization, and requiring advance notices before any further attempts. The rule aims to prevent cascades of nonsufficient-funds (NSF) and overdraft fees triggered by repeated debit attempts.¹²⁶ The re-collection of loan payments from the borrower is contingent upon their active re-authorization for another attempt. Lenders must also provide advance and ‘consumer-rights’ notices. This regulation overdrafts fees when lenders repeatedly attempt to withdraw from an empty account.

Detailed comparisons of the operational mechanisms of both regulations are presented in the table below.

Comparative aspect	Usury law (interest-rate caps)	CFPB „Two-strikes” rule
Type of regulation	command-and-control (prohibition)	behavioral tool, heuristic-blocking nudge, transparent nudge type 2, ¹²⁷ adds additional friction costs (“positive sludge”), ¹²⁸ salience
The aim of the intervention	The intervention targets the excessive APR on loan origination. However, the intervention can suppress headline APR, but evasion via interstate banking and fee-add-ons remains common; caps do not address how repayments are collected.	The intervention recognises present-bias and inertia: many borrowers neglect low balances and do not anticipate compounding NSF charges. Rule inserts administrative friction (fresh consent) and salient notices to break the automatic fee spiral.
The mechanism of the intervention	A statutory ceiling APR (e.g. 36 % on small loans in many states) makes any higher-priced contract void or uncollectable. It is a pure legal prohibition.	This regulation works as a standard ‘cool-off’ – interrupting the sequence of automatic (System 1) payment actions, compelling the borrower to think deliberately (System 2). This halts impulsive choices and necessitates thoughtful evaluation.
Cognitive system targeted by intervention	Targets System 2, prices must be compared. If the rate is bigger than cap the contract is illegal.	Targets System 1 (stop automatic debits) and nudges System 2 (notice gives time to reflect).
Assumptions regarding legal agent	Implied fully rational agent: once prices are capped, borrowers can	Bounded rationality – consumers overlook small-print ACH terms,

¹²⁶ Consumer Financial Protection Bureau, ‘New protections for payday and installment loans take effect March 30’ (*Consumerfinance.gov*, 10 January 2025). <https://www.consumerfinance.gov/about-us/blog/new-protections-for-payday-and-installment-loans-take-effect-march-30/> accessed 15 September 2025

¹²⁷ The intervention requires reflection—the borrower decides whether to consent to another installment withdrawal; the borrower can easily reconstruct the policy-maker’s intention and the means designed to achieve that goal. See Hansen and Jespersen (n 94) 20.

¹²⁸ Sina Shahab and Leonhard K Lades, ‘Sludge and Transaction Costs’ (2024) 8 Behavioural Public Policy 327. <https://doi.org/10.1017/bpp.2021.12> accessed 11 December 2024

	choose freely; no further cognitive help is foreseen.	underestimate overdraft risk, and rarely monitor balances in real time.
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Table 2. Comparison of Standard and Behavioral Policies.

As shown in the preceding analysis and in many other cases, choice architecture interventions centred on information provision are intended to improve access to decision-relevant information by making it more available, comprehensible, and personally salient to the decision-maker.¹²⁹

Behavioral instruments may possess a more robust empirical foundation compared to conventional regulatory mechanisms.¹³⁰ By neglecting them, the legislator forfeits the opportunity to engage with the realms of thought and action of citizens, which are fundamental to their daily decision-making. Behavioral regulations differ from traditional ones in that they are based on a ‘better understanding of and inherent capacity to control human behavior.’¹³¹ As emphasized by Mongin and Cozic, ‘[t]oday's policy research has witnessed a collective effort to substitute traditional welfare economics with a more appropriate theoretical basis for public policies, and nudge is a major inspiration for this endeavour.’¹³² As Jolls emphasises, ‘[b]ehavioral law and economics attempts to improve the predictive power of law and economics by building in more realistic accounts of actors’ behavior.’¹³³ Alemanno and Spina take a similar view: ‘[a]s the understanding of ... heuristics spreads contagiously across jurisdictions, policy makers and administrative agencies seem increasingly ready to design policies that better integrate in their actions how people really behave, not how they are assumed to behave.’¹³⁴

¹²⁹ Mertens and others (n 98) 2.

¹³⁰ Philippe Mongin and Mikaël Cozic, ‘Rethinking Nudge: Not One But Three Concepts’ (2018) 2 Behavioural Public Policy 107, 109. <<https://www.cambridge.org/core/journals/behavioural-public-policy/article/rethinking-nudge-not-one-but-three-concepts/60BEEA6CEDBE6749C31845CF8EF3A91A>> accessed 11 September 2024; Richard H Thaler and Cass R Sunstein, *Nudge: Improving decisions about health, wealth, and happiness* (Yale University Press 2008).

¹³¹ Alemanno and Spina (n 122) 432.

¹³² Mongin and Cozic (n 130).

¹³³ Jolls (n 43) 2.

¹³⁴ Alemanno and Spina (n 122).

4.3. Limited problem coverage

Another limitation of traditional regulatory tools is that they are not suitable for effectively addressing all regulatory issues. Johnson and others support this thesis by providing examples:

In financial decisions, purely economic incentives are not enough to improve choices; for example, even company matching on 401(k) contributions is not enough to achieve 100% participation in savings programs. In food consumption, observed behavior also cannot be reconciled with standard economic models: Altering prices and providing information is generally ineffective in altering consumption. For the environment, economic solutions have included regulating behavior (through building codes and CAFE efficiency standards) and raising the price of energy (e.g., a carbon tax in some countries other than the USA), often without substantial effects.¹³⁵

When it comes to decisions affecting the environment, like reducing energy use, conserving water, and improving land management, attempts have been made to find purely economic solutions. However, psychological biases hinder these efforts, suggesting that promoting behavioral change might be a more effective approach.¹³⁶

Traditional regulations, as they rather rarely rely on sophisticated and nuanced insights into the human thinking process, often fail to effectively support legal agents in preventing unfavorable decisions that arise from predictable errors. Traditional regulatory tools are not designed to account for the complexity of human cognition, and even less so for cognitive errors, which are regarded from the perspective of rational choice theory as mere shortcomings that do not deserve to be taken into consideration. Feldman highlights the limitations of the command-and-control approach, particularly its ‘inability to address people with different levels of awareness of their wrongdoing and different motivations to comply with legal and ethical regulations.’¹³⁷

¹³⁵ Eric J Johnson and others, ‘Beyond nudges: Tools of a choice architecture’ (2012) 23 Marketing Letters 487, 500.
<https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architect> accessed 7 November 2024

¹³⁶ ibidem 498; Elke U Weber, ‘Doing the right thing willingly: behavioral decision theory and environmental policy’ in Eldar Shafir (ed), *The behavioral foundations of policy* (Princeton University Press, 2012) 387.

¹³⁷ Feldman (n 119) 59.

Behavioral insights, on the other hand, ‘lay the foundation for laws and policies that reflect an understanding of where humans stumble.’¹³⁸ As indicated by practical guidelines, behavioral tools are developed through a procedure that requires lawmakers to consider numerous factors, which are typically irrelevant from the perspective of traditional regulations, such as:

1. Decision attributes. What incentives and motivations are associated with the decision-making process?

2. Sources of information. How do individuals gather information, and what types of information do they encounter? It is possible that individuals may feel overwhelmed by the complex nature and wide array of options available to them.

3. Psychological characteristics. Are emotional factors likely to have an impact on the decision?

4. Contextual influences. What external factors—such as social pressure or the complexity of application processes—affect the decision?¹³⁹

4.4. Costly means

The first point is that ‘reward and punishment can be very costly or difficult to enforce.’¹⁴⁰ Sunstein emphasizes that it is a noble aspiration to create public policies that exclusively activate the reflective cognitive system (System 2); however, making individuals better decision-makers is both costly and challenging.¹⁴¹ He also highlights the difficulty in overlooking the fact that often ‘the net benefits of a System 1 nudge are far higher than the net benefits of a System 2 nudge.’¹⁴² The popularity of nudging is associated with the belief that it is beneficial ‘to foster alternatives to traditional regulation and to move towards less-restrictive and lower-cost controls of behaviour.’¹⁴³

It is anticipated that nudges may be more suited for low-cost, rapid wins whereas boosts promise more permanent changes in behavior across a variety of situations. There are studies

¹³⁸ Or Amir and Orly Lobel, ‘Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy’ (2008) 108 Columbia Law Review 2098 2099. <<http://www.jstor.org/stable/40041817>> accessed 2 December 2024

¹³⁹ Kim Ly and others, ‘A Practitioner's Guide to Nudging’ (2013) Rotman School of Management: Research Report Series Behavioural Economics in Action, 1, 5. <<https://www.yumpu.com/en/document/read/53646826/a-practitioners-guide-to-nudging>> accessed 16 December 2024

¹⁴⁰ John, Smith and Stoker (n 4) 363.

¹⁴¹ Sunstein (n 113) 5.

¹⁴² *ibidem*.

¹⁴³ Baldwin (n 3).

indicating that when faced with a choice between employing a norm (e.g., sanction) and a nudge, the nudge is more cost-effective¹⁴⁴ (the results of the cost-benefit analysis favor the nudge).¹⁴⁵ It is generally assumed within the doctrine that the measures derived from behavioral sciences are inexpensive to implement¹⁴⁶ However, some authors argue that there is no evidence to support the claim that a nudge is effectively cheaper than traditional regulatory instruments.¹⁴⁷

Regarding policy influence, the non-mandatory character of these frameworks proved decisive, particularly in the Anglo-American context, where official rhetoric opposed further regulation and enforcement. Equally significant, in an age of fiscal austerity, was the promise that many behavioral interventions could be implemented at low cost.¹⁴⁸

5. Place of nudge in legal system

It is clear that the functioning of nudge differs significantly from that of conventional regulatory instruments, even when tackling the same regulatory challenges. Legislators must consider when it is suitable to implement behavioral interventions versus when it might be more reasonable or effective to rely on traditional methods. An important question also arises regarding the relationship between nudge and traditional regulatory tools: should it complement them, or is it capable of functioning entirely independently?

¹⁴⁴ Michael Hallsworth, 'Do nudges actually work?' (*Behavioural Insights Team Blog*, 27 July 2020) <<https://www.bi.team/blogs/do-nudges-actually-work/>> accessed 2 December 2024; Maria Alejandra Madi, *The Dark Side of Nudges* (Routledge 2020) 79; Bruno S Frey and Jana Gallus, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 11; Marteau, Hollands and Fletcher (n 96); Thaler and Sunstein (n 130).

¹⁴⁵ Shlomo Benartzi and others, 'Should Governments invest more in nudging?' (2017) 28 *Psychological Science* 1041. <<https://doi.org/10.1177/0956797617702501>> accessed 17 December 2024

¹⁴⁶ Hallsworth (n 144); Madi (n 144) 79; Frey and Gallus (n 144) 11; Marteau, Hollands and Fletcher (n 96); Thaler and Sunstein (n 130).

¹⁴⁷ Avishalom Tor, 'The Private Cost of Behavioral Interventions' (2023) 72 *Duke Law Journal* 1673. <<https://scholarship.law.duke.edu/dlj/vol72/iss8/2>> accessed 15 September 2025; Mette Trier Damgaard and Christina Gravert, 'The Hidden Costs of Nudging: Experimental Evidence from Reminders in Fundraising' (2018) 157 *Journal of Public Economics* 15. <<https://doi.org/10.1016/j.jpubeco.2017.11.005>> accessed 15 September 2025; Avishalom Tor, 'The Target Opportunity Costs of Successful Nudges' in Klaus Mathis and Avishalom Tor (eds), *Consumer Law and Economics* (Springer 2021); Avishalom Tor and Jonathan Klick, 'When Should Governments Invest More in Nudging? Revisiting Benartzi et al (2017)' (2022, forthcoming) *Review of Law and Economics*. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4189136> accessed 15 September 2025; Hunt Allcott and others, 'When Do "Nudges" Increase Welfare?' (2025) 115 *American Economic Review* 1555. <<https://www.aeaweb.org/articles?id=10.1257/aer.20231304>> accessed 15 September 2025; Edward L Glaeser, 'Paternalism and Psychology' (2006) 73 *University of Chicago Law Review* 133. 135-138. <<https://chicagounbound.uchicago.edu/uclrev/vol73/iss1/8/>> accessed 15 September 2025

¹⁴⁸ Adam Oliver, *The Origins of Behavioural Public Policy* (Cambridge University Press 2017) 1.

First, a rather obvious rationale for selecting nudge as a solution to a regulatory issue arises when the regulatory problem stems from cognitive errors or heuristics of the legal agent, rather than from their ill will or miscalculation.

If one assumes that law should serve the interests of legal agents (their broadly understood welfare, happiness, or interests), then when the lawmaker is aware that a certain phenomenon is detrimental to the legal agents, he is confronted with a regulatory choice: to impose a prohibition or to otherwise limit the occurrence of this phenomenon. Conly advocates for the clear regulation of personal behaviors in situations where the overall perceived advantages of such regulation to individuals are believed to surpass the generally perceived disadvantages.¹⁴⁹ Conly argues that legislation ought not to regulate the majority of life's facets; however, it should step in when individuals are prone to making choices that could significantly and permanently hinder their capacity to achieve their objectives, particularly in situations where legislation represents the most cost-effective means of reliably preventing such detrimental decisions.¹⁵⁰ Therefore, in situations where the value is clear, traditional regulatory tools may serve as the primary option for legislation. Charles and colleagues indicate that a nudge is particularly well-suited as a regulatory tool when the legal addressee faces difficulty in determining the appropriate course of action:

[i]n some instances incentives require a normative clarity about the balancing of values that may be lacking if they are going to be the policy instrument of choice. Where the harm or benefit of certain actions is more easily judged, then, the traditional tools of reward and punishment might hold sway. Those that engage in late-night violence against fellow citizens after excessive drinking need to be detected and then locked up or fined. But when it comes to those of us who may be wasting energy by our household practices, governments need to consider the option of more subtle tools and balance concerns with the environment with concerns about individual liberty.¹⁵¹

¹⁴⁹ Sarah Conly, *Against Autonomy: Justifying Coercive Paternalism* (Cambridge University Press 2012).

¹⁵⁰ *ibidem*.

¹⁵¹ John, Smith and Stoker (n 4) 363.

According to Wansink, when faced with certain harmful products or behaviors, legislators who opt not to impose a total ban can still resort to nudges that promote safer decision-making among legal agents:

...behavioral economic instruments cannot achieve 100% compliance. For example, the only way to eliminate soda consumption in a school is to eliminate the soda. If we instead approach the problem by allowing choice but place the soda at some disadvantage in the marketplace, we can reduce soda consumption substantially but not eliminate it. To preserve choice, we will necessarily have to allow some individuals to purchase items that are less nutritious. But we can make these choices less convenient or less visible, by moving the soda machines into more distant, less visited parts of the school.¹⁵²

Similarly, Feldman states that when the regulated activity poses a significant risk of immediate harm to others, it is justified to adopt the safest approach and emphasize deterrence.¹⁵³

Alternative methods of addressing the same regulatory issue can be observed through a comparative analysis of regulatory tools, where the legislator, aiming to encourage individuals to adopt healthier eating habits, employed two distinct regulatory instruments: a ban and a nudge.

Comparative aspect	Trans Fatty Acids in Oils and Fats Act ¹⁵⁴	Reducing the size of plates in school cafeterias ¹⁵⁵
Regulation type	Prohibition of industrial trans fats	Environmental cue
The aim of the intervention	Combating obesity and cardiovascular diseases	Combating obesity and cardiovascular diseases, reducing

¹⁵² Just and Wansink (n 66) 2.

¹⁵³ Feldman (n 119) 86.

¹⁵⁴ Commission Regulation (EU) 2019/649 of 24 April 2019 amending Annex III to Regulation (EC) No 1925/2006 of the European Parliament and of the Council as regards trans fat, other than trans fat naturally occurring in fat of animal origin.

¹⁵⁵ Brian Wansink and Koert Van Ittersum, 'Portion size me: downsizing our consumption norms' (2007) 107 *Journal of the Academy of Nutrition and Dietetics* 1103.

<[https://www.jandonline.org/article/S0002-8223\(07\)00747-X/abstract](https://www.jandonline.org/article/S0002-8223(07)00747-X/abstract)> accessed 16 September 2025; Brian Wansink, *Mindless Eating: Why We Eat More Than We Think* (Bantam 2006); Stephen S Holden, Natalina Zlatevska and Chris Dubelaar, 'Whether Smaller Plates Reduce Consumption Depends on Who's Serving and Who's Looking: A Meta-Analysis' (2016) 1 *Journal of the Association for Consumer Research* <<https://doi.org/10.1086/684441>> accessed 22 June 2025

		the amount of food waste ¹⁵⁶
The mechanism of the intervention	The removal of a component from the market; absence of consumer decision, exclusion of System 2	Optical portioning: a reduced surface area results in a smaller food ration without the conscious calculation by the nudgee
Assumptions regarding legal agent	Consumers are not required to analyze food ingredients – the state assumes that they are incapable of doing so (bounded rationality), thus legally mitigating the associated risks.	The consumer automatically (System 1) consumes the meal until the plate is empty, without counting calories.

Table 3. Comparison of Standard and Behavioral Policies.

Why might a legislator opt for a nudge instead of an outright ban? This is because the behavioral tool serves as a means of social dialogue, altering the relationship between the lawmaker and the legal agent, thereby allowing the latter a choice and respecting his freedom. Nudge has gained considerable political and cross-disciplinary academic interest in the United States and United Kingdom,¹⁵⁷ as it appears to offer politicians the opportunity to recast the relationship between state and society. This transformation involves minimizing the influence of mandates and prohibitions wherever feasible, in favor of regulations that honor individual freedom. In order to shape civic behavior, it is not always efficient to use simplistic 1-0 methods.¹⁵⁸ As John et al. pointed out: ‘For governments wanting to connect with its citizens the choices really are nudge or think.’¹⁵⁹

5.1. Nudge as a complementary tool to the traditional policy

When a traditional tool only partially addresses a specific regulatory issue (usually in a way that assumes the legal agent will make logical choices), a nudge can target previously unaddressed elements (heuristics and cognitive biases). Loewenstein explains how this

¹⁵⁶ The Decision Lab, ‘How smaller plates reduced hotel food waste by 20%’ (*thedecisionlab.com*, 23 January 2022).

<<https://thedecisionlab.com/intervention/how-smaller-plates-reduced-hotel-food-waste-by-20>> accessed 16 September 2025; Pelle Guldberg Hansen, ‘Nudge-Experiment: How To Reduce Food Waste Among CEOs’ (*inudgeyou.com*, 30 March 2013). <<https://inudgeyou.com/en/nudge-experiment-how-to-reduce-food-waste-among-ceos/>> accessed 16 September 2025; Camerer and others (n 29) 1249-53.

¹⁵⁷ Stefano DellaVigna and Elizabeth Linos, ‘RCTs to Scale: Comprehensive Evidence From Two Nudge Units’ (2022) 90 *Econometrica* 81. <<https://doi.org/10.3982/ECTA18709>> accessed 24 October 2024; OECD, ‘Behavioural Insights and Public Policy: Lessons from Around the World’ (OECD Publishing 2017). <<https://doi.org/10.1787/9789264270480-en>> accessed 16 September

¹⁵⁸ Wells (n 88).

¹⁵⁹ John, Smith and Stoker (n 4) 363.

operates by referencing examples from working with patients who, despite being aware of healthy habits, struggle to adhere to their doctors' recommendations:

According to status quo and default biases, even if patients know the best course of action, they are likely to adhere to the path of least resistance, doing what is automatic or what they have done in the past. Because of present-biased preferences and intangibility, informing patients about delayed consequences of their behavior is unlikely to have much effect because the costs of adhering to recommendations are often immediate and thus heavily weighted, whereas the benefits are often remote in time (and hence drastically discounted) and amorphous because any single self-harming action has little if any noticeable effect.¹⁶⁰

Therefore, in situations where the provision of information is insufficient to motivate an individual to take a specific action due to behavioral blockages, a nudge serves as an effective tool that can help prevent patients from making self-harming choices.¹⁶¹ Such behavioral policy actions complement traditional policies based on information provision and economic instruments, such as sugar taxes, among others.

According to many authors, traditional and behavioral policies can interact and reinforce each other.¹⁶² Traditional economic policy primarily focuses on 'economic' solutions, such as taxes, incentives, and regulations, to address issues arising from market factors like externalities, misaligned incentives, and information asymmetries. In contrast, 'nudges' provide behavioral solutions to problems often associated with human decision-making flaws, including biases and cognitive errors.

An example of the mutual reinforcement of two interventions (traditional and behavioral) is the tax on sugary drinks and the default option of providing unsweetened

¹⁶⁰ Loewenstein, Brennan and Volpp (n 93).

¹⁶¹ *ibidem*; Marteau, Hollands and Fletcher (n 96) 1493.

¹⁶² George Loewenstein and Nick Chater, 'Putting nudges in perspective' (2017) 1 *Behavioural Public Policy* 26. <https://www.cmu.edu/dietrich/sds/docs/loewenstein/putting_nudges_in_perspective.pdf> accessed 26 October 2024; Oliver, Rayner and Lang (n 121) 899; As the authors said: 'In a wide range of policy fields such as energy, health, financial services, or transport, experimental findings in behavioral research can be used by the administrative and regulatory state in connection with the traditional regulatory tools to produce change.' See: Alemanno and Spina (n 122) 430; Mertens and others (n 198) 7; Carlsson and others (n 3).

beverages in restaurants that offer meals for children. Both regulations are effective, although they operate through entirely different mechanisms.

Comparative aspect	Ley del Impuesto Especial sobre Producción y Servicios (IEPS) art 2, Frac I (Mexico, 2014)	California Senate Bill 1192 (2018) Children's Meal Default Beverages
Type of regulation	Tax on sugary beverages	The default healthy beverage in a kids meal, anchoring, friction cost, status quo, nudge leveraging inertia
The aim of the intervention	Reducing the consumption of sugary beverages - a battle against obesity.	Reducing the intake of sugary beverages - to mitigate health risks linked to sugar consumption ¹⁶³
The mechanism of the intervention	The implementation of taxes on sugary beverages results in significantly higher product prices, which discourages consumers from purchasing such products. ¹⁶⁴	Default effect: the restaurant must offer water/milk; the parent has the option to change (System 1 with option 2). Defaults are based on inertia and status quo bias. Nudgee thinks: 'Since the restaurant offers water, it should be that way'—a belief that a state has superior knowledge regarding the healthy practices. ¹⁶⁵
Assumptions regarding legal agent	The increase in the price of a product leads to the withdrawal of the intention to purchase it. The legal agent acts rationally and performs a straightforward economic calculation.	When the primary option is set as default, the System 1 brain interprets it as 'normal' and does not trigger the need for change. Alteration (requesting a different beverage) necessitates effort (friction cost).
Effectiveness	'...6.3% reduction in the observed purchases of SSBs in 2014 compared with the expected purchases in that same year based on trends from 2008 to 2012.' ¹⁶⁶	'...menus including only policy-consistent beverages significantly increased in California (9.7 % to 66.1 %, P < 0.0001), but remained constant in Wilmington (30.8 %).' ¹⁶⁷

¹⁶³ Food Safety Program, Senate Bill (SB) 1192 Fact Sheet - Healthy by Default Children's Meal Beverage Law

¹⁶⁴ Joshua Petimar, Laura A Gibson and Christina A Roberto, 'Evaluating the Evidence on Beverage Taxes: Implications for Public Health and Health Equity' (2022) 5 JAMA Network Open 1. <<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2792849>> accessed 23 June 2025

¹⁶⁵ Feldman (n 119) 77.

¹⁶⁶ M Arantxa Colchero, Mariana Molina and Carlos M Guerrero-López, 'After Mexico Implemented a Tax, Purchases of Sugar-Sweetened Beverages Decreased and Water Increased: Difference by Place of Residence, Household Composition, and Income Level' (2017) 147 Journal of Nutrition 1552. <<https://doi.org/10.3945/jn.117.251892>> accessed 23 June 2025

¹⁶⁷ Phoebe Harpainter, Marisa M Tsai, Gail Woodward-Lopez, Tara Tracy, Wendi Gosliner, Kathleen McCallops, Isabel Thompson and Allison Karpyn, 'Restaurant kids' meal beverage offerings before and after implementation of healthy default beverage policy statewide in California compared with citywide in Wilmington, Delaware' (2022) 25 Public Health Nutrition 794. <<https://doi.org/10.1017/S1368980021001245>> accessed 23 June 2025

Table 4. Comparison of Standard and Behavioral Policies.

Another example that demonstrates a mutually reinforcing relationship between traditional and behavioral regulations is the public interventions designed to reduce cigarette smoking:

Comparative aspect	Act on Protection of Health Against the Effects of Use of Tobacco and Tobacco Products ¹⁶⁸	Tobacco Advertising and Promotion (Display) (England) Regulations 2010 (SI 2010/445)
Type of regulation	The prohibition of smoking in public places.	Reduction of visual stimuli (cue reduction).
The aim of the intervention	Addressing issues related to smoking behaviors (encouraging quitting) and protecting the health of non-smokers nearby by minimizing their exposure to cigarette smoke.	Protection of both smokers and non-smokers from impulsive cigarette purchases triggered by visual cues.
The mechanism of the intervention	The regulation formally eliminates the possibility of smoking in public places (such as restaurants, cafes, and means of transport), thereby significantly reducing the opportunities and social norms that encourage smoking.	It reduces visual cues that can automatically activate the desire to smoke (System 1). By concealing packaging through a behind-the-counter policy, it decreases the frequency of these automatic impulses.
Assumptions regarding legal agent	The regulation is directed towards System 2 - it assumes that the legal entity is rational and makes decisions based on knowledge of the prohibition and the penalties for its violation.	Smokers are driven by impulses and reflexes (automatism), susceptible to 'triggers' (environmental heuristics). This assumes limited rationality, a lack of conscious control over habits, and difficulty in self-regulation in the presence of strong stimuli.
Effectiveness	'There has been a significant reduction in exposure to tobacco smoke in public places. The most substantial decrease, exceeding twofold, was recorded in food and entertainment establishments (from 36% in 2009 to 14% in 2011).' ¹⁶⁹	'Postban, 90% of never-smokers supported the display ban and indicated that it made cigarettes seem unappealing (77%) and made smoking seem unacceptable (87%).' ¹⁷⁰

¹⁶⁸ Ustawa o ochronie zdrowia przed następstwami używania tytoniu i wyrobów tytoniowych 1995 (Dz.U. 1996 nr 10 poz. 55 z późn. zm.)

¹⁶⁹ Ministerstwo Zdrowia, 'Zakaz palenia w miejscach publicznych' (*Archiwum.mz.gov.uk*, 19 May 2019). <<https://archiwum.mz.gov.pl/zdrowie-i-profilaktyka/uzaleznienia/tyton/zakaz-palenia-w-miejscach-publicznych/>> accessed 21 September 2025 [author's translation]

¹⁷⁰ Allison Ford and others, 'Impact of a ban on the open display of tobacco products in retail outlets on never smoking youth in the UK: findings from a repeat cross-sectional survey before, during and after implementation' (2020) 29 *Tob Control* 282. <[10.1136/tobaccocontrol-2018-054831](https://doi.org/10.1136/tobaccocontrol-2018-054831)> accessed 14 July 2025

Table 5. Comparison of Standard and Behavioral Policies.

The authors propose a taxonomy regarding which type of public policy (behavioral, traditional, or mixed) should be employed in response to specific regulatory issues.¹⁷¹

Many policy measures incorporate both economic and behavioral components, such as the way a tax or incentive is framed.¹⁷² This intersection of traditional policies and nudges is referred to as hybrid policies.¹⁷³ Mertens and Herberz illustrate this by stating that ‘...the impact of economic interventions such as taxes or financial incentives can be enhanced through choice architecture.’¹⁷⁴

Is nudge a standalone regulatory instrument, or is it merely supplementary? Oliver asserts that it is only supplementary tool:

No behavioural economist that I know would argue that nudges should entirely replace, for example, stricter forms of food legislation. Rather, nudges should be seen as an additional tool to complement regulation by moving society incrementally in a direction that might benefit all of us.¹⁷⁵

6. Conclusions

As previously noted in Chapter III, legal agents are categorized into actual and rational addressees. We propose a redefinition of these concepts that incorporates the latest findings from psychology and insights from behavioral economics.

Rational legal agents = *homo oeconomicus*

Factual legal agents = Human (according to Thaler’s terminology)

A legislator who takes into account knowledge of cognitive biases, heuristics, and rules of thumb in the lawmaking activities creates laws with the factual legal agents in mind. Such a legislator thus expands the set of regulatory tools to include more sophisticated, subtle approaches based on experimental and well-documented knowledge of human behavior and decision-making.

¹⁷¹ Loewenstein and Chater (n 162).

¹⁷² Mertens and others (n 98) 7; Loewenstein and Chater (n 162).

¹⁷³ Mertens and others (n 98) 7; Loewenstein and Chater (n 162).

¹⁷⁴ Mertens and others (n 98) 7.

¹⁷⁵ Oliver, Rayner and Lang (n 121).

According to Fuller, a legislator must assume that the legal agent is or can become a responsible individual, capable of understanding rules, adhering to them, and facing consequences.¹⁷⁶ The factual legal agent does not always meet these assumptions; therefore, a dogmatic legislator directs communications not to him, but to the rational legal agent as a subject whose existence is presumed. This perspective has a significant impact on the lawmaking process.

The philosophy of nudge suggests that this way of thinking should be reversed. The legislator should begin to create laws with the factual legal agents in mind. As Wiecha argues, the insights concerning the notion of legal addressees could potentially contribute to the expansion of legal theories in the future. Additionally, these findings may support specific legal principles and could even impact the process of legal interpretation.¹⁷⁷ A revised understanding of legal agents may also affect the manner in which laws are drafted. According to Bruns et al., ‘[b]ehavioural insights put human behaviour at the core of evidence-based policy-making. The great hope has been that such focus can improve existing policies and reveal alternative approaches to policy problems.’¹⁷⁸

Alemanno and Spina also recognize the implications for the legal system that arise from the use of behavioral insights by lawmakers:

Behavioral research, by showing that individuals deviate in predictable ways from neoclassical assumptions of rationality, may have implications for regulatory policy and, as such, is potentially set to revolutionize the way in which policies are formulated and implemented.¹⁷⁹

A properly informed lawmaker tailors regulatory instruments to the cognitive architecture of the legal agent.

The IV chapter has demonstrated how jurisprudence, enriched by insights from behavioral economics and psychology, is undergoing a profound transformation. Building on the findings of Chapters I–III, which traced the limits of the rational-agent paradigm in

¹⁷⁶ Lon L Fuller, *Moralność prawa* (Stefan Amsterdamski tr, Państwowy Instytut Wydawniczy 1978).

¹⁷⁷ Jakub Wiecha, ‘Addressee of the Law: Actual and Rational’ (2024) *Przegląd Prawniczy TBSP UJ* 2023/2 26, 27. <[10.5281/ZENODO.12625613](https://doi.org/10.5281/ZENODO.12625613)> accessed 11 March 2025

¹⁷⁸ Hendrik Bruns, Adrien Fillon, Zacharias Maniadis and Yavor Paunov, ‘“Fear of the Light”? Transparency does not reduce the effectiveness of nudges. A data-driven review’ (2023) University of Cyprus Working Papers in Economics 04-2023, 1.

<<https://www2.aueb.gr/conferences/Crete2023/papers/Maniadis.pdf>> accessed 1 November 2024

¹⁷⁹ Alemanno and Spina (n 122).

economics and law, this chapter has shown that the legislator can no longer design regulations with only the abstract *homo oeconomicus* in mind. Instead, lawmakers increasingly recognise the factual legal agent—a human subject shaped by heuristics, biases, and cognitive constraints.

By mapping out models such as the vulnerable consumer, *homo myopicus*, the *optimistic borrower*, the *boundedly rational actor*, and *homo heuristicus*, the chapter has revealed how legal theory is gradually replacing the idealised rational agent with empirically grounded figures. Each of these models highlights predictable deviations from rationality and legitimises corresponding regulatory responses—from defaults and salience cues, to lender liability, cooling-off periods, or competence-enhancing boosts. Together, they form the backbone of an emerging Behavioral Compliance Theory, one that understands obedience to the law not as a linear product of knowledge, fear, and calculation, but as an outcome shaped by architecture of choice, social norms, and automatic cognitive processes.

The analysis of the limitations of traditional regulation further reinforced this argument. The classical ‘sticks and carrots’ framework, rooted in neoclassical assumptions of rationality, proves too crude, costly, and often ineffective to address the behavioural realities of legal agents. Behavioral interventions—whether nudges or boosts—do not replace traditional instruments but supplement them, offering a more nuanced, empirically informed toolkit for legislators. In this way, Chapter IV establishes the case for a pluralistic regulatory strategy that recognises humans, not abstract Econs, as the real addressees of law.

Yet, as compelling as this behavioural turn may be, it is not without controversy. The very mechanisms that make nudges effective—exploiting heuristics, bypassing reflective cognition, or embedding defaults—also raise pressing normative and practical questions. Does behavioural regulation undermine autonomy or infantilise citizens? Are its effects robust, long-lasting, and efficient in the long run? How should responsibility be allocated when nudged decisions lead to harm? These questions point directly to the critical examination that follows.

Chapter V therefore engages with the ethical and effectiveness-based objections levelled against nudging. It analyses whether nudges respect or erode autonomy, whether they empower or manipulate, and whether their impact justifies their widespread adoption in public law and policy. In doing so, it completes the argumentative arc: having explored the promise of behavioural jurisprudence, the next chapter scrutinises its limits, ensuring that the enthusiasm for behavioural tools is balanced by a rigorous account of their risks, weaknesses, and normative boundaries

Chapter V

Criticism of Nudge in Terms of Ethics and Effectiveness.

1. Introduction

The preceding chapters have demonstrated the intellectual trajectory of nudging: from its conceptual foundations in behavioral economics (Chapter I), through definitional clarification (Chapter II), the analogy of ‘economic man’ with jurisprudential models of legal subjects (Chapter III), and the development of a Behavioral Compliance Theory rooted in empirically grounded assumptions about factual legal agents (Chapter IV). Having outlined this promise, the dissertation must now confront its limits. The very features that make nudges attractive as regulatory instruments—their subtlety, reliance on cognitive shortcuts, and non-coercive design—are also the source of the most powerful objections.

Chapter V therefore undertakes a critical assessment of nudging from two complementary perspectives: ethics and effectiveness. On the ethical plane, the central question is whether nudges, by shaping behavior without restricting formal choice, nonetheless compromise fundamental values of law such as autonomy, freedom, and responsibility. Critics argue that certain nudges—particularly non-transparent defaults or heuristic-triggering devices—bypass reflective cognition, manipulate cognitive weaknesses, and risk infantilising legal subjects rather than empowering them. Does the image of the ‘irrational citizen’ as a regulatory premise erode respect for individuals as legal agents? Does nudging constitute covert paternalism under the guise of libertarian rhetoric? Or can some forms of behavioral intervention, such as boosts, be reconciled with the demand for volitional autonomy?

The second axis of critique concerns effectiveness. Even if ethically permissible, are nudges capable of delivering on their policy promises? The literature increasingly highlights their modest effect sizes, short-term impact, and vulnerability to context sensitivity. Failures take many forms: from spill-over and self-licensing effects, through outright backfires and reactance, to long-term ineffectiveness once recipients habituate to the intervention. Questions also arise about accountability: who bears responsibility when a nudged decision results in harm? Moreover, the reliance on Randomized Controlled Trials (RCTs) as the evidentiary basis for nudging policies has itself been challenged as methodologically fragile, prone to bias, and of uncertain scalability to complex legal and social systems.

This chapter therefore asks: Does nudging, in practice, protect or undermine the autonomy of the legal agent? To what extent can reliance on cognitive biases be reconciled

with the principles of rational agency and democratic legitimacy? Are nudges effective regulatory tools, or do their limitations confine them to minor, context-dependent applications? How reliable is the empirical foundation of behavioral regulation, given methodological and reporting biases? Ultimately, can nudges form a stable and legitimate component of the legislator's toolbox, or are they normatively and practically flawed?

By analysing these questions through a systematic review of doctrinal critiques and empirical evidence, Chapter V provides the necessary counterbalance to the preceding chapters. It ensures that any argument for the adoption of nudging in law and policy is weighed against its ethical costs, practical failures, and the constitutional values at stake.

2. Ethical criticism

2.1. Nudge against autonomy

A nudge, by definition, is intended to safeguard individual autonomy by not restricting the range of choices available and by avoiding the imposition of mandates or prohibitions on end-users. It is meant to act as a benevolent guardian, preventing individuals from stumbling over their own automatic and simplified thought processes. From the perspective of regulatory ethics, it is justifiable for lawmakers to take action aimed at protecting legal subjects from their own erroneous decisions, which could potentially lead to adverse consequences for them.

Critics contend that the nudge mechanism and the underlying model, which is developed in contrast to rational agents, may jeopardize individual autonomy.¹

¹ Anastasia Vugts, Mariëtte Van Den Hoven, Emely De Vet and Marcel Verweij, 'How autonomy is understood in discussions on the ethics of nudging' (2020) 4 *Behavioral Public Policy* 108. <<https://doi.org/10.1017/bpp.2018.5>> accessed 4 November 2024; Ayala Arad and Ariel Rubinstein, 'The People's Perspective on Libertarian-Paternalistic Policies' (2018) 61 *Journal of Law and Economics* 311, 313. <<https://arielrubinstein.tau.ac.il/papers/101.pdf>> accessed 9 December 2024; Bruno S Frey and Jana Gallus, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 11, 14; Anne van Aaken, 'Judge the Nudge: Legal Limits in the EU' in Alberto Alemanno and Anne-Lise Sibony (eds), *Nudge and the law: a European perspective* (Hart Publishing 2015); Alberto Alemanno and Alessandro Spina, 'Nudging Legally: On the Checks and Balances of Behavioral Regulation' (2014) 12 *International Journal of Constitutional Law* 429. <<https://doi.org/10.1093/icon/mou033>> accessed 6 February 2025; Rebecca Zeilstra, 'Nudging and the Safeguards of the Rule of Law' (2024) 25 *German Law Journal* 750, 756. <<https://doi.org/10.1017/glj.2024.30>> accessed 6 February 2025; Danny Scoccia, 'Paternalism and Manipulation'. <https://www.academia.edu/11382085/Paternalism_and_Manipulation> accessed 16 September 2025; Peter C John, Graham Smith and Gerry Stoker, 'Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour' (2009) 80 *The Political Quarterly* 361. <https://www.researchgate.net/publication/230361341_Nudge_Nudge_Think_Think_Two_Strategies_for_Changing_Civic_Behaviour> accessed 24 August 2024; Luc Bovens, 'The ethics of nudge' in Till Grüne-Yanoff and Sven Ove Hansson (eds), *Preference change: Approaches from philosophy, economics and psychology* (Springer 2009) 207, 211. <<https://doi.org/10.1007/978-90-481-2593->

In this section, the violation of autonomy is analyzed from the perspective of several dimensions proposed by Schmidt and Engelen,² as well as Vugts et al.:³ freedom of choice, volitional autonomy, and rational agency.

The first aspect of autonomy focuses on the choices available to individuals. Here, freedom is seen as having opportunities rather than just the act of making choices. Some critics claim that nudges can limit freedom of choice, suggesting they are not as supportive of liberty or easy to resist as supporters claim.⁴ They argue that safeguarding freedom of choice necessitates more than merely refraining from overt coercion; it also involves considering the extent to which individuals maintain control over their own evaluations and decisions.⁵

In the case of certain nudges (particularly those from the category of non-transparent nudges, and advanced in the realm of controllability, as discussed in Chapter II), the control that individuals possess within the decision-making process is constrained by a carefully designed choice architecture. This scenario can occur, for instance, with default options. Johnson et al. observe that ‘...if defaults have an effect because consumers are not aware that they have choices, or because the transaction costs of changing from the default are too high, defaults impinge upon liberty.’⁶ Goldstein and others draw attention to a similar threat associated with the functioning of default options.⁷

¹ [7_10](#)> accessed 18 August 2024; Yavor Paunov, Michaela Wänke and Tobias Vogel, ‘Transparency effects on policy compliance: Disclosing how defaults work can enhance their effectiveness’ (2019) 3 Behavioral Public Policy 187. <<https://doi.org/10.1017/bpp.2018.40>> accessed 6 November 2024

² Andreas T Schmidt and Bart Engelen, ‘The ethics of nudging: An overview’ (2020) 15 Philosophy Compass 1, 4. <<https://doi.org/10.1111/phc3.12658>> accessed 14 November 2024

³ Vugts and others (n 1).

⁴ ‘...nudges may preserve so-called option-freedom, but surely infringe the autonomy-freedom of individuals’. See: Francesco Guala and Luigi Mittone, ‘A political justification of nudging’ (2015) 6 Review of Philosophy and Psychology 385, 386. <<https://doi.org/10.1007/s13164-015-0241-8>> accessed 16 August 2025; See also: Yashar Saghai, ‘Salvaging the concept of nudge’ (2013) 39 Journal of Medical Ethics 487. <<https://jme.bmj.com/content/39/8/487>> accessed 15 August 2024

⁵ Daniel M Hausman and Brynn Welch, ‘To nudge or not to nudge’ (2010) 18 Journal of Political Philosophy 123, 128.

<https://www.researchgate.net/publication/229562409_Debate_To_Nudge_or_Not_to_Nudge> accessed 27 September 2024

⁶ Eric J Johnson and others, ‘Beyond nudges: Tools of a choice architecture’ (2012) 23 Marketing Letters 487, 492.

<https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architecture> accessed 7 November 2024

⁷ The unethical use of default options results in a situation where such a default, although functioning identically to a nudge from a technical standpoint, should not be categorized as a nudge. Utilizing choice architecture to generate benefits for the nudger at the expense of the nudgee does not constitute nudging. See more here: Daniel Goldstein and others, ‘Nudge your customers toward better choices’ (2008) 86 Harvard Business Review 99.

<https://www.researchgate.net/publication/262042571_Nudge_Your_Customers_Toward_Better_Chchoices> accessed 6 November 2024

The second dimension of autonomy is volitional. Relational autonomy refers to the ability to critically examine one's own beliefs and desires, free from coercion, deception, or the overpowering influence of others.⁸ In other words, an individual's autonomy is defined by the degree to which it is challenging for others to impose their desires or control over her.⁹ As stated in the Stanford Encyclopedia, according to coherentist views '...[a]n agent governs her own action if and only if she is motivated to act as she does because this motivation coheres with (is in harmony with) some mental state that represents her point of view on the action.'¹⁰ Volitional autonomy demands that people's actions align with preferences deeply rooted in their identity,¹¹ yet nudge techniques raise concerns that such external influences may undermine the authenticity of those choices.¹²

Lithwick, while addressing the seemingly positive impacts of nudging, warns that the so-called independent decisions made by nudged individuals are actually choices designed by policy-makers for the benefit of those being nudged: '[i]n some ways the whole project involves resetting the default buttons of your life to healthy and wealthy and wise. Of course someone else is doing the resetting, and that is where the problem lies.'¹³ This objection, while valid particularly with regard to non-transparent nudges, is not justified in the context of boosts, which do not impose solutions that manifest a particular preference but merely facilitate the decision-making process by providing information.¹⁴ As Reijula observes: '[b]oosts should just improve each person's ability to achieve his or her respective goals, no matter what they are.'¹⁵

Hausman addresses the issue of autonomy by taking as his starting point Thaler and Sunstein's claim that nudges are ethically permissible only if those nudged regard the chosen option as better than the alternatives.¹⁶ However, because empirical studies show that people

⁸ Marina Oshana, *Personal Autonomy in Society* (Routledge 2006) 20.

⁹ Michael Garnett, 'The Autonomous Life: A Pure Social View' (2014) 92 *Australasian Journal of Philosophy* 143. <<https://philarchive.org/rec/GARTAL-2>> accessed 14 November 2024

¹⁰ Sarah Buss and Andrea Westlund, 'Personal Autonomy', *The Stanford Encyclopedia of Philosophy* (Spring edn 2018) para 2. <<https://plato.stanford.edu/archives/spr2018/entries/personal-autonomy/>> accessed 14 November 2024

¹¹ Schmidt and Engelen (n 2) 4; Vugts and others (n 1) 118.

¹² Zeilstra (n 1) 767; Alemanno and Spina (n 1) 430.

¹³ Dahlia Lithwick, 'Taming Your Inner Homer Simpson: How to Opt Out of Our Own Stupid Choices' *Slate* (12 May 2008). <<https://slate.com/culture/2008/05/cass-sunstein-and-richard-thaler-s-nudge.html>> accessed 23 October 2024

¹⁴ Samuli Reijula and others, 'Nudge, Boost, or Design? Limitations of behaviorally informed policy under social interaction' (2018) 2 *The Journal of Behavioral Economics for Policy*, Special Issue on Nudges and Heuristics 99. <<https://sabeconomics.org/wordpress/wp-content/uploads/JBEP-2-1-14.pdf>> accessed 23 August 2025

¹⁵ *ibidem*.

¹⁶ Daniel M Hausman, 'Nudging and Other Ways of Steering Choices' (2018) 53 *Intereconomics* 17, 19. <<https://doi.org/10.1007/s10272-018-0713-z>> accessed 4 August 2024

often hold conflicting or indeterminate preferences, he asks why economists should trust their judgment about whether a given nudge benefits them (a question explored further in Chapter II).¹⁷ This would lead to a rather controversial conclusion: if individuals are unaware of their own preferences, the legislator may feel justified in disregarding their opinions when deciding what serves their best interests (see more in Section 2.3.).

The concern of autonomy violation through nudging is shared by Schmidt and Engelen, who indicate that '[t]he worry now is that, when we are nudged, we are no longer the "authors" of our choices: They are not really our own anymore in that they do not reflect our own autonomous desires.'¹⁸ This may occur particularly in the case of type 1 nudges that trigger System 1,¹⁹ type 1 non-transparent nudges,²⁰ certain heuristic-triggering nudges,²¹ and mindless nudges.²²

These nudges aim to prompt individuals in a way that skips their reflective thinking, which may result in decisions that do not accurately represent their true preferences. White argues that these nudges can divert people from their authentic desires, ultimately compromising their capacity for self-determination.²³

2.2. Nudge exploits cognitive limitations or bypasses reflective cognitive system

Many scholars emphasize that the nudge mechanism undermines the individual's ability to make independent and autonomous decisions, as it relies on bypassing the human

¹⁷ *ibidem*.

¹⁸ Schmidt and Engelen (n 2) 4.

¹⁹ Cass R Sunstein, 'People Prefer System 2 Nudges (Kind Of)' (2016) 66 *Duke Law Journal* 121. <<https://scholarship.law.duke.edu/dlj/vol66/iss1/3>> accessed 5 December 2024; Philippe Mongin and Mikael Cozic, 'Rethinking nudges' (2014) HEC Paris Research Paper no. ECO/SCD-2014-1067, 1, 6. <https://www.researchgate.net/publication/314476261_Rethinking_Nudges> accessed 5 August 2024; Pelle Guldberg Hansen and Andreas Maaløe Jespersen, 'Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy' (2013) 4 *European Journal of Risk Regulation* 3, 14. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024

²⁰ *ibidem*.

²¹ Fredrik Carlsson, Christina Gravert, Olof Johansson-Stenman and Verena Kurz, 'Nudging as an Environmental Policy Instrument' (2020) 756 *Working Paper in Economics* 1, 4. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3711946> accessed 5 September 2024

²² Julian House and Elizabeth Lyons, 'Towards a Taxonomy of Nudging Strategies' (2013) Rotman School of Management: Research Report Series Behavioural Economics in Action, 1, 4.

²³ As a response to critics, supporters of nudge say that individuals can still make different choices, but the clever psychological tricks behind nudges suggest otherwise. Even if someone has a valid reason to avoid joining a retirement plan, their natural tendency to take the easy route will likely push them to join if that option is set as the default. See more here: Mark D White, 'The Crucial Importance of Interests in Libertarian Paternalism' in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 21, 23.

reflective cognitive system²⁴ and thus may remain in tension with autonomy,²⁵ operating outside the subject's informed consent.²⁶ Hertwig and Grüne-Yanoff explain the mechanism of nudge's impact on the human psyche: 'Nudges co-opt the decision maker's (internal) cognitive and motivational processes and design the (external) choice architecture such that it, in tandem with the (untouched) functional processes, produces a change in behavior.'²⁷ The effect of bypassing System 2 can be caused not only by triggering System 1 but also by exploiting the limitations of the automatic cognitive system, such as inertia, selective attention,²⁸ or emotional evaluation.²⁹ Many authors conclude that the use of nudges amounts to manipulation of the targeted subjects.³⁰

²⁴ Douglas MacKay and Alexandra Robinson, 'The Ethics of Organ Donor Registration Policies: Nudges and Respect for Autonomy' (2016) 16 *The American Journal of Bioethics* 3. <<https://doi.org/10.1080/15265161.2016.1222007>> accessed 14 November 2024; David Rodriguez-Arias and Myfanwy Morgan, "'Nudging" Deceased Donation Through an Opt-Out System: A Libertarian Approach or Manipulation?' (2016) 16 *The American Journal of Bioethics* 25. <<https://doi.org/10.1080/15265161.2016.1222022>> accessed 14 November 2024; Hausman and Welch (n 5); Luc Bovens, 'Real Nudge' (2012) 3 *European Journal of Risk Regulation* 43. <[10.1017/S1867299X00001793](https://doi.org/10.1017/S1867299X00001793)> accessed 6 February 2025; Bart Engelen, 'Nudging and rationality: What is there to worry?' (2019) 31 *Rationality and Society* <<https://doi.org/10.1177/1043463119846743>> accessed 22 June 2025; Nathalie Elgrably-Levy, 'Nudge: a new way of governing that needs oversight' (*Montreal Economic Institute*, September 2023). <<https://www.iedm.org/nudge-a-new-way-of-governing-that-needs-oversight/>> accessed 20 August 2025

²⁵ Alemanno and Spina (n 1) 431; Sofia Ranchordas, 'Nudging Citizens Through Technology in Smart Cities' (2020) 34 *International Review of Law, Computers & Technology* 254, 267. <<https://doi.org/10.1080/13600869.2019.1590928>> accessed 7 February 2025; Cass R Sunstein, *The ethics of influence: Government in the age of behavioral science* (Cambridge University Press 2016) 65; Sunstein (n 19) 5; Frank Furedi, 'Defending moral autonomy against an army of nudgers' (spiked-online.com, 1 November 2010). <<https://www.spiked-online.com/2011/01/20/defending-moral-autonomy-against-an-army-of-nudgers/>> accessed 30 October 2024

²⁶ Lithwick (n 13); Bruns and others, "'Fear of the Light"? Transparency does not reduce the effectiveness of nudges. A data-driven review' (2023) *University of Cyprus Working Papers in Economics* 04-2023, 1. <<https://www2.aueb.gr/conferences/Crete2023/papers/Maniadis.pdf>> accessed 1 November 2024; Ian Dunt, 'Nudge nudge, say no more. Brits' minds will be controlled without us knowing it' *The Guardian* (5 February 2014). <<https://www.theguardian.com/commentisfree/2014/feb/05/nudge-say-no-more-behavioural-insights-team>> accessed 21 December 2024

²⁷ Ralph Hertwig and Till Grüne-Yanoff T, 'Nudging and boosting: Steering or empowering good decisions' (2017) 12 *Perspectives on Psychological Science* 973. <<https://pages.ucsd.edu/~mckenzie/Hertwig&Grune-Yanoff2017PerspectivesPsychSci.pdf>> accessed 15 August 2024

²⁸ Sunstein (n 19) 4.

²⁹ Saghai (n 4) 488.

³⁰ Bovens (n 1); Adam Burgess, "'Nudging" Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market' (2012) 3 *European Journal of Risk Regulation* 3, 10. <<https://www.jstor.org/stable/24323121>> accessed 8 February 2025; Edward L Glaeser, 'Paternalism and Psychology' (2006) 73 *University of Chicago Law Review* 133, 155. <<https://chicagounbound.uchicago.edu/uclrev/vol73/iss1/8/>> accessed 15 September 2025; Evan Selinger and Kyle P Whyte, 'Is There a Right Way to Nudge? The Practice and Ethics of Choice Architecture' (2011) 5 *Sociology Compass* 923, 928–35. <<https://doi.org/10.1111/j.1751-9020.2011.00413.x>> accessed 10 February 2025; Karen Yeung, 'Are Design-Based Regulatory

Saghai argues by invoking the words of other critics:

Some suspect that nudges may subject us to the control of others because of the mechanisms through which they operate... If nudges harness the automatic processes of system 1, as T&S [Thaler and Sunstein] tell us, then their influence is efficacious precisely because the influencee does not deliberate over her choice.³¹

The person being nudged is unaware that they are being subjected to regulation and unconsciously follow the direction proposed by the nudge.³² By bypassing the cognition of the nudgee, they are denied the ability to make conscious and independent decisions. Consequently, it cannot be said that freedom and the right to choose are protected; rather, the individual's right to choose is taken away, and thus their freedom is restricted.³³

Jones et al. have contended that behavioral policies shift authority back to the state and foster the emergence of a new form of passive citizen-subject.³⁴ Hansen and Jaspersen also draw attention to the problem of violating autonomy, or in other words freedom of choice, of legal subjects: 'While it is true in principle that citizens are free to choose otherwise, one can hardly appeal to this in a practical context because the nudge approach to behavioural change is applied exactly in contexts where we tend to fall short of such principles.'³⁵ How could a nudgee possibly become aware that he is being subjected to a nudge, given that some nudges (e.g., non-transparent nudges) operate entirely by bypassing the reflective cognitive system?

Standing somewhat in opposition to the above objections, Saghai denies that a covert nudge could go unnoticed by the nudgee. He emphasizes that triggering the non-reflective system does not always occur outside the nudgee's awareness. Saghai points out that '[t]here is sufficient psychological evidence to believe that attention-bringing capacities can be activated even when an influence is "covert," that is, unannounced, and therefore not explicitly

Instruments Legitimate?' (2014) King's College London Law School Research Paper No. 2015-27, 3. <<https://ssrn.com/abstract=2570280>> accessed 10 August 2025

³¹ Saghai (n 4).

³² Dunt (n 26).

³³ Luciano Floridi, 'Tolerant Paternalism: Pro-ethical Design as a Resolution of the Dilemma of Toleration' (2016) 22 Science and Engineering Ethics 1. <[10.1007/s11948-015-9733-2](https://doi.org/10.1007/s11948-015-9733-2)> accessed 15 August 2025

³⁴ Rhys Jones, Jessica Pykett and Mark Whitehead, 'Psychological Governance and Behaviour Change' (2013) 42 Policy & Politics 159. <<https://doi.org/10.1332/030557312X655422>> accessed 13 January 2025

³⁵ Hansen and Jaspersen (n 19) 5.

indicated to the influencee.’³⁶ He further adds, citing Thompson’s research,³⁷ that ‘[f]or instance, according to some cognitive psychologists, stimuli that produce a strong feeling of rightness (ie, an intuition that the decision is correct) are not likely to be further scrutinized, whereas those that produce a feeling of dysfluency are more likely to trigger scrutiny.’³⁸ Schweizer likewise argues that people are capable of disregarding the effect of nudges.³⁹ Johnson et al. observe that individuals can detect manipulative techniques and possess mechanisms for regaining autonomy when facing default options: ‘[w]hen consumers are aware that defaults may be set as recommendations in some cases, or manipulation attempts in other cases, they exhibit a level of “marketplace metacognition” that suggests they successfully retain autonomy and freedom of choice.’⁴⁰ The argument that a nudgee is capable of recognising manipulation and thus resisting a nudge is frequently invoked to support the view that nudges do not compromise individual freedom. Yet, even the proponents of this view admit that not all nudges are perceptible—some function completely outside the *nudgee*’s conscious awareness.

Referring to the mechanism of nudges, Aaken identifies another risk related to the difficulty of systematically controlling behavioral, invisible, and subliminal instruments of influence:

‘Whereas coercive or mandated action can be legally challenged, persuasive or invisible measures are much harder to contest legally although they may have the same effect. Soft means (social norms, ‘naming and shaming’, playing on emotions, etc.) are not always softer, but they are more difficult to control legally than hard paternalistic measures, such as prohibitions, which can always be legally challenged by the nudgee.’⁴¹

³⁶ Saghai (n 4) 489.

³⁷ Valerie A Thompson, ‘Dual-process theories: a metacognitive perspective’ in Jonathan S Evans and Keith Frankish (eds) *In two minds: dual processes and beyond* (Oxford University Press 2009) 187.

³⁸ Saghai (n 4) 489.

³⁹ Mark Schweizer, ‘Nudging and the Principle of Proportionality: Obligated to Nudge?’ in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 109.

⁴⁰ Johnson and others (n 6) 492.

⁴¹ Anne van Aaken, ‘Constitutional Limits to Nudging: A Proportionality Assessment’ (2015) University of St. Gallen Law School, Law and Economics Research Paper Series, Working Paper No. 2015-03, 5.

<https://www.researchgate.net/publication/314541952_Constitutional_Limits_to_Nudging_A_Proportionality_Assessment> accessed 18 June 2025

Further discussion of the challenges related to the legal control of behavioral tools can be found in Chapter VI.

Rational agency, the third dimension of autonomy, pertains not to the specific goals people aim to achieve, but rather to the methodologies they employ in the decision-making processes. Critics contend that nudges may not only disregard rationality but could also actively compromise it,⁴² as they operate through mechanisms that are either irrational or, at the very least, devoid of rationality (arational).⁴³ Schmidt and Engelen point out that '[e]ven if nudges respect people's freedom and promote their goals and well-being, that nudgers tap into our irrational or arational heuristics and biases means they fail to treat us like rational human beings and thereby condescend and infantilize us.'⁴⁴ A similar concern, namely that nudges may infantilize people, is expressed by many scholars.⁴⁵ Bruns and others, citing Bovens,⁴⁶ emphasize that nudges should not 'serve as substitutes to personal responsibility.'⁴⁷ It is noted that the model of the economic agent formulated within behavioral economics resembles Homer Simpson,⁴⁸ portraying humans as irrational and flawed beings. Schmidt observes that 'some critics object that nudging treats people as irrational. Such treatment might be disrespectful in itself and might crowd out more empowering policies.'⁴⁹ Floridi adds that '...nudging, by shaping the courses of actions rather than the informational interface, run the

⁴² Christian Schubert, 'On the ethics of public nudging: Autonomy and Agency' (2015) MAGKS Joint Discussion Paper Series in Economics, No. 33-2015 <<http://dx.doi.org/10.2139/ssrn.2672970>> accessed 19 April 2025

⁴³ MacKay and Robinson (n 24).

⁴⁴ Schmidt and Engelen (n 2) 5.

⁴⁵ *ibidem*; Aeon J Skoble, 'The dangers of nudging—the use of state coercion to affect behaviour' Fraser Institute (19 January 2018). <<https://www.fraserinstitute.org/commentary/dangers-nudging-use-state-coercion-affect-behaviour>> accessed 3 January 2025; Van Aaken (n 41).

⁴⁶ Bovens (n 1) 207.

⁴⁷ Bruns and others (n 26).

⁴⁸ Stefan Schneider, 'Homo economicus – or more like Homer Simpson?' (2010) Deutsche Bank Research Paper 1. <https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD000000000475711/Homo_economicus_%E2%80%93_or_more_like_Homer_Simpson%3F.pdf?undefined&reaload=vnKoZe8QkdCgIL/WpdaxVXnSbX/fMfiZTd~LFzHfpCXVQbL7nWqj53WojX7wy/1v> accessed 17 December 2024; Mark Whitehead, 'Homo Economicus to Homer Simpson: Psychological governance and new subjectivities' *Psychology Today* (31 March 2014). <<https://www.psychologytoday.com/intl/blog/the-psychological-state/201403/homo-economicus-to-homer-simpson>> accessed 17 December 2024; Joshua Hall, *Homer Economicus: The Simpsons and Economics* (Stanford Economics and Finance 2014); Guilhem Lecouteux, 'The Homer economicus narrative: from cognitive psychology to individual public policies' (2023) 30 *Journal of Economic Methodology* 176. <<https://hal.science/hal-03791951v2/document>> accessed 17 December 2024; Lithwick (n 13).

⁴⁹ Andreas T Schmidt, 'Getting Real on Rationality—Behavioral Science, Nudging, and Public Policy' (2019) 129 *Ethics* 511. <<https://doi.org/10.1086/702970>> accessed 9 November 2024

risk of ethically desensitising, de-skilling, and de-responsabilising agents, who may end up being merely herded, mindlessly and non-responsibly, towards some pre-established options chosen by the designers of the environment.’⁵⁰ Numerous voices in the doctrine argue that instead of nudging people, they should be educated in order ‘to build a more responsible and active citizenry.’⁵¹ They emphasize that enhanced clarity in the presentation of statistical information, along with initiatives aimed at improving public numeracy, can significantly aid individuals in developing more effective risk assessment skills and, consequently, in making better decisions.⁵² According to them, policy-makers should acknowledge individuals as rational decision-makers.⁵³ Waldron expresses his view in line with other critics: ‘I wish... I could be made a better chooser rather than having someone on high take advantage (even for my own benefit) of my current thoughtlessness and my shabby intuitions.’⁵⁴ Many authors maintain that it would be more beneficial for people to promote public policies that support self-empowerment and ‘seeks to make people independent of external influences.’⁵⁵ The goal of such policies is to debias instead of exploiting human limitations.⁵⁶ Floridi proposes replacing nudges with a tool called ‘pro-ethical design,’ defined as ‘an approach to choice architecture that shapes only the information about the actual options available, relying on human intelligence and explicit interests as the pragmatic motivation for action.’⁵⁷ He emphasizes that this tool ‘... not only is respectful of agents’ ability to choose... but actually

⁵⁰ Floridi (n 33) 14.

⁵¹ Burgess (n 30).

⁵² Gerd Gigerenzer, *Risk Savvy: How to Make Good Decisions* (Penguin Books 2015); Holly Sutherland and others, ‘How People Understand Risk Matrices, and How Matrix Design Can Improve Their Use: Findings from Randomized Controlled Studies’ (2022) 42 *Risk Analysis* 1023. <<https://doi.org/10.1111/risa.13822>> accessed 21 January 2025

⁵³ Schmidt and Engelen (n 2) 5. Unlike nudges though, boosts focus on developing new decision skills or enhancing existing ones rather than influencing immediate individual behaviors. The boost program’s proponents contend that individuals can choose the best course of action for a given circumstance if they are educated to do so or once they have the skills to cope with the essential risks, probabilities, and statistics.

⁵⁴ Jeremy Waldron, ‘It’s all for your own good’ (*The New York Review of Books*, 9 October 2014). <<http://www.nybooks.com/articles/archives/2014/oct/09/cass-sunstein-its-all-your-own-good/>> accessed 14 November 2024

⁵⁵ Frey and Gallus (n 1) 14; Martin Binder and Leonhard K Lades, ‘Autonomy-Enhancing Paternalism’ (2015) 68 *International Review for Social Sciences* 3. <<https://doi.org/10.1111/kykl.12071>> accessed 28 December 2024; Chris Mills, ‘Why Nudges Matter: A Reply to Goodwin’ (2013) 33 *Politics* 28. <<https://doi.org/10.1111/j.1467-9256.2012.01450.x>> accessed 28 December 2024; Hausman and Welch (n 5);

⁵⁶ Richard P Larrick, ‘Debiasing’ in Derek J Koehler and Nigel Harvey (eds) *Blackwell handbook of judgment and decision making* (Blackwell Publishing 2004) 316, 317; Christine Jolls and Cass R Sunstein, ‘Debiasing Through Law’ (2006) 35 *Journal of Legal Studies* 199, 200-201. <<https://doi.org/10.1086/500096>> accessed 29 November 2024

⁵⁷ Floridi (n 33) 12.

fosters their abilities to decide about their actions more critically.’⁵⁸ O’Neill raises the objection that the Cabinet Office does not support such an idea, since, as the institution itself states, ‘providing information *per se* often has surprisingly modest and sometimes unintended impacts.’⁵⁹ The report cited by O’Neill suggests that the government should ‘shift the focus of attention away from facts and information, and towards altering the context in which people act.’⁶⁰ According to O’Neill, the assumption of human irrationality thus entails serious consequences for the assumptions and practice of lawmaking:

[t]his is why the proponents of nudgism actively problematise the idea of information, the idea of giving people facts and evidence and political justifications in order that they might make their own decisions... Boiled down, this means: never mind reason, use pressure. And ideally an underhand, sly form of pressure.⁶¹

Challenging the validity of the above objections, Grune-Yanoff argues that there are certain things people simply cannot be taught. Referring to Fodor’s work,⁶² he gives the example of heuristics: ‘[o]ne cannot teach humans to “see” that the two lines in the Müller-Lyer illusion are of equal length; even if people have convinced themselves otherwise, they will still see them as unequal in length.’⁶³

By analogy, the author refers to public policies (boosts and nudges) designed on the basis of behavioral insights, emphasizing that people cannot be taught to be attentive when environmental stimuli cause information overload:

[t]he policymaker might fail to teach people even about malleable features, if contextual factors causing distraction, inattention, or inability are present. Such

⁵⁸ As an example, the author cites speed cameras, which influence drivers’ decisions not by modifying infrastructure but solely by providing information, see: Floridi (n 33) 12.

⁵⁹ Paul Dolan and others, ‘Mindspace: Influencing behaviour through public policy’ (2010) Institute For Government, 1, 15. <<http://www.instituteforgovernment.org.uk/publications/mindspace>> accessed 16 December 2024

⁶⁰ *ibidem* 14.

⁶¹ Brendan O’Neill, ‘A message to the illiberal Nudge Industry: push off’ (spiked-online.com, 1 November 2010). <<https://www.spiked-online.com/2010/11/01/a-message-to-the-illiberal-nudge-industry-push-off/>> accessed 30 October 2024

⁶² Jerry A Fodor, *The Modularity of Mind* (MIT Press 1983).

⁶³ Till Grüne-Yanoff, ‘Behavioral Public Policy, One Name, Many Types. A Mechanistic Perspective’ in Conrad Heilmann and Julian Reiss (eds) *The Routledge Handbook of the Philosophy of Economics* (Routledge 2021) 489.

factors undermine the teachability of heuristics and, thus, constitute modulators of any boost mechanism that seeks to teach them.

Grüne-Yanoff stresses that in situations where it is not possible to effectively enhance the competence of a legal agent or to provide the necessary information through a boost, a nudge remains the only solution capable of eliciting the desired response, since ‘[n]udges, in contrast,... do not operate through teaching agents, are not sensitive to this kind of modulator.’⁶⁴ In a similar vein, Lithwick discusses the inevitability of irrational decisions resulting from a cognitive system that does not function like the model of *homo oeconomicus*. She describes the hope of avoiding ‘one’s inner Homer Simpson’ as ironically the product of an ‘optimism bias.’⁶⁵ She concludes: ‘[i]n other words—painful though it may be to admit—the mere fact that we believe ourselves smart enough to optimize complicated choices may be the most Simpsonic thing about us. I know: D’oh!’⁶⁶

Conly also draws attention to the problem of the insufficient effectiveness of education. She notes that sometimes education, even in the context of the most obvious and widely known issues, proves unable to prevent harmful decisions: ‘...even with something as straightforward and specific as cigarettes, even a really thoroughgoing attempt at education has not been entirely successful...’⁶⁷ To illustrate the problem, she further refers to the example of smoking: ‘more than 20 percent of the American population does smoke, despite the millions of dollars spent in schools and the unmissable warnings on cigarette packages... Educating people out of error is not easy, when errors arise in significant part from cognitive bias.’⁶⁸

2.3. Nudge against liberal assumptions about human nature

Many scholars reject the idea of building public interventions on the basis of an irrational image of human beings, such as Homer Simpson.⁶⁹ In their view, such an idea is

⁶⁴ *ibidem*.

⁶⁵ Lithwick (n 13).

⁶⁶ *ibidem*.

⁶⁷ Sarah Conly, *Against Autonomy: Justifying Coercive Paternalism* (Cambridge University Press 2012) 25.

⁶⁸ *ibidem*.

⁶⁹ Does the government have a duty to treat its citizens as rational individuals? At first glance it seems that it does. This duty may be grounded in the principles that should guide the relationship between the state and its people, particularly three essential values. First, many advocates of liberalism contend that personal autonomy is crucial for legitimate institutions and policies. Regularly overlooking individuals' rational abilities could jeopardize the principle of autonomy. Second, this idea may stem from the state's obligation to respect individuals, which requires a genuine recognition of their rational agency. Finally, the government's perception of its citizens as irrational could be viewed

incompatible with the principles of liberalism.⁷⁰ O'Neill argues that adopting the model of Homer Simpson as the legislator's point of reference opens the door for authority to withdraw from exercising power within the framework of pluralism and public debate. To justify his concerns, he cites official Cabinet Office publications, such as 'people are sometimes seemingly irrational'⁷¹ and adds: 'the elitist politics of the brain treats the mass of the population as not worth seriously engaging with. Indeed its very premise is that we are not rational beings who can be reasoned with, but rather are simply collections of nerve endings and subconscious processes who need to be subjected to a mental MOT.'⁷²

Christman likewise draws attention to the problem of autonomy being undermined by paternalistic power:

...paternalism involves interference with a person's actions or knowledge against that person's will for the purpose of advancing that person's good. Respect for autonomy is meant to prohibit such interventions because they involve a judgment that the person is not able to decide for herself how best to pursue her own good.

as unacceptably manipulative. See more here: Jacob Elster, 'Autonomy in Political Philosophy', *Oxford Research Encyclopedia of Politics* (2020) <<https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-1385>> accessed 13 November 2024; John Christman, 'Autonomy in Moral and Political Philosophy' *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition) para 3. <<https://plato.stanford.edu/archives/fall2020/entries/autonomy-moral/>> accessed 21 December 2024; Olatunji Alabi Oyeshile, 'Respect for Persons as a Principle of Governance' in Felix Adedoyin Adeigbo, Dipo Irele and Amaechi Udefi (eds) *Ethics and Public Affairs* (Ibadan University Press 2014) 83; Marcia Baron, 'Manipulativeness' (2003) 77 *Proceedings and Addresses of the American Philosophical Association* 37, 50. <<https://doi.org/10.2307/3219740>> accessed 16 September 2025

⁷⁰ Liberalism rests on the conviction that '...human beings are essentially rational creatures capable of settling their political disputes through dialogue and compromise.' See: Harry K Girvetz, Terence Ball, Richard Dagger and Kenneth Minogue, 'Liberalism' (*Britannica*, 1998) para 6. <<https://www.britannica.com/topic/liberalism>> accessed 17 December 2024. Liberal concepts of autonomy are not instrumental in nature. In other terms, individuals are not required to exercise their autonomy for the sake of pursuing objective welfare interests; they do not serve as guardians of public welfare, nor are they obligated to secure their own welfare (for instance, maintaining a healthy body). Autonomy remains neutral concerning any particular conception of life; it safeguards the development of an individual's own understanding of a 'good life' and ensures that individuals have the space to make their own choices. See: Van Aaken (n 41). White emphasizes that 'One of the bedrock principles of a liberal society is that each person may pursue his or her own idea of the good life, provided no one interferes wrongfully with others doing the same.' See: White (n 23) 21, 23; O'Neill (n 61); Conly (n 67) 30; Schmidt emphasizes that '...there is something objectionable about the government treating people as irrational...[s]uch treatment might clash with liberal respect, a concern for personal autonomy, and a state's duty not to manipulate its citizens. Such treatment might also have instrumental disvalue: widespread nudging might stunt people's agential capacities and steer our attention away from more empowering policy approaches, such as education. See: Schmidt (n 49).

⁷¹ Dolan and others (n 59).

⁷² O'Neill (n 61).

Autonomy is the ability to so decide, so for the autonomous subject of such interventions paternalism involves a lack of respect for autonomy.⁷³

It is worth noting that the above critical remarks apply primarily to paternalistic nudges. Some critics argue that the nudge doctrine is merely paternalism in disguise.⁷⁴ Farrell and Shalizi, drawing on libertarian critiques of libertarian paternalism, emphasize that ‘[a] nudge is like a shove ... only more disreputable because it pretends otherwise.’⁷⁵ According to the authors, there is a difference between ‘guiding a person’s choices and eliminating them.’⁷⁶ Aaken points out that the fact that people do not always make rational decisions does not mean they should be nudged: ‘[a]lthough behavioural economics is used to justify nudging, at this point the finding that an average human being’s rationality is subject to a de facto limitation does not support any State intervention per se; the ‘ought’ cannot be derived from the ‘is’ (Hume’s law).’⁷⁷ She stresses that nudges may be employed, but only after considering ‘whether the purpose of the nudge is legitimate and whether the concrete measure taken is appropriate to reach the stated aim.’⁷⁸

Furedi, in his famous critique of nudge philosophy, argues that it stems from the conviction about people’s cognitive deficits, which paradoxically leads authorities toward ideological regression in the formulation of public policies: ‘[i]n recent years, the idea that people are too thick to know what is in their best interests has influenced and shaped policymaking on both sides of the Atlantic. In one sense, this diagnosis of intellectual poverty among the masses is simply a new expression of an old idea. Nineteenth-century social engineers regarded the targets of their work – the masses – as both irrational and easily suggestible.’⁷⁹ The only difference Furedi sees between nineteenth-century and contemporary authorities is that today the techniques of influencing the ‘dark masses’ are more sophisticated and based on indisputable evidence: ‘[i]n the twentieth century, psychologists and advertisers argued that the world would be a better place if they could successfully manipulate the public

⁷³ Christman (n 69).

⁷⁴ Hansen and Jespersen (n 19) 5.

⁷⁵ Henry Farrell and Cosma Shalizi, “Nudge” policies are another name for coercion’ (2011) 2837 New Scientist.
<<https://www.newscientist.com/article/mg21228376-500-nudge-policies-are-another-name-for-coercion/>> accessed 30 October 2024

⁷⁶ *ibidem*.

⁷⁷ Van Aaken (n 41) 5.

⁷⁸ *ibidem*. See more detailed discussion in Chapter VI.

⁷⁹ Furedi (n 25).

to act in accordance with the latest ‘scientific’ insights. They expressed their assumption of moral authority openly and with little concern for insulting people’s sensibilities.’⁸⁰

3. Effectiveness issues

Recent findings suggest that altering choices through nudging may be more complex than typically believed, revealing that the impact of nudges is generally limited, irrespective of the type of nudge employed or the behavior being targeted.⁸¹ Many authors point out that nudging has its limits when it comes to effectiveness.⁸² There is an increasing view that interventions relying solely on behavioral insights are insufficient to achieve policy goals on their own.⁸³ As Osman and others observe, ‘What is clear from reviewing the literature is that failed interventions are surprisingly common, that their prevalence presents looming

⁸⁰ *ibidem*.

⁸¹ Gerd Gigerenzer, ‘On the supposed evidence for libertarian paternalism’ (2015) 6 *Review of Philosophy and Psychology* 361.

<<https://doi.org/10.1007/s13164-015-0248-1>> accessed 4 November 2024

⁸² Robert Baldwin, ‘From regulation to behaviour change: giving nudge the third degree’ (2014) 77 *The Modern Law Review* 831, 839. <<http://eprints.lse.ac.uk/64343/1/From%20Regulation.pdf>> accessed 22 August 2024; Stuart Mills and Richard Whittle, ‘Seeing the nudge from the trees: The 4S Framework for evaluating nudges’ (2024) 102 *Public Administration* 580.

<<https://doi.org/10.1111/padm.12941>> accessed 3 January 2025; Nick Chater and George Loewenstein, ‘The I-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray’ (2023) 46 *Behavioral and Brain Sciences* 1.

<<https://doi.org/10.1017/S0140525X22002023>> accessed 3 January 2025; Stuart Mills, ‘Nudge theory: what 15 years of research tells us about its promises and politics’ *The Conversation* (6 September 2023). <<https://theconversation.com/nudge-theory-what-15-years-of-research-tells-us-about-its-promises-and-politics-210534>> accessed 2 January 2025; Jason Collins, ‘Why Behavioral Economics is Itself Biased’ *Economics* (12 December 2020). <<https://economics.com/why-behavioral-economics-is-itself-biased/>> accessed 3 January 2025; Chater and Loewenstein (n 82) 2; Magda Osman, Scott McLachlan, Norman Fenton, Martin Neil, Ragnar Löfstedt, and Björn Meder, ‘Learning from Behavioural Changes That Fail’ (2020) 24 *Trends in Cognitive Sciences* 969.

<<https://doi.org/10.1016/j.tics.2020.09.009>> accessed 13 January 2025; Ariella S Kristal and Ashley V Whillans, ‘What We Can Learn from Five Naturalistic Field Experiments That Failed to Shift Commuter Behaviour’ (2020) 4 *Nature Human Behaviour* 169. <<https://doi.org/10.1038/s41562-019-0795-z>> accessed 13 January 2025; Tamara Dumanovsky and others, ‘Changes in Energy Content of Lunchtime Purchases from Fast Food

Restaurants After Introduction of Calorie Labelling: Cross Sectional Customer Surveys’ (2011) 343 *The British Medical Journal* d4464. <<https://doi.org/10.1136/bmj.d4464>> accessed 13 January 2025

⁸³ John Y Campbell, ‘Restoring rational choice: the challenge of consumer financial regulation’ (2016) 106 *American Economic Review* 1.

<<https://scholar.harvard.edu/campbell/publications/restoring-rational-choice-challenge-consumer-financial-regulation>> accessed 26 October 2024; George Loewenstein and Nick Chater, ‘Putting nudges in perspective’ (2017) 1 *Behavioural Public Policy* 26.

<https://www.cmu.edu/dietrich/sds/docs/loewenstein/putting_nudges_in_perspective.pdf> accessed 26 October 2024; Chater and Loewenstein (n 82) 2; Joshua Petimar and others, ‘Evaluation of the Impact of Calorie Labeling on McDonald’s Restaurant Menus: A Natural Experiment’ (2019) 16 *The International Journal of Behavioral Nutrition and Physical Activity*. <<https://doi.org/10.1186/s12966-019-0865-7>> accessed 13 January 2025; Kamila M Kiszko, Olivia D Martinez, Courtney Abrams and Brian Elbel, ‘The Influence of Calorie Labeling on Food Orders and Consumption: A Review of the Literature’ (2014) 39 *Journal of Community Health* 1248. <<https://doi.org/10.1007/s10900-014-9876-0>> accessed 13 January 2025

consequences for the field of behavioural interventions, and that not all “failures” are the same.⁸⁴ Mertens et al. conducted a meta-analysis of the literature on implemented nudge choice architecture and concluded that ‘... choice architecture interventions promote behavior change with a small to medium effect size of Cohen’s $d = 0.43$, which is comparable to more traditional intervention approaches like education campaigns or financial incentives.’⁸⁵ At the same time, the authors noted that their findings are consistent with other meta-analyses carried out in a similar scope.⁸⁶ There are many reasons for the modest impact of nudges enumerated in the literature. The most significant nudge failures are discussed below, based on the taxonomy proposed by Osman and others.⁸⁷

First major limitation is that nudge focuses on individual decision-making, which may not tackle the root causes of various issues.⁸⁸ For instance, due to its methodological individualism, nudgers might view obesity as a result of poor personal choices that can be improved with nudges. However, this perspective overlooks many biological, social, and cultural factors contributing to obesity. Recent discussions suggest that the increase in obesity is not just about personal responsibility but is influenced by a mix of cheap, high-calorie foods, fewer manual labor jobs, more cars, changing social norms around cooking and eating, and

⁸⁴ Osman and others (n 82) 976.

⁸⁵ Stephanie Mertens and others, ‘The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains’ (2022) 119 *Proceedings of the National Academy of Sciences* 1, 6. <<https://doi.org/10.1073/pnas.2107346118>> accessed 16 December 2024

⁸⁶ Shlomo Benartzi and others, ‘Should Governments invest more in nudging?’ (2017) 28 *Psychological Science* 1041. <<https://doi.org/10.1177/0956797617702501>> accessed 17 December 2024; John Beshears and Harry Kosowsky, ‘Nudging: Progress to date and future directions’ (2020) 161 *Organizational Behavior and Human Decision Processes* 3. <<https://doi.org/10.1016/j.obhdp.2020.09.001>> accessed 17 December 2024; Dennis Hummel and Alexander Maedche, ‘How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies’ (2019) 80 *Journal of Behavioral and Experimental Economics* 47. <<https://doi.org/10.1016/j.socec.2019.03.005>> accessed 17 December 2024; Jon M Jachimowicz and others, ‘When and why defaults influence decisions: a meta-analysis of default effects’ (2019) 3 *Behavioural Public Policy* 159. <<https://doi.org/10.1017/bpp.2018.43>> accessed 17 December 2024; Maximilian Maier and others, ‘No evidence for nudging after adjusting for publication bias’ (2022) 119 *Proceedings of the National Academy of Sciences* 1. <<https://doi.org/10.1073/pnas.2200300119>> accessed 2 January 2025

⁸⁷ Osman et others’ nudge failures taxonomy: (1) no treatment effects (lack of effects), (2) backfiring, when the intervention brings about the opposite from planned effects, (3) treatment offset by negative side effects, when the positive effects of nudge are reduced by negative ones, (4) no treatment effect, but positive side effect, (5) only proxy changes, not actual criterion, (6) positive treatment effect is offset by later behavior, (7) environment does not support change, (8) intervention triggers counteracting forces. Another taxonomy of nudge failures proposed by Osman is the following: backfiring, reactance, boomerang, spillovers, and rebound effects. See: Osman and others (n 82).

⁸⁸ Suzanne Schneider, ‘Technocracy without society: a critique of nudging as an approach to managing risk’ (2024) *International Review Of Applied Economics* 1, 9. <<https://doi.org/10.1080/02692171.2024.2384457>> accessed 8 January 2025; Maria Alejandra Madi, *The Dark Side of Nudges* (Routledge 2020); Frank Mols and others, ‘Why a Nudge is Not Enough: A Social Identity Critique of Governance by Stealth’ (2015) 54 *European Journal of Political Research* 81, 87. <<https://doi.org/10.1111/1475-6765.12073>> accessed 9 January 2025

other aspects of an environment that promotes obesity.⁸⁹ Since personal choices are just one part of the obesity problem, nudging alone may not be very effective. A more comprehensive approach that includes personal, social, cultural, and environmental strategies is likely needed to address obesity properly.⁹⁰ Mols et al. emphasize that human choices—particularly those made in a social context and with a subconscious source—cannot be managed through ‘scientific management’ and ‘nudging tactics’ alone.⁹¹ According to Schneider, the selection of such forms of public intervention reflects a narrow and inadequate model of human beings, one shaped by the imagination of public institutions and experts and rooted in extreme methodological individualism.⁹²

A second limitation of nudge effectiveness is linked to the notion of nudgeability. Löfgren and Nordblom define nudgeability—that is, the degree to which people can be effectively nudged—as dependent on several factors: level of attentiveness, confidence in the outcome when making a choice inattentively, perceived importance of the decision, habits, required effort, imitation of peers’ behavior or adherence to authority’s recommendations, and degree of personal knowledge.⁹³ Löfgren and Nordblom claim that ‘[a] nudge is more likely to be effective the less important the choice is. The less important the decision maker perceives the choice to be, the more likely it is to be made inattentively in the first place.’⁹⁴ From this, one may conclude that nudges are small tools that may be useful in minor situations but are not necessarily capable of addressing complex problems.

A third limitation of nudge effectiveness is its low long-term impact. Osman and others point out that the lack of long-term effectiveness of nudges stems from the fact that ‘... the underlying mechanisms or other relevant factors are not understood because they may compete with or undo the change achieved earlier.’⁹⁵ Research shows that even if a nudge initially produces promising results, this tendency does not persist, and over time the effectiveness of the nudge declines. Studies by Guttman-Kenney et al. on the effectiveness of nudges designed

⁸⁹ Bryony Butland and others, ‘Tackling obesities Future Choices – Project report’ (2007) Government Office of Science Publishing 1.

<<https://assets.publishing.service.gov.uk/media/5a759da7e5274a4368298a4f/07-1184x-tackling-obesities-future-choices-report.pdf>> accessed 24 October 2024

⁹⁰ Baldwin (n 82) 839.

⁹¹ Mols and others (n 88) 87.

⁹² Schneider (n 88) 11.

⁹³ Åsa Löfgren and Katarina Nordblom, ‘A theoretical framework of decision making explaining the mechanisms of nudging’ (2020) 174 *Journal of Economic Behavior & Organization* 1.

<<https://www.sciencedirect.com/science/article/pii/S0167268120300871>> accessed 3 September 2024

⁹⁴ *ibidem* 6.

⁹⁵ Osman and others (n 82).

to encourage credit card holders to pay more than the minimum required payment and reduce their long-run credit card debt demonstrated that the impressive proxy effects of nudges did not translate into long-term outcomes.⁹⁶ The aim of the intervention was to lower credit card debt by applying a motivational nudge to increase repayments and an educational nudge about the costs of carrying credit card debt. Even if the nudges initially prompted a surge in repayment levels, over time their effects did not differ significantly from the pre-intervention baseline. Similar conclusions regarding the long-term effects of nudges were drawn by Carlsson et al., who analyzed the effectiveness of green nudges providing information about household energy consumption based on social comparison. The authors conclude that individuals may require additional nudges, such as reminders, to reinforce desired behaviors,⁹⁷ and they add that ‘...nudges such as social comparisons, reminders, or feedback face the risk of wearing off once an individual has been exposed to them repeatedly...’⁹⁸ Research conducted by Belton and others found that the provision of information may increase the selection of healthy food options in a simulated supermarket environment; however, it appears to have no lasting effect on body mass index or overall lifestyle choices.⁹⁹

The effects of nudges may, worse still, be the opposite of what is intended.¹⁰⁰ This is, first of all, because the nudgee may feel resistance to being influenced by a behavioral intervention. Amir and Lobel emphasize that employing nudges to alter decisions can result in unintended outcomes, particularly as individuals may respond negatively to the perceived

⁹⁶ Benedict Guttman-Kenney and others, ‘The Semblance of Success in Nudging Consumers to Pay Down Credit Card Debt’ (2023) National Bureau Of Economic Research, Working paper 31926 <https://www.nber.org/system/files/working_papers/w31926/w31926.pdf> accessed 25 October 2024; Paul Adams and others, ‘Do Nudges Reduce Borrowing and Consumer Confusion in the Credit Card Market?’ (2022) 89 *Economica* 178. <<https://onlinelibrary.wiley.com/doi/epdf/10.1111/ecca.12427>> accessed 26 October 2024; David Laibson, ‘Nudges Are not Enough: The Case for Price-Based Paternalism’ (2020) <<https://www.aeaweb.org/webcasts/2020/aea-afa-joint-luncheon-nudges-are-not-enough>> accessed 26 October 2024

⁹⁷ Carlsson and others (n 21) 12; Hunt Allcott and Judd B Kessler, ‘The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons’ (2019) 11 *American Economic Journal: Applied Economics* 236. <<https://www.aeaweb.org/articles?id=10.1257/app.20170328>> accessed 3 January 2025

⁹⁸ Carlsson and others (n 21) 12.

⁹⁹ Michèle Belot, Jonathan James and Jonathan Spiteri, ‘Facilitating healthy dietary habits: An experiment with a low income population’ (2020) 129 *European Economic Review* 1. <<https://doi.org/10.1016/j.euroecorev.2020.103550>> accessed 1 February 2025

¹⁰⁰ Osman and others (n 82); Sylvain Chabé-Ferret and others, ‘When Nudges Backfire: Evidence from a Randomized Field Experiment to Boost Biological Pest Control’ (2024) 156 *Annals of Economics and Statistics* 9. <<https://brgm.hal.science/hal-04900081/document>> accessed 3 February 2025

manipulation of their choices.¹⁰¹ In such cases, the aversion to being nudged may be so strong that some people would prefer to pay to avoid the nudge.¹⁰² Carlson and colleagues likewise observe that moral nudges—by prompting a conscious response—are likelier than unnoticed ‘pure’ nudges to provoke backlash when the prompted behavior conflicts with preferences or with aversion to being steered, and they tend to lose effectiveness more quickly.¹⁰³ Hunt Allcott and Judd Kessler show that standard evaluations of home-energy social-comparison letters overstate their welfare benefits—by an estimated factor of 3.7, or roughly US \$620 million—because they ignore private costs to recipients such as self-image concerns, psychological stress and other facets of subjective well-being.¹⁰⁴ Tim Mullett adds that while the letters prompt heavy users to conserve, households already consuming less than their neighbours tend to increase usage.¹⁰⁵ Verena Tiefenbeck’s field study likewise finds that weekly water-saving feedback cuts water use yet raises electricity demand, illustrating how nudges mis-aligned with recipients’ preferences can backfire and create negative side effects that erode or reverse overall welfare gains.¹⁰⁶ Stibe and Cugelman warn that ‘quite often, interventions that start-out with a solid theoretical underpinning, end up radically different after adapting to real-world necessities, complexities, budget limits, stakeholder feedback, market testing and politics’¹⁰⁷ so implementation slippage alone can reverse a nudge’s intended effect. Rizzo and Whitman claim that a nudge can be normatively harmful for parts of its audience; in the case of automatic 401(k) enrolment, low- and middle-income earners who fully engage in a 401K plan starting at age 25 may end up paying more in taxes over their lifetime while spending less. This is because deferring income to later years can increase the amount of Social Security income that gets taxed, lower the benefits of mortgage tax deductions, and push the individual into a higher

¹⁰¹ Or Amir and Orly Lobel, ‘Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy’ (2008) 108 Columbia Law Review 2098, 2116. <<http://www.jstor.org/stable/40041817>> accessed 2 December 2024

¹⁰² Allcott and Kessler (n 97); Andreas Löschel, Matthias Rodemeier and Madeline Werthschulte, ‘When Nudges Fail to Scale: Field Experimental Evidence from Goal Setting on Mobile Phones’ (2020) Cesifo working paper no 8485. <<https://www.cesifo.org/en/publications/2020/working-paper/when-nudges-fail-scale-field-experimental-evidence-goal-setting>> accessed 6 January 2025

¹⁰³ Carlsson and others (n 21) 6.

¹⁰⁴ Mills (n 82).

¹⁰⁵ Tim Mullett, ‘What are the advantages and disadvantages of nudging?’ (*Warwick Business School*, 14 February 2022). <<https://www.wbs.ac.uk/news/what-are-the-advantages-and-disadvantages-of-nudging/>> accessed 29 January 2025

¹⁰⁶ Verena Tiefenbeck, Thorsten Staake, Kurt Roth and Olga Sachs, ‘For better or for worse? Empirical evidence of moral licensing in a behavioral energy conservation campaign’ (2013) 57 Energy Policy 160. <<https://doi.org/10.1016/j.enpol.2013.01.021>> accessed 3 February 2025

¹⁰⁷ Agnis Stibe and Brian Cugelman, ‘Persuasive Backfiring: When Behavior Change Interventions Trigger Unintended Negative Outcomes’ (2016) 9638 Lecture Notes in Computer Science 65, 66. <http://dx.doi.org/10.1007/978-3-319-31510-2_6> accessed 3 February 2025

tax bracket as they age.¹⁰⁸ This means that such an intervention does not always lead to increased retirement savings. Beshears et al. show that peer-comparison letters, intended to boost 401(k) savings, actually reduced contributions among workers excluded from automatic enrollment—a ‘boomerang’ effect driven by discouraging upward comparisons.¹⁰⁹ Tim Mullett observes that the UK’s auto-enrolment rule—requiring employees who meet a weekly-hours threshold to contribute only the statutory minimum—can backfire, because the meagre default is insufficient for retirement security yet reassures workers that they are ‘doing their bit,’ discouraging them from joining more robust pension schemes and thereby harming their long-term welfare.¹¹⁰ Research conducted by Anderson and Robinson on the effectiveness of informational nudges in financial decisions also demonstrated that nudges can produce effects opposite to those intended.¹¹¹ The researchers demonstrate that individuals who mistakenly perceive themselves as financially literate are the most responsive to interventions designed to motivate proactive management of their retirement savings. Consequently, this demographic of consumers experiences a shortfall in their retirement savings relative to what they would have accrued had they opted to remain with the default savings plan. Such negative outcomes of nudging are referred to as a backfire effect, ‘which is what happens when an intervention triggers audiences to adopt the opposite target behavior, rendering the intervention partially responsible for causing the behavior it was designed to reduce.’¹¹²

Another example of a nudge that backfires comes from research by Amanda Agan and Sonja Starr. They investigated the effects of concealing job applicants’ criminal histories from human resources personnel, and their findings indicate that this practice leads to an increase in racial discrimination.¹¹³

¹⁰⁸ Mario J Rizzo, ‘Trust Us’ (*FORBES*, 1 June 2007).

<<https://www.forbes.com/forbes/2007/0618/030.html>> accessed 30 November 2024; Jagadeesh Gokhale, Laurence J Kotlikoff and Todd Neumann, ‘Does participating in a 401(k) raise your lifetime taxes?’ (2001) Working Papers 0108, Federal Reserve Bank of Cleveland.

<<https://ideas.repec.org/p/fip/fedcwp/0108.html>> accessed 30 November 2024

¹⁰⁹ John Beshears and others, ‘The Effect of Providing Peer Information on Retirement Savings Decisions’ (2015) 70 *The Journal of Finance* 1161. <<https://doi.org/10.1111/jofi.12258>> accessed 3 February 2025

¹¹⁰ Mullett (n 105).

¹¹¹ Anders Anderson and David T Robinson, ‘Who Feels the Nudge? Knowledge, Self-Awareness and Retirement Savings Decisions’ (2019) Swedish House of Finance Research Paper No. 17-15.

<<http://dx.doi.org/10.2139/ssrn.3021962>> accessed 30 January 2025

¹¹² Stibe and Cugelman (n 107).

¹¹³ Amanda Agan and Sonja Starr, ‘Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment’ (2018) 133 *The Quarterly Journal of Economics* 191. <<https://doi.org/10.1093/qje/qjx028>> accessed 29 January 2025

A study carried out by researchers from the University of Wyoming and Copenhagen University found that calorie labeling on menus has not effectively encouraged people to choose lower-calorie options. This result may be due to individuals possibly ignoring the labels in order to avoid feelings of guilt related to their calorie consumption.¹¹⁴ Moreover, other studies have shown that the effectiveness of nudges can be reduced by compensatory behaviors. For instance, although being mindful of caloric content might encourage people to opt for healthier food choices, this beneficial impact can be offset by their choice of higher-calorie side dishes and drinks.¹¹⁵ Research conducted by Amy Wilson and her team reveals that information designed to promote the consumption of low-calorie milk inadvertently leads to an increase in the consumption of both low- and high-calorie milk.¹¹⁶

The impact of nudges differs from person to person. For instance, research conducted by Thunström et al. on nudges aimed at encouraging better saving indicates that sending reminder nudges does not affect individuals who would benefit from cutting back on their spending, commonly known as ‘spendthrifts.’ On the other hand, such nudges are likely to reduce spending among those who are excessively frugal, referred to as ‘tightwads.’¹¹⁷ The authors summarize their findings as follows: ‘[o]ur results highlight two important aspects of salience nudges – given the complexity of consumer emotions and information processing, salience nudges can have undesired welfare effects, and the direction of their impact may be the opposite of what was intended.’¹¹⁸ Similar conclusions were reached by Sasaki and others, who conducted an online survey experiment to examine how the Japanese population reacts when nudged with messages encouraging voluntary contact-avoidance and infection-prevention behaviors to control the spread of COVID-19. The authors observed that, depending on the subgroup, the message could produce either the desired or the opposite outcomes.¹¹⁹

¹¹⁴ Linda Thunström and others, ‘Strategic self-ignorance’ (2016) 52 *Journal of Risk Uncertainty* 117. <<https://doi.org/10.1007/s11166-016-9236-9>> accessed 29 January 2025

¹¹⁵ Jessica Wisdom, Julie S Downs and George Loewenstein, ‘Promoting healthy choices: Information versus convenience’ (2010) 2 *American Economic Journal* 164. <<https://www.aeaweb.org/articles?id=10.1257/app.2.2.164>> accessed 1 February 2025

¹¹⁶ Amy L Wilson, Svetlana Bogomolova and Jonathan D Buckley, ‘Lack of Efficacy of a Salience Nudge for Substituting Selection of Lower-Calorie for Higher-Calorie Milk in the Work Place’ (2015) 7 *Nutrients* 4336. <[10.3390/nu7064336](https://doi.org/10.3390/nu7064336)> accessed 29 January 2025

¹¹⁷ Linda Thunström, Ben Gilbert and Chian Jones Ritten, ‘Nudges that hurt those already hurting – distributional and unintended effects of salience nudges’ (2018) 153 *Journal of Economic Behavior & Organization* 267. <<https://doi.org/10.1016/j.jebo.2018.07.005>> accessed 30 January 2025

¹¹⁸ *ibidem*.

¹¹⁹ Shusaku Sasaki, Hirofumi Kurokawa and Fumio Ohtake, ‘Effective but fragile? Responses to repeated nudge-based messages for preventing the spread of COVID-19 infection’ (2021) 72 *The Japanese Economic Review* 371. <<https://doi.org/10.1007/s42973-021-00076-w>> accessed 30 January 2025

Nudges may also produce opposite effects in the long run, when a nudgee engages in indulgent behavior as compensation for good conduct (self-licensing).¹²⁰ This phenomenon is illustrated by studies on information-provision nudges used in charitable campaigns: charitable organizations that issue reminders to prospective donors may experience an increase in contributions; however, this practice can subsequently lead to higher unsubscription rates from their mailing lists, potentially jeopardizing future donation opportunities.¹²¹ A similar phenomenon occurs in the case of healthy nudges: the use of dietary supplements may lead to an increase in their intake while simultaneously diminishing individuals' motivation to participate in physical activity.¹²² Many educational campaigns try to influence food choices by sharing information about the harmful effects of unhealthy eating. However, this approach does not always work as intended. Individuals who are very focused on their weight and fitness, known as 'dieters,' may actually feel a stronger urge for and consume more unhealthy foods after hearing messages about the downsides of certain foods or not exercising.¹²³ Similarly, anti-soda advertisements employed in public campaigns may paradoxically lead to an increase in the consumption of sugary beverages, as evidenced by findings from both laboratory studies and real-world observations.¹²⁴

A further limitation regarding effectiveness is rooted in contextual and cultural differences. Nudges are highly context-sensitive—an instrument that works in one place may fail in another, and thus effectiveness varies.¹²⁵ The authors explain it in the following way: '[c]ontext sensitivity means that the effect size of the intervention depends on the presence or

¹²⁰ Irene Blanken, Niels van de Ven, and Marcel Zeelenberg, 'A meta-analytic review of moral licensing' (2015) 41 *Personality and Social Psychology Bulletin* 540.

<<https://doi.org/10.1177/0146167215572134>> accessed 1 February 2025; Uzma Khan and Ravi Dhar, 'Licensing effect in consumer choice' (2006) 43 *Journal of Marketing Research* 259.

<<https://doi.org/10.1509/jmkr.43.2.259>> accessed 1 February 2025

¹²¹ Mette T Damgaard and Christina Gravert, 'The hidden costs of nudging: Experimental evidence from reminders in fundraising' (2018) 157 *Journal of Public Economics* 15.

<<https://doi.org/10.1016/j.jpubeco.2017.11.005>> accessed 1 February 2025

¹²² Wen-Bin Chiou, Chao-Chin Yang and Chin-Sheng Wan, 'Ironie effects of dietary supplementation: illusory invulnerability created by taking dietary supplements licenses health-risk behaviors' (2011) 22 *Psychological Science* 1081. <<https://www.jstor.org/stable/25835503>> accessed 1 February 2025

¹²³ Nguyen Pham, Naomi Mandel and Andrea C Morales, 'Messages from the food police: how food-related warnings backfire among dieters' (2016) 1 *Journal of the Association for Consumer Research* 175. <<https://doi.org/10.1086/684394>> accessed 1 February 2025

¹²⁴ Jakina Debnam and David R Just, 'Endogenous Responses to Paternalism: Examining Psychological Reactance in the Lab and the Field' (2017) working paper.

<<https://files.webservices.illinois.edu/7370/jakinadebnamjmp.pdf>> accessed 16 September 2025

¹²⁵ Alemanno and Spina (n 1) 432; Alberto Alemanno and others, 'Nudging Healthy Lifestyles—Informing Regulatory Governance with Behavioural Research' (2012) 3 *European Journal of Risk Regulation* 3. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2005672> accessed 16 September 2025

absence of such contextual factors as politicization,¹²⁶ access to technology, and peer networks.¹²⁷ This is due to the fact that individuals' reactions to nudges differ across institutional, social, economic, and cultural contexts.¹²⁸ For this reason, every implementation of a nudge should be preceded by appropriate studies and experiments, even if the nudge has already been applied in another country or under different circumstances. Grüne-Yanoff emphasizes that nudges should be deeply understood:¹²⁹ '[a] one-size-fits-all approach to choice architecture will not always work,¹³⁰ particularly in diverse and sometimes highly politicized environments.'¹³¹ Therefore, it is necessary to test, evaluate, and experiment: '[t]he implication is that the intuitions of choice architects will not always be enough and that choice architectures should be tested in diverse populations of interest.'¹³²

Other undesirable effects of nudges may include slippery slopes¹³³ and spill-over effects.¹³⁴

To sum up the discussion on unintended nudge effects, it is worth referring to Stibe and Cugelman's list of twelve ways in which nudges can backfire: (1) superficialising—blind copying nudge tactics without understanding the underlying strategy; (2) overemphasising—

¹²⁶ David Tannenbaum, Craig R Fox and Todd Rogers, 'On the Misplaced Politics of Behavioural Policy Interventions' (2017) 1 *Nature Human Behaviour* 1. <<https://doi.org/10.1038/s41562-017-0130>> accessed 16 September 2025

¹²⁷ Grüne-Yanoff (n 63) 483; Simon Gächter, Martin Sefton And Daniele Nosenzo, 'Peer Effects In Pro-Social Behavior: Social Norms Or Social Preferences?' (2013) 11 *Journal Of The European Economic Association* 548. <<https://www.jstor.org/stable/24538762>> accessed 16 September 2025

¹²⁸ Petr Houdek, 'Nudging in organizations: How to avoid behavioral interventions being just a façade' (2024) 182 *Journal of Business Research*. <<https://doi.org/10.1016/j.jbusres.2024.114781>> accessed 24 October 2024

¹²⁹ Grüne-Yanoff (n 63).

¹³⁰ Xinghua Wang, Guandong Song and Xia Wan, 'Measuring "Nudgeability": Development of a Scale on Susceptibility to Physical Activity Nudges among College Students' (2022) 12 *Behavioral Sciences* 1. <<https://www.mdpi.com/2076-328X/12/9/318>> accessed 6 January 2025

¹³¹ Johnson and others (n 6) 497.

¹³² *ibidem*.

¹³³ The authors distinguish two groups of slippery slopes: slippery-slope arguments (SSA) and slippery-slope events (SSE). An SSA 'is an argument about how the acceptance of one argument (regarding a decision, act, or policy) may lead to the acceptance of other arguments (regarding other decisions, acts, or policies).' An SSE 'refers to the actual manifestation of the events (decisions, acts, or policies) described in the SSA.' See: Mario J Rizzo and Douglas Glen Whitman, 'The Camel's Nose is in the Tent: Rules, Theories and Slippery Slopes' (2003) 51 *Ucla Law Review* 539, 545. <<http://hdl.handle.net/10211.3/195767>> accessed 29 November 2024

¹³⁴ See more here: Monica MJ Torres and Frederik Carlsson, 'Direct and spillover effects of a social information campaign on residential water savings' (2018) 92 *Journal of Environmental Economics and Management* 222. <<https://www.sciencedirect.com/science/article/abs/pii/S0095069617301651>> accessed 17 September 2025; Alexander Maki and others, 'Meta-analysis of pro-environmental behaviour spillover' (2019) 2 *Nature Sustainability* 307. <<https://www.nature.com/articles/s41893-019-0263-9>> accessed 17 September 2025; Timothy Brennan, 'Behavioral Economics and Energy Efficiency Regulation' (2016) Washington DC: Resources for the Future. <<https://media.rff.org/documents/RFF-DP-16-30.pdf>> accessed 21 January 2025

spotlighting one benefit while hiding attendant harms; (3) defiance arousing—nudgee’s reactance when messages clash with his self-identity; (4) self-licensing—good behavior in one domain excusing lapses in another; (5) self-discrediting—a mismatch between source and message credibility; (6) message hijacking—third parties mocking or recontextualising the nudge; (7) mistailoring—normative messages shown to those already above average; (8) mistargeting—an unintended audience misreads the message; (9) misdiagnosing—faulty behavioral diagnostics underpin the intervention; (10) misanticipating—policy shifts producing unforeseen uses; (11) anti-modelling—repeated exposure to bad behavior that provokes imitation; and (12) reverse norming—highlighting widespread misconduct in hopes of improvement.¹³⁵

3.1. Unreliable research and experimental results

As emphasized in Chapter III, Randomized Controlled Trials (RCTs) are considered the gold standard in work on public policies based on behavioral insights. One of the primary benefits of randomized controlled trials (RCTs) is their ability to discern causal relationships by establishing a control group that does not receive the intervention.¹³⁶ However, Randomized Controlled Trials (RCTs) can face challenges in complex adaptive systems due to the dynamic interconnections that can complicate the maintenance of this isolation for the control group.¹³⁷ As Hallsworth emphasizes in a publication prepared by the Behavioural Insights Team entitled ‘Manifesto,’ such ‘contamination’ poses significant challenges for policy-makers seeking to implement changes across an entire system. For instance, implementing an RCT to evaluate the effects of new tax policies or criminal justice reforms at a national scale proves to be particularly challenging. Additionally, the nature of non-linear changes occurring over time further complicates the application of RCTs.¹³⁸ RCT[s] ‘may deal poorly with the features of complex adaptive systems. We can see this in two main ways: dealing with change and establishing causality.’¹³⁹ The numerous and dynamic interactions within these systems can complicate the maintenance of a distinct control group. Furthermore, an excessive emphasis on

¹³⁵ Stibe and Cugelman (n 107) 74.

¹³⁶ Michael Hallsworth, ‘A Manifesto for Applying Behavioral Science’ (*Behavioural Insights Team Blog*, 20 March 2023) 45. <<https://www.bi.team/publications/a-manifesto-for-applying-behavioral-science/>> accessed 2 December 2024

¹³⁷ *ibidem*.

¹³⁸ *ibidem*.

¹³⁹ *ibidem*.

particular outcomes may lead to the neglect of other significant yet unpredictable results.¹⁴⁰ The emergence of new outcomes is not the sole concern; during the evaluation process, new inquiries, causal relationships, stakeholders, or even objectives may arise that the initial evaluation framework fails to address.¹⁴¹

An illustrative example of such limitations, presented by Rizzo, is found in the experiments conducted by Kahneman and others in 1993, where the researchers identified the ‘peak-end’ rule related to how people remember experiences involving pleasure or pain.¹⁴² This rule suggests that individuals recall events, such as a colonoscopy or immersing a hand in cold water, by focusing on the most intense moment and the final moment of the experience. However, this approach has a flaw known as ‘temporal monotonicity.’ If a longer painful experience ends on a positive note, people may remember it as better than a shorter experience that ends poorly. This can lead to errors when using these memories to make future decisions about similar situations, as it does not truly maximize overall satisfaction (expected utility) over time. Rizzo points out that the experiments conducted by Kahneman et al. were somewhat artificial, as they ended experiences at arbitrary points without considering their true purpose.¹⁴³ For instance, the end of a colonoscopy is not merely when the procedure stops; it also encompasses whether it successfully identified harmful polyps and whether the doctor provided good advice afterward. While these aspects are not purely about pleasure, they are often just as important to individuals. According to Rizzo, the studies by Kahneman and others lacked an important component influencing human choices—namely, the contextual meaning (purpose) that people assign to options in different choice situations; he points out that ‘the experience is arbitrarily truncated at a point where no apparent purpose has been served.’¹⁴⁴ For

¹⁴⁰ *ibidem* 15. HM Treasury and Evaluation Task Force, ‘The Magenta Book: Supplementary Guide: Handling Complexity in Policy Evaluation’ (Gov.uk, 2020).

<<https://www.gov.uk/government/publications/the-magenta-book/supplementary-guide-handling-complexity-in-policy-evaluation-html>> accessed 17 September 2025; Angus Deaton and Nancy Cartwright, ‘Understanding and misunderstanding randomized controlled trials’ (2018) 210 *Social Science & Medicine* 2. <[10.1016/j.socscimed.2017.12.005](https://doi.org/10.1016/j.socscimed.2017.12.005)> accessed 2 December 2024

¹⁴¹ HM Treasury and Evaluation Task Force (n 214); Jessica Heal and Bibi Groot, ‘Running RCTs with complex interventions’ (*Behavioural Insights Team Blog*, 1 November 2017).

<<https://www.bi.team/blogs/running-rcts-with-complex-interventions/>> accessed 3 December 2024; Kristen Underhill, ‘Broken Experimentation, Sham Evidence-Based Policy’ (2020) 38 *Yale Law & Policy Review* 150, 154. <https://scholarship.law.columbia.edu/faculty_scholarship/3276> accessed 27 January 2025

¹⁴² Daniel Kahneman and others, ‘When more pain is preferred to less: Adding a better end’ (1993) 4 *Psychological science* 401. <<https://www.jstor.org/stable/40062570>> accessed 4 December 2024

¹⁴³ Mario J Rizzo, ‘Rationality – What? Misconceptions of Neoclassical and Behavioral Economics’ in Matthew Todd Henderson (ed), *The Cambridge Handbook of Classical Liberal Thought* (Cambridge University Press 2018) 12.

¹⁴⁴ *ibidem*.

this reason, the results of experiments do not necessarily reflect reality, as the very design of the experiment is often ‘unrealistic,’ at times detached from real-life conditions.

Furthermore, there is the problem of how the results of RCT experiments relate to the outcomes of large-scale regulations in the real world. The influence of nudges on behaviors such as vaccination uptake or the prompt payment of fines raises an important inquiry regarding the consistency of effects observed in academic research compared to those seen in broader governmental applications. A critical aspect of this investigation is the scalability of RCTs, as both researchers and policy-makers seek to leverage findings from smaller-scale interventions to inform the design and execution of more extensive programs.¹⁴⁵ There is a significant discrepancy between the effectiveness of nudges reported in academic journals and that demonstrated in studies conducted in nudge units.¹⁴⁶ DellaVigna and Linos undertook to investigate the causes of these discrepancies, attributing them, among other factors, to the size of the study groups.¹⁴⁷ The researchers point out that academics’ optimistic views on nudge effect sizes may influence how they design their trials, leading to variations in statistical power.

Deaton and Cartwright also highlight that ‘researchers put too much trust in RCTs over other methods of investigation.’¹⁴⁸

Szaszi et al. formulated a series of conclusions and recommendations concerning the reporting and publishing of studies in the field of behavioral interventions.¹⁴⁹

Firstly, systematic reviews of choice architecture studies revealed problems with both the design quality and the reporting of the studies. For instance, the reviews noted that the descriptions of the interventions were often too vague for accurate replication.¹⁵⁰ Additionally, due to poor reporting of complex interventions and their interacting parts, it was difficult to

¹⁴⁵ Silvia Saccardo and others, ‘Assessing Nudge Scalability’ (preprint research paper) <<https://ssrn.com/abstract=3971192>> accessed 6 January 2025

¹⁴⁶ Stefano DellaVigna and Elizabeth Linos, ‘RCTs to Scale: Comprehensive Evidence From Two Nudge Units’ (2022) 90 *Econometrica* 81, 83. <<https://doi.org/10.3982/ECTA18709>> accessed 24 October 2024

¹⁴⁷ *ibidem*.

¹⁴⁸ Deaton and Cartwright (n 140).

¹⁴⁹ Barnabas Szaszi and others, ‘A systematic scoping review of the choice architecture movement: Toward understanding when and why nudges work’ (2018) 31 *Journal of Behavioral Decision Making* 355, 362. <<https://doi.org/10.1002/bdm.2035>> accessed 5 November 2024

¹⁵⁰ *ibidem*; Hallsworth (n 136) 51; Patrick E Shrout and Joseph L Rodgers, ‘Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis’ (2018) 69 *Annual Review of Psychology* 487. <[10.1146/annurev-psych-122216-011845](https://doi.org/10.1146/annurev-psych-122216-011845)> accessed 3 December 2024; Hans IJzerman and others, ‘Use caution when applying behavioural science to policy’ (2020) 4 *Nature Human Behaviour* 1092. <<https://www.nature.com/articles/s41562-020-00990-w>> accessed 2 January 2025; Open Science Collaboration, ‘Estimating the Reproducibility of Psychological Science’ (2015) 349 *Science* 943. <<https://doi.org/10.1126/science.aac4716>> accessed 9 January 2025; Matt Tincani and Jason Travers, ‘Replication research, publication bias, and applied behavior analysis’ (2019) 42 *Perspectives on Behavior Science* 59. <[10.1007/s40614-019-00191-5](https://doi.org/10.1007/s40614-019-00191-5)> accessed 30 January 2025

separate the effects of these components.¹⁵¹ Such technical problems in determining the effectiveness of interventions are evident in studies conducted by Skov and others.¹⁵² Nudges are gaining popularity; however, 'to date, the scientific evidence has not been systematically reviewed to enable practitioners and policymakers to implement, or argue for the implementation of, specific measures to support nudging strategies.'¹⁵³ The problem with nudges also concerns the contested usefulness of psychological and behavioral sciences.¹⁵⁴ A more serious issue, widely discussed within the field, is fake research results, which have undermined confidence in the value of behavioral insights.¹⁵⁵

Secondly, the authors draw attention to the phenomenon of publication bias, defined as the tendency to publish results that are statistically significant while ignoring those that are not.¹⁵⁶ This bias partly arises from the well-known challenges of null-hypothesis significance testing, where results showing no effect are often regarded as difficult to interpret.¹⁵⁷ Stibe and Cugelman identify the following causes of this phenomenon:

Scholars or practitioners who report that they have disseminated a backfiring technologies can easily feel embarrassed, or worse, find themselves not just

¹⁵¹ Szaszi and others (n 149) 362; David M Sanbonmatsu, Emily H Cooley and Jonathan E Butner, 'The Impact of Complexity on Methods and Findings in Psychological Science' (2021) 11 *Frontiers in Psychology* 1. <[10.3389/fpsyg.2020.580111](https://doi.org/10.3389/fpsyg.2020.580111)> accessed 3 December 2024

¹⁵² Laurits R Skov and others, 'Choice architecture as a means to change eating behaviour in self-service settings: A systematic review' (2013) 14 *Obesity Reviews* 187. <https://www.researchgate.net/publication/233723061_Choice_architecture_as_a_means_to_change_eating_behaviour_in_self-service_settings_A_systematic_review> accessed 14 August 2024; Trine Riebeling Nørnberg and others, 'Choice architecture interventions for increased vegetable intake and behaviour change in a school setting: A systematic review' (2015) 136 *Perspectives in Public Health* 132. <<https://journals.sagepub.com/doi/10.1177/1757913915596017>> accessed 5 November 2024

¹⁵³ Tamara Bucher and others, 'Nudging consumers towards healthier choices: A systematic review of positional influences on food choice' (2016) 115 *British Journal of Nutrition* 2252. <<https://www.cambridge.org/core/journals/british-journal-of-nutrition/article/nudging-consumers-towards-healthier-choices-a-systematic-review-of-positional-influences-on-food-choice/3D7DE450C7FEB6844E79D773C92A8B14>> accessed 5 November 2024

¹⁵⁴ Dominique Lazanski, A nudge towards totalitarianism? *Institute of Economic Affairs* (9 October 2009). <<https://iea.org.uk/blog/a-nudge-towards-totalitarianism-0>> accessed 2 January 2025

¹⁵⁵ Andrew Hill and Andrew Jack, 'Harvard fraud claims fuel doubts over science of behaviour' *The Financial Times* (29 June 2023). <<https://www.ft.com/content/846cc7a5-12ee-4a44-830e-11ad00f224f9>> accessed 2 January 2025; Noam Scheiber, 'The Harvard Professor and the Bloggers' *The New York Times* (30 September 2023). <<https://www.nytimes.com/2023/09/30/business/the-harvard-professor-and-the-bloggers.html>> accessed 2 January 2025; Jacob Stern, 'An Unsettling Hint at How Much Fraud Could Exist in Science' *The Atlantic* (2 August 2023). <<https://www.theatlantic.com/science/archive/2023/08/gino-ariely-data-fraud-allegations/674891/>> accessed 9 January 2025

¹⁵⁶ Mertens (n 85) 4; Mills (n 82); Hummel and Maedche (n 86) 54; DellaVigna and Linos (n 146) 104 - 112.

¹⁵⁷ Christopher J Ferguson and Moritz Heene, 'A vast graveyard of undead theories publication bias and psychological science's aversion to the null' (2012) 7 *Perspectives on Psychological Science* 555. <<https://journals.sagepub.com/doi/full/10.1177/1745691612459059>> accessed 5 November 2024

stigmatized, but potentially unfunded or unemployed. Without doubt, there are many practical reasons why people do not formally issue published papers that detail how their digital interventions backfire. We believe that this stigma has created a climate where the existing body of scientific literature may possess a heavy publication bias, resulting from the overemphasizing of positive outcomes.¹⁵⁸

Publication and reporting bias can distort the estimated effect sizes of interventions, hinder the investigation of the boundary conditions of nudges, and obstruct the testing of hypotheses that explain the underlying mechanisms.¹⁵⁹

Thirdly, various taxonomies of nudge interventions ('lack of definitional and conceptual clarity')¹⁶⁰ appear in the literature, creating challenges for researchers. This situation complicates the accurate replication and implementation of interventions and the development of systematic reviews.¹⁶¹ The reasons for these challenges are multifaceted. First, different classifications are based on different criteria, either focusing on cognitive processes or the interventions themselves. Second, the categories in these classifications can be overlapping and incomplete, meaning one label might represent multiple techniques, and not all nudge interventions are included in the labels.¹⁶²

The authors conclude by listing recommendations: (1) to harmonize the taxonomy of nudges (ensure a common nomenclature), (2) to use reporting guidelines,¹⁶³ and (3) they suggest using public preregistration systems because it can help reduce publication bias and ensure high-quality reporting.¹⁶⁴

¹⁵⁸ Stibe and Cugelman (n 107) 66.

¹⁵⁹ Szaszi and others (n 149) 363; Maier and others (n 86).

¹⁶⁰ Gareth J Hollands and others, 'Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions' (2013) 13 BMC Public Health 1, 2. <<https://doi.org/10.1186/1471-2458-13-1218>> accessed 14 December 2024

¹⁶¹ The House of Lords, Science and Technology Select Committee 'Definitions, categorisation and the ethics of behaviour change interventions' (Parliament.uk, 2011). <<https://publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/17905.htm#note23>> accessed 17 August 2024

¹⁶² Szaszi and others (n 149) 362.

¹⁶³ See for example: Jake Anders and others, 'Evaluation of Complex Whole-School Interventions: Methodological and Practical Considerations' (2017) Education Endowment Fund. <<https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluation/eef-evaluation-reports-and-research-papers/methodological-research-and-innovations/evaluation-of-complex-whole-school-interventions>> accessed 3 December 2024; Colin Begg and others, 'Improving the quality of reporting of randomized controlled trials: The CONSORT statement' (1996) 276 JAMA 637. <[10.1001/jama.276.8.637](https://doi.org/10.1001/jama.276.8.637)> accessed 3 December 2024; Marcus R Munafò and others, 'A manifesto for reproducible science' (2017) 1 Nature Human Behaviour 1. <<https://www.nature.com/articles/s41562-016-0021#citeas>> accessed 2 January 2025; IJzerman and others (n 150).

¹⁶⁴ Szaszi and others (n 149) 364.

4. Conclusions

The fifth chapter has shown that nudging, while initially celebrated as a gentle and cost-effective regulatory innovation, faces serious normative and practical objections. On the ethical plane, the analysis revealed that behavioral interventions often operate by bypassing reflective cognition, raising fundamental concerns about autonomy and respect for the agency of individuals. Critics have argued that nudges can infantilise people, exploit cognitive shortcuts, and shift responsibility for social risks onto citizens themselves, thereby undermining the very values of freedom and dignity that legal systems are bound to protect.

From the perspective of effectiveness, the findings are equally sobering. Nudges often deliver modest or short-lived results, are highly context-dependent, and are prone to backfire or spill-over effects. Their reliance on RCTs as evidence has also been criticised as methodologically fragile, with weak predictive value for complex regulatory environments. These shortcomings suggest that while nudges may supplement the legislator's toolbox, they cannot replace more robust forms of legal intervention, nor can they be treated as a panacea for structural regulatory problems.

Together, these findings highlight a fundamental paradox: the very qualities that make nudges appealing—subtlety, non-coerciveness, low cost—are also those that expose them to ethical suspicion and empirical fragility. This duality calls for a more rigorous normative framework. If nudges are to be used within constitutional democracies governed by the rule of law, they must not only be tested for effectiveness but also subjected to principles of legality, transparency, proportionality, and accountability.

This recognition leads directly to the analysis undertaken in Chapter VI. Having examined nudges as behavioral tools and their ethical and practical limitations, the dissertation now turns to a systematic legal critique. Chapter VI asks whether nudges, as instruments of governance, are compatible with the constitutional principles of legality, predictability, equality, and fairness; whether their use undermines democratic deliberation and the publicity principle; and whether the current absence of legal safeguards amounts to a dangerous circumvention of the rule of law. In short, while Chapter V has highlighted why nudges may be ethically and practically flawed, Chapter VI investigates whether they can ever be reconciled with the foundational principles of jurisprudence itself.

Chapter VI

Political and legal criticism of nudge. The proposition of legal safeguard.

...the ... problem with the nudge state is that it utterly rearranges the traditional democratic relationship. In the modern political era, it is supposed to be governments that shape themselves in response to what people want, not people who reshape their lifestyles in response to what the government wants. Democracy is meant to involve the formulation of a government that expresses the people's will; it is about the people putting pressure on the authorities to believe in and pursue certain ideals. Under the nudge tyranny that is turned totally on its head, as instead the government devises more and more ways to put pressure on us to change.¹

~Brendan O'Neill

1. Introduction

This chapter addresses the legal criticism of nudging, moving from the ethical and practical concerns discussed previously to a systematic examination of the compatibility of behavioral interventions with the foundational principles of law and democracy. While proponents of libertarian paternalism argue that nudges are benign, cost-effective, and non-coercive tools that preserve freedom of choice, a growing body of legal scholarship questions whether such interventions respect the rule of law and constitutional safeguards.

The analysis proceeds from several interrelated perspectives. First, critics argue that nudges may conflict with the principle of legality, particularly where their subtle and informal character allows them to bypass established procedures of legislative scrutiny and democratic deliberation. Secondly, nudges have been accused of undermining the principles of fairness, equality, and predictability of law, by producing discriminatory effects or operating in ways that citizens cannot anticipate or contest.

The chapter also examines the problem of accountability: if governments influence citizens' decisions through behavioral design, questions arise about who bears responsibility for harmful or unintended consequences of these choices. Related to this is the accusation of government overreach and technocratic abuse, whereby policy-making becomes increasingly guided by expert-driven nudge units,' at the expense of public debate and democratic

¹ Brendan O'Neill, 'A message to the illiberal Nudge Industry: push off' (*spiked-online.com*, 1 November 2010). <<https://www.spiked-online.com/2010/11/01/a-message-to-the-illiberal-nudge-industry-push-off/>> accessed 30 October 2024

participation. Finally, critics highlight the risk that nudges may be used as superficial solutions—masking the lack of political will to address structural problems, while simultaneously shifting responsibility for regulatory failures onto individuals.

Against this background, the chapter explores whether nudges can be reconciled with the rule of law through the development of appropriate safeguards. Drawing on analogies with the jurisprudence of the European Court of Human Rights, proposals are considered to distinguish trivial interventions from those with serious consequences for autonomy, dignity, and fundamental rights, thereby ensuring that the use of behavioral regulation remains subject to legality, proportionality, and democratic oversight.

2. Political criticism

2.1. Incompetent government

From an organizational perspective, the implementation of public policies based on the expertise of specialized governmental or quasi-governmental units (so-called ‘nudge units’) constitutes nothing less than a form of technocratic governance.² As Sunstein himself observed: ‘experts are generally right, and ordinary people are generally wrong.’³ The doctrinal core of technocratic risk management is framed as a ‘science’ or as pure analysis,⁴ and—just like the process of designing and implementing nudges—it is expected to proceed on the basis of data gathering, testing, option analysis, and evidence-based reasoning.⁵

However, scholars from various disciplines have questioned the assumption that experts can accurately determine what constitutes a rational or appropriate decision for the general

² Zachary Liscow and Daniel Markovits, ‘Democratizing Behavioral Economics’ (2022) 39 Yale Journal on Regulation 1217, 1268. <<https://doi.org/10.2139/ssrn.4012996>> accessed 21 January 2025; Kristen Underhill, ‘Broken Experimentation, Sham Evidence-Based Policy’ (2020) 38 Yale Law & Policy Review 150. <https://scholarship.law.columbia.edu/faculty_scholarship/3276> accessed 27 January 2025

³ Cass R Sunstein, *Risk and Reason: Safety, Law, and the Environment* (Cambridge University Press 2002) 55.

⁴ Suzanne Schneider, ‘Technocracy without society: a critique of nudging as an approach to managing risk’ (2024) International Review Of Applied Economics 1, 6. <<https://doi.org/10.1080/02692171.2024.2384457>> accessed 8 January 2025

⁵ Terje Aven, ‘Risk Assessment and Risk Management: Review of Recent Advances on Their Foundation’ (2016) 253 European Journal of Operational Research 1, 3. <<https://doi.org/10.1016/j.ejor.2015.12.023>> accessed 8 January 2025; Policy making based on behavioral economics insights is often referred as ‘BLE’ (behavioral law and economics) or ‘EBPM’ (evidence-based policy-making) defined as ‘the systematic use of empirical research evidence by legislators and agency personnel when making government decisions.’ See: Underhill (n 2) 153; See also: Liscow and Markovits (n 2);

public.⁶ Hansen and Jaspersen note that ‘...nudging can encourage abuse of power by technocrats’⁷ Similarly, Mols et al. argue that nudge-based governance restricts individual choice to the vision of what is ‘right,’ as defined by elites. In their words: ‘nudging is an inherently elitist choice-limiting technique, used to achieve what those in positions of authority (politicians, policy makers and experts) consider positive public good outcomes.’⁸

Farrell and Shalizi reach similar conclusions, emphasizing that the central problem with nudging lies in the presumption underlying libertarian paternalism—that ‘...technocrats understand what ordinary people want better than the people themselves.’⁹ In the authors’ view, there is no reason to assume that technocrats, notwithstanding their expertise, know what is good for citizens: ‘[i]t is doubtful that governments can prove that the interventions indeed enhance agents’ well-being.’¹⁰

O’Neill underscores that the subliminal mode of operation characteristic of nudges creates a situation in which authority effectively thinks on behalf of citizens, deciding what is good or bad for them. Through the use of behavioral stimuli, it may even micromanage people. The author voices his concerns:

It’s about finding ways to change how individuals think and behave so that they conform to some preordained, elite-decided view of what a decent person is (booze-

⁶ Mark D White, ‘The Crucial Importance of Interests in Libertarian Paternalism’ in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 21, 23; Aeon J Skoble, ‘The dangers of nudging—the use of state coercion to affect behaviour’ Fraser Institute (19 January 2018). <<https://www.fraserinstitute.org/commentary/dangers-nudging-use-state-coercion-affect-behaviour>> accessed 3 January 2025; Jason Collins, ‘Why Behavioral Economics is Itself Biased’ *Economics* (12 December 2020). <<https://economics.com/why-behavioral-economics-is-itself-biased/>> accessed 3 January 2025; Underhill (n 2); Nathalie Elgrably-Levy, ‘Nudge: a new way of governing that needs oversight’ (*Montreal Economic Institute*, September 2023). <<https://www.iedm.org/nudge-a-new-way-of-governing-that-needs-oversight/>> accessed 20 August 2025

⁷ Pelle Guldberg Hansen and Andreas Maaløe Jespersen, ‘Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy’ (2013) 4 *European Journal of Risk Regulation* 3, 12. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024

⁸ Frank Mols and others, ‘Why a Nudge is Not Enough: A Social Identity Critique of Governance by Stealth’ (2015) 54 *European Journal of Political Research* 81, 87. <<https://doi.org/10.1111/1475-6765.12073>> accessed 9 January 2025

⁹ Henry Farrell and Cosma Shalizi, ‘“Nudge” policies are another name for coercion’ (*Newscientist.com*, 2 November 2011). <<https://www.newscientist.com/article/mg21228376-500-nudge-policies-are-another-name-for-coercion/>> accessed 30 October 2024

¹⁰ Ayala Arad and Ariel Rubinstein, ‘The People’s Perspective on Libertarian-Paternalistic Policies’ (2018) 61 *Journal of Law and Economics* 311, 314. <<https://arielrubinstein.tau.ac.il/papers/101.pdf>> accessed 9 December 2024; Roberto Fumagalli, ‘Decision Sciences and the New Case for Paternalism: Three Welfare-Related Justificatory Challenges’ (2016) 47 *Social Choice and Welfare* 459. <[10.1007/s00355-016-0972-1](https://doi.org/10.1007/s00355-016-0972-1)> accessed 22 September 2025; Skoble (n 6).

free, non-fat, eco-aware). Politics no longer has any macro-visions for society, so instead it aims obsessively to micromanage the way that individuals think.¹¹

Similar concerns are raised by other authors,¹² who emphasize that no official or governmental expert possesses sufficient knowledge to determine, on behalf of individuals, what is subjectively good for them, nor do they have access to the knowledge of how individuals themselves define their own interests. Grounding public policies in the philosophy of nudging leads precisely to such a situation: authorities make decisions for people without full access to their preferences. White illustrates this problem with a simple example of a choice situation, in which the decision-maker is artificially ascribed a particular motivation, despite the absence of any knowledge about his or her true intentions. The author examines a decision-making scenario where, despite the prevailing advice to avoid sugar intake, the individual chooses a large slice of chocolate cake for reasons that a paternalistic legislator overlooks:

A person who chooses the huge slice of chocolate cake in the cafeteria may be doing so to celebrate a colleague's birthday, to flirt with the person at the dessert counter, or simply because he likes chocolate cake, each in full knowledge of the adverse health consequences. People have any number of interests they are acting toward at any given time, interests that are complex, multifaceted, and, most important, subjective - many times not fully known even to the person making choices, much less an outside observer. Designers of nudges do not and indeed cannot know these interests, and by necessity choose interests toward which they steer people.¹³

Brennan similarly highlights the problem of policy-makers' lack of knowledge regarding the broader context of individual decisions. He points out that expert determinations can restrict consumer choices which, although they may appear irrational—such as the preference for incandescent light bulbs or the decision to drive a fuel-inefficient sports car—

¹¹ O'Neill (n 1).

¹² Dominique Lazanski, A nudge towards totalitarianism? *Institute of Economic Affairs* (9 October 2009). <<https://iea.org.uk/blog/a-nudge-towards-totalitarianism-0>> accessed 2 January 2025; White (n 6) 21, 23; Collins (n 6); Skoble (n 6); Mark D White, 'Nudging Debt: On the Ethics of Behavioral Paternalism in Personal Finance' (2017) 28 *Journal of Financial Counseling and Planning* 225, 227. <<http://dx.doi.org/10.1891/1052-3073.28.2.225>> accessed 19 April 2025

¹³ White (n 6) 21, 23.

may in fact provide personal benefits, including superior lighting aesthetics or the enjoyment of increased speed.¹⁴

According to Zeilstra, in practice legislators applying nudges do not always act with the intention of producing outcomes that reflect the decisions a nudgee would make if acting fully in accordance with his or her own interests. As the author stresses, not every policy serves objectives that are directly aligned with the immediate interests of citizens. For this reason, public institutions may not consistently implement nudges in a manner consistent with the principles of libertarian paternalism.¹⁵ For example, nudges aimed at encouraging climate-friendly behaviors may psychologically motivate individuals to adopt such behaviors, even when these actions do not coincide with their short-term self-interest.¹⁶ A more detailed discussion of non-paternalistic nudges is provided in Chapter II.

An important observation is that evidence-based policy-making has its limits; not every governmental decision should rely exclusively on scientific evidence.¹⁷ The reliance on research during the policy-making process is itself not immune to numerous pathologies, ranging from ‘the neglect and deliberate undermining of research (broken experimentation), to the distortion of evidence (a form of sham EBPM), to the disingenuous use of selective evidence to de-fund entire program categories (ratcheting).’¹⁸

In practice, numerous obstacles hinder the effective implementation of behavioral interventions (also called Evidence-Based Policy-Making). Oliver and colleagues identified several such barriers: ‘[t]he most frequently reported barriers were the lack of availability to research, lack of relevant research, having no time or opportunity to use research evidence, policymakers’ and other users not being skilled in research methods, and costs.’¹⁹ Other significant factors include the quality of collaborative relationships between researchers and

¹⁴ Timothy Brennan, ‘Behavioral Economics and Energy Efficiency Regulation’ (2016) Washington DC: Resources for the Future. <<https://media.rff.org/documents/RFF-DP-16-30.pdf>> accessed 21 January 2025

¹⁵ Rebecca Zeilstra, ‘Nudging and the Safeguards of the Rule of Law’ (2024) 25 German Law Journal 750, 754. <<https://doi.org/10.1017/glj.2024.30>> accessed 6 February 2025

¹⁶ Helena Siipi and Polaris Koi, ‘The Ethics of Climate Nudges: Central Issues for Applying Choice Architecture Interventions to Climate Policy’ (2022) 13 European Journal of Risk Regulation 223. <<https://doi.org/10.1017/err.2021.49>> accessed 7 February 2025

¹⁷ Underhill (n 2) 155; John J Donohue III and Justin Wolfers, ‘Uses and Abuses of Empirical Evidence in the Death Penalty Debate’ (2006) 58 Stanford Law Review 791, 793. <<https://ssrn.com/abstract=870312>> accessed 27 January 2025

¹⁸ Underhill (n 2) 155.

¹⁹ Kathryn Oliver and others, ‘A Systematic Review of Barriers to and Facilitators of the Use of Evidence by Policymakers’ (2014) 14 BMC Health Services Research 2, 4. <<https://doi.org/10.1186/1472-6963-14-2>> accessed 27 January 2025

policy-makers, the accessibility of research, the financial implications of utilizing evidence, and the comprehensibility of research outcomes.²⁰

The authors further note that policy-makers may lack the requisite knowledge to design beneficial paternalistic policies.²¹ Rizzo cautions that '[t]he policies in question could produce ineffective or even counterproductive results, because they interfere with individuals' self-debiasing and learning processes.'²² Self-debiasing is understood as 'the activities of an individual in overcoming systematic errors in behavior or cognition.'²³

According to Public Choice Theory, 'public decision-makers are subject to the same distortions as are other people. It could even be argued that they act in a less careful manner because they decide about other people's, and not their own, money.'²⁴ Rizzo similarly concludes that '[i]f policymakers are subject to the same cognitive biases that affect regular people, that, too, will inhibit good policy-making.'²⁵ This concern is echoed by other scholars. Underhill, for example, enumerates a variety of biases and heuristics that influence the decision-making processes of policy-makers:

...overestimating the likelihood of familiar or vividly imaginable events, regretting losses more acutely than we value gains, generalizing to social groups from individual examples, seeking out evidence that confirms our prior beliefs, changing our opinions depending on the framing of choices, updating beliefs to conform with others in our political party or social group, being stymied by ambiguity or complexity, interpreting emotions as information, believing that independent events are related, and believing that we will be luckier than others.²⁶

In democratic states, the legislative system should, at least in principle, provide lawmakers with an advantage over individual citizens by granting them access to expert

²⁰ *ibidem* 7.

²¹ Mario J Rizzo and Douglas Glen Whitman, 'The Knowledge Problem of New Paternalism' (2009) 4 *Brigham Young University Law Review* 905.

<<https://digitalcommons.law.byu.edu/lawreview/vol2009/iss4/4>> accessed 8 January 2025

²² Mario J Rizzo and Douglas Glen Whitman, 'Little Brother is Watching You: New Paternalism on the Slippery Slopes' (2009) 51 *Arizona Law Review* 685. <<https://arizonalawreview.org/pdf/51-3/51arizrev685.pdf>> accessed 29 November 2024

²³ *ibidem* 687.

²⁴ Bruno S Frey and Jana Gallus, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds) *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016) 14.

²⁵ Rizzo and Whitman (n 22) 687.

²⁶ Underhill (n 2) 164.

knowledge and by operating through a collegial process of drafting legal norms. Choice architects, however, must design decision-making environments with a nuanced understanding of the traits of decision-makers: how they comprehend and interpret information, as well as the goals they pursue. In some cases, the optimal structure of a choice architecture may vary substantially depending on these personal traits. Policy-makers who overlook this variability may discover that their efforts to guide decision-making do not benefit all citizens as intended and may even generate unintended consequences.²⁷

As Arad and Rubinstein note: '[p]olicy makers are in the end only human, and the possibility that they will fail to make the correct decision on behalf of an individual is not less likely than the individual failing to do so on his own.'²⁸ Furthermore, policymakers are susceptible to the so-called 'curse of knowledge,' whereby choice architects concentrate excessively on their own expertise or preferences, neglecting to account for what decision-makers themselves actually know, value, or prefer.²⁹

Other critics argue that the nudge approach to public policy formulation has a limited evidentiary basis,³⁰ or that it rests upon research of questionable quality (see further discussion in Chapter V).³¹ Referring to these risks, Underhill observes: '[h]igh-quality research on policy decisions is often absent, and evaluation mandates are unfunded or toothless, culminating in research that is poorly designed or irrelevant to policy choices... Pathological uses of existing research evidence are similarly ubiquitous.'³²

²⁷ Eric J Johnson and others, 'Beyond nudges: Tools of a choice architecture' (2012) 23 Marketing Letters 487, 497.

<https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architect> accessed 7 November 2024

²⁸ Arad and Rubinstein (n 10) 313.

²⁹ Raymond S Nickerson, 'How we know—and sometimes misjudge—what others know: imputing one's own knowledge to others' (1999) 125 Psychological Bulletin 737, 750.

<<https://doi.org/10.1037/0033-2909.125.6.737>> accessed 7 November 2024

³⁰ Maximilian Maier and others, 'No evidence for nudging after adjusting for publication bias' (2022) 119 Proceedings of the National Academy of Sciences 1. <<https://doi.org/10.1073/pnas.2200300119>>

accessed 2 January 2025; Stuart Mills, 'Nudge theory: what 15 years of research tells us about its promises and politics' The Conversation (6 September 2023). <<https://theconversation.com/nudge-theory-what-15-years-of-research-tells-us-about-its-promises-and-politics-210534>> accessed 2 January 2025; Yiling Lin, Magda Osman and Richard Ashcroft, 'Nudge: Concept, Effectiveness, and Ethics' (2017) 39 Basic and Applied Social Psychology 1.

<https://www.researchgate.net/publication/320969370_Nudge_Concept_Effectiveness_and_Ethics> accessed 4 August 2023

³¹ Hans IJzerman and others, 'Use caution when applying behavioural science to policy' (2020) 4 Nature Human Behaviour 1092. <<https://www.nature.com/articles/s41562-020-00990-w>> accessed 2 January 2025

³² Underhill (n 2) 154.

McChesney analyzes the practical design and legal implementation of nudges through the example of the Federal Trade Commission's Cooling-Off Rule.³³ This regulation was introduced to protect consumers from impulsive purchasing decisions that they might later regret. The rule applies to transactions of \$25 or more conducted outside a seller's primary place of business, making it especially relevant in the context of door-to-door sales. It grants consumers the right to rescind sales agreements within three days and obliges sellers to provide written notice of these rights and the procedures for exercising them at the time of sale.

McChesney emphasizes that the adoption of this regulation was not preceded by experiments confirming its necessity or effectiveness: 'The FTC's "Statement of Basis and Purpose" for the Rule included almost no quantitative information, and was devoid of any systematic evidence of the need for the rule.'³⁴ The Commission also failed to propose a reliable method for establishing whether direct selling practices were characterized by systematic opportunism—as opposed to merely sporadic instances—that could exploit consumers' bounded rationality. Instead, '[t]he record relied on what "everybody knew" about door-to-door purchases—assumptions about consumers—rather than on actual consumer behavior and experience.'³⁵

The author ironically notes that the paternalistically libertarian nudgers were themselves operating under conditions of bounded rationality, influencing decisions in domains where their own knowledge was limited. He warns that certain nudges rest on general and colloquial assumptions about human behavior and cognitive processes, without being tested within specific regulatory and cultural contexts. Liscow and Markovits share similar concerns, remarking that 'in making judgments about the right policy, BLE [Behavioral Law and economics] has erected a new, shaky structure, based on ad hoc and often unstated normative assumptions.'³⁶

These critical remarks are particularly relevant to studies assessing the effectiveness of regulations only after their implementation, which are frequently conducted without any prior pre-regulation analysis.³⁷ The absence of such preliminary studies makes it impossible to compare post-regulation outcomes with the original state of affairs, thereby rendering

³³ *Rule Concerning Cooling-off Period for Sales Made at Homes or at Certain Other Locations*, 16 CFR Part 429 (2025).

³⁴ Fred S McChesney, 'Behavioral Economics: Old Wine in Irrelevant New Bottles?' (2014) 21 *Supreme Court Economic Review* 43, 69. <<https://www.jstor.org/stable/10.1086/675265>> accessed 22 October 2024

³⁵ *ibidem*.

³⁶ Liscow and Markovits (n 2) author's note.

³⁷ Underhill (n 2).

subsequent evaluations of limited analytical value. Without research conducted on the underlying problem prior to regulation, it becomes impossible to determine whether the regulation has in fact proven effective.³⁸ The same concern is emphasized by Szaszi and colleagues, who note that

[p]olicy makers have often relied on nudge-like techniques in the past to influence human behavior, but due to lack of rigorous research, these attempts were mostly based on the pure luck of trial-and-error. The nudge movement aimed to take the next step and provide an evidence-base to practitioners in their attempts to promote socially advantageous behavior. However, previous domain-specific nudge reviews suggested that for identifiable reasons, the field is greatly limited in its ability to accumulate evidence, and to predict when and to explain why nudges work.³⁹

Whether public policy is grounded in knowledge and data, or instead reflects a random gesture of the legislator, is the subject of inquiry within the field of so-called ‘knowledge communication.’ Chapman and colleagues define knowledge communication as a set of tools that ‘seek to address the challenges involved in the use of research evidence by different and diverse stakeholders, in order to close the gap between the evidence generated and the decisions made by these stakeholders...’⁴⁰ Building on this framework, Chapman and colleagues distinguish three levels of knowledge implementation in policy-making each corresponding to the degree to which policy decisions are informed by sound insights:

Diffusion or communication activities are those that are passive and largely unplanned, uncontrolled, and primarily horizontal or mediated by peers (“let it happen”). Dissemination focuses primarily on communicating research results by targeting and tailoring the findings and the message to a particular target audience (“helping it happen”). Finally, in this taxonomy, implementation involves systematic efforts to encourage the adoption of the research findings by identifying

³⁸ McChesney (n 34) 69.

³⁹ Barnabas Szaszi and others, ‘A systematic scoping review of the choice architecture movement: Toward understanding when and why nudges work’ (2018) 31 *Journal of Behavioral Decision Making* 355, 362. <<https://doi.org/10.1002/bdm.2035>> accessed 5 November 2024

⁴⁰ Evelina Chapman and others, ‘Assessing the impact of knowledge communication and dissemination strategies targeted at health policy-makers and managers: an overview of systematic reviews’ (2021) 19 *Health Research Policy and Systems* 140. <<https://doi.org/10.1186/s12961-021-00780-4>> accessed 24 October 2024

and overcoming barriers through specific multifaceted interventions ("make it happen").⁴¹

By definition, a nudge should belong to the third category of regulation, as it must be grounded in behavioral insights, experimental validation, and appropriate implementation procedures. As IJzerman and colleagues emphasize: '[w]e believe that scientists should apply their creativity, efforts and talents to serve our society, especially during crises. However, the way that social and behavioural science research is often conducted makes it difficult to know whether our efforts will do more good than harm.'⁴² A lack of knowledge and expertise is not the only reason behind the inadequate implementation of behavioral public policies. As Glaeser observes: '[p]olicymakers may also lack the proper incentives to implement wise policies, given their own self-interest and the lobbying efforts of interested parties.'⁴³

Work on behavioral public policies therefore requires humility, caution, and pragmatism. Osman and colleagues propose how policy-makers might prepare themselves to avoid nudge failures: '[r]ather than asking in hindsight after an intervention failed "what went wrong?", researchers and practitioners should ask in advance "what could go wrong, and how could it go wrong?"'⁴⁴

2.2. Superficial measures adopted in lieu of legislative reforms

A nudge can serve as a tool for masking governmental inertia in undertaking genuine legislative reforms. Schneider argues that nudges may constitute an inadequate instrument in the hands of technocrats, as they tend to replace 'robust protective regulations or ambitious policy goals that aim to tackle risk at the structural, rather than individual, level.'⁴⁵ According to Schneider, nudges 'further the fiction that risk can be effectively managed outside of formal political channels.'⁴⁶

In the context of risk management at the national and global scale, nudging is, in her view, not an adequate instrument, but rather contributes to the abandonment of formal

⁴¹ *ibidem*.

⁴² IJzerman and others (n 31).

⁴³ Edward L Glaeser, 'Paternalism and Psychology' (2006) 73 *University of Chicago Law Review* 133, 145–46. <<https://chicagounbound.uchicago.edu/uclrev/vol73/iss1/8>> accessed 21 September 2025

⁴⁴ Magda Osman and others, 'Learning from Behavioural Changes That Fail' (2020) 24 *Trends in Cognitive Sciences* 969, 979. <<https://doi.org/10.1016/j.tics.2020.09.009>> accessed 13 January 2025

⁴⁵ Schneider (n 4) 5, 9.

⁴⁶ *ibidem* 4.

regulatory tools. As she puts it, ‘nudging can be understood as an approach to risk management that eschews meaningful interventions in the neoliberal political economic order.’⁴⁷

To illustrate this problem, Schneider refers to the example of mortgage contracts. Within the framework of libertarian paternalism, the problem of complex mortgage agreements and the risks associated with variable interest rates—including contractual provisions such as negative amortization or balloon payments—is addressed by simplifying the contracts so that even unsophisticated mortgage shoppers can understand their terms. Schneider stresses, however, that such a nudge does not resolve the underlying issue: the persistence of predatory practices in the mortgage industry. The author concludes:

...Sunstein and Thaler do not believe that it is appropriate for governments to restrict the types of mortgages that exist or bank predatory lending features... Nudgers do not accept that financial risks of this sort can be ameliorated by making it harder for sharks; instead, they offer swimmers goggles.⁴⁸

According to Schneider, the use of nudges to address such problems merely masks the absence of genuinely effective governmental action, allowing authorities to avoid deploying stronger legal instruments necessary to eliminate harmful practices. In this sense, nudges become tools in the hands of politicians, enabling them to maintain electoral support without undertaking the substantive efforts required to resolve regulatory challenges.

A similar perspective is articulated by Skobie, who warns that ‘politicians are as self-interested as everyone else, which means they are susceptible to lobbying and the demands of the reelection process.’⁴⁹ Mills likewise observes that ‘nudges remain useful political tools. They are cheap, and they neither ban nor mandate. And if they don’t work, it takes a while for voters to notice.’⁵⁰

Nudges may therefore serve as a façade of problem-solving, simulating regulatory action while diverting attention from more effective structural reforms: ‘... nudge-based acts are open to being used by vested interests to distract policymakers and the public from actually effective solutions – that they put the emphasis on slight changes from individuals instead of more meaningful and effective systemic change.’⁵¹

⁴⁷ *ibidem* 9.

⁴⁸ *ibidem* 10.

⁴⁹ Skobie (n 6).

⁵⁰ Mills (n 30).

⁵¹ *ibidem*.

To illustrate this problem, the author refers to the domain of pro-environmental interventions:

[f]or instance, nudges that encourage households to reduce their energy consumption may be considered a good idea. But what if this nudge also reduces the political will to pursue more effective (and expensive) policies, such as retrofitting homes or dramatically investing in sources of sustainable energy?⁵²

Similarly, behavioral interventions introduced under the framework of the ‘Responsibility Deal’⁵³ for the protection of public health—particularly in the fight against obesity—have been viewed by some commentators⁵⁴ as superficial measures, serving as delaying tactics and as substitutes for genuine solutions, such as the imposition of a tax on soft drinks or a ban on junk food advertising before 9 p.m.⁵⁵ Oliver summarizes this concern succinctly: ‘[t]he lesson here might be that nudge is a smokescreen for, at best, inaction and, at worst, publicly endorsed marketing.’⁵⁶

Frey and Gallus further underscore that ‘nudges are not always in the interest of the population. Unlike most of the literature on Liberal Paternalism we suggest that governments may nudge people in a direction that fails to raise their welfare.’⁵⁷ The authors highlight the particular danger of behavioral interventions when employed by undemocratic governments, which, in pursuing policies designed to maximize their own benefits, can skillfully manipulate society with little regard for the public interest.

A nudge can also serve as a cynical pretext for legislators to avoid addressing problems through changes in law, or through broader economic and political reforms, instead locating the source of social problems in human cognitive limitations—limitations that can supposedly

⁵² *ibidem*.

⁵³ Department of Health and Social Care, ‘Public health responsibility deal’ (July 2011). <<https://www.gov.uk/government/news/public-health-responsibility-deal>> accessed 5 May 2025

⁵⁴ Sarah Boseley and Denis Campbell, ‘Food industry playing for time on regulation, says obesity expert’ *The Guardian* (19 February 2013). <<https://www.theguardian.com/society/2013/feb/18/food-industry-regulation-obesity-expert>> accessed 5 May 2025

⁵⁵ Matthew Limb, ‘Royal Colleges call for “duty” on sugary drinks in action plan against obesity’ (2013) 346 *BMJ* f1146. <<https://doi.org/10.1136/bmj.f1146>> accessed 5 May 2025

⁵⁶ Adam Oliver, Geof Rayner and Tim Lang, ‘Is nudge an effective public health strategy to tackle obesity?’ (2011) 342 *British Medical Journal* 898. <<https://www.jstor.org/stable/41150305>> accessed 17 August 2024

⁵⁷ Frey and Gallus (n 24) 18.

be addressed ‘only’ through nudging.⁵⁸ This approach to regulatory problem-solving introduces a further risk: authorities may claim that certain regulatory challenges are the result of citizens’ own inappropriate choices, thereby shifting responsibility from the state onto society.⁵⁹ As Oliver points out, one of the distinctive features of nudging is that ‘...it addresses internalities rather than externalities.’⁶⁰ Madi shares the view that libertarian paternalism reorients the focus of regulation toward individual behavior, framing regulatory failures as the product of citizens’ flawed decisions, actions, or ways of thinking—in other words, holding individuals responsible for their own misfortunes. As she notes: ‘nudging foster the responsibility of individual subjects for social risks, such as illness and unemployment.’⁶¹

Since the publication of Sunstein and Thaler’s influential book, an era of widespread enthusiasm for nudges has emerged, manifested most visibly in the creation of nudge units across more than 200 countries worldwide. This ‘fashion for nudging’ is not merely anecdotal. The reliance on complex and seemingly esoteric knowledge from psychology and behavioral economics presents itself as an upgrade in the development of modern public policies. Yet, the average citizen may not be fully informed about the actual effectiveness of behavioral interventions. Mills therefore remarks: ‘[s]o perhaps nudges do not even need to work to continue to have a role in modern society, because politicians will always demand a tool like them for their political ends. It is an argument that could nudge nudging along for at least another 15 years.’⁶² His observation reflects a notably cynical conviction: nudges need not be effective in practice in order to remain a popular instrument of political action. As long as their inefficacy goes unnoticed, policy-makers can continue to invoke nudging as a substitute for genuine regulatory solutions.

Other scholars likewise note that nudges ‘raises a series of concerns related to their democratic legitimacy and accountability;’⁶³ a concern that is discussed in detail in the next Section.

⁵⁸ Nick Chater and George Loewenstein, ‘The I-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray’ (2023) 46 *Behavioral and Brain Sciences* 1, 3. <<https://doi.org/10.1017/S0140525X22002023>> accessed 3 January 2025

⁵⁹ *ibidem* 2.

⁶⁰ Adam Oliver, ‘Nudges, shoves and budes: Behavioural economic policy frameworks’ (2018) 33 *The International Journal of Health Planning and Management* 272, 284. <<https://doi.org/10.1002/hpm.2419>> accessed 29 August 2024

⁶¹ Maria Alejandra Madi, *The Dark Side of Nudges* (Routledge 2020) 72.

⁶² Mills (n 30).

⁶³ Alberto Alemanno and Alessandro Spina, ‘Nudging Legally: On the Checks and Balances of Behavioral Regulation’ (2014) 12 *International Journal of Constitutional Law* 429, 430. <<https://doi.org/10.1093/icon/mou033>> accessed 6 February 2025

3. Legal criticism

The lawmaking process in the European Union is bound by rules and principles designed to safeguard fundamental values such as respect for individual liberty and human dignity. This part of the dissertation sets out the doctrinal and theoretical baselines against which any behavioral instrument adopted by public authorities must be assessed. The analysis focuses on three interlocking requirements: (i) accountability in public administration; (ii) the principle of legality (including legal certainty); and (iii) the Rawlsian notion of publicity, rooted in the ideal of public reason. Each of these requirements has a clear pedigree in legal sources and political philosophy and provides operational criteria—relating to institutional responsibility, lawful authority, and justificatory transparency—without which the exercise of public power lacks legitimacy.

The EU's principle of legality is inseparable from democratic lawmaking. Articles 10–11 TEU enshrine the constitutional requirements of representative democracy, citizen participation, and open dialogue with civil society, thereby setting the tone for transparent and participatory norm production.⁶⁴ The legislative process must be preceded by public debate, and the content of the law must be published in official outlets, ensuring that citizens can readily acquaint themselves with the obligations imposed upon them.

The EU's accountability principle further imposes a constitutional duty to state reasons for legislative acts, thus enabling both judicial review and political scrutiny.⁶⁵ Nudges, however, often operate in a covert and non-transparent manner. The processes preceding their implementation frequently bypass public debate and the participation of diverse stakeholders, while the techniques of nudge design tend to be confined to technocratic exercises conducted by a narrow circle of experts, the ultimate product of which is a behavioral intervention.

⁶⁴ Consolidated Version of the Treaty on European Union [2016] OJ C 202/1.

⁶⁵ Article 296 TFEU requires that acts shall state the reasons on which they are based. See: Consolidated version of the Treaty on the Functioning of the European Union, art 296, [2016] OJ C 202/1. The Court of Justice treats reason-giving as a general principle of law and a condition for effective review, see: Case C-589/15 P *Alexios Anagnostakis v European Commission* [2017] ECLI:EU:C:2017:663, paras 28–30; The right to good administration in Article 41 of the Charter includes a right to receive reasons, see: Charter of Fundamental Rights of the European Union, art 41, [2012] OJ C 326/391.

3.1. Government overreach

Critics contend that it is unethical for governments to influence individuals' decision-making processes without their awareness⁶⁶ and approval;⁶⁷ such practices are widely regarded as instances of governmental overreach.⁶⁸ The legitimacy of nudges carries significant consequences: in democratic systems, where transparency is a core requirement for public policy, confining public consent to the overarching policy level risks granting governments excessive latitude to act beyond what many would consider the legitimate boundaries of their authority.⁶⁹

The lack of transparency inherent in nudging is underscored by Dunt, who writes: '[t]his is what makes nudge so toxic an idea. While it seems more liberal than using legislation to clamp down on unhealthy behavior, it is actually more pernicious. At least when something is banned, you know you are being prevented from doing it. With nudge, you will never know.'⁷⁰

From a legal standpoint, it is imperative to restrict the use of manipulative strategies that directly affect individuals' thoughts, emotions, and actions, in order to safeguard their autonomy, integrity, dignity, and capacity to make informed decisions in accordance with their own values and interests. The freedom and autonomy of every citizen deserve protection from excessive governmental intrusion; subliminally influencing individual decision-making escapes the principle of respect for personal autonomy.

Reflecting on the mechanism of nudging, De Ridder cites critics who argue: '[o]pponents ... criticize the manipulative nature of nudges, as they would exploit inherent

⁶⁶ At the same time, some argue that since individuals often fail to make sound decisions—because rationality is at times replaced by automatic or habitual behaviors—nudges must necessarily operate as covert tools. As noted in the literature, 'an inability to discern – i.e. the observed bounds on human rationality – is the reason that behavioural economics as a subdiscipline of economics and nudging as a behavioural economic-informed policy approach, exist. If people acquiesced to nudging as a general principle, some may argue that the motivation for each individual intervention could legitimately remain covert.' See: Oliver (n 60) 283.

⁶⁷ Till Grüne-Yanoff, 'Old Wine in New Casks: Libertarian Paternalism Still Violates Liberal Principles' (2012) 38 *Social Choice and Welfare* 635. <<https://doi.org/10.1007/s00355-011-0636-0>> accessed 7 January 2025; Hansen and Jespersen (n 7); Mark D White, *The Manipulation of Choice: Ethics and Libertarian Paternalism* (Palgrave Macmillan 2013); Riccardo Rebonato, 'A Critical Assessment of Libertarian Paternalism' (2014) 37 *Journal of Consumer Policy* 357. <<https://doi.org/10.1007/s10603-014-9265-1>> accessed 7 January 2025

⁶⁸ Mills (n 30).

⁶⁹ Oliver (n 60) 283.

⁷⁰ Ian Dunt, 'Nudge nudge, say no more. Brits' minds will be controlled without us knowing it' *The Guardian* (5 February 2014). <<https://www.theguardian.com/commentisfree/2014/feb/05/nudge-say-no-more-behavioural-insights-team>> accessed 21 December 2024

weaknesses in human reasoning of which individuals themselves are unaware, which violates a liberal democratic society's requirement of transparency in public policy objectives.'⁷¹

Through its intrusion into human decision-making processes, behaviorally informed regulation has the potential to significantly disrupt, and may ultimately conflict with, essential individual rights, including freedom of expression, privacy, and self-determination.⁷²

Maintaining proportionality in the enactment of legal instruments is a fundamental requirement for the exercise of power in democratic states. At the Treaty level, Article 5 TEU enshrines the principles of proportionality and subsidiarity, requiring that legislative choices be suitable, necessary, and not excessively burdensome, and that action at the Union level be justified by demonstrable added value.⁷³ Judicial review gives real effect to these safeguards: proportionality review examines whether a measure is appropriate and necessary;⁷⁴ the duty to provide reasons facilitates meaningful scrutiny;⁷⁵ and any limitation of rights must be 'provided for by law,' while respecting both their essence and proportionality requirements.⁷⁶ Within any legal framework that protects individual liberties, the state is legally bound to exercise its corrective powers solely in a proportional manner and only as prescribed by statute. In liberal legal systems, restrictions on freedom must be properly justified, and in cases of uncertainty, the least intrusive intervention should be preferred. This necessitates a comparative evaluation of possible regulatory alternatives in light of the proportionality principle.⁷⁷

Criticism of nudges often targets the lack of clear boundaries surrounding behavioral regulations. Because nudges are designed to operate subtly and without overt coercion, it is frequently difficult to distinguish them from more intrusive forms of behavior change.⁷⁸ The

⁷¹ Denise De Ridder and others, 'Simple nudges that are not so easy' (2024) 8 Behavioural Public Policy 154.

<<https://www.cambridge.org/core/journals/behavioural-public-policy/article/simple-nudges-that-are-not-so-easy/86DDA762087208E5BCEB2188D42FFC80#>> accessed 6 November 2024

⁷² Alemanno and Spina (n 63) 430.

⁷³ Consolidated version of the Treaty on European Union, art 5, [2016] OJ C 202/1

⁷⁴ See for example Case C-331/88 *R v Ministry of Agriculture, Fisheries and Food, ex parte Fedesa and Others* [1990] ECR I-4023.

⁷⁵ See for example Case C-72/15 *Rosneft Oil Company OJSC v Her Majesty's Treasury and Others* [2017] ECLI:EU:C:2017:236.

⁷⁶ Protocol (No 2) on the Application of the Principles of Subsidiarity and Proportionality [2012] OJ C326/206.

⁷⁷ Anne van Aaken, 'Constitutional Limits to Nudging: A Proportionality Assessment' (2015) University of St. Gallen Law School, Law and Economics Research Paper Series, Working Paper No. 2015-03, 5.

<https://www.researchgate.net/publication/314541952_Constitutional_Limits_to_Nudging_A_Proportionality_Assessment> accessed 18 June 2025

⁷⁸ Mario J Rizzo and Douglas Glen Whitman, 'The Camel's Nose is in the Tent: Rules, Theories and Slippery Slopes' (2003) 51 *Ucla Law Review* 539. <<http://hdl.handle.net/10211.3/195767>> accessed 29 November 2024; Evan Selinger and Kyle Whyte, 'Is There a Right Way to Nudge? The Practice

ultimate dimension of autonomy, critics argue, concerns not merely psychological factors but also the dynamics of power relations within which individuals are situated. In this sense, governments employing nudges risk extending their authority beyond the conventional means of coercive control. Lithwick highlights this risk, noting that seemingly minor and subtle behavioral interventions—particularly those implemented as default options—may result in disproportionate intrusions on individual liberty.⁷⁹ As he observes, there is only a short distance between a nudge facilitating the choice of a good school for one’s children and a nudge culminating in a full-on body check.⁸⁰ Similar concerns are raised by Oliver, who also points to the intrusive potential of default options: ‘behavioural economic policy potentially covers a large range of qualitatively different interventions ... the profound and, for many, unacceptably intrusive (e.g. defaulting people into actions, such as organ donation, that they would rather not do but are not fully cognizant that they are now enrolled for).’⁸¹

3.2. Bypassing democratic lawmaking rules

The concerns outlined above point to another issue: nudges are frequently implemented by governments or other organizations in ways that circumvent traditional channels of democratic decision-making and representation. This raises serious questions about democratic legitimacy and accountability. Such procedures for introducing behavioral regulations, which bypass the standard stages of lawmaking, stand in direct contradiction to Rawls’s idea of public reason, which requires that the exercise of coercive political power be justified by reasons that citizens can reasonably endorse. Officials must therefore be both able and willing to defend policies publicly in terms of a political conception of justice.⁸²

Contemporary interpretations explain publicity as a fundamental constraint on democratic legitimacy: laws must be justifiable to those subject to them, rather than merely instrumentally effective.⁸³ The EU’s commitments to open consultation, reason-giving, and

and Ethics of Choice Architecture’ (2011) 5 *Sociology Compass* 923. <<https://doi.org/10.1111/j.1751-9020.2011.00413.x>> accessed 10 February 2025

⁷⁹ Dahlia Lithwick, ‘Taming Your Inner Homer Simpson: How to Opt Out of Our Own Stupid Choices’ *Slate* (12 May 2008). <<https://slate.com/culture/2008/05/cass-sunstein-and-richard-thaler-s-nudge.html>> accessed 23 October 2024

⁸⁰ *ibidem*.

⁸¹ Oliver (n 60) 283.

⁸² John Rawls, ‘The Idea of Public Reason Revisited’ (1997) 64 *University of Chicago Law Review* 765. <<https://chicagounbound.uchicago.edu/uclrev/vol64/iss3/1>> accessed 6 October 2025; John Rawls, *Political Liberalism: Expanded Edition* (Columbia Classics in Philosophy 2005).

⁸³ Jonathan Quong, ‘Public Reason’ *The Stanford Encyclopedia of Philosophy* (Summer 2022 Edition). <<https://plato.stanford.edu/entries/public-reason/>> accessed 5 October 2025; Axel Gosseries

publication—as embodied in the ‘Better Regulation Guidelines,’ ‘Better Regulation Toolbox,’ and the ‘Better Law-Making Agreement’—fit squarely within this Rawlsian framework, as they institutionalize the public presentation and defense of reasons.⁸⁴ Equally significant are documents such as the ‘Joint Practical Guide’ and the 2023 ‘Joint Handbook for the Presentation and Drafting of Acts,’ which require plain and consistent drafting, together with an explicit statement of objectives and mechanisms.⁸⁵

Critics emphasize that, in the case of nudges, the rationale behind regulation is often not officially disclosed: ‘...libertarian paternalism treats people as consumers rather than citizens. It either fails to tell people why choices are set up in particular ways, or actively seeks to conceal the rationale...’⁸⁶ Schneider similarly argues that employing nudges as instruments of risk management constitutes an evasion of established regulatory principles: ‘[w]hile the attempt to go around politics might appear strategically sound given the polarised nature of American democracy, such approaches further entrench a democratic deficit that undermines the legitimacy of the state in the eyes of many.’⁸⁷

3.3. Lack of public deliberation

The accusation that behavioral regulations lack transparency rests on the assumption that nudges can be introduced without explicit public debate or input,⁸⁸ and that their effectiveness may not be subject to the same level of scrutiny or evaluation as formal laws or regulations. This raises significant concerns about accountability. Farrell draws attention to this problem, noting that

and Tom Parr, ‘Publicity’ *The Stanford Encyclopedia of Philosophy* (Summer 2022 Edition).
<<https://plato.stanford.edu/entries/publicity/>> accessed 6 October 2025

⁸⁴ Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making [2016] OJ L 123, 12.5.2016; European Commission, *Better Regulation Guidelines* (SWD, 2021, 305 final).
<https://commission.europa.eu/system/files/2021-11/better_regulation_guidelines_swd2021_305_en_0.pdf> accessed 6 October 2025; European Commission, *Better Regulation Toolbox* (2023) <https://commission.europa.eu/system/files/2023-07/better-regulation-toolbox_en.pdf> accessed 6 October 2025

⁸⁵ European Parliament, Council and Commission, *Joint Practical Guide* (2015/2016 ed).
<<https://op.europa.eu/en/publication-detail/-/publication/3879747d-7a3c-411b-a3a0-55c14e2ba732>> accessed 6 October 2025; European Parliament, Council and Commission, *Joint Handbook for the Presentation and Drafting of Acts subject to the ordinary legislative procedure* (1 October 2023).
<https://www.consilium.europa.eu/media/67390/joint_handbook_en_01-october-2023_clean_def_final.pdf> accessed 6 October 2025

⁸⁶ Farrell and Shalizi (n 9).

⁸⁷ Schneider (n 4) 4.

⁸⁸ Schneider (n 4) 8; Farrell and Shalizi (n 9).

[w]hile democratic institutions need reform to build in dialogue between citizens and experts, they should not be bypassed. By cutting dialogue and diversity for concealed and unaccountable decision-making, “nudge” politics attacks democracy’s core. We should not give in to temptation – and save our benevolent meddling for family reunions.⁸⁹

Hansen and Jaspersen, in analyzing the undemocratic aspects of nudging, emphasize its incompatibility with public policy-making in a modern democracy: ‘Indeed, state manipulation with the choices of citizens appears to be at odds with the democratic ideals of free exercise of choice, deliberation, and public dialogue.’⁹⁰ The authors further argue that ‘Thaler and Sunstein’s appeal to Rawls’ Publicity Principle⁹¹ is insufficient; as a safeguard against non-legitimate state manipulation of people’s choices, it is severely lacking.’⁹² Lepenies and Malecka likewise explain that nudges encounter two fundamental problems: most lack proper legal integration, and none require specific behavior.⁹³ In this context, the Rawlsian notion of publicity alone cannot ensure the democratic legitimacy of behavioral lawmaking.

Critics additionally suggest that the generation of nudges without meaningful public debate signals that governments do not take citizens seriously—treating them not as partners in democratic deliberation, but as passive objects of intervention. O’Neill highlights the threats to democracy that arise from such a governmental stance toward its citizens:

‘The reason the nudgers are instinctively allergic to providing people with information is that they believe much of our behaviour takes place “outside conscious awareness”. Which means it cannot be influenced through such achingly old-fashioned mechanisms as moral debate and engagement but rather should be shifted with a bit of subliminal messaging and healthy-living handouts. Most

⁸⁹ Farrell and Shalizi (n 9).

⁹⁰ Hansen and Jaspersen (n 7) 5.

⁹¹ Sunstein and Thaler ground their call for transparency of nudges in Rawls’s publicity principle. See: John Rawls, *A Theory of Justice* (rev edn, Harvard University Press 1999). This principle, in its most fundamental expression, prohibits the government from adopting a policy that it cannot or is unwilling to justify openly to its own populace. Thaler and Sunstein ultimately conclude that the publicity principle is an effective guideline for regulating and implementing nudges in both the public and private sectors. See: Richard H Thaler and Cass R Sunstein, *Nudge: Improving decisions about health, wealth, and happiness* (Yale University Press 2008) 244.

⁹² Hansen and Jaspersen (n 7) 6.

⁹³ Robert Lepenies and Magdalena Malecka, ‘The Institutional Consequences of Nudging – Nudges, Politics, and the Law’ (2015) 6 *Review of Philosophy and Psychology* 427. <[10.1007/s13164-015-0243-6](https://doi.org/10.1007/s13164-015-0243-6)> accessed 7 February 2025

shockingly of all, the nudge brigade sees it as its responsibility to exercise willpower on *our behalf*, because apparently we're too fickle to do it ourselves. The government should become a "surrogate willpower", says *Mindspace*; government action can "augment our freedom" by pushing us to make the right choices. They don't only want to remake our minds; they want to become our minds, Big Brother-style. It speaks volumes about the nudge statist that they cannot see what a whopping contradiction in terms it is to label government pressure as 'freedom' and external interventions into our brains as the exercising of 'willpower'.⁹⁴

Furedi also underscores the threat that nudging poses to pluralism and to the quality of public debate within democratic systems:

'[i]n the twenty-first century, motivational research has been embraced by governments that have effectively given up on the idea of morally or politically motivating their citizens. Policy advisers frequently complain that citizens refuse to acknowledge the wisdom that they are offering and instead adopt forms of behaviour that are antithetical to expert advice. In effect, these policy advisers, along with government officials and politicians, have concluded that the time for open debate and argument is over, since arguing with people who act irrationally is pointless. They claim that what is now required are new techniques of behaviour management and motivational manipulation, in order to encourage the public to act in accordance with best practice.'⁹⁵

The omission of inclusivity procedures in the generation of behavioral public policies is not the only way in which the rules of democratic lawmaking are circumvented. The process of designing behavioral interventions typically involves specialists—often economists—who, according to Schneider, operate on the basis of an extreme methodological individualism that disregards the broader contextual spectrum of decision-making.⁹⁶ She criticizes governance

⁹⁴ O'Neill (n 1).

⁹⁵ Frank Furedi, 'Defending moral autonomy against an army of nudgers' (spiked-online.com, 1 November 2010).

<<https://www.spiked-online.com/2011/01/20/defending-moral-autonomy-against-an-army-of-nudgers/>> accessed 30 October 2024

⁹⁶ Some voices in the literature criticize the dominance of economics experts in the process of public policy-making. Liscow and Markovits emphasize that 'economic experts do not look or think like the rest of the population. Their demographics and policy views are deeply unrepresentative.' See Liscow and Markovits (n 2).

informed by libertarian paternalism and behavioral insights on the grounds that public policies implemented under such a paradigm are assessed and valued primarily through an economic lens, neglecting other, equally important considerations such as public opinion or social debate.

This narrowly economic perspective fails to account for the broader context in which regulatory problems are embedded. The benchmark for selecting regulatory tools becomes the cost-benefit analysis, which, as Schneider points out, is not a sufficient metric for determining the appropriate form of intervention.⁹⁷ A restricted view of individual preferences leads cost-benefit analysis to overlook costs or benefits that may be crucial from the subject's perspective. As a result, this model does not adequately reflect reality, but instead produces an overly simplified picture of the world.

Such reductionism, however, contributes to the devaluation of other values that should provide equally strong—if not stronger—justifications for the adoption of specific public policies. As Schneider observes, public policies developed in this spirit ‘laid the groundwork for the embrace of efficiency – rather than fairness, equality, or even democracy – as the premier political virtue.’⁹⁸

3.4. Discriminatory effect

Another fundamental principle of law is the principle of equality, which requires that citizens be treated equally before the law. Nudges, however, may be discriminatory or have a disproportionate impact on certain groups. For instance, behavioral incentives in health care, often framed as wellness programs, can unintentionally deepen inequities when they disproportionately benefit affluent, well-educated individuals while disadvantaging more vulnerable populations. Financially framed incentives for outcomes such as weight loss, for example, fail to account for structural barriers faced by groups such as single working mothers with limited access to healthy food and exercise. Such program designs risk reproducing racial and socioeconomic inequalities under the guise of impartial efficiency, echoing utilitarian cost–benefit arguments that historically devalued the lives of the poor.

To mitigate these effects, scholars have proposed replacing attainment-based rewards with participation incentives specifically tailored to disadvantaged employees, while also

⁹⁷ Schneider (n 4) 14.

⁹⁸ Schneider (n 4) 13.

subjecting such programs to rigorous evaluation along socioeconomic and ethnic lines.⁹⁹ A broader body of literature likewise warns that nudges may reproduce or even exacerbate social inequities. De Ridder et al. argue that ‘nudgeability’ varies significantly across individuals, with those from lower socioeconomic groups often less able to respond effectively, resulting in differential benefits and potential injustice.¹⁰⁰ Roberts emphasizes that unequal access to resources may render certain populations effectively ‘nudge-proof,’ thereby creating a regressive distribution of benefits and burdens.¹⁰¹ Similarly, Kuyser et al., in systematic reviews of nudge ethics, highlight persistent equity concerns, noting that interventions often privilege dominant groups unless fairness is explicitly embedded in their design.¹⁰²

Standing somewhat in opposition to these critiques, some scholars contend that nudges also have the potential to reduce inequalities. As they observe:

[nudges] also have the potential to reduce ... inequalities, because they do not rely on the communication and comprehension of complex information... The impact of interventions that involve providing persuasive information depends on recipients’ literacy, numeracy, and cognitive control, which are generally poorer in those who are more deprived.¹⁰³ In contrast, changes made to the physical environment largely bypass these processes, having the potential to shape behavior for all individuals who are exposed to that environment.¹⁰⁴

⁹⁹ Herald Schmidt, Kristin Voigt and Daniel Wikler, ‘Carrots, Sticks, and Health Care Reform - Problems with Wellness Incentives’ (2010) 362 *The New England Journal of Medicine* e3. <[10.1056/NEJMp0911552](https://doi.org/10.1056/NEJMp0911552)> accessed 12 November 2024; Schneider (n 4) 14.

¹⁰⁰ Denise TD De Ridder, Floor Kroese and Laurens van Gestel, ‘Nudgeability: Mapping conditions of susceptibility to nudge influence’ (2022) 17 *Perspectives on Psychological Science* 346. <<https://journals.sagepub.com/doi/10.1177/1745691621995183>> accessed 1 November 2024

¹⁰¹ Jessica L Roberts, ‘Nudge-Proof: Distributive Justice and the Ethics of Nudging’ (2018) 116 *Michigan Law Review* 1045. <<https://repository.law.umich.edu/mlr/vol116/iss6/13>> accessed 21 September 2025

¹⁰² Paul Kuyser and Bert Gordijn, ‘Nudge in perspective: A systematic literature review on the ethical issues with nudging’ (2023) 35 *Rationality and Society* 192. <<https://doi.org/10.1177/10434631231155005>> accessed 15 August 2025

¹⁰³ Mark Kutner, Elizabeth Greenberg, Ying Jin and Christine Paulsen, ‘The Health Literacy of America’s Adults Results From the 2003 National Assessment of Adult Literacy’ (2006) National Center for Educational Statistics 1. <<https://nces.ed.gov/pubs2006/2006483.pdf>> accessed 13 December 2024; Dean Spears, ‘Economic Decision-Making in Poverty Depletes Behavioral Control’ (2011) 11 *The B.E. Journal of Economic Analysis & Policy*, Article 72. <<https://doi.org/10.2202/1935-1682.2973>> accessed 13 December 2024; Gareth J Hollands and others, ‘Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions’ (2013) 13 *BMC Public Health* 1, 2. <<https://doi.org/10.1186/1471-2458-13-1218>> accessed 14 December 2024

¹⁰⁴ Theresa M Marteau, Gareth J Hollands and Paul C Fletcher, ‘Changing Human Behavior to Prevent Disease: The Importance of Targeting Automatic Processes’ (2012) 337 *Science* 1492, 1494. <[10.1126/science.1226918](https://doi.org/10.1126/science.1226918)> accessed 11 December 2024

4. Legal safeguards

A crucial element in maintaining democratic standards is the ability to exercise oversight over the conduct of policy-makers. Since nudges operate differently from traditional regulatory tools, they also require distinct procedures of control.

Because nudges are typically perceived as non-coercive instruments, they were integrated into the regulatory toolkit without the establishment of formal procedures or legal rules governing their formulation and verification.¹⁰⁵ This approach was driven by the assumption that, as a non-coercive tool, the design of nudges does not necessitate legal safeguards.¹⁰⁶

However, given the ethical objections—particularly those relating to the infringement of individual autonomy through the application of behavioral policies—and considering that nudges exert real influence on people's decisions, thereby functioning as genuine instruments of governmental power, an increasing number of voices in the doctrine call for the creation of a legal framework to define the rules governing both the application and the verification of nudges.¹⁰⁷

At present, legal experts have not yet reached consensus on how public institutions should distinguish between nudges that must comply with rule-of-law safeguards and those that may legitimately operate outside such constraints.¹⁰⁸

The constitutional review of nudges is particularly important given the very nature of behavioral regulations: they are highly specialized and sophisticated tools, whose mechanisms are not easily understood by the wider public. According to Farrell and Shalizi, entrusting power to technocrats specialized in designing public interventions on the basis of behavioral

¹⁰⁵ Christopher McCrudden and Jeff King, 'The Dark Side of Nudging: The Ethics, Political Economy, and Law of Libertarian Paternalism' in Alexandra Kemmerer, Christoph Möllers, Maximilian Steinbeis and Gerhard Wagner (eds), *Choice architecture in democracies: Exploring the Legitimacy of Nudging* (Nomos/Hart 2017) 131. Numerous nudges are composed of seemingly benign interventions aimed at promoting "positive" behavior, such as the placement of fly stickers in urinals to enhance the cleanliness of public restrooms, or the installation of cheerful trash bins in train stations to encourage individuals to dispose of their waste properly. These types of nudges appear to present minimal risk regarding the potential abuse of public authority, and entities responsible for upholding the rule of law, including judges and legislative bodies, may lack the ability to evaluate these minor and noncoercive measures. See: Zeilstra (n 15).

¹⁰⁶ Ryan Calo, 'Code, Nudge, or Notice?' (2014) 99 Iowa Law Review 773, 798.
<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2217013> accessed 8 February June 2025

¹⁰⁷ Alemanno and Spina (n 63) 455; Anne S Van Aaken, 'Judge the Nudge: Legal Limits in the EU' in Alberto Alemanno and Anne-Lise Sibony (eds), *Nudge and the law: a European perspective* (Bloomsbury Publishing 2015); Lepenies and Małecka (n 93); Zeilstra (n 15); McCrudden and King (n 105).

¹⁰⁸ Zeilstra (n 15) 751.

insights represents a step toward a system that prevents citizens from exercising meaningful oversight over governmental conduct: ‘...Thaler and Sunstein offer no means for ordinary people to comment on, let alone correct, the technocrats’ prescriptions. This leaves the technocrats with no systematic way of detecting their own errors, correcting them, or learning from them. And technocracy is bound to blunder, especially when it is not democratically accountable.’¹⁰⁹

Dunt voices similar concerns, stressing that nudges pose a serious threat to the principles of democratic governance. He recalls that the part-privatization of the Behavioural Insights Team—the British nudge unit—has had profound constitutional consequences. As he observes, the unit ‘...is no longer subject to the Freedom of Information Act...’¹¹⁰ and thus cannot be held accountable in the same manner as before privatization. He further warns that the funding of public policy generation by private actors—in this case a charity, the National Endowment for Science, Technology and the Arts (Nesta)—‘...marks a dangerous new precedent in the rise of private power over the public. Now that the nudge unit is privatised, it is protected from scrutiny’¹¹¹

The journalist continues: ‘The secrecy and legal might of private firms offering public services is morally indefensible whatever the sector. But in the case of nudge it is particularly dangerous, because this is an organisation specifically tasked with implementing policy on the subconscious of the British public.’¹¹² He concludes with a stark warning: ‘...public bodies, corporations and government are trying to change public behaviour without us realising. But we are not entitled to find out about it. It’s a disastrous position for a democracy to find itself in...’¹¹³

Given that nudges may pose a threat to the principles of law and to fundamental democratic values such as freedom and equality, one might ask whether it would be preferable to abandon their use altogether and permanently deny legitimacy to this regulatory tool. As noted above, some critics indeed advocate for such a categorical ban. Yet there is also a way to draw on the insights of behavioral economics while preserving the standards of a democratic state governed by the rule of law.

Frey and Gallus argue that instead of rejecting nudges outright, they should be subjected to constitutional rules under which voters are able to decide the procedures or processes by

¹⁰⁹ Farrell and Shalizi (n 9).

¹¹⁰ Dunt (n 70).

¹¹¹ *ibidem*.

¹¹² *ibidem*.

¹¹³ *ibidem*.

which governments may legitimately resort to nudging.¹¹⁴ The intensity of oversight should depend on the type of behavioral intervention, as nudges often deserve greater scrutiny than boosts, which generally do not operate in non-transparent ways.¹¹⁵

Such oversight would help maintain the standard of predictability in the functioning of law, including laws informed by behavioral insights. Since not every nudge affects individual autonomy to the same extent, nor produces equally serious consequences for decision-making, scholars have suggested developing a framework to distinguish between nudges that must be subject to legal safeguards and those for which such protections are unnecessary.¹¹⁶ As Zeilstra observes, ‘such a doctrine does not have to be developed from scratch because existing legal approaches can be used as a source of inspiration.’¹¹⁷

4.1. Assessing Nudges under Human Rights Convention Standards: A Judicial Review Model

Zeilstra proposes that the system for distinguishing between different categories of nudges be grounded in three approaches developed within the doctrine of the European Court of Human Rights: (1) the *de minimis* principle, (2) the notion of the core of fundamental rights, and (3) the criterion of the seriousness of the interference.¹¹⁸ The author argues that the analogy between the ECtHR’s legal safeguards and a governmental system for assessing nudges is legitimate, since both frameworks aim to protect the legal order from misuse of power. The essential difference, however, lies in the application: the ECtHR operates *ex post* through judicial review, whereas governments would need to apply such safeguards *ex ante* in assessing the permissibility of nudges.¹¹⁹

The *de minimis* principle, encapsulated in the maxim *de minimis non curat praetor*, holds that courts are not obliged to adjudicate trivial matters.¹²⁰ In other words, ‘the law will

¹¹⁴ Frey and Gallus (n 24) 18.

¹¹⁵ Till Grüne-Yanoff, ‘Behavioral Public Policy, One Name, Many Types. A Mechanistic Perspective’ in Conrad Heilmann and Julian Reiss (eds) *The Routledge Handbook of the Philosophy of Economics* (Routledge 2021) 489.

¹¹⁶ Zeilstra (n 15) 760.

¹¹⁷ *ibidem*.

¹¹⁸ *ibidem*.

¹¹⁹ *ibidem*.

¹²⁰ Jeff Nemerofsky, ‘What is a “Trifle” Anyway?’ (2002) 37 *Gonzaga Law Review* 315.

<<https://blogs.gonzaga.edu/gulawreview/files/2011/02/Nemerofsky.pdf>> accessed 12 February 2025

not resolve petty or unimportant disputes.’¹²¹ In 2010, the *de minimis* principle was formally codified in the European Convention on Human Rights as an admissibility criterion, although the ECtHR had already invoked it in earlier case law.¹²² As frequently cited, the function of the doctrine is to place ‘outside the scope of legal relief the sorts of intangible injuries, normally small and invariably difficult to measure, that must be accepted as the price of living in society.’¹²³

Just as courts require analytic criteria to distinguish between claims that deserve adjudication and those that do not,¹²⁴ so too governments should adopt boundary-setting mechanisms to differentiate between nudges that necessitate legal safeguards and those that may legitimately fall outside such a framework.

The European Court of Human Rights has not developed a definitive framework for determining when the *de minimis* principle should be applied, and evidence suggests that the Court often relies on the principle in a somewhat rigid and formalistic manner.¹²⁵ Courts have advanced various rationales in support of their *de minimis* rulings.¹²⁶ Inesi identifies several conditions relevant to its application: (1) the size and type of the harm, (2) the cost of adjudication, (3) the purpose of the rule or statute in question, (4) the effect of adjudication on the rights of third parties, and (5) the intent of the infringer.¹²⁷ This, however, does not constitute a closed list.

The first condition—the size and type of the harm—‘is used to dismiss claims for small dollar amounts.’¹²⁸ It should be noted, however, that applying this condition in the context of nudges will not always follow the classical model of economic analysis of law. In certain cases, particularly where nudges significantly infringe upon individual autonomy, the relevant metric will not be monetary but non-pecuniary values such as liberty, freedom of choice, and personal autonomy.

¹²¹ Andrew Inesi, ‘A Theory Of De Minimis And A Proposal For Its Application In Copyright’ (2006) 21 Berkeley Technology Law Journal 945, 948. <<https://www.jstor.org/stable/24117312>> accessed 19 February 2025

¹²² Zeilstra (n 15) 761.

¹²³ Nemerofsky (n 120) 323.

¹²⁴ Anita Bernstein, ‘Civil Rights Violations = Broken Windows: De Minimis Curat Lex’ (2010) 62 Florida Law Review 897, 938.

<https://www.researchgate.net/publication/45515629_Civil_Rights_Violations_Broken_Windows_De_Minimis_Curat_Lex> accessed 19 February 2025

¹²⁵ Cosette D Creamer and Zuzanna Godzimirska, ‘Trust, Legal Elites, and the European Court of Human Rights’ (2023) 45 Human Rights Quarterly 628, 638. <[10.1353/hrq.2023.a910490](https://doi.org/10.1353/hrq.2023.a910490)> accessed 25 February 2025

¹²⁶ Andrew Inesi (n 121) 949.

¹²⁷ *ibidem* 951.

¹²⁸ *ibidem*.

The second condition, the cost of adjudication, may be analogized to the costs of *ex ante* evaluation. Not every behavioral intervention merits the initiation of a review process by specialized governmental units (nudge units), whose work entails considerable financial and administrative expense.

With respect to the third condition—the purpose of the rule or statute in question—the determination of whether a given activity constitutes a *de minimis* deviation from an established standard must be evaluated in light of that standard’s intended purpose.¹²⁹

The fourth condition highlights the potential impact on third-party rights: ‘[w]hen adjudication of the relevant dispute would have a significant effect on the legal rights of third parties, courts may decide to adjudicate, even if the matter at hand, considered alone, would qualify for *de minimis* treatment.’¹³⁰ Judicial bodies often apply this reasoning in cases that challenge the constitutionality of legislation or involve significant issues of statutory interpretation.

Finally, courts frequently consider the intentions of the alleged wrongdoer. Some courts maintain that intentionally wrongful behavior should never be excused—that a morally culpable individual is not entitled to *de minimis*.¹³¹ In order for a claim to warrant judicial proceedings, the violation of rights must therefore be severe and persistent, or severe and persuasive.¹³²

By employing metrics borrowed from the ECtHR, rule-of-law actors are not required to address trivial instances of nudging—such as the positioning of a smiling trash bin in a public park—just as the ECtHR is not obliged to investigate minor cases brought by applicants.¹³³

The ‘core’ or essence of fundamental rights encompasses the central values that the European Court of Human Rights has recognized as vital to the European Convention on Human Rights. These values include dignity, autonomy, pluralism, democracy, and the rule of law.¹³⁴ The ECtHR applies a less rigorous standard of review in cases where the core values remain intact, focusing its scrutiny primarily on instances where only peripheral aspects of a

¹²⁹ *ibidem* 953.

¹³⁰ *ibidem* 954.

¹³¹ *ibidem* 955.

¹³² Judith J Johnson, ‘License to Harass Women: Requiring Hostile Environment Sexual Harassment to Be “Severe or Pervasive” Discriminates Among “Terms and Conditions” of Employment’ (2003) 62 Maryland Law Review 85, 96. <<https://digitalcommons.law.umaryland.edu/mlr/vol62/iss1/6/>> accessed 22 September 2025

¹³³ Zeilstra (n 15) 762.

¹³⁴ *ibidem*.

right are implicated.¹³⁵ Accordingly, this criterion suggests that practices which do not significantly affect a fundamental right should be subject to a less demanding review process.¹³⁶

Default legal provisions (*ius dispositivum*) are in fact a long-standing form of nudge embedded in legal systems across the world. The review of their constitutionality is therefore not a novel undertaking within established legal orders. From a behavioral science perspective, however, it is observed that '[i]n general, a default option does successfully steer people's decisions, which means that it will also successfully bypass people's capacity for autonomous reflection.'¹³⁷ For this very reason, such provisions ought to be subjected to particularly rigorous scrutiny by legal actors.

Alemanno and Spina argue that judicial review of nudges should differ from conventional constitutional and administrative review by embracing a higher degree of flexibility: '[i]t is contended that as behavioral regulation is implemented through informal and flexible interventions, courts reviewing the legality of the acts adopted by public institutions on the basis of behavioral regulation should exercise a certain degree of analytical flexibility.'¹³⁸ The authors recommend that courts take contextual factors into account when exercising judicial control over nudges, particularly within the scope of administrative law.¹³⁹

5. Conclusions

The dissertation has traced the evolution of the concept of nudge from its roots in behavioral economics to its contested reception within legal theory and regulatory practice. Chapter II deconstructed the definition of nudge, analysed its constitutive elements in light of vast academic literature, and proposed a refined definition tailored to the needs of jurisprudence and legislative practice—one that highlights the dual structure of legal agents (indirect and direct) and the non-coercive, welfare-oriented character of nudges. Chapter III demonstrated that the intellectual trajectory of legal thought mirrors the evolution of economic theory: from neoclassical conceptions of rational actors to the recognition of bounded rationality and, in law, to the emergence of experimental jurisprudence. Chapter IV explored how behavioral insights

¹³⁵ Janneke H Gerards, 'The Prism of Fundamental Rights' (2012) 8 European Constitutional Law Review 173, 190, 195. <<https://doi.org/10.1017/S1574019612000144>> accessed 25 February 2025

¹³⁶ Zeilstra (n 15) 763; Janneke H Gerards and Lize R Glas, 'Access to Justice in the European Convention on Human Rights System' (2017) 35 Netherlands Quarterly of Human Rights 11, 19. <<https://doi.org/10.1177/0924051917693988>> accessed 27 February 2025

¹³⁷ Zeilstra (n 15) 767.

¹³⁸ Alemanno and Spina (n 63) 432.

¹³⁹ *ibidem*.

have been incorporated into legal instruments and regulatory practice, while Chapter V identified the main ethical and practical limitations of nudges, particularly their fragility, context-dependence, and implications for personal autonomy.

The sixth chapter has expanded this critique by situating nudges within the framework of constitutional principles and the rule of law. The analysis confirmed that while nudges can serve as innovative regulatory tools, their covert, technocratic, and potentially discriminatory nature raises profound concerns for legality, transparency, predictability, fairness, equality, and accountability. Left unchecked, behavioral regulation risks eroding democratic deliberation, fostering government overreach, and circumventing the safeguards that ensure the legitimacy of law.

This dissertation also demonstrates that legislators tend to reach for behavioral tools only once they revise their understanding of who factual legal agents are. Economic theory has not abandoned the model of *homo oeconomicus*, but it has increasingly questioned its descriptive adequacy and complemented it with alternative models that account for bounded rationality, heuristics, and cognitive biases. Similarly, legal theory and legislative practice cannot remain bound exclusively to the assumption that citizens act as fully rational, utility-maximising actors. Recognising that legal agents, like Thaler's 'Humans,' decide under cognitive and contextual constraints marks a milestone in the evolution of jurisprudence. It indicates that traditional regulatory philosophy, based solely on 'carrots and sticks,' is insufficient to address complex regulatory problems effectively. Acknowledging the true nature of legal agents opens the door to integrating behavioral insights into law in a manner that is both more realistic and more responsive to the conditions under which people actually make decisions.

At the same time, the very fact that nudges are applied as instruments of public policy means that they cannot be treated merely as neutral or technical design devices. They operate as legal instruments—tools of state intervention—and therefore must be held to the same normative standards as any other form of regulation. The central challenge, then, is not whether to use nudges, but how to embed them within the framework of legality, proportionality, transparency, fairness, equality, and accountability. Only in this way can behavioral regulation enhance the effectiveness of law without undermining the rule of law itself.

The general conclusion is twofold. First, nudges should not be abandoned as regulatory tools: when properly designed, tested, and embedded within a legal framework, they can complement traditional instruments and promote individual and collective welfare. Secondly, their future lies in law. Only by subjecting nudges to the principles of law can governments

harness their potential without compromising the autonomy and agency of individuals or the foundational commitments of constitutional democracy.

Final Conclusions

This dissertation set out to examine whether and under what conditions nudges can operate as legitimate instruments of legal regulation within democratic systems. The analysis has demonstrated that while behavioral regulation offers valuable insights into human decision-making, its application in the legal sphere raises complex normative and constitutional challenges. The study has shown that the incorporation of behavioral tools into legal governance requires a nuanced understanding of both human psychology and the foundational principles of the rule of law.

Throughout the six chapters, the dissertation traced the intellectual, theoretical, and legal evolution of the concept of nudge. It began by situating nudging within the broader epistemic transformation from neoclassical to behavioral economics, emphasizing the growing recognition that individuals act under bounded and ecological rationality rather than as perfectly rational agents. This shift, it was argued, has profound implications for jurisprudence and legal regulation, since the decision to comply with the law occurs not in a sphere of rational deliberation but within an environment shaped by cognitive biases, heuristics, and social influences. The study then examined libertarian paternalism—the philosophical foundation of nudging—as an attempt to reconcile paternalistic aspirations to improve welfare with the preservation of formal freedom of choice. This conceptual duality, while rhetorically appealing, conceals persistent tensions between autonomy and influence, consent and manipulation, and democratic deliberation and technocratic design.

The subsequent chapters addressed these tensions through a legal and theoretical lens. The analysis of traditional models of legal agents within jurisprudence revealed their reliance on the idealized image of *homo oeconomicus*, an actor presumed to be fully rational and self-governing. In contrast, behavioral compliance theory, informed by empirical findings from cognitive psychology and behavioral economics, portrays legal subjects as boundedly rational, context-dependent, and socially embedded. This reconceptualization necessitates a shift in how lawmakers perceive legal agents—not as purely rational rule-followers, but as decision-makers influenced by cognitive constraints and environmental cues.

A comparative assessment of traditional and behavioral regulatory tools demonstrated that nudges, despite their non-coercive nature, can complement but not replace traditional legal instruments. They may enhance compliance in areas where sanctions are ineffective or costly,

but they must operate within transparent and accountable frameworks. The analysis of ethical and practical critiques further revealed that behavioral interventions, though often justified as benign and evidence-based, risk infringing on individual autonomy and democratic legitimacy when applied without clear procedural safeguards. Questions of manipulation, consent, and empirical validity complicate the normative standing of nudges as public policy instruments.

In the final chapters, the dissertation turned to the political and legal criticism of behavioral regulation, examining its compatibility with constitutional principles. While behavioral public policy often presents itself as a neutral, technocratic endeavor, it carries implicit normative assumptions about human behavior, welfare, and state responsibility. The work therefore emphasized the need for legal oversight mechanisms that ensure nudging operates within the boundaries of legality, proportionality, and transparency. Although the model of legal safeguards discussed in the study draws on existing scholarship, it has been situated here within a broader jurisprudential context, highlighting the role of constitutional guarantees as conditions of legitimacy for any behavioral intervention undertaken by public authorities.

Taken together, the findings support the conclusion that nudges can serve as instruments of legal regulation only when embedded within a coherent theoretical and dogmatic framework that reconciles behavioral insights with the normative architecture of law. The dissertation's original contribution lies in developing such a framework—one that locates the philosophy of nudge within the legal order, interpreting it through the lenses of legal theory, philosophy of law, and the science of public policy in a democratic rule-of-law state. This conceptualization not only clarifies the legal and normative status of behavioral regulation but also delineates its permissible scope and constitutional boundaries.

The research also reveals that while behavioral law and economics offers valuable tools for understanding compliance, it cannot substitute for the normative function of law itself. Law's legitimacy derives not merely from its empirical effectiveness but from its adherence to procedural fairness, equality before the law, and respect for autonomy and dignity. Nudges, if used indiscriminately, risk eroding these principles by introducing subtle forms of influence that bypass rational deliberation and public justification. Yet, when grounded in transparency, accountability, and democratic consent, behavioral regulation can enrich the law's capacity to respond to real human behavior without abandoning its normative commitments.

Like all theoretical endeavors, this study has limitations. It does not offer empirical testing of specific behavioral interventions, nor does it exhaust the comparative dimension of regulatory design across jurisdictions. Its scope remains primarily theoretical and doctrinal,

aimed at constructing a legal-philosophical foundation rather than an operational framework. Future research may expand on this work by examining empirical outcomes of legally embedded nudges, exploring their interaction with other behavioral tools such as boosts and defaults, or assessing their implications for emerging areas of digital governance and algorithmic regulation.

In conclusion, the dissertation has argued that the integration of behavioral insights into the legal system must not be viewed as a technocratic innovation but as a normative challenge. It invites legal scholars and policy-makers to reflect on the evolving relationship between knowledge and power, persuasion and consent, and welfare and freedom. The future of behavioral regulation, if it is to remain compatible with the ideals of constitutional democracy, depends on the law's capacity to absorb empirical insights without compromising its foundational principles. Nudging, therefore, should not replace law's rational and deliberative function but rather serve as its modest ally—an instrument capable of improving decision-making, provided that it remains firmly anchored in legality, transparency, and respect for human autonomy.

Bibliography

A

- Abadie A and Gay S, 'The impact of presumed consent legislation on cadaveric organ donation: a cross-country study' (2006) 25 *Journal of Health Economics* 599. <<https://www.sciencedirect.com/science/article/abs/pii/S016762960600004X>> accessed 3 September 2024
- Abramowitz AJ and O'Leary SG, 'Effectiveness of Delayed Punishment in an Applied Setting' (1990) 21 *Behavior Therapy* 231. <[https://doi.org/10.1016/S0005-7894\(05\)80279-5](https://doi.org/10.1016/S0005-7894(05)80279-5)> accessed 14 September 2025
- Adams P and others, 'Do Nudges Reduce Borrowing and Consumer Confusion in the Credit Card Market?' (2022) 89 *Economica* 178. <<https://onlinelibrary.wiley.com/doi/epdf/10.1111/ecca.12427>> accessed 26 October 2024
- Adams T, 'Nudge economics: has push come to shove for a fashionable theory?' *The Guardian* (1 June 2014). <<https://www.theguardian.com/science/2014/jun/01/nudge-economics-freakonomics-daniel-kahneman-debunked>> accessed 19 June 2015
- Agan A and Starr S, 'Ban the Box, Criminal Records, and Racial Discrimination: A Field Experiment' (2018) 133 *The Quarterly Journal of Economics* 191. <<https://doi.org/10.1093/qje/qjx028>> accessed 29 January 2025
- Agarwal S, and others, 'Regulating Consumer Financial Products: Evidence From Credit Cards' (2015) 130 *The Quarterly Journal of Economics* 111. <<https://www.jstor.org/stable/26372597>> accessed 17 June 2025
- Agassi J and Jarvie IC, 'The rationality of irrationalism' (1980) 11 *Metaphilosophy* 127. <<https://www.jstor.org/stable/24435611>> accessed 16 November 2024
- Ainslie GW, 'Specious reward: A behavioral theory of impulsiveness and impulse control' (1975) 82 *Psychological Bulletin* 463. <https://www.researchgate.net/publication/22054716_Specious_Reward_A_Behavioral_Theory_of_Impulsiveness_and_Impulse_Control> accessed 7 November 2024
- Ainslie GW and Haslam N, 'Hyperbolic discounting' in George Loewenstein and Jon Elster (eds), *Choice over time* (Russell Sage Foundation 1992).
- Akerlof GA and Shiller RJ, *Animal Spirits: How Human Psychology Drives the Economy and Why It Matters for Global Capitalism* (Princeton University Press 2010).
- Alchian A, 'Principles of Professional Advancement' (1996) 34 *Economic Inquiry* 520. <<https://ideas.repec.org/a/oup/ecinqu/v34y1996i3p520-26.html>> accessed 23 October 2024
- Alemanno A and others, 'Nudging Healthy Lifestyles—Informing Regulatory Governance with Behavioural Research' (2012) 3 *European Journal of Risk Regulation* 3. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2005672> accessed 16 September 2025
- Alemanno A and Spina A, 'Nudging Legally: On the Checks and Balances of Behavioral Regulation' (2014) 12 *International Journal of Constitutional Law* 429. <<https://doi.org/10.1093/icon/mou033>> accessed 6 February 2025

Allcott H, 'Social norms and energy conservation' (2011) 95 Journal of Public Economics 1082. <<https://www.sciencedirect.com/science/article/abs/pii/S0047272711000478>> accessed 6 September 2024

Allcott H and Rogers T, 'The short-run and long-run effects of behavioral interventions: Experimental evidence from energy conservation' (2014) 104 American Economic Review 3003. <<https://www.aeaweb.org/articles?id=10.1257/aer.104.10.3003>> accessed 6 September 2024

Allcott H and Rogers T, 'Opower: Evaluating the Impact of Home Energy Reports on Energy Conservation in the United States' (*povertyactionlab.org*, 8 March 8 2017). <<https://www.povertyactionlab.org/evaluation/opower-evaluating-impact-home-energy-reports-energy-conservation-united-states>> accessed 14 September 2025

Allcott H and Kessler JB, 'The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons' (2019) 11 American Economic Journal: Applied Economics 236. <<https://www.aeaweb.org/articles?id=10.1257/app.20170328>> accessed 3 January 2025

Allcott H and others, 'When Do "Nudges" Increase Welfare?' (2025) 115 American Economic Review 1555. <<https://www.aeaweb.org/articles?id=10.1257/aer.20231304>> accessed 15 September 2025;

Alschuler AW, 'The Descending Trail: Holmes' Path of the Law One Hundred Years Later' (1997) 49 Florida Law Review 353. <<https://scholarship.law.ufl.edu/flr/vol49/iss3/1>> accessed 20 November 2024

Amadae SM, 'Rational choice theory', *Encyclopaedia Britannica*. <<https://www.britannica.com/topic/rational-choice-theory>> accessed 15 July 2025

Amir O and Lobel O, 'Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy' (2008) 108 Columbia Law Review 2098. <<http://www.jstor.org/stable/40041817>> accessed 2 December 2024

Anders J and others, 'Evaluation of Complex Whole-School Interventions: Methodological and Practical Considerations' (2017) Education Endowment Fund. <<https://educationendowmentfoundation.org.uk/projects-and-evaluation/evaluation/eef-evaluation-reports-and-research-papers/methodological-research-and-innovations/evaluation-of-complex-whole-school-interventions>> accessed 3 December 2024

Anderson A and Robinson DT, 'Who Feels the Nudge? Knowledge, Self-Awareness and Retirement Savings Decisions' (2019) Swedish House of Finance Research Paper No. 17-15. <<http://dx.doi.org/10.2139/ssrn.3021962>> accessed 30 January 2025

Anderson LR and Stafford SL, 'Punishment in a regulatory setting: Experimental evidence from the VCM' (2003) 24 Journal of Regulatory Economics 91. <<https://doi.org/10.1023/A:1023952115422>> accessed 23 November 2024

Anderson SP, Goeree JK and Holt CA, 'A theoretical analysis of altruism and decision error in public goods games' (1998) 70 Journal of Public Economics 297. <[https://doi.org/10.1016/S0047-2727\(98\)00035-8](https://doi.org/10.1016/S0047-2727(98)00035-8)> accessed 22 August 2025

Andreoni J, 'Cooperation in public-goods experiments: kindness or confusion?' (1995) 85 American Economic Review 891. <<https://www.jstor.org/stable/2118238>> accessed 22 August 2025

Andrighetto G and Castelfranchi C, 'Norm Compliance: The Prescriptive Power of Normative Actions' (2013) 2 Paradigmi 139. <https://www.researchgate.net/publication/269677144_Norm_Compliance_The_Prescriptive_Power_of_Normative_Actions> accessed 21 March 2025

Angner E and Loewenstein G, 'Behavioral Economics' in Uskali Mäki, Dov M Gabbay, Paul Thagard and John Woods (eds), *Philosophy of Economics* (Amsterdam, Elsevier 2012).

- Apel R, 'Sanctions, Perceptions, and Crime' (2022) 5 Annual Review of Criminology 205. <<http://dx.doi.org/10.1146/annurev-criminol-030920-112932>> accessed 13 July 2025
- Arad A and Rubinstein A, 'The People's Perspective on Libertarian-Paternalistic Policies' (2018) 61 Journal of Law and Economics 311. <<https://arielrubinstein.tau.ac.il/papers/101.pdf>> accessed 9 December 2024
- Araña JE and León CJ, 'Can defaults save the climate? Evidence from a field experiment on carbon offsetting programs' (2013) 54 Environmental and Resource Economics 613. <<https://link.springer.com/article/10.1007/s10640-012-9615-x>> accessed 5 September 2024
- Ariely D, *Predictably Irrational: The Hidden Forces That Shape Our Decisions* (HarperCollins 2009).
- Arkes HR and Blumer C, 'The psychology of sunk costs' (1985) 35 Organizational Behavior and Human Decision Processes 124. <[https://doi.org/10.1016/0749-5978\(85\)90049-4](https://doi.org/10.1016/0749-5978(85)90049-4)> accessed 23 August 2025
- Asch SE, 'Opinions and Social Pressure' (1955) 193 Scientific American 1. <<https://pdodds.w3.uvm.edu/teaching/courses/2009-08UVM-300/docs/others/everything/asch1955a.pdf>> accessed 30 June 2025
- Ashraf N, Camerer CF and Loewenstein G, 'Adam Smith, Behavioral Economist' (2005) 19 Journal of Economic Perspectives 131. <<https://www.aeaweb.org/articles?id=10.1257/089533005774357897>> accessed 30 September 2025
- Association for Psychological Science, 'Spinning class, the scarcity heuristic, and me' (Psychologicalscience.org, 13 April 2010). <<https://www.psychologicalscience.org/news/full-frontal-psychology/spinning-class-the-scarcity-heuristic-and-me.html>> accessed 17 September 2025
- Austin J, *The Province of Jurisprudence Determined* (1832 Campbell & Thomas).
- Aven T, 'Risk Assessment and Risk Management: Review of Recent Advances on Their Foundation' (2016) 253 European Journal of Operational Research 1, 3. <<https://doi.org/10.1016/j.ejor.2015.12.023>> accessed 8 January 2025
- Ayres I and Gertner R, 'Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules' (1989) 99 Yale Law Journal 87. <<http://hdl.handle.net/20.500.13051/781>> accessed 5 December 2024
- Ayres I, Raseman S and Shih A, 'Evidence from two large field experiments that peer comparison feedback can reduce residential energy usage' (2013) 29 The Journal of Law Economics and Organization 992. <<https://academic.oup.com/jleo/article-abstract/29/5/992/976785?redirectedFrom=fulltext>> accessed 6 September 2024

B

- Baird DG, Epstein RA and Sunstein CR, 'Introduction to Symposium: Homo Economicus, Homo Myopicus, and the Law and Economics of Consumer Choice' (2006) 73 University of Chicago Law Review 1. <<http://www.jstor.org/stable/4495540>> accessed 17 June 2025
- Baisch R, 'Nudging: Information, Choice Architecture and Beyond' in Mathis K and Tor A (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016).
- Bajtelsmit VL and Thistle PD, 'The Reasonable person negligence standard and liability insurance' (2008) 75 The Journal of Risk and Insurance 815. <<https://www.jstor.org/stable/25145311>> accessed 20 November 2024

Baldwin R, 'From regulation to behaviour change: giving nudge the third degree' (2014) 77 The Modern Law Review 831. <<http://eprints.lse.ac.uk/64343/1/From%20Regulation.pdf>> accessed 22 August 2024

Balwicka-Szczyrba M and Sylwestrzak A, *Kodeks cywilny. Komentarz* (LEX, 2023).

Balz JP, 'A nudge on a hot button issue: abortion' (*The Nudge*, 1 May 2008). <<http://nudges.org/a-nudge-on-a-hot-button-issue-abortion/>> accessed 4 Apr 2021

Bandura A, 'Social cognition theory: an agentic perspective' (2001) 52 Annual Review of Psychology 1. <<https://doi.org/10.1146/annurev.psych.52.1.1>> accessed 28 November 2024

Bandura A, 'Social Cognitive Theory: An Agentic Perspective' (2020) 12 Psychology the Journal of the Hellenic Psychological Society 313. <[10.12681/psy_hps.23964](https://doi.org/10.12681/psy_hps.23964)> accessed 28 November 2024

Banerjee S, Peter Charles John, 'Nudge and Nudging in Public Policy' (2022) SSRN Electronic Journal 1. <https://www.researchgate.net/publication/366871003_Nudge_and_Nudging_in_Public_Policy> accessed 29 August 2024

Bar-Gill O, 'Seduction by Plastic' (2004) American Law & Economics, Association Annual Meetings, Paper 12. <<http://law.bepress.com/alea/14th/art12>> accessed 18 June 2025

Bar-Gill O and Warren E, 'Making Credit Safer' (2008) 157 University of Pennsylvania Law Review 1. <<https://www.law.upenn.edu/live/files/112-bar-gillwarren157upalrev12008pdf>> accessed 19 June 2025

Bar-Gill O, *Seduction by Contract: Law, Economics, and Psychology in Consumer Markets* (Oxford University Press 2012).

Barnum TC and Nagin DS, 'Deterrence and Sanction Certainty Perceptions' (2023) Oxford Research Encyclopedia of Criminology and Criminal Justice. <<https://doi.org/10.1093/acrefore/9780190264079.013.248>> accessed 13 July 2025

Baron M, 'Manipulativeness' (2003) 77 Proceedings and Addresses of the American Philosophical Association 37. <<https://doi.org/10.2307/3219740>> accessed 16 September 2025

Barr MS, Mullainathan S and Shafir E, 'The Case for Behaviorally Informed Regulation' in Moss D and Cisternino J (eds), *New Perspectives on Regulation* (The Tobin Project 2009).

Barton A and Grüne-Yanoff T, 'From Libertarian Paternalism to Nudging—and Beyond' (2015) 6 Review of Philosophy and Psychology 341. <<https://link.springer.com/article/10.1007/s13164-015-0268-x>> accessed 11 December 2024

Bastien C and Cardoso JL, 'From homo economicus to homo corporativus: A neglected critique of neoclassical economics' (2007) 36 The Journal of Socio-Economics 118. <<https://doi.org/10.1016/j.socec.2005.11.016>> accessed 22 August 2025

Battesini E, 'Incremental Learned Hand Standard, Degrees of Negligence and Allocation of Damages: a Comparative Tort Law and Economics Approach' (2020) 11 Economic Analysis of Law Review 48. <<https://doi.org/10.31501/ealr.v11i1.11602>> accessed 21 November 2024

Baumgartner L and Kneer M, 'The Meaning of 'Reasonable': Evidence From a Corpus-Linguistic Study' in Tobia KP (ed), *The Cambridge Handbook of Experimental Jurisprudence* (Cambridge University Press 2025).

Baumol WJ and Quandt RE, 'Rules of Thumb and Optimally Imperfect Decisions' (1964) 54 The American Economic Review 23. <<http://www.jstor.org/stable/1810896>> accessed 23 October 2024.

- Beaudry-Cyr M, 'Rational Choice Theory', *The Encyclopedia of Crime and Punishment* (2015) 1. <<https://doi.org/10.1002/9781118519639.wbecpx038>> accessed 28 November 2024
- Becker GS, 'Crime and punishment: an economic approach' (1968) 76 *Journal of Political Economy* 169. <<https://www.jstor.org/stable/1830482>> accessed 22 November 2024
- Becker GS, *Accounting for Tastes* (Cambridge: Harvard University Press 1996).
- Beech J and others, 'What Role Do Taxes and Regulation Play in Promoting Better Health' (*The King's Fund*, 6 March 2020). <<https://www.kingsfund.org.uk/insight-and-analysis/briefings/taxes-regulation-better-health>> accessed 23 August 2025
- Begg C and others, 'Improving the quality of reporting of randomized controlled trials: The CONSORT statement' (1996) 276 *JAMA* 637. <[10.1001/jama.276.8.637](https://doi.org/10.1001/jama.276.8.637)> accessed 3 December 2024
- Behavioural Insights Team, 'Behaviour Change and Energy Use' (2011) Cabinet Office BIT Publications. <<https://assets.publishing.service.gov.uk/media/5a79cee1ed915d6b1deb37f8/behaviour-change-and-energy-use.pdf>> accessed 23 August 2025
- Behavioural Insights Team, 'EAST: Four Simple Ways to Apply Behavioural Insights' (*Bi.team*, 2014). <<https://www.bi.team/wp-content/uploads/2014/04/BIT-EAST-1.pdf>> accessed 30 September 2025
- Belot M, James J and Spiteri J, 'Facilitating healthy dietary habits: An experiment with a low income population' (2020) 129 *European Economic Review* 1. <<https://doi.org/10.1016/j.eurocorev.2020.103550>> accessed 1 February 2025
- Bemelmans-Vidéc ML, Rist R and Vedung E, *Carrots, Sticks and Sermons: Policy Instruments and Their Evaluation (Comparative Policy Evaluation)* (Routledge 2017).
- Benartzi S and others, 'Should Governments invest more in nudging?' (2017) 28 *Psychological Science* 1041. <<https://doi.org/10.1177/0956797617702501>> accessed 17 December 2024
- Bentham J, *Of Laws in General* (The Athlone Press 1970).
- Bentham J, *An Introduction to the Principles of Morals and Legislation* (1789).
- Berg C and Davidson S, 'Nudging, calculation, and utopia' (2017) 1 *Journal of Behavioral Economics for Policy* 49. <https://www.academia.edu/35101352/Nudging_calculation_and_utopia> accessed 29 August 2024
- Bernedo M, Ferraro PJ and Price MK, 'The persistent impacts of norm-based messaging and their implications for water conservation' (2014) 37 *Journal of Consumer Policy* 437. <<https://link.springer.com/article/10.1007/s10603-014-9266-0>> accessed 6 September 2024
- Berns W, 'Law and Behavioral Science' (1963) 28 *Law and Contemporary Problems* 185. <<https://doi.org/10.2307/1190729>> accessed 1 March 2025
- Bernstein A, 'Civil Rights Violations = Broken Windows: De Minimis Curat Lex' (2010) 62 *Florida Law Review* 897. <https://www.researchgate.net/publication/45515629_Civil_Rights_Violations_Broken_Windows_De_Minimis_Curet_Lex> accessed 19 February 2025
- Beshears J and others, 'The Effect of Providing Peer Information on Retirement Savings Decisions' (2015) 70 *The Journal of Finance* 1161. <<https://doi.org/10.1111/jofi.12258>> accessed 3 February 2025

- Beshears J and Kosowsky H, 'Nudging: Progress to date and future directions' (2020) 161 *Organizational Behavior and Human Decision Processes* 3. <https://doi.org/10.1016/j.obhdp.2020.09.001> accessed 17 December 2024
- Bicchieri C, *The Grammar of Society. The Nature and Dynamics of Social Norms*. (Cambridge University Press 2006).
- Bicchieri C, 'Norms, Preferences, and Conditional Behavior' (2010) 9 *Politics, Philosophy and Economics* 297. <https://doi.org/10.1177/1470594X1036927> accessed 21 March 2025
- Bickman L, 'The social power of a uniform' (1974) 4 *Journal of Applied Social Psychology* 47. [10.1111/j.1559-1816.1974.tb02807.x](https://doi.org/10.1111/j.1559-1816.1974.tb02807.x) accessed 22 August 2025
- Bielska-Brodziak A, *Śladami prawodawcy faktycznego. Materiały legislacyjne jako narzędzie wykładni prawa* (Wolters Kluwer 2017).
- Binder M and Lades LK, 'Autonomy-Enhancing Paternalism' (2015) 68 *International Review for Social Sciences* 3. <https://doi.org/10.1111/kykl.12071> accessed 28 December 2024
- Blanken I, van de Ven N and Zeelenberg M, 'A meta-analytic review of moral licensing' (2015) 41 *Personality and Social Psychology Bulletin* 540. <https://doi.org/10.1177/0146167215572134> accessed 1 February 2025
- Blankenship KM and others, 'Structural interventions: concepts, challenges and opportunities for research' (2006) 83 *Journal of Urban Health* 59. https://www.researchgate.net/publication/7047211_Structural_Interventions_Concepts_Challenges_and_Opportunities_for_Research accessed 17 August 2024
- Block MK and Gerety VE, 'Some experimental evidence on differences between student and prisoner reactions to monetary penalties and risk' (1995) 24 *Journal of Legal Studies* 123. <https://www.jstor.org/stable/724592> accessed 23 November 2024
- Blythman J, *Shopped: the shocking power of British supermarkets* (Fourth Estate 2004).
- Bogdanowicz B, 'Ekonomia behawioralna a klasyczny paradygmat ekonomii' (2014) 313 *Folia Pomeranae Universitatis Technologiae Stetinensis. Oeconomica* 23, 26. <http://foliaoe.zut.edu.pl/pdf/files/magazines/2/49/618.pdf> accessed 23 August 2025
- Boland LA, Lawrence A Boland, 'Scientific thinking without scientific method' in Backhouse RE (ed), *New directions in economic methodology* (Routledge 1994).
- Boldeman L, 'The Long-Running Critique of Neoclassical Economics and its Limited Relevance to Policy' in *The Cult of the Market: Economic Fundamentalism and its Discontents* (ANU Press 2007). <http://press-files.anu.edu.au/downloads/press/p98831/mobile/ch08s03.html> accessed 15 July 2025
- Bonell C and others, 'One nudge forward, two steps back' (2011) 342 *British Medical Journal* 1. <https://researchonline.lshtm.ac.uk/id/eprint/1610/1/One%20nudge%20forward%2C%20two%20steps%20back%20-%20The%20BMJ.pdf> accessed 17 August 2024
- Bonsmann SG and others, 'Front-of-pack nutrition labelling schemes: a comprehensive review' (2020) Publications Office of the European Union. <https://publications.jrc.ec.europa.eu/repository/handle/JRC113586> accessed 13 September 2025
- Borucka-Arctowa M, 'Legalizm a konformizm i oportunizm' (1964) 2 *Ruch Prawniczy, Ekonomiczny i Socjologiczny* 239. <http://hdl.handle.net/10593/18753> accessed 6 October 2025

- Boseley S and Campbell D, 'Food industry playing for time on regulation, says obesity expert' *The Guardian* (19 February 2013). <<https://www.theguardian.com/society/2013/feb/18/food-industry-regulation-obesity-expert>> accessed 5 May 2025
- Boudon R, 'Beyond Rational Choice Theory' (2003) 29 *Annual Review of Sociology* 1. <<http://www.jstor.com/stable/30036958>> accessed 18 August 2025
- Bovens L, 'The ethics of nudge' in Till Grüne-Yanoff and Sven Ove Hansson (eds), *Preference change: Approaches from philosophy, economics and psychology* (Springer 2009) 207. <https://doi.org/10.1007/978-90-481-2593-7_10> accessed 18 August 2024
- Bovens L, 'Real Nudge' (2012) 3 *European Journal of Risk Regulation* 43. <[10.1017/S1867299X00001793](https://doi.org/10.1017/S1867299X00001793)> accessed 6 February 2025
- Bovens M, 'Analysing and Assessing Accountability: A Conceptual Framework' (2007) 13 *European Law Journal* 447. <<https://doi.org/10.1111/j.1468-0386.2007.00378.x>> accessed 18 September 2025
- Bovens M, 'Two Concepts of Accountability: Accountability as a Virtue and as a Mechanism' (2010) 33 *West European Politics* 946. <<https://www.tandfonline.com/doi/full/10.1080/01402382.2010.486119>> accessed 18 September 2025
- Bowles S, 'Endogenous Preferences: The Cultural Consequences of Markets and Other Economic Institutions' (1998) 36 *Journal of Economic Literature* 75. <<https://ideas.repec.org/a/aea/jecolit/v36y1998i1p75-111.html>> accessed 21 November 2024
- Bozeman B, 'Rules Compliance Behavior: A Heuristic Model' (2022) 5 *Perspectives on Public Management and Governance* 36. <<https://doi.org/10.1093/ppmgov/gvab028>> accessed 13 September 2025
- Brantingham PJ and Brantingham PL, 'A Theoretical Model of Crime Site Selection' in Marvin D Krohn and Ronald L Akers (eds), *Crime, Law and Sanctions: Theoretical Perspectives* (1978 Sage).
- Brennan T, 'Behavioral Economics and Energy Efficiency Regulation' (2016) Washington DC: Resources for the Future. <<https://media.rff.org/documents/RFF-DP-16-30.pdf>> accessed 21 January 2025
- Brent DA, Cook JH and Olsen S, 'Social comparisons, household water use, and participation in utility conservation programs: Evidence from three randomized trials' (2015) 2 *Journal of the Association of Environmental and Resource Economists* 597. <https://www.researchgate.net/publication/282966135_Social_Comparisons_Household_Water_Use_and_Participation_in_Utility_Conservation_Programs_Evidence_from_Three_Randomized_Trials> accessed 6 September 2024.
- Brigham J and Brown DW, *Political Implementation: Penalties or Incentives?* (Sage Publications 1980).
- Brighton H and Gigerenzer G, 'Homo Heuristicus: Less-is-More Effects in Adaptive Cognition' (2012) 19 *The Malaysian journal of medical sciences* 6. <<https://pmc.ncbi.nlm.nih.gov/articles/PMC3629675/>> accessed 19 June 2025
- Broude T, 'Behavioral International Law' (2015) 163 *University of Pennsylvania Law Review* 1099. <<https://www.jstor.org/stable/24752762>> accessed 28 February 2025
- Brousseau KL and others, 'From Beliefs to Attitudes: Polias, a Model of Attitude Dynamics Based on Cognitive Modeling and Field Data' (2016) 19 *Journal of Artificial Societies and Social Simulation* 2. <<https://www.jasss.org/19/4/2.html>> accessed 10 June 2025
- Brown CL and Krishna A, 'The skeptical shopper: a metacognitive account for the effects of default options on choice' (2004) 31 *Journal of Consumer Research* 529. <<https://doi.org/10.1086/425087>> accessed 6 November 2024

Brown D, 'Do Harsher Punishments Deter Crime?' (UNSW Newsroom, 16 July 2020) <https://www.unsw.edu.au/newsroom/news/2020/07/do-harsher-punishments-deter-crime> accessed 13 July 2025

Brown JL, 'The Coase Theorem' (*Britannica*, 2 February 2024). <https://www.britannica.com/money/environmental-economics/The-Coase-theorem> accessed 19 June 2025

Bruns H, Fillon A, Maniadis Z and Paunov Y, "Fear of the Light"? Transparency does not reduce the effectiveness of nudges. A data-driven review' (2023) University of Cyprus Working Papers in Economics 04-2023, 1. <https://www2.aueb.gr/conferences/Crete2023/papers/Maniadis.pdf> accessed 1 November 2024

Brunswik E, 'Organismic achievement and environmental probability' (1943) 50 *Psychological Review* 255. <https://doi.org/10.1037/h0060889> accessed 29 June 2025

Brunswik E, 'Representative design and probabilistic theory in a functional psychology' (1955) 62 *Psychological Review* 193. <https://doi.org/10.1037/h0047470> accessed 29 June 2025

Bucher T and others, 'Nudging consumers towards healthier choices: A systematic review of positional influences on food choice' (2016) 115 *British Journal of Nutrition* 2252. <https://www.cambridge.org/core/journals/british-journal-of-nutrition/article/nudging-consumers-towards-healthier-choices-a-systematic-review-of-positional-influences-on-food-choice/3D7DE450C7FEB6844E79D773C92A8B14> accessed 5 November 2024

Bureau of Consumer Financial Protection, 'Payday, Vehicle Title, and Certain High-Cost Installment Loans' (Final Rule) 85 Fed Reg 44382 (22 July 2020). <https://www.consumerfinance.gov/rules-policy/regulations/1041/1/> accessed 21 September 2025

Burgess A, "Nudging" Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market' (2012) 3 *European Journal of Risk Regulation* 3. <https://www.jstor.org/stable/24323121> accessed 8 February 2025

Buss B and Westlund A, 'Personal Autonomy', *The Stanford Encyclopedia of Philosophy* (Spring edn 2018). <https://plato.stanford.edu/archives/spr2018/entries/personal-autonomy/> accessed 14 November 2024

Butland B and others, 'Tackling obesities Future Choices – Project report' (2007) Government Office of Science Publishing 1. <https://assets.publishing.service.gov.uk/media/5a759da7e5274a4368298a4f/07-1184x-tackling-obesities-future-choices-report.pdf> accessed 24 October 2024

Butenheim A and others, 'Do incentives crowd out motivation? A feasibility study of a community vector-control campaign in Peru' (2021) 49 *Behavioural Medicine* 1. [10.1080/08964289.2021.1977603](https://doi.org/10.1080/08964289.2021.1977603) accessed 13 September 2025

Bystranowski P, 'Ignorance of Law Does Not Excuse: A New Empirical Account' (pre-print, Oct 2024) [10.13140/RG.2.2.13172.97925](https://doi.org/10.13140/RG.2.2.13172.97925) accessed 13 July 2025

C

Cairney P, *The Politics of Evidence-Based Policy Making* (Palgrave Pivot London 2015).

Caldwell BJ, 'Proposals for the Recovery of Economic Practice' in Roger E Backhouse (ed), *New Directions in Economic Methodology* (Routledge 1994).

Calo R, 'Code, Nudge, or Notice?' (2014) 99 *Iowa Law Review* 773. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2217013 accessed 8 February 2025

- Calo R, 'Digital Market Manipulation' (2014) 82 The George Washington Law Review 995.
<https://www.gwlr.org/wp-content/uploads/2014/10/Calo_82_41.pdf> accessed 1 March 2025
- Camerer CF and others, 'Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism"' (2003) 151 University of Pennsylvania Law Review 1211, 1249–53.
<https://scholarship.law.upenn.edu/penn_law_review/vol151/iss3/15> accessed 12 September 2025
- Camerer CF and Loewenstein G, 'Behavioral Economics: Past, Present, Future' in Camerer CF, Loewenstein G and Rabin M (eds), *Advances in Behavioral Economics* (Princeton University Press 2004) 1.
- Camici C, 'The matter of habit' (1986) 91 American Journal of Sociology 1039.
<<https://www.jstor.org/stable/2780121>> accessed 26 November 2024
- Casad BJ and Luebering JE, 'Confirmation bias' (*Britannica*, 29 July 2025).
<<https://www.britannica.com/science/confirmation-bias>> accessed 22 August 2025
- Casebeer KM and Whalen CJ, 'Taking Interdependence and Production More Seriously: Toward Mutual Rationality and a More Useful Law and Economics' (2011) 66 University of Miami Law Review 141. <<https://repository.law.miami.edu/umlr/vol66/iss1/6>> accessed 22 October 2024
- Campbell JY, 'Restoring rational choice: the challenge of consumer financial regulation' (2016) 106 American Economic Review 1.
<<https://scholar.harvard.edu/campbell/publications/restoring-rational-choice-challenge-consumer-financial-regulation>> accessed 26 October 2024
- Campbell R and others, 'An informal school--based peer--led intervention for smoking prevention in adolescence (ASSIST): a cluster randomised trial' (2008) 371 Lancet 1595-. <[10.1016/S0140-6736\(08\)60692-3](https://doi.org/10.1016/S0140-6736(08)60692-3)> accessed 23 September 2025
- Carlsson F and others, 'Nudging as an Environmental Policy Instrument' (2020) 756 Working Paper in Economics 1.
<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3711946> accessed 5 September 2024
- Carroll J, Denny E and Lyons S, 'The effects of energy cost labelling on appliance purchasing decisions: trial results from Ireland' (2016) 39 Journal of Consumer Policy 23.
<<https://link.springer.com/article/10.1007/s10603-015-9306-4>> accessed 5 September 2024
- Chabé-Ferret S and others, 'When Nudges Backfire: Evidence from a Randomized Field Experiment to Boost Biological Pest Control' (2024) 156 Annals of Economics and Statistics 9.
<<https://brgm.hal.science/hal-04900081/document>> accessed 3 February 2025
- Chapman E and others, 'Assessing the impact of knowledge communication and dissemination strategies targeted at health policy-makers and managers: an overview of systematic reviews' (2021) 19 Health Research Policy and Systems 140. <<https://doi.org/10.1186/s12961-021-00780-4>> accessed 24 October 2024
- Chater N and Loewenstein G, 'The I-Frame and the s-Frame: How Focusing on Individual-Level Solutions Has Led Behavioral Public Policy Astray' (2023) 46 Behavioral and Brain Sciences 1.
<<https://doi.org/10.1017/S0140525X22002023>> accessed 3 January 2025
- Chen DL, Moskowitz TJ and Shue K, 'Decision-Making Under the Gambler's Fallacy: Evidence from Asylum Judges, Loan Officers, and Baseball Umpires' (2016) 131 Quarterly Journal of Economics 1181. <<https://ssrn.com/abstract=2538147>> accessed 6 December 2024

Cherry K, 'How Cognitive Biases Influence the Way You Think and Act' (Verywellmind.com, 7 May 2024). <<https://www.verywellmind.com/what-is-a-cognitive-bias-2794963>> accessed 20 September 2025

Chiou W, Yang C and Wan C, 'Ironic effects of dietary supplementation: illusory invulnerability created by taking dietary supplements licenses health-risk behaviors' (2011) 22 Psychological Science 1081. <<https://www.jstor.org/stable/25835503>> accessed 1 February 2025

Choduń A, *Aspekty językowe derywacyjnej koncepcji wykładni prawa* (Wydawnictwo Naukowe Uniwersytetu Szczecińskiego 2018).

Christman J, 'Autonomy in Moral and Political Philosophy' *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition) <<https://plato.stanford.edu/archives/fall2020/entries/autonomy-moral/>> accessed 21 December 2024

Cialdini RB, Reno RR and Kallgren CA, 'A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places' (1990) 58 Journal of Personality and Social Psychology 1015. <<https://doi.org/10.1037/0022-3514.58.6.1015>> accessed 11 September 2025

Clarke RV and Cornish DB, 'Modeling Offenders' Decisions: A Framework for Research and Policy' (1985) 6 Crime and Justice 147. <<http://www.jstor.org/stable/1147498>> accessed 11 June 2025

Coase RH, 'The Problem of Social Cost' (1960) 3 The Journal of Law & Economics 1. <<http://www.jstor.org/stable/724810>> accessed 19 June 2025

Cohen MR, 'The Basis of Contract' (1933) 46 Harvard Law Review 553. <<https://doi.org/10.2307/1331491>> accessed 20 November 2024

Colchero MA, Molina M and Guerrero-López CM, 'After Mexico Implemented a Tax, Purchases of Sugar-Sweetened Beverages Decreased and Water Increased: Difference by Place of Residence, Household Composition, and Income Level' (2017) 147 Journal of Nutrition 1552. <<https://doi.org/10.3945/jn.117.251892>> accessed 23 June 2025

Coleman JS, 'Social Capital in the Creation of Human Capital' (1988) 94 American Journal of Sociology S95. <<https://www.jstor.org/stable/2780243>> accessed 25 November 2024

Collins J, 'Why Behavioral Economics is Itself Biased' Economics (12 December 2020). <<https://economics.com/why-behavioral-economics-is-itself-biased/>> accessed 3 January 2025

Congiu L and Moscati I, 'A review of nudges: Definitions, justifications, effectiveness' (2022) 36 Journal of Economic Surveys 188. <<https://onlinelibrary.wiley.com/doi/full/10.1111/joes.12453>> accessed 5 August 2024

Conlisk J, 'Why bounded rationality?' (1996) 34 Journal of Economic Literature 667. <<http://www.jstor.org/stable/2729218>> accessed 28 December 2024

Conly S, *Against Autonomy: Justifying Coercive Paternalism* (Cambridge University Press 2012).

Consumer Financial Protection Bureau, 'Ability-to-Repay and Qualified Mortgage Rule. Small Entity Compliance Guide' (v 3.1, April 2021). <<https://www.consumerfinance.gov/rules-policy/final-rules/qualified-mortgage-definition-under-truth-lending-act-regulation-z-general-qm-loan-definition-delay-mandatory-compliance-date/>> accessed 21 September 2025

Consumer Financial Protection Bureau, 'New protections for payday and installment loans take effect March 30' (Consumerfinance.gov, 10 January 2025). <<https://www.consumerfinance.gov/about-us/blog/new-protections-for-payday-and-installment-loans-take-effect-march-30/>> accessed 15 September 2025

Conte R and Castelfranchi C, *Cognitive and social action* (Garland Science 1995).

Conte R and Castelfranchi C, 'The mental path of norms' (2006) 19 Ratio Juris 501. <https://www.researchgate.net/publication/228282115_The_Mental_Path_of_Norms> accessed 24 March 2025

Cornish DB, *Gambling: A Review of the Literature and Its Implication for Policy and Research* (Home Office Research Study no. 42 1978).

Cornish DB and Clarke RV, *The Reasoning Criminal: Rational Choice Perspectives On Offending* (Transaction Publishers 2014).

Costa DL and Kahn ME, 'Energy conservation "nudges" and environmentalist ideology: Evidence from a randomized residential electricity field experiment' (2013) 11 Journal of the European Economic Association 680. <<https://academic.oup.com/jeea/article/11/3/680/2300535>> accessed 6 September 2024

Cournot AA, *Researches into the Mathematical Principles of the Theory of Wealth* (Macmillan 1897). <https://archive.org/details/bub_gb_AGoGpyJY_SAC/page/n9/mode/2up> accessed 12 November 2024

Creamer CD and Godzimirska Z, 'Trust, Legal Elites, and the European Court of Human Rights' (2023) 45 Human Rights Quarterly 628, 638. <[10.1353/hrq.2023.a910490](https://doi.org/10.1353/hrq.2023.a910490)> accessed 25 February 2025

Croson RTA, 'Theories of commitment, altruism and reciprocity: evidence from linear public goods games' (2007) 45 Economic Inquiry 199. <<https://doi.org/10.1111/j.1465-7295.2006.00006.x>> accessed 22 August 2025

Curtin RT, 'George Katona: A Founder of Behavioral Economics' in Roger Frantz and others (eds), *Routledge Handbook of Behavioral Economics* (Routledge 2016).

D

Dale S, 'Heuristics and biases: The science of decision-making' (2015) 32 Business Information Review 93. <[10.1177/0266382115592536](https://doi.org/10.1177/0266382115592536)> accessed 20 September 2025

Damgaard MT and Gravert C, 'The hidden costs of nudging: Experimental evidence from reminders in fundraising' (2018) 157 Journal of Public Economics 15. <<https://doi.org/10.1016/j.jpubeco.2017.11.005>> accessed 1 February 2025

Davis KC, 'Behavioral Science and Administrative Law' (1964) 17 Journal of Legal Education 137. <<http://www.jstor.org/stable/42891618>> accessed 1 March 2025

Dayan E and Bar-Hillel M, 'Nudge to Nobesity II: Menu Positions Influence Food Orders' (2011) 6 Judgment and Decision Making 333. <<https://doi.org/10.1017/S1930297500001947>> accessed 6 December 2024

Dean M, Kibris O and Masatlioglu Y, 'Limited attention and status quo bias' (2017) 169 Journal of Economic Theory 93. <<https://doi.org/10.1016/j.jet.2017.01.009>> accessed 23 August 2025

Deaton A and Cartwright N, 'Understanding and misunderstanding randomized controlled trials' (2018) 210 Social Science & Medicine 2. <[10.1016/j.socscimed.2017.12.005](https://doi.org/10.1016/j.socscimed.2017.12.005)> accessed 2 December 2024

Debnam J and Just DR, 'Endogenous Responses to Paternalism: Examining Psychological Reactance in the Lab and the Field' (2017) working paper. <<https://files.webservices.illinois.edu/7370/jakinadebnamjimp.pdf>> accessed 16 September 2025

DellaVigna S and Linos E, 'RCTs to Scale: Comprehensive Evidence From Two Nudge Units' (2022) 90 *Econometrica* 81. <<https://doi.org/10.3982/ECTA18709>> accessed 24 October 2024

Delmas MA and Lessem N, 'Saving power to conserve your reputation? The effectiveness of private versus public information' (2014) 67 *Journal of Environmental Economics and Management* 353. <https://www.researchgate.net/publication/260110792_Saving_Power_to_Conserve_Your_Reputation_The_effectiveness_of_private_versus_public_information> accessed 6 September 2024

Demuyneck T and Hjertstrand P, 'Samuelson's Approach to Revealed Preference Theory: Some Recent Advances' in: Robert A Cord, Richard A Anderson and William Barnett (eds) *Paul Samuelson. Remaking Economics: Eminent Post-War Economists* (Palgrave Macmillan 2019). <https://doi.org/10.1057/978-1-137-56812-0_9> accessed 18 November 2024

Department of Health and Social Care, 'Public health responsibility deal' (July 2011). <<https://www.gov.uk/government/news/public-health-responsibility-deal>> accessed 5 May 2025

Department for Work and Pensions, 'Workplace pension participation and savings trends of eligible employees: 2009 to 2023' (*Gov.uk*, 31 July 2024). <<https://www.gov.uk/government/statistics/workplace-pension-participation-and-savings-trends-2009-to-2023/workplace-pension-participation-and-savings-trends-of-eligible-employees-2009-to-2023>> accessed 1 October 2025;

Department for Work and Pensions, 'Workplace pension participation and savings trends of eligible employees: 2009 to 2024' (*Gov.pl*, 5 August 2025). <<https://www.gov.uk/government/statistics/workplace-pension-participation-and-savings-trends-2009-to-2024/workplace-pension-participation-and-savings-trends-of-eligible-employees-2009-to-2024>> accessed 1 October 2025

De Ridder DTD, Kroese F and van Gestel L, 'Nudgeability: Mapping conditions of susceptibility to nudge influence' (2022) 17 *Perspectives on Psychological Science* 346. <<https://journals.sagepub.com/doi/10.1177/1745691621995183>> accessed 1 November 2024

De Ridder DTD and others, 'Simple nudges that are not so easy' (2024) 8 *Behavioural Public Policy* 154. <<https://www.cambridge.org/core/journals/behavioural-public-policy/article/simple-nudges-that-are-not-so-easy/86DDA762087208E5BCEB2188D42FFC80#>> accessed 6 November 2024

De Vinne MJ, 'The Reasonable Person as Living Fossil' (2010) 37 *Litigation* 15. <<https://www.jstor.org/stable/25801830>> accessed 21 November 2024

Diepeveen S and others, 'Public acceptability of government intervention to change health-related behaviors: A systematic review and narrative analysis' (2013) 13 *BMC Public Health* 1. <<https://doi.org/10.1186/1471-2458-13-756>> accessed 5 November 2024

Di Nucci E, 'Habits, Nudges, and Consent' (2013) 13 *The American Journal of Bioethics* 27. <<https://doi.org/10.1080/15265161.2013.781711>> accessed 16 August 2025

Dolan P and others, 'MindSpace: Influencing behaviour through public policy' (2010) Institute For Government, 1. <<http://www.instituteforgovernment.org.uk/publications/mindspace>> accessed 16 December 2024

Donohue III JJ and Wolfers J, 'Uses and Abuses of Empirical Evidence in the Death Penalty Debate' (2006) 58 *Stanford Law Review* 791. <<https://ssrn.com/abstract=870312>> accessed 27 January 2025

Doucoulagos C, 'A Note on the Evolution of Homo Economicus' (1994) 28 *Journal of Economic Issues* 877. <<https://www.jstor.org/stable/4226858>> accessed 21 November 2024

Dowling JM and Fang YC, *Modern Developments in Behavioral Economics: Social Science Perspectives on Choice and Decision Making* (World Scientific 2007).

Dumanovsky T and others, 'Changes in Energy Content of Lunchtime Purchases from Fast Food Restaurants After Introduction of Calorie Labelling: Cross Sectional Customer Surveys' (2011) 343 The British Medical Journal d4464. <<https://doi.org/10.1136/bmj.d4464>> accessed 13 January 2025

Dunt I, 'Nudge nudge, say no more. Brits' minds will be controlled without us knowing it' The Guardian (5 February 2014). <<https://www.theguardian.com/commentisfree/2014/feb/05/nudge-say-no-more-behavioural-insights-team>> accessed 21 December 2024

Durkheim E, *The Rules of Sociological Method* (The Free Press 1982).

Durkheim E, *De la division du travail social* (8th edition, Presses Universitaire de France 1893).

Dworkin G, 'Paternalism', *The Stanford Encyclopedia of Philosophy* (December edn 2005). <www.plato.stanford.edu/archives/win2005/entries/paternalism> accessed 8 May 2015

Dworkin R, *Law's Empire* (Harvard University Press 1986).

Dworkin R, *Sovereign Virtue: The Theory and Practice of Equality* (Harvard University Press 2000).

Dworkin R, *Is Democracy Possible Here? Principles for a New Political Debate* (Princeton University Press 2006).

Dworkin R, *Justice for Hedgehogs* (Harvard University Press 2011).

E

Eagly AH and Chaiken S, *The psychology of attitudes* (Harcourt Brace Jovanovich College Publishers 1993).

Ehrlich I, 'Participation in illegitimate activities: an economic analysis' in Gary S Becker and William M Landes (eds), *Essays in the Economics of Crime and Punishment* (Columbia University Press 1974) 63. <<https://www.nber.org/system/files/chapters/c3627/c3627.pdf>> accessed 22 November 2024

Eide E, 'Economics of criminal behavior', *Encyclopedia of law and economics* (Edward Elgar 2000).

Eide E, Rubin PH and Shepherd JM, 'Economics of Crime' (2006) 2 Foundations and Trends® in Microeconomics 205. <[10.1561/07000000014](https://doi.org/10.1561/07000000014)> accessed 22 November 2024

Elgrably-Levy N, 'Nudge: a new way of governing that needs oversight' (*Montreal Economic Institute*, September 2023). <<https://www.iedm.org/nudge-a-new-way-of-governing-that-needs-oversight/>> accessed 20 August 2025

Elster J, 'Autonomy in Political Philosophy', *Oxford Research Encyclopedia of Politics* (2020). <<https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-1385>> accessed 13 November 2024

Engelen B, 'Nudging and rationality: What is there to worry?' (2019) 31 Rationality and Society <<https://doi.org/10.1177/1043463119846743>> accessed 22 June 2025

Engels RCME and others, 'Alcohol portrayal on television affects actual drinking behaviour' (2009) 44 Alcohol and alcoholism 244. <[10.1093/alcalc/agg003](https://doi.org/10.1093/alcalc/agg003)> accessed 13 December 2024

European Commission, 'Nutrition labelling.' <https://food.ec.europa.eu/food-safety/labelling-and-nutrition/food-information-consumers-legislation/nutrition-labelling_en> accessed 19 June 2025

European Commission, *Better Regulation Guidelines* (SWD, 2021, 305 final). <https://commission.europa.eu/system/files/2021-11/better_regulation_guidelines_swd2021_305_en_0.pdf> accessed 6 October 2025

European Commission, *Better Regulation Toolbox* (2023).
<https://commission.europa.eu/system/files/2023-07/better-regulation-toolbox_en.pdf> accessed 6 October 2025

European Parliament, Council and Commission, *Joint Practical Guide* (2015/2016 ed).
<<https://op.europa.eu/en/publication-detail/-/publication/3879747d-7a3c-411b-a3a0-55c14e2ba732>> accessed 6 October 2025

European Parliament, Council and Commission, *Joint Handbook for the Presentation and Drafting of Acts subject to the ordinary legislative procedure* (1 October 2023)
<https://www.consilium.europa.eu/media/67390/joint_handbook_en_01-october-2023_clean_def_final.pdf> accessed 6 October 2025

Evans JSBT, *Bias in Human Reasoning: Causes and Consequences* (Erlbaum 1989)

Evans JSBT and Over DE, *Rationality and Reasoning* (Routledge 1996).

Evans JSBT, 'Dual-Processing Accounts of Reasoning, Judgment, and Social Cognition' (2008) 59 Annual Review of Psychology 255.
<<https://sites.ualberta.ca/~francisp/Phil488/EvansDualProcessing2008.pdf>> accessed 13 August 2024

Evans JSBT, 'Dual process theories of deductive reasoning: facts and fallacies' in Holyoak KJ and Morrison RG (eds), *The Oxford handbook of thinking and reasoning* (Oxford University Press 2012).

Evans JSBT and Stanovich KE, 'Dual-process theories of higher cognition: Advancing the debate' (2013) 8 Perspectives on Psychological Science 223. <[10.1177/1745691612460685](https://doi.org/10.1177/1745691612460685)> accessed 22 August 2025

F

Faber M, Petersen T and Schiller J, 'Homo oeconomicus and homo politicus in Ecological Economics' (2002) 40 Ecological Economics 323. <[https://doi.org/10.1016/s0921-8009\(01\)00279-8](https://doi.org/10.1016/s0921-8009(01)00279-8)> accessed 22 August 2025

Faden RR and Beauchamp TL, *A history and theory of informed consent* (Oxford University Press 1986).

Fagan J, 'Women and drugs revisited: female participation in the cocaine economy' (1994) 24 Journal of Drug Issues 179. <<https://doi.org/10.1177/002204269402400>> accessed 26 November 2024

Fair Patterns, 'European Court of Justice: Compass Banca and the notion of "average consumer"' (Fairpatterns.com, November 2024). <<https://www.fairpatterns.com/regulations/european-court-of-justice-compass-banca-and-the-notion-of-average-consumer>> accessed 23 September 2025

Farhi E and Gabaix X, 'Optimal taxation with behavioral agents' (2019) 110 American Economic Review 298. <<https://www.aeaweb.org/articles?id=10.1257/aer.20151079>> accessed 23 August 2025

Farrell H and Shalizi C, "'Nudge" policies are another name for coercion' (*Newscientist.com*, 2 November 2011). <<https://www.newscientist.com/article/mg21228376-500-nudge-policies-are-another-name-for-coercion/>> accessed 30 October 2024

Faskunger J and others, 'Effect of an environmental barrier to physical activity on commuter stair use' (2003) 47 Scandinavian Journal of Nutrition 26. <<https://doi.org/10.3402/fnr.v47i1.1467>> accessed 13 December 2024

Fazio RH, 'Attitudes as object-evaluation associations of varying strength' (2007) 25 Social Cognition 603. <[doi:10.1521/soco.2007.25.5.603](https://doi.org/10.1521/soco.2007.25.5.603)> accessed 23 August 2025

Federal Reserve Board, 'Design and Testing of Effective Truth in Lending Disclosures' (*Federalreserve.gov*, 16 May 2007). <<https://www.federalreserve.gov/dcca/regulationz/20070523/Execsummary.pdf>> accessed 15 September 2025

Federal Reserve Banks, 'The Regulation Z Amendments for Open-End Credit Disclosures: Part Two' (*Consumer Compliance Outlook*, Second Quarter 2009). <https://www.consumercomplianceoutlook.org/2009/second-quarter/q2_02/> accessed 15 September 2025

Fehr E and Gächter S, 'Fairness and Retaliation: The Economics of Reciprocity' (2000) 14 The Journal of Economic Perspectives 159. <<https://www.jstor.org/stable/2646924>> accessed 21 November 2024

Fehr E, Fischbacher U and Gächter S, 'Strong reciprocity, human cooperation, and the enforcement of social norms' (2002) 13 Human Nature 1. <<https://doi.org/10.1007/s12110-002-1012-7>> accessed 21 November 2024

Fehr E and Fischbacher U, 'Social Norms and Human Cooperation' (2004) 8 Trends in Cognitive Sciences 185. <<https://doi.org/10.1016/j.tics.2004.02.007>> accessed 21 March 2025

Feldman Y, *The Law of Good People: Challenging states' ability to regulate human behavior* (Cambridge University Press 2018).

Feldman Y and Kaplan Y, 'Behavioral Ethics as Compliance' in Van Rooij B and Sokol D (eds), *The Cambridge Handbook of Compliance* (Cambridge University Press 2021).

Ferguson CJ and Heene M, 'A vast graveyard of undead theories publication bias and psychological science's aversion to the null' (2012) 7 Perspectives on Psychological Science 555. <<https://journals.sagepub.com/doi/full/10.1177/1745691612459059>> accessed 5 November 2024

Ferraro PJ, Miranda JJ and Price MK, 'The persistence of treatment effects with norm-based policy instruments: Evidence from a randomized environmental policy experiment' (2011) 101 American Economic Review 318. <<https://www.aeaweb.org/articles?id=10.1257/aer.101.3.318>> accessed 6 September 2024

Ferraro PJ and Price MK, 'Using non-pecuniary strategies to influence behavior: Evidence from a large-scale field experiment' (2013) 95 The Review of Economics and Statistics 64. <https://www.researchgate.net/publication/228303533_Using_Non-Pecuniary_Strategies_to_Influence_Behavior_Evidence_from_a_Large_Scale_Field_Experiment> accessed 6 September 2024

Fessenden T, 'The Principle of Commitment and Behavioral Consistency' (*Nngroup.com*, 4 March 2018). <<https://www.nngroup.com/articles/commitment-consistency-ux/>> accessed 17 September 2025

Festinger L, *A theory of cognitive dissonance* (Stanford University Press 1957).

Fine B and Green F, 'Economics, social capital, and the colonization of the social sciences' in Baron S, Field J and Schuller T (eds), *Social Capital: Critical Perspectives* (Oxford University Press 2000). <<https://doi.org/10.1093/oso/9780198297130.003.0004>> accessed 15 July 2025

Fine B and Milonakis D, *From Economics Imperialism to Freakonomics: The Shifting Boundaries between Economics and Other Social Sciences* (Routledge 2009).

Fischbacher U, Gächter S and Fehr E, 'Are people conditionally cooperative? Evidence from a public goods experiment' (2001) 71 *Economics Letters* 397. <[https://doi.org/10.1016/S0165-1765\(01\)00394-9](https://doi.org/10.1016/S0165-1765(01)00394-9)> accessed 30 June 2025

Fisher DL and others, 'Effectiveness of dynamic speed feedback signs. Volume I: Literature review and meta-analysis' (2021) National Highway Traffic Safety Administration. <<https://rosap.nhtl.bts.gov/view/dot/57513>> accessed 9 July 2025

Floridi L, 'Tolerant Paternalism: Pro-ethical Design as a Resolution of the Dilemma of Toleration' (2016) 22 *Science and Engineering Ethics* 1. <[10.1007/s11948-015-9733-2](https://doi.org/10.1007/s11948-015-9733-2)> accessed 15 August 2025

Fodor JA, *The Modularity of Mind* (MIT Press 1983).

Foglia WD, 'Perceptual deterrence and the mediating effects of internalized norms among inner-city teenagers' (1997) 34 *Journal of Research in Crime and Delinquency* 414. <[10.1177/0022427897034004002](https://doi.org/10.1177/0022427897034004002)> accessed 25 November 2024

Ford A and others, 'Impact of a ban on the open display of tobacco products in retail outlets on never smoking youth in the UK: findings from a repeat cross-sectional survey before, during and after implementation' (2020) 29 *Tob Control* 282. <[10.1136/tobaccocontrol-2018-054831](https://doi.org/10.1136/tobaccocontrol-2018-054831)> accessed 14 July 2025

Fox J, 'From "Economic Man" to Behavioral Economics' (*Harvard Business Review*, May 2015). <<https://hbr.org/2015/05/from-economic-man-to-behavioral-economics>> accessed 18 August 2025

Frank RH, *What Price the Moral High Ground?* (Princeton University Press 2003).

Frank RH, *Microeconomics and Behavior* (4th edn, McGraw-Hill Education 2005).

French SA and others, 'Pricing and availability intervention in vending machines at four bus garages' (2010) 52 *Journal of occupational and environmental medicine* S29. <[10.1097/JOM.0b013e3181c5c476](https://doi.org/10.1097/JOM.0b013e3181c5c476)> accessed 13 December 2024

Frerichs S, 'Bounded sociality: behavioural economists' truncated understanding of the social and its implications for politics' (2019) 26 *Journal of Economic Methodology* 243. <<https://doi.org/10.1080/1350178X.2019.1625217>> accessed 15 May 2025

Frey BS and Gallus J, 'Beneficial and Exploitative Nudges' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016).

Fried C, *Contract as Promise: A Theory of Contractual Obligation* (2nd edn, Oxford University Press 2015).

Friedman M, 'The Methodology of Positive Economics' in *Essays in Positive Economics* (University of Chicago Press 1966).

Friesen L, 'Certainty of Punishment versus Severity of Punishment: An Experimental Investigation' (2012) 79 *Southern Economic Journal* 399. <<http://www.jstor.org/stable/41638882>> accessed 23 November 2024

Friis R and others, 'Comparison of three nudge interventions (priming, default option, and perceived variety) to promote vegetable consumption in a self-service buffet setting' (2017) 12 *PLoS ONE* 1. <<https://doi.org/10.1371/journal.pone.0176028>> accessed 17 December 2024

Fry JP and Neff R, 'Periodic Prompts and Reminders in Health Promotion and Health Behavior Interventions: Systematic Review' (2009) 11 Journal of Medical Internet Research 1, 2. <<https://www.jmir.org/2009/2/e16/>> accessed 6 September 2024

Fuller LL, *Moralność prawa* (Stefan Amsterdamski tr, Państwowy Instytut Wydawniczy 1978).

Furedi F, 'Defending moral autonomy against an army of nudgers' (spiked-online.com, 1 November 2010). <<https://www.spiked-online.com/2011/01/20/defending-moral-autonomy-against-an-army-of-nudgers/>> accessed 30 October 2024

G

Gabaix X and Laibson D, 'Shrouded Attributes, Consumer Myopia, And Information Suppression In Competitive Markets' (2005) National Bureau Of Economic Research, Working Paper 11755, 1. <<http://www.nber.org/papers/w11755>> accessed 18 June 2025

Gächter S, Sefton M And Nosenzo D, 'Peer Effects In Pro-Social Behavior: Social Norms Or Social Preferences?' (2013) 11 Journal Of The European Economic Association 548. <<https://www.jstor.org/stable/24538762>> accessed 16 September 2025

Gane N, 'Nudge Economics as Libertarian Paternalism' (2021) 38 Theory, Culture & Society 119. <<https://doi.org/10.1177/0263276421999447>> accessed 15 August 2024

Ganti A, 'Understanding the Endowment Effect: Causes, Examples, and Impacts' (*Investopedia.com*, 8 September 2025). <<https://www.investopedia.com/terms/e/endowment-effect.asp>> accessed 17 September 2025

Gardner J, 'The Mysterious Case of the Reasonable Person' (2001) 51 The University of Toronto Law Journal 273. <<https://doi.org/10.2307/825941>> accessed 21 November 2024

Garland DW, 'Ideas, Institutions and Situational Crime Prevention', in von Hirsch A, W Garland DW and Wakefield A (eds), *Ethical and Social Perspectives on Situational Crime Prevention* (Hart Publishing 2000) 1.

Garnett M, 'The Autonomous Life: A Pure Social View' (2014) 92 Australasian Journal of Philosophy 143. <<https://philarchive.org/rec/GARTAL-2>> accessed 14 November 2024

Gerards JH, 'The Prism of Fundamental Rights' (2012) 8 European Constitutional Law Review 173. <<https://doi.org/10.1017/S1574019612000144>> accessed 25 February 2025

Gerards JH and Glas LR, 'Access to Justice in the European Convention on Human Rights System' (2017) 35 Netherlands Quarterly of Human Rights 11. <<https://doi.org/10.1177/0924051917693988>> accessed 27 February 2025

Gerber DJ, 'Authority Heuristics' (2004) 79 Chicago-Kent Law Review 759. <<https://scholarship.kentlaw.iit.edu/cklawreview/vol79/iss3/25>> accessed 22 August 2025

Gigerenzer G and Goldstein DG, 'Reasoning the fast and frugal way: models of bounded rationality' (1996) 103 Psychological review 650. <[10.1037/0033-295x.103.4.650](https://doi.org/10.1037/0033-295x.103.4.650)> accessed 22 August 2025

Gigerenzer G, Todd PM and the ABC Research Group, *Simple Heuristics That Make Us Smart* (Oxford University Press 1999).

Gigerenzer G and Selten R, *Bounded Rationality: The Adaptive Toolbox* (The MIT Press 2001).

Gigerenzer G and Engel C, *Heuristics and the law* (MIT Press in cooperation with Doherty University Press 2006).

Gigerenzer G, *Gut feelings: The intelligence of the unconscious* (Penguin 2007).

Gigerenzer G and others, 'Helping Doctors and Patients Make Sense of Health Statistics' (2008) 8 Psychological Science In The Public Interest 53. <[10.1111/j.1539-6053.2008.00033.x](https://doi.org/10.1111/j.1539-6053.2008.00033.x)> accessed 19 June 2025

Gigerenzer G and Brighton H, 'Homo Heuristicus: Why Biased Minds Make Better Inferences' (2009) 1 Topics in Cognitive Science 107. <<https://doi.org/10.1111/j.1756-8765.2008.01006.x>> accessed 19 June 2025

Gigerenzer G, Hertwig R and Pachur T, *Heuristics: The foundations of adaptive behavior* (Oxford University Press 2011).

Gigerenzer G and Gaissmaier W, 'Heuristic decision making' (2011) 62 Annual Review of Psychology 451. <https://www.researchgate.net/publication/49653132_Heuristic_Decision_Making> accessed 3 September 2024

Gigerenzer G and Gaissmaier W, 'Heuristic decision-making' (2011) 62 Annual Review of Psychology 451. <https://www.researchgate.net/publication/49653132_Heuristic_Decision_Making> accessed 412 August 2024

Gigerenzer G, 'On the supposed evidence for libertarian paternalism' (2015) 6 Review of Philosophy and Psychology 361. <<https://doi.org/10.1007/s13164-015-0248-1>> accessed 4 November 2024

Gigerenzer G, *Risk Savvy: How to Make Good Decisions* (Penguin Books 2015).

Gilles SG, 'The Invisible Hand Formula' (1994) 80 Virginia Law Review 1015. <<https://doi.org/10.2307/1073624>> accessed 22 November 2024

Giné X, Karlan D and Zinman J, 2010. 'Put your money where your butt is: a commitment contract for smoking cessation' (2010) 2 American Economic Journal: Applied Economics 213. <<https://www.aeaweb.org/articles?id=10.1257/app.2.4.213>> accessed 6 September 2024

Giocoli N, 'Modeling rational agents: the consistency view of rationality and the changing image of neoclassical economics' (2005) 49 Cahiers d'Économie Politique 177. <<https://doi.org/10.3917/cep.049.0177>> accessed 15 July 2025

Girvetz HK and others, 'Liberalism' (*Britannica*, 1998) para 6. <<https://www.britannica.com/topic/liberalism>> accessed 17 December 2024

Gizbert-Studnicki T, *Język prawny z perspektywy socjolingwistycznej* (PWN 1986).

Glaeser EL, 'Paternalism and Psychology' (2006) 73 University of Chicago Law Review 133. <<https://chicagounbound.uchicago.edu/uclrev/vol73/iss1/8/>> accessed 15 September 2025

Glen PJ, 'Law as Asymmetric Information: Theory, Application, and Results in the Context of Foreign Direct Investment in Real Estate' (2011) 8 Berkeley Business Law Journal 116. <<https://scholarship.law.georgetown.edu/facpub/494/>> accessed 18 August 2025

Gneezy U and Rustichini A, 'A Fine Is a Price' (2000) 29 Journal of Legal Studies 1, 7–8. <<https://doi.org/10.1086/468061>> accessed 6 July 2025

Gokhale J, Kotlikoff LJ and Neumann T, 'Does participating in a 401(k) raise your lifetime taxes?' (2001) Working Papers 0108, Federal Reserve Bank of Cleveland. <<https://ideas.repec.org/p/fip/fedcwp/0108.html>> accessed 30 November 2024

Goldstein D and others, 'Nudge your customers toward better choices' (2008) 86 Harvard Business Review 99.

<https://www.researchgate.net/publication/262042571_Nudge_Your_Customers_Toward_Better_Changes> accessed 6 November 2024

Gordon RW, 'The Path of the Lawyer' (1997) 110 Harvard Law Review 1013.
<<https://doi.org/10.2307/1342110>> accessed 20 November 2024

Gosnell GK, List JA and Metcalfe RD, 'The impact of management practices on employee productivity: A field experiment with airline captains' (2020) 128 Journal of Political Economy 1195.
<<https://www.journals.uchicago.edu/doi/abs/10.1086/705375?af=R&mobileUi=0&>> accessed 6 September 2024

Gosseries A and Parr T, 'Publicity' *The Stanford Encyclopedia of Philosophy* (Summer 2022 Edition).
<<https://plato.stanford.edu/entries/publicity/>> accessed 6 October 2025

Gottfredson MR and Hirschi T, *A General Theory of Crime* (Stanford University Press 1990).

Gottfredson MR, 'The empirical status of control theory in criminology' in: Francis T Cullen, John Paul Wright, Kristie R Blevins (eds) *Taking stock: the status of criminological theory* (Transaction Publishers 2006) 77.

Gravert C and Kurz V, 'Nudging à la carte: a field experiment on climate-friendly food choice' (2019) 5 Behavioral Public Policy 1.
<https://www.researchgate.net/publication/333294579_Nudging_a_la_carte_a_field_experiment_on_climate-friendly_food_choice> accessed 6 September 2024

Green E, 'The Reasonable Man: Legal Fiction or Psychosocial Reality?' (1968) 2 Law & Society Review 241. <<https://doi.org/10.2307/3052783>> accessed 21 November 2024

Greenberg M, 'How to Explain Things with Force' (2016) 129 Harvard Law Review 1932.
<<https://harvardlawreview.org/print/vol-129/how-to-explain-things-with-force/>> accessed 9 June 2025

Grey TC, 'Holmes and Legal Pragmatism' (1989) 41 Stanford Law Review 787.
<<https://doi.org/10.2307/1228740>> accessed 20 November 2024

Grogger J, 'Certainty vs. severity of punishment' (1991) 29 Economic Inquiry 297.
<<https://doi.org/10.1111/j.1465-7295.1991.tb01272.x>> accessed 23 November 2024

Grogger J, 'Market wages and youth crime' (1998) 16 Journal of Labor Economics 756.
<<https://doi.org/10.1086/209905>> accessed 25 November 2024

Grossman PZ, Cearley RW and Cole DH, 'Uncertainty, insurance and the Learned Hand formula' (2006) 5 Law, Probability and Risk 1. <<https://doi.org/10.1093/lpr/mgl012>> accessed 21 November 2024

Grundstein N, 'Administrative Law and the Behavioral and Management Sciences' (1982) 24 Journal of the Indian Law Institute 279. <<http://www.jstor.org/stable/43952209>> accessed 1 March 2025

Grüne-Yanoff T, 'Old Wine in New Casks: Libertarian Paternalism Still Violates Liberal Principles' (2012) 38 Social Choice and Welfare 635. <<https://doi.org/10.1007/s00355-011-0636-0>> accessed 7 January 2025

Grüne-Yanoff T, 'Behavioral Public Policy, One Name, Many Types. A Mechanistic Perspective' in Conrad Heilmann and Julian Reiss (eds) *The Routledge Handbook of the Philosophy of Economics* (Routledge 2021).

Guala F and Mittone L, 'A political justification of nudging' (2015) 6 Review of Philosophy and Psychology 385. <<https://doi.org/10.1007/s13164-015-0241-8>> accessed 16 August 2025

Guttman-Kenney B and others, 'The Semblance of Success in Nudging Consumers to Pay Down Credit Card Debt' (2023) National Bureau Of Economic Research, Working paper 31926.

<https://www.nber.org/system/files/working_papers/w31926/w31926.pdf> accessed 25 October 2024

H

Haines MP and Spear SF, 'Changing the perception of the norm: a strategy to decrease binge drinking among college students' (1996) 45 *Journal of American College Health* 134.

<[10.1080/07448481.1996.9936873](https://doi.org/10.1080/07448481.1996.9936873)> accessed 11 December 2024

Hall J, *Homer Economicus: The Simpsons and Economics* (Stanford Economics and Finance 2014).

Hallsworth M and others, 'The behavioralist as tax collector: Using natural field experiments to enhance tax compliance' (2017) 148 *Journal of Public Economics* 14.

<<https://doi.org/10.1016/j.jpubeco.2017.02.003>> accessed 1 October 2025

Hallsworth M, 'Do nudges actually work?' (*Behavioural Insights Team Blog*, 27 July 2020).

<<https://www.bi.team/blogs/do-nudges-actually-work/>> accessed 2 December 2024

Hallsworth M, 'A Manifesto for Applying Behavioral Science' (*Behavioural Insights Team Blog*, 20 March 2023). <<https://www.bi.team/publications/a-manifesto-for-applying-behavioral-science/>> accessed 2 December 2024

Halonen E, 'If context is king, why has nudging ignored it so much?' (Square Peg Insight, 20 September 2021). <<https://www.squarepeginsight.com/post/context-is-king-so-why-has-nudging-ignored-it-so-much>> accessed 2 December 2024

Halpern D, *Inside the nudge unit. How small changes can make a big difference* (WH Allen 2015).

Hanna J, 'Libertarian Paternalism, Manipulation, and the Shaping of Preferences' (2015) 41 *Social Theory and Practice* 618. <<http://www.jstor.org/stable/24575752>> accessed 21 October 2024

Hansen PG, 'The 'Big Gulp Ban' – a nudge or not?' (iNudgeyou, 8 October 2012).

<<https://inudgeyou.com/en/the-big-gulp-ban-a-nudge-or-not/>> accessed 15 August 2024

Hansen PG and Jespersen AM, 'Nudge and the Manipulation of Choice: A Framework for the Responsible Use of the Nudge Approach to Behaviour Change in Public Policy' (2013) 4 *European Journal of Risk Regulation* 3. <<https://www.jstor.org/stable/24323381>> accessed 30 October 2024

Hansen PG, 'Nudge-Experiment: How To Reduce Food Waste Among CEOs' (*inudgeyou.com*, 30 March 2013). <<https://inudgeyou.com/en/nudge-experiment-how-to-reduce-food-waste-among-ceos/>> accessed 16 September 2025

Hansen PG, Pelle G Hansen, 'The Definition of Nudge and Libertarian Paternalism: Does the Hand Fit the Glove?' (2016) 7 *European Journal of Risk Regulation* 155.

<<https://www.jstor.org/stable/24770005>> accessed 4 August 2024

Hanson JD and Kysar DA, 'Taking Behavioralism Seriously: Some Evidence of Market Manipulation' (1999) 112 *Harvard Law Review* 1420, 1564–65. <<https://doi.org/10.2307/1342413>> accessed 1 March 2025

Harris JL, Bargh JA and Brownell KD, 'Priming effects of television food advertising on eating behavior' (2009) 28 *Health psychology* 404. <[10.1037/a0014399](https://doi.org/10.1037/a0014399)> accessed 13 December 2024

Hart HLA, *The concept of law* (2 ed, Oxford University Press 1994).

Häubl G and Trifts V, 'Consumer decision making in online shopping environments: the effects of interactive decision aids' (2000) 19 *Marketing Science* 4. <<https://doi.org/10.1287/mksc.19.1.4.15178>> accessed 6 November 2024

Haugh T, 'Harmonizing Governance, Risk Management, and Compliance Through the Paradigm of Behavioral Ethics Risk' (2019) 21 University of Pennsylvania Journal of Business Law 873. <scholarship.law.upenn.edu> accessed 13 September 2025

Hausman DM and Welch B, 'Debate: To nudge or not to nudge' (2010) 18 Journal of Political Philosophy 123. <https://www.researchgate.net/publication/229562409_Debate_To_Nudge_or_Not_to_Nudge> accessed 27 September 2024

Hausman DM, *Preference, value, choice, and welfare* (Cambridge University Press 2012).

Hausman DM, 'Nudging and Other Ways of Steering Choices' (2018) 53 Intereconomics 17. <<https://doi.org/10.1007/s10272-018-0713-z>> accessed 4 August 2024.

Hayes A, 'Economics Defined With Types, Indicators, and Systems' (Investopedia, 28 June 2024) <<https://www.investopedia.com/terms/e/economics.asp>> accessed 15 July 2025

Heal J and Groot B, 'Running RCTs with complex interventions' (*Behavioural Insights Team Blog*, 1 November 2017). <<https://www.bi.team/blogs/running-rcts-with-complex-interventions/>> accessed 3 December 2024

Heath R and Ramirez D, 'What are usury laws and maximum interest rates?' (*Bankrate.com*, 12 March 2025). <<https://www.bankrate.com/credit-cards/zero-interest/does-law-cap-credit-card-interest-rates/>> accessed 15 September 2025

Henrich J and others, "'Economic man" in cross-cultural perspective: Behavioral experiments in 15 small-scale societies' (2005) 28 Behavioral and Brain Science 795. <[10.1017/S0140525X05000142](https://doi.org/10.1017/S0140525X05000142)> accessed 22 August 2025

Hertwig R and Grüne-Yanoff T, 'Nudging and boosting: Steering or empowering good decisions' (2017) 12 Perspectives on Psychological Science 973. <<https://pages.ucsd.edu/~mckenzie/Hertwig&Grune-Yanoff2017PerspectivesPsychSci.pdf>> accessed 15 August 2024

Hertwig R and Mazar N, 'Toward a taxonomy and review of honesty interventions' (2022) 47 Current Opinion in Psychology 1. <<https://doi.org/10.1016/j.copsyc.2022.101410>> accessed 16 December 2024

Higbee KL, 'Fifteen years of fear arousal: Research on threat appeals: 1953-1968' (1969) 72 Psychological Bulletin 426. <<https://doi.org/10.1037/h0028430>> accessed 14 September 2025

Hilchey MD, Osborne M and Soman D, 'Does the visual salience of credit card features affect choice?' (2023) 7 Behavioural Public Policy 291. <https://ideas.repec.org/a/cup/bpubpo/v7y2023i2p291-308_4.html> accessed 15 September 2025

Hill A and Jack A, 'Harvard fraud claims fuel doubts over science of behaviour' *The Financial Times* (29 June 2023). <<https://www.ft.com/content/846cc7a5-12ee-4a44-830e-11ad00f224f9>> accessed 2 January 2025

Hira A, 'Irrational Exuberance: An Evolutionary Perspective on the Underlying Causes of the Financial Crisis' (2013) 48 Intereconomics 116. <<https://www.intereconomics.eu/contents/year/2013/number/2/article/irrational-exuberance-an-evolutionary-perspective-on-the-underlying-causes-of-the-financial-crisis.html>> accessed 10 February 2025

HM Treasury and Evaluation Task Force, 'The Magenta Book: Supplementary Guide: Handling Complexity in Policy Evaluation' (Gov.uk, 2020). <<https://www.gov.uk/government/publications/the->

[magenta-book/supplementary-guide-handling-complexity-in-policy-evaluation-html](#)> accessed 17 September 2025

Hodgson GM, 'What Is the Essence of Institutional Economics?' (2000) 34 Journal of Economic Issues 317. <<https://www.jstor.org/stable/4227559>> accessed 18 August 2025

Hoffman E and Spitzer ML, 'Entitlements, Rights, and Fairness: An Experimental Examination of Subjects' Concepts of Distributive Justice' (1985) 14 The Journal of Legal Studies 259. <<http://www.jstor.org/stable/724430>> accessed 23 October 2024

Hoffman E, McCabe K and Smith VL, 'Reciprocity in Ultimatum and Dictator Games: An Introduction' in Charles R Plott and Vernon L Smith (eds) *Handbook of Experimental Economics Results* (Elsevier 2008). <<https://ideas.repec.org/h/eee/expchp/4-46.html>> accessed 23 October 2024

Hofmann W, Friese M and Strack F, 'Impulse and self-control from a dual-systems perspective' (2009) 4 Perspectives on Psychological Science 162. <<https://typeset.io/papers/impulse-and-self-control-from-a-dual-systems-perspective-o0z75n8b48>> accessed 15 August 2024

Holden SS, Zlatevska N and Dubelaar C, 'Whether Smaller Plates Reduce Consumption Depends on Who's Serving and Who's Looking: A Meta-Analysis' (2016) 1 Journal of the Association for Consumer Research <<https://doi.org/10.1086/684441>> accessed 22 June 2025

Hollands GJ and others, 'Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions' (2013) 13 BMC Public Health 1. <<https://doi.org/10.1186/1471-2458-13-1218>> accessed 14 December 2024

Holmes OW, 'The Path of the Law' (1897) 10 Harvard Law Review 457. <<https://doi.org/10.2307/1322028>> accessed 23 August 2025

Hoover KD, 'Reductionism in Economics: Intentionality and Eschatological Justification in the Microfoundations of Macroeconomics' (2015) 82 Philosophy of Science 689. <<http://www.jstor.org/stable/10.1086/682917>> accessed 17 September 2025

Houdek P, 'Nudging in organizations: How to avoid behavioral interventions being just a façade' (2024) 182 Journal of Business Research. <<https://doi.org/10.1016/j.jbusres.2024.114781>> accessed 24 October 2024

House J and Lyons E, 'Towards a Taxonomy of Nudging Strategies' (2013) Rotman School of Management: Research Report Series Behavioural Economics in Action, 1.

Hovland CI, Janis IL and Kelley HH, *Communication and persuasion* (Yale University Press 1953).

Hsee CK and Zhang J, 'General evaluability theory' (2010) 5 Perspectives on Psychological Science 343. <[10.1177/1745691610374586](https://doi.org/10.1177/1745691610374586)> accessed 14 September 2025

Hummel D and Maedche A, 'How effective is nudging? A quantitative review on the effect sizes and limits of empirical nudging studies' (2019) 80 Journal of Behavioral and Experimental Economics 47. <<https://doi.org/10.1016/j.socec.2019.03.005>> accessed 17 December 2024

Hylton KN, 'Information and Causation in Tort Law: Generalizing the Learned Hand Test for Causation Cases' (2015) 7 Journal of Tort Law 35. <[10.1515/jtl-2015-0021](https://doi.org/10.1515/jtl-2015-0021)> accessed 21 November 2024

I

IJzerman H and others, 'Use caution when applying behavioural science to policy' (2020) 4 Nature Human Behaviour 1092. <<https://www.nature.com/articles/s41562-020-00990-w>> accessed 2 January 2025

Inciardi JA, *Careers in Crime* (Rand McNally 1975).

Inesi A, 'A Theory Of De Minimis And A Proposal For Its Application In Copyright' (2006) 21 Berkeley Technology Law Journal 945. <<https://www.jstor.org/stable/24117312>> accessed 19 February 2025

Infante G, Lecouteux G and Sugden R, 'Preference purification and the inner rational agent: a critique of the conventional wisdom of behavioural welfare economics' (2016) 23 Journal of Economic Methodology 1. <<http://dx.doi.org/10.1080/1350178X.2015.1070527>> accessed 5 February 2025

Ireland DJ, 'Behavioral Economics, Regulatory Compliance and Performance, and the Compliance Continuum' (2024) SSRN. <<http://dx.doi.org/10.2139/ssrn.4952636>> accessed 13 September 2025

Iyengar SS and Lepper MR, 'When choice is demotivating: can one desire too much of a good thing?' (2000) 79 Journal of Personality and Social Psychology 995. <https://www.researchgate.net/publication/12189991_When_Choice_is_Demotivating_Can_One_Desire_Too_Much_of_a_Good_Thing> accessed 6 November 2024

J

Jabłonowska A and Bouwman T, 'Cognitive biases of the average consumer' (ConsumerID 22 November 2024) <<https://consumerid.eu/blogs/the-cognitive-biases-of-the-average-consumer>> accessed 9 June 2025

Jabłońska E, 'Obszary zastosowania ekonomii eksperymentalnej' (2013) 32 Studia i Prace Wydziału Nauk Ekonomicznych i Zarządzania 37. <https://bazhum.muzhp.pl/media/texts/studia-i-prace-wydziau-nauk-ekonomicznych-i-zarzadzania/2013-tom-32-numer-2/studia_i_prace_wydzialu_nauk_ekonomicznych_i_zarzadzania-r2013-t32-n2-s37-50.pdf> accessed 15 July 2025

Jachimowicz JM and others, 'When and why defaults influence decisions: a meta-analysis of default effects' (2019) 3 Behavioural Public Policy 159. <<https://doi.org/10.1017/bpp.2018.43>> accessed 17 December 2024

Jacoby J, 'Perspectives on information overload' (1984) 10 Journal of Consumer Research 432. <<https://www.jstor.org/stable/2488912>> accessed 6 November 2024

Janis IL and Feshbach S, 'Effects of fear-arousing communications' (1953) 48 Journal of Abnormal and Social Psychology 78. <<https://doi.org/10.1037/h0060732>> accessed 14 September 2025

Janis IL, 'Effects of Fear Arousal on Attitude Change: Recent Developments in Theory and Experimental Research' (1967) 3 Advances in Experimental Social Psychology 166. <[https://doi.org/10.1016/S0065-2601\(08\)60344-5](https://doi.org/10.1016/S0065-2601(08)60344-5)> accessed 14 September 2025

Jarra E, *Ogólna teoria prawa* (Nakład Gebethnera i Wolfa 1922).

Jenny MA and Betsch C, 'Large-scale behavioural data are key to climate policy' (2022) 6 Nature Human Behaviour 1444. <<https://doi.org/10.1038/s41562-022-01479-4>> accessed 23 August 2025

Jessoe K and Rapson D, 'Knowledge is (less) power: Experimental evidence from residential energy use' (2014) 104 American Economic Review 1417. <<https://www.jstor.org/stable/42920745>> accessed 17 December 2024

Jimenez M, 'Finding the Good in Holmes's Bad Man' (2011) 79 Fordham Law Review 2069. <<https://ir.lawnet.fordham.edu/flr/vol79/iss5/9>> accessed 20 November 2024

Johansson B, 'The Third-Person Effect' (2005) 26 Nordicom Review 81. <https://www.researchgate.net/publication/313779930_The_Third-Person_Effect> accessed 1 November 2024

John PC, Smith G and Stoker G, 'Nudge Nudge, Think Think: Two Strategies for Changing Civic Behaviour' (2009) 80 The Political Quarterly 361.
<https://www.researchgate.net/publication/230361341_Nudge_Nudge_Think_Think_Two_Strategies_for_Changing_Civic_Behaviour> accessed 24 August 2024

Johnson EJ and Goldstein D, 'Do defaults save lives?' (2003) 302 Science 1338.
<<https://www.science.org/doi/10.1126/science.1091721>> accessed 6 November 2024

Johnson EJ and others, 'Beyond nudges: Tools of a choice architecture' (2012) 23 Marketing Letters 487.
<https://www.researchgate.net/publication/236302915_Beyond_nudges_Tools_of_a_choice_architecture> accessed 7 November 2024

Johnson JJ, 'License to Harass Women: Requiring Hostile Environment Sexual Harassment to Be "Severe or Pervasive" Discriminates Among "Terms and Conditions" of Employment' (2003) 62 Maryland Law Review 85. <<https://digitalcommons.law.umaryland.edu/mlr/vol62/iss1/6/>> accessed 22 September 2025

Jolls C and Sunstein CR, 'Debiasing Through Law' (2006) 35 Journal of Legal Studies 199.
<<https://doi.org/10.1086/500096>> accessed 29 November 2024

Jolls C, 'Behavioral Law and Economics' (2007) National Bureau Of Economic Research, Working Paper 12879, 2. <https://www.nber.org/system/files/working_papers/w12879/w12879.pdf> accessed 19 June 2025

Jolls C, 'Product Warnings, Debiasing, and Free Speech: The Case of Tobacco Regulation' (2013) 169 Journal of Institutional and Theoretical Economics 53. <[0.2307/23354770](https://doi.org/10.2307/23354770)> accessed 6 December 2024

Jones BD, *Politics and the Architecture of Choice* (University of Chicago Press 2001).

Jones R, Pykett J and Whitehead M, 'Psychological Governance and Behaviour Change' (2013) 42 Policy & Politics 159. <<https://doi.org/10.1332/030557312X655422>> accessed 13 January 2025

Just DR and Wansink B, 'Better school meals on a budget: using behavioral economics and food psychology to improve meal selection' (2009) 24 Choices 1, 2.
<https://www.choicesmagazine.org/UserFiles/file/article_87.pdf> accessed 9 November 2024

K

Kagan J, 'Schumer Box: What it is and How it Works' (*Investopedia*, 7 October 2024).
<<https://www.investopedia.com/terms/s/schumer-box.asp>> accessed 21 June 2025

Kagel JH and Van Huyck JB, 'Introduction to Issue of "Experimental Economics" in Honor of Raymond C. Battalio' (2007) 10 Experimental Economics 201.
<<https://doi.org/10.1007/s10683-007-9177-x>> accessed 23 October 2024

Kahneman D and Tversky A, 'Subjective probability: A judgment of representativeness' (1972) 3 Cognitive psychology 430.
<<https://www.sciencedirect.com/science/article/abs/pii/0010028572900163?via%3Dihub>> accessed 13 August 2024

Kahneman D and Tversky A, 'Prospect Theory: An Analysis of Decision under Risk' (1979) 47 Econometrica 263. <<https://doi.org/10.2307/1914185>> accessed 19 June 2025

- Kahneman D, Slovic P and Tversky A, *Judgment under uncertainty: Heuristics and biases* (Cambridge University Press 1982).
- Kahneman D, Knetsch JL and Thaler RH, 'Experimental tests of the endowment effect and the coase theorem' (1990) 98 *Journal of Political Economy* 1325. <<https://doi.org/10.1086/261737>> accessed 5 February 2025
- Kahneman D and Lovallo D, 'Timid choices and bold forecasts: a cognitive perspective on risk taking' (1993) 39 *Management Science* 17. <<http://www.jstor.org/stable/2661517>> accessed 7 November 2024
- Kahneman D and others, 'When more pain is preferred to less: Adding a better end' (1993) 4 *Psychological science* 401. <<https://www.jstor.org/stable/40062570>> accessed 4 December 2024
- Kahneman D, 'New Challenges to the Rationality Assumption' (1997) 3 *Legal Theory* 105. <<https://doi.org/10.1017/S1352325200000689>> accessed 29 June 2025
- Kahneman D and Tversky A, *Choices, values and frames* (Cambridge University Press 2000).
- Kahneman D and Frederick S, 'Representativeness revisited: Attribute substitution in intuitive judgement' in Thomas Gilovich, Dale Griffin and Daniel Kahneman (eds), *Heuristics and Biases: The Psychology of Intuitive Judgment* (Cambridge University Press 2002).
- Kahneman D, 'A Perspective on Judgment and Choice. Mapping Bounded Rationality' (2003) 58 *American Psychologist* 697. <[10.1037/0003-066X.58.9.697](https://doi.org/10.1037/0003-066X.58.9.697)> accessed 29 June 2025
- Kahneman D, 'Maps of Bounded Rationality: Psychology for Behavioral Economics' (2003) 93 *The American Economic Review* 1449. <<https://www.jstor.org/stable/3132137>> accessed 13 August 2024
- Kahneman D and Klein G, 'Conditions for Intuitive Expertise: A Failure to Disagree' (2009) 64 *American Psychologist* 515. <https://www.researchgate.net/publication/26798603_Conditions_for_Intuitive_Expertise_A_Failure_to_Disagree> accessed 5 December 2024
- Kahneman D, *Thinking fast and slow* (Farrar, Straus and Giroux 2011).
- Kallbekken S and Saelen H, '"Nudging" hotel guests to reduce food waste as a win-win environmental measure' (2013) 119 *Economics Letters* 325. <<https://www.sciencedirect.com/science/article/abs/pii/S0165176513001286>> accessed 6 September 2024
- Kang JM, 'Prove Yourself: Oliver Wendell Holmes and the Obsessions of Manliness' (2016) 118 *West Virginia Law Review* 1067. <<https://researchrepository.wvu.edu/cgi/viewcontent.cgi?article=1098&context=wvrl>> accessed 20 November 2024
- Kanka K, 'Możliwość wydania interpretacji indywidualnej w przedmiocie oceny dochowania należytej staranności – analiza orzecznictwa sądów administracyjnych, Ordynacja Podatkowa' (2021) *Przegląd Podatkowy* 2021/5, 49.
- Karing A, Finetti J and Kuloszewski Z, 'Incentives and Motivation Crowd-Out: Experimental Evidence from Childhood Immunization' (2024) Becker Friedman Institute Working Paper. <https://files.givewell.org/files/DWDA%202009/Interventions/Immunization/Karing_Finetti_and_Kuloszewski_2024_Incentives.pdf> accessed 13 September 2025
- Katona G, 'The Role of the Frame of Reference in War and Post-War Economy' (1944) 49 *American Journal of Sociology* 340. <<https://doi.org/10.1086/219428>> accessed 15 July 2025
- Katona G, 'Psychology and Consumer Economics' (1974) 1 *Journal of Consumer Research* 1. <<https://www.jstor.org/stable/2488948>> accessed 27 November 2024

- Katsikopoulos KV, 'Fast and Frugal Heuristics,' *Oxford Research Encyclopedia of Politics* (2020). <<https://doi.org/10.1093/acrefore/9780190228637.013.973>> accessed 19 June 2025
- Katz O, 'Attitude Theories of the Law' (2021) SSRN. <<https://ssrn.com/abstract=3886554>> accessed 10 June 2025
- Kelman HC, 'Compliance, Internalization, and Identification: Three Processes of Attitude Change' (1958) 2 *Journal of Conflict Resolution* 51. <https://hckelman.scholars.harvard.edu/sites/g/files/omnuum10576/files/hckelman/files/Compliance_i_dentification_and_internalization.pdf> accessed 30 June 2025
- Kennedy D, 'Form and Substance in Private Law Adjudication' (1976) 89 *Harvard Law Review* 1685. <<https://doi.org/10.2307/1340104>> accessed 20 November 2024
- Kenton W, 'What Are Usury Laws?' (*Investopedia.com*, 16 January 2024). <<https://www.investopedia.com/terms/u/usury-laws.asp>> accessed 15 September 2025
- Keren G and Schul Y, 'Two is not always better than one a critical evaluation of two-system theories' (2009) 4 *Perspectives on psychological science* 533. <<https://doi.org/10.1111/j.1745-6924.2009.011>> accessed 22 August 2025
- Keynes JM, *Ogólna teoria zatrudnienia, procentu i pieniądza* (trans Kalecki M and Rączkowski S, 2nd edn, PWN 1985).
- Khan U and Dhar R, 'Licensing effect in consumer choice' (2006) 43 *Journal of Marketing Research* 259. <<https://doi.org/10.1509/jmkr.43.2.259>> accessed 1 February 2025
- Kirby KN, 'Bidding on the future: Evidence against normative discounting of delayed rewards' (1997) 126 *Journal of Experimental Psychology: General* 54. <https://www.researchgate.net/publication/232437900_Bidding_on_the_Future_Evidence_Against_Normative_Discounting_of_Delayed_Rewards> accessed 7 November 2024
- Kiszko KM and others, 'The Influence of Calorie Labeling on Food Orders and Consumption: A Review of the Literature' (2014) 39 *Journal of Community Health* 1248. <<https://doi.org/10.1007/s10900-014-9876-0>> accessed 13 January 2025
- Kleinig J, *Paternalism* (Oxford Clarendon Press 1984).
- Klepczarek E, 'Dualistyczny model poznawczy i heurystyki Daniela Kahnemana i Amosa Tversky'ego' (2012) 31 *Economy in Practice and Theory* 57, 64. <[10.18778/1429-3730.31.05](https://doi.org/10.18778/1429-3730.31.05)> accessed 22 August 2025
- Klepper S and Nagin D, 'The Deterrent Effect of Perceived Certainty and Severity of Punishment Revisited' (1989) 27 *Criminology* 721. <<https://doi.org/10.1111/j.1745-9125.1989.tb01052.x>> accessed 11 September 2025
- Kling JR and others, 'Comparison friction: Experimental evidence from medicare drug plans' (2012) 127 *The Quarterly Journal of Economics* 199. <[10.1093/qje/qjr055](https://doi.org/10.1093/qje/qjr055)> accessed 23 August 2025
- Korobkin RB and Ulen TS, 'Law and Behavioral Science: Removing the Rationality Assumption from Law and Economics' (2000) 88 *California Law Review* 1051, 1059. <<https://doi.org/10.2307/3481255>> accessed 23 August 2025
- Korobkin RB, 'Bounded Rationality, Standard Form Contracts, and Unconscionability' (2003) 70 *The University of Chicago Law Review* 1203. <<https://doi.org/10.2307/1600574>> accessed 21 November 2024

Korsgaard A and Meglino BM, 'Beyond the individualistic self: A framework for prosocial motives and judgments' in Heidi A Wayment and Jack J Bauer (eds), *Transcending self-interest: Psychological explorations of the quiet ego* (American Psychological Association 2008).
<<https://doi.org/10.1037/11771-017>> accessed 22 August 2025

Kozielecki J, *Psychological Decision Theory* (Reidel 1981).

Kozłowski T, 'Autorytatywna wykładnia prawa' in Piotr Winczorek (ed), *Teoria i praktyka wykładni* (Liber 2005).

Knoll M, 'The Role of Behavioral Economics and Behavioral Decision Making in Americans' Retirement Savings Decisions' (2010) 70 Social Security Bulletin 1.
<<https://ssrn.com/abstract=1702815>> accessed 26 November 2024

Knowles D, Brown K and Aldrovandi S, 'Exploring the underpinning mechanisms of the proximity effect within a competitive food environment' (2019) 134 Appetite 94. <[10.1016/j.appet.2018.12.005](https://doi.org/10.1016/j.appet.2018.12.005)> accessed 17 December 2024

Krauss RM, Freedman JL and Whitcup M, 'Field and Laboratory Studies of Littering' (1978) 14 Journal of Experimental Social Psychology 109. <[https://doi.org/10.1016/0022-1031\(78\)90064-1](https://doi.org/10.1016/0022-1031(78)90064-1)> accessed 11 September 2025

Krijnen J, 'Choice Architecture 2.0: How People Interpret and Make Sense of Nudges' (behavioralscientists.org, 18 September 2018).
<<https://behavioralscientist.org/choice-architecture-2-0-how-people-interpret-and-make-sense-of-nudges/>> accessed 15 August 2024

Kristal AS and Whillans AV, 'What We Can Learn from Five Naturalistic Field Experiments That Failed to Shift Commuter Behaviour' (2020) 4 Nature Human Behaviour 169.
<<https://doi.org/10.1038/s41562-019-0795-z>> accessed 13 January 2025

Krockow EM, 'Nudge or Boost: What's Best For Changing Behavior?' (Psychology Today, 13 January 2023). <<https://www.psychologytoday.com/us/blog/stretching-theory/202301/nudge-or-boost-whats-best-for-changing-behavior>> accessed 23 August 2025

Kroese FM, Marchiori DR and De Ridder DTD, 'Nudging healthy food choices: A field experiment at the train station' (2015) 38 Journal of Public Health 1.
<https://www.researchgate.net/publication/280116474_Nudging_healthy_food_choices_A_field_experiment_at_the_train_station> accessed 14 August 2024

Kroszner RS, speech 'Creating More Effective Consumer Disclosures' (George Washington University School of Business, Financial Services Research Program Policy Forum, Washington, D.C., 23 May 2007). <<https://www.federalreserve.gov/newsevents/speech/kroszner20070523a.htm>> accessed 15 September 2025

Kruglanski AW and Gigerenzer G, 'Intuitive and deliberate judgments are based on common principles' (2011) 118 Psychological Review 97.
<https://pure.mpg.de/rest/items/item_2098989/component/file_2098988/content> accessed 29 August 2024

Kuan R and others, 'Behavioral nudges prevent loan delinquencies at scale: A 13-million-person field experiment' (2025) 122 PNAS e2416708122. <<https://doi.org/10.1073/pnas.2416708122>> accessed 14 September 2025

Kugelberg HD and Stemplowska Z, 'Partial Compliance Theory' in Copp D, Rosati C and Rulli T (eds), *The Oxford Handbook of Normative Ethics* (Oxford University Press forthcoming).
<<https://philarchive.org/archive/KUGPCT>> accessed 13 September 2025

Kurz V, 'Nudging to reduce meat consumption: Immediate and persistent effects of an intervention at a university restaurant' (2018) 90 *Journal of Environmental Economics and Management* 317. <<https://www.sciencedirect.com/science/article/abs/pii/S0095069617307738>> accessed 3 September 2024

Kutner M, Greenberg E, Jin Y and Paulsen C, 'The Health Literacy of America's Adults Results From the 2003 National Assessment of Adult Literacy' (2006) National Center for Educational Statistics 1. <<https://nces.ed.gov/pubs2006/2006483.pdf>> accessed 13 December 2024

Kuyer P and Gordijn B, 'Nudge in perspective: A systematic literature review on the ethical issues with nudging' (2023) 35 *Rationality and Society* 192. <<https://doi.org/10.1177/10434631231155005>> accessed 15 August 2025

L

Laibson D, 'Nudges Are not Enough: The Case for Price-Based Paternalism' (2020) <<https://www.aeaweb.org/webcasts/2020/aea-afa-joint-luncheon-nudges-are-not-enough>> accessed 26 October 2024

Lande J, *Studia z filozofii prawa* (Państwowe Wydawnictwo Naukowe 1959).

Langevoort DC, 'Behavioral Ethics, Behavioral Compliance' (2015) Georgetown University Law Center. <<https://scholarship.law.georgetown.edu/facpub/1507>> accessed 9 July 2025

Larrick RP, 'Debiasing' in Derek J Koehler and Nigel Harvey (eds) *Blackwell handbook of judgment and decision making* (Blackwell Publishing 2004).

Larrick RP and Soll JB, 'Economics - The MPG illusion' (2008) 320 *Science* 1593. <https://www.researchgate.net/publication/5288853_Economics_-_The_MPG_illusion> accessed 17 December 2024

Lattimore P and Witte A, 'Models of decision making under uncertainty: The criminal choice: Rational Choice Perspectives on Offending' in Derek B Cornish and Ronald V Clarke (eds) *The Reasoning Criminal Rational Choice Perspectives on Offending* (1st ed, Routledge 2017).

Laub JH and Sampson RJ, *Shared Beginnings, Divergent Lives: Delinquent Boys to Age 70* (Harvard University Press 2003).

Lauterbach A, 'Psychological Assumptions of Economic Theory' (1950) 10 *The American Journal of Economics and Sociology* 27. <<https://www.jstor.org/stable/3483431>> accessed 18 August 2025

Lazanski D, A nudge towards totalitarianism? *Institute of Economic Affairs* (9 October 2009). <<https://iea.org.uk/blog/a-nudge-towards-totalitarianism-0>> accessed 2 January 2025

Lecouteux G, 'Reconciling Behavioural and Neoclassical Economics' (2013) École Polytechnique Cahiers de Recherche Working Paper 2013/09, 12. <<https://hal.science/hal-00819763>> accessed 15 July 2025

Lecouteux G, 'The Homer economicus narrative: from cognitive psychology to individual public policies' (2023) 30 *Journal of Economic Methodology* 176. <<https://hal.science/hal-03791951v2/document>> accessed 17 December 2024

Lepenies R and Małecka M, 'The Institutional Consequences of Nudging – Nudges, Politics, and the Law' (2015) 6 *Review of. Philosophy and Psychology* 427. <[10.1007/s13164-015-0243-6](https://doi.org/10.1007/s13164-015-0243-6)> accessed 7 February 2025

Letekman P, *Crimes as Work* (Englewood Cliffs Prentice Hall 1973).

Levin IP, 'Associative effects of information framing' (1987) 25 *Bulletin of the Psychonomic Society* 85. <<https://doi.org/10.3758/bf03330291>> accessed 26 November 2024

Levin IP, Schnittjer SK and Thee SL, 'Information framing effects in social and personal decisions' (1988) 24 *Journal of Experimental Social Psychology* 520. <[https://doi.org/10.1016/0022-1031\(88\)90050-9](https://doi.org/10.1016/0022-1031(88)90050-9)> accessed 26 November 2024

Levin J and Milgrom P, 'Introduction to Choice Theory' (*Stanford.edu*, 2004). <<https://web.stanford.edu/~jdlevin/Econ%20202/Choice%20Theory.pdf>> accessed 20 November 2024

Levitt SD and Venkatesh SA, 'An economic analysis of a drug-selling gang's finances' (2000) 115 *The Quarterly Journal of Economics* 755. <<https://pricetheory.uchicago.edu/levitt/Papers/LevittVenkateshAnEconomicAnalysis2000.pdf>> accessed 22 November 2024

Lewis PG, 'Policy Thinking, Fast and Slow: A Social Intuitionist Perspective on Public Policy Processes' (2013) APSA 2013 Annual Meeting Paper 1. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2300479> accessed 27 January 2025

Li RYM, 'The Institutional Analysis of Fittings in Residential Units' in *Law, Economics and Finance of the Real Estate Market* (Springer 2014).

Limb M, 'Royal Colleges call for "duty" on sugary drinks in action plan against obesity' (2013) 346 *BMJ* f1146. <<https://doi.org/10.1136/bmj.f1146>> accessed 5 May 2025

Lin Y, Osman M and Ashcroft R, 'Nudge: Concept, Effectiveness, and Ethics' (2017) 39 *Basic and Applied Social Psychology* 1. <https://www.researchgate.net/publication/320969370_Nudge_Concept_Effectiveness_and_Ethics> accessed 4 August 2023

Ling M and Xu L, 'How and when financial incentives crowd out pro-environmental motivation: A longitudinal quasi-experimental study' (2021) 78 *Journal of Environmental Psychology* 101715. <<https://doi.org/10.1016/j.jenvp.2021.101715>> accessed 13 September 2025

Linville PW and Fischer GW, 'Preferences for separating or combining events' (1991) 60 *Journal of Personality and Social Psychology* 5. <<https://doi.org/10.1037/0022-3514.60.1.5>> accessed 9 November 2024

Liscow Z and Markovits D, 'Democratizing Behavioral Economics' (2022) 39 *Yale Journal on Regulation* 1217. <<https://doi.org/10.2139/ssrn.4012996>> accessed 21 January 2025

Lisiński M, 'Metody naukowe w metodologii nauk o zarządzaniu' (2016) 4 *Przegląd Organizacji* 11. <<https://doi.org/10.33141/po.2016.04.02>> accessed 15 July 2025

Lithwick D, 'Taming Your Inner Homer Simpson: How to Opt Out of Our Own Stupid Choices' *Slate* (12 May 2008). <<https://slate.com/culture/2008/05/cass-sunstein-and-richard-thaler-s-nudge.html>> accessed 23 October 2024

Lode E, 'Slippery Slope Arguments and Legal Reasoning' (1999) 87 *California Law Review* 1469. <<https://doi.org/10.15779/Z38NQ7F>> accessed 29 November 2024

Loewenstein G, 'Out of control: visceral influences on behavior' (1996) 65 *Organizational Behavior and Human Decision Processes* 272. <<https://doi.org/10.1006/obhd.1996.0028>> accessed 27 November 2024

Loewenstein G, Brennan T and Volpp KG, 'Asymmetric Paternalism to Improve Health Behaviors' (2007) 298 *JAMA* 3415. <<https://jamanetwork.com/journals/jama/article-abstract/209557>> accessed 28 December 2024

Loewenstein G and others, 'Warning: You are about to be nudged' (2015) 1 Behavioral Science & Policy 35.
<https://www.researchgate.net/publication/272299492_Warning_You_are_about_to_be_nudged> accessed 17 August 2024

Loewenstein G and Chater N, 'Putting nudges in perspective' (2017) 1 Behavioural Public Policy 26.
<https://www.cmu.edu/dietrich/sds/docs/loewenstein/putting_nudges_in_perspective.pdf> accessed 26 October 2024

Löfgren A and Nordblom K, 'A theoretical framework of decision making explaining the mechanisms of nudging' (2020) 174 Journal of Economic Behavior & Organization 1.
<<https://www.sciencedirect.com/science/article/pii/S0167268120300871>> accessed 3 September 2024

Loock CM, Staake T and Thiesse F, 'Motivating Energy-Efficient Behavior with Green IS: An Investigation of Goal Setting and the Role of Defaults' (2013) 37 Mis Quarterly 1313.
<https://www.researchgate.net/publication/236646834_Motivating_Energy-Efficient_Behavior_with_Green_IS_An_Investigation_of_Goal_Setting_and_the_Role_of_Defaults> accessed 6 September 2024

Löschel A, Rodemeier M and Werthschulte M, 'When Nudges Fail to Scale: Field Experimental Evidence from Goal Setting on Mobile Phones' (2020) Cesifo working paper no 8485.
<<https://www.cesifo.org/en/publications/2020/working-paper/when-nudges-fail-scale-field-experimental-evidence-goal-setting>> accessed 6 January 2025

Loughran TA, Paternoster R and Weiss DB, 'Hyperbolic Time Discounting, Offender Time Preferences and Deterrence' (2012) 28 Journal of Quantitative Criminology 607. <[10.1007/s10940-011-9163-5](https://doi.org/10.1007/s10940-011-9163-5)> accessed 9 July 2025

Loughran TA and others, 'The Returns to Criminal Capital' (2013) 78 American Sociological Review 925. <<https://journals.sagepub.com/doi/pdf/10.1177/0003122413505588>> accessed 25 November 2024

Loughran TA and others, '"A Good Man Always Knows His Limitations": Overconfidence in Criminal Offending' (2013) 50 Journal Of Research In Crime & Delinquency 327.
<https://scholarship.law.columbia.edu/faculty_scholarship/1680> accessed 30 June 2025

Love PED, Ika LA, and Pinto JK, 'Fast-and-frugal heuristics for decision-making in uncertain and complex settings in construction' (2023) 14 Developments in the Built Environment 1.
<<https://doi.org/10.1016/j.dibe.2023.100129>> accessed 22 August 2025

Luban D, 'The bad man and the good lawyer: A centennial essay on Holmes's "The path of the law"' (1997) 72 New York University Law Review 1547. <<https://www.nyulawreview.org/wp-content/uploads/2018/08/NYULawReview-72-6-Luban.pdf>> accessed 20 November 2024

Ly K, Mazar N, Zhao M and Soman D, 'A Practitioner's Guide to Nudging' (2013) Rotman School of Management: Research Report Series Behavioural Economics in Action, 1.
<<https://www.yumpu.com/en/document/read/53646826/a-practitioners-guide-to-nudging>> accessed 16 December 2024

Lyons D, 'Logic and Coercion in Bentham's Theory of Law' (1972) 57 Cornell Law Review 335.
<https://scholarship.law.bu.edu/faculty_scholarship/2583> accessed 14 June 2025

M

- Maas J and others, 'Do distant foods decrease intake? The effect of food accessibility on consumption' (2012) 27 *Psychology & Health* 59. <<https://doi.org/10.1080/08870446.2011.565341>> accessed 17 December 2024
- MacKay D and Robinson A, 'The Ethics of Organ Donor Registration Policies: Nudges and Respect for Autonomy' (2016) 16 *The American Journal of Bioethics* 3. <<https://doi.org/10.1080/15265161.2016.1222007>> accessed 14 November 2024
- Madi MA, *The Dark Side of Nudges* (Routledge 2020).
- Madrian BC and Shea DF, 'The power of suggestion: Inertia in 401(k) participation and savings behavior' (2001) 116 *Quarterly Journal of Economics* 1149. <<https://www.jstor.org/stable/2696456>> accessed 18 August 2024
- Madrian BC, 'Applying Insights from Behavioral Economics to Policy Design' (2014) 6 *Annual Review of Economics* 663. <<https://www.jstor.org/stable/42940305>> accessed 23 August 2025
- Maier M and others, 'No evidence for nudging after adjusting for publication bias' (2022) 119 *Proceedings of the National Academy of Sciences* 1. <<https://doi.org/10.1073/pnas.2200300119>> accessed 2 January 2025
- Maki M and others, 'Meta-analysis of pro-environmental behaviour spillover' (2019) 2 *Nature Sustainability* 307. <<https://www.nature.com/articles/s41893-019-0263-9>> accessed 17 September 2025
- Mansbridge JJ, *Beyond self interest* (University of Chicago Press 1990).
- Manwaring P and Regan T, 'Public Disclosure and Tax Compliance: Evidence from Uganda' (2023) Center for Economic Performance, discussion paper no 1937. <<https://cep.lse.ac.uk/pubs/download/dp1937.pdf>> accessed 9 July 2025
- Marchiori DR, Adriaanse MA and De Ridder DTD, 'Unresolved questions in nudging research: Putting the psychology back in nudging' (2017) 11 *Social and Personality Psychology Compass* 1. <<https://doi.org/10.1111/spc3.12297>> accessed 13 August 2024
- Marcus R, 'Michael Bloomberg's ban on super-size sugary sodas is nudge government run amok' *The Oregonian* (5 June 2021). <https://www.oregonlive.com/opinion/2012/06/michael_bloombergs_ban_on_supe.html> accessed 30 April 2025
- Markovits D and Schwartz A, 'The Myth of Efficient Breach: New Defenses of the Expectation Interest' (2011) 97 *Virginia Law Review* 1939. <<https://www.jstor.org/stable/23080087>> accessed 1 October 2025
- Marteau TT and others, 'Judging Nudging: Can Nudging Improve Population Health? (2011) 342 *The BMJ* 263. <https://www.researchgate.net/publication/49784905_Judging_Nudging_Can_Nudging_Improve_Population_Health> accessed 21 August 2024
- Marteau TM, Hollands GJ and Fletcher PC, 'Changing Human Behavior to Prevent Disease: The Importance of Targeting Automatic Processes' (2012) 337 *Science* 1492. <[10.1126/science.1226918](https://doi.org/10.1126/science.1226918)> accessed 11 December 2024
- Marteau TT, Mantzari E and Hollands GJ, 'Do nudges need a regulatory push? Comparing the effectiveness and implementation of exemplar nudge (size-based) and non-nudge (price-based) dietary interventions' (2025) 373 *Social Science & Medicine* 1. <<https://doi.org/10.1016/j.socscimed.2025.118004>> accessed 23 August 2025

- McCabe M, 'Whitehouse, Colleagues Introduce Bill to Shield Americans from Sky-High Credit Card Interest Rates' (*Whitehouse.senate.gov*, 14 June 2023).
<<https://www.whitehouse.senate.gov/news/release/whitehouse-colleagues-introduce-bill-to-shield-americans-from-sky-high-credit-card-interest-rates/>> accessed 15 September 2025
- McCarthy B and Hagan J, 'When crime pays: capital, competence and criminal success' (2001) 79 *Social Forces* 1035. <<https://www.jstor.org/stable/2675617>> accessed 25 November 2024
- McCarthy B, 'New Economics of Sociological Criminology' (2002) 28 *Annual Review of Sociology* 417. <[10.1146/annurev.soc.28.110601.140752](https://doi.org/10.1146/annurev.soc.28.110601.140752)> accessed 22 November 2024
- McChesney FS, 'Behavioral Economics: Old Wine in Irrelevant New Bottles?' (2014) 21 *Supreme Court Economic Review* 43. <<https://www.jstor.org/stable/10.1086/675265>> accessed 22 October 2024
- McCrudden C and King J, 'The Dark Side of Nudging: The Ethics, Political Economy, and Law of Libertarian Paternalism' in Alexandra Kemmerer, Christoph Möllers, Maximilian Steinbeis and Gerhard Wagner (eds), *Choice architecture in democracies: Exploring the Legitimacy of Nudging* (Nomos/Hart 2017).
- McKenzie CRM, Liersch MJ and Finkelstein SR, 'Recommendations implicit in policy defaults' (2006) 17 *Psychological Science* 414. <<https://doi.org/10.1111/j.1467-9280.2006.01721.x>> accessed 6 November 2024
- McNeil BJ and others, 'On the Elicitation of Preferences for Alternative Therapies' (1982) 306 *New England Journal of Medicine* 1259.
<https://www.researchgate.net/publication/16129490_On_the_Elicitation_of_Preference_for_Alternative_Therapies> accessed 21 October 2024
- McQuillin B and Sugden R, 'Reconciling normative and behavioural economics: The problems to be solved' (2012) 38 *Social Choice and Welfare* 553. <<https://doi.org/10.1007/s00355-011-0627-1>> accessed
- Medema SG, 'HES Presidential Address: The Coase Theorem Lessons For The Study Of The History Of Economic Thought' (2011) 33 *Journal of the History of Economic Thought* 1.
<<https://doi.org/10.1017/S105383721000060X>> accessed 19 June 2025
- Medina PC, 'Side Effects of Nudging: Evidence from a Randomized Intervention in the Credit Card Market' (2021) 34 *The Review of Financial Studies* 2580. <<https://doi.org/10.1093/rfs/hhaa108>> accessed 29 January 2025
- Mendoza JP, Wielhouwer JL and Kirchler E, 'The backfiring effect of auditing on tax compliance' (2017) 62 *Journal of Economic Psychology* 284. <<https://doi.org/10.1016/j.joep.2017.07.007>> accessed 14 September
- Mertens S and others, 'The effectiveness of nudging: A meta-analysis of choice architecture interventions across behavioral domains' (2022) 119 *Proceedings of the National Academy of Sciences* 1. <<https://doi.org/10.1073/pnas.2107346118>> accessed 16 December 2024
- Mehta J, 'The discourse of bounded rationality in academic and policy arenas: pathologising the errant consumer' (2013) 37 *Cambridge Journal of Economics* 1243.
<<https://www.jstor.org/stable/23602006>> accessed 22 September 2025
- Michaelsen P and Sunstein CR, *Default Nudges: From People's Experiences to Policymaking Implications* (Springer Nature 2023).
- Michalski MA, 'Kim jest postmodernistyczny *homo oeconomicus*, czyli pytanie o współczesne relacje pomiędzy rodziną a rynkiem' (2011) 14 *Annales. Etyka w Życiu Gospodarczym* 141.
<<https://doi.org/10.18778/1899-2226.14.1.13>> accessed 15 July 2025

Miller DT, 'The norm of self-interest' (1999) 54 *American Psychologist* 1053. <<https://doi.org/10.1037/0003-066x.54.12.1053>> accessed 18 August 2025

Mills C, 'Why Nudges Matter: A Reply to Goodwin' (2013) 33 *Politics* 28. <<https://doi.org/10.1111/j.1467-9256.2012.01450.x>> accessed 28 December 2024

Mills C, 'The heteronomy of choice architecture' (2015) 6 *Review of Philosophy and Psychology* 495. <<https://wrap.warwick.ac.uk/id/eprint/91069/1/WRAP-heteronomy-choice-architecture-Mills-2015.pdf>> accessed 18 August 2024

Mills C, 'The Choice Architect's Trilemma' (2018) 24 *Res Publica* 395. <<https://doi.org/10.1007/s11158-017-9363-4>> accessed 16 August 2025

Mills S, 'Nudge theory: what 15 years of research tells us about its promises and politics' *The Conversation* (6 September 2023). <<https://theconversation.com/nudge-theory-what-15-years-of-research-tells-us-about-its-promises-and-politics-210534>> accessed 2 January 2025

Mills S and Whittle R, 'Seeing the nudge from the trees: The 4S framework for evaluating nudges' (2024) 102 *Public Administration* 580. <<https://doi.org/10.1111/padm.12941>> accessed 3 January 2025

Mills S and Whittle R, 'How "nudge" happened: the political economy of nudging in the UK' (2025) 49 *Cambridge Journal of Economics* 1. <<https://doi.org/10.1093/cje/beae038>> accessed 10 February 2025

Ministerstwo Zdrowia, 'Zakaz palenia w miejscach publicznych' (*Archiwum.mz.gov.pl*, 19 May 2019). <<https://archiwum.mz.gov.pl/zdrowie-i-profilaktyka/uzaleznienia/tyton/zakaz-palenia-w-miejscach-publicznych/>> accessed 21 September 2025

Mitchell G, 'Libertarian Paternalism Is an Oxymoron' (2004) 99 *Northwestern University Law Review* 1. <https://www.researchgate.net/publication/228249621_Libertarian_Paternalism_Is_an_Oxymoron> accessed 29 June 2025

Mols F and others, 'Why a Nudge is Not Enough: A Social Identity Critique of Governance by Stealth' (2015) 54 *European Journal of Political Research* 81. <<https://doi.org/10.1111/1475-6765.12073>> accessed 9 January 2025

Mongin P and Cozic M, 'Rethinking nudges' (2014) HEC Paris Research Paper no. ECO/SCD-2014-1067, 1. <https://www.researchgate.net/publication/314476261_Rethinking_Nudges> accessed 5 August 2024

Mongin P and Cozic M, 'Rethinking Nudge: Not One But Three Concepts' (2018) 2 *Behavioural Public Policy* 107. <<https://doi.org/10.1017/bpp.2016.16>> accessed 23 August 2025

Moran M, 'The reasonable person: A conceptual biography in comparative perspective' (2010) 14 *Lewis & Clark Law Review* 1233. <<https://law.lclark.edu/live/files/7230-lcb144art1moranpdf>> accessed 21 November 2024

Morawski W, *Socjologia ekonomiczna. Problemy. Teoria. Empiria* (PWN 2001).

Morgan MS, 'Economic man as model man: Ideal types, idealization and caricatures' (2006) 28 *Journal of the History of Economic Thought* 1. <<https://doi.org/10.1080/10427710500509763>> accessed 15 July 2025

Moss M, '((Salt + Fat2) / Satisfying Crunch) × Pleasing Mouth Feel = A Food Designed to Addict' (*New York Times Magazine*. 24 February 2013). <<https://www.nytimes.com/2013/02/24/magazine/the-extraordinary-science-of-junk-food.html>> accessed 1 March 2025

Mosselmans B, 'William Stanley Jevons', *The Stanford Encyclopedia of Philosophy* (Spring edn, 2020). <<https://plato.stanford.edu/archives/spr2020/entries/william-jevons/>> accessed 14 May 2025.

Motyka K, 'Leon Petrażycki. Challenge to Legal Orthodoxy' (2007) *Towarzystwo Naukowe Katolickiego Uniwersytetu Lubelskiego Jana Pawła* II, 22, 28.
<https://www.academia.edu/32479728/Leon_Petra%C5%BCycki_Challenge_to_Legal_Orthodoxy_Lublin_Towarzystwo_Naukowe_Katolickiego_Uniwersytetu_Lubelskiego_Jana_Paw%C5%82a_II_200> accessed 23 August 2025

Mullainathan S and Shafir E, *Scarcity: Why Having Too Little Means So Much* (Times Books 2013).

Mullett T, 'What are the advantages and disadvantages of nudging?' (*Warwick Business School*, 14 February 2022). <<https://www.wbs.ac.uk/news/what-are-the-advantages-and-disadvantages-of-nudging/>> accessed 29 January 2025

Munafò MR and others, 'A manifesto for reproducible science' (2017) 1 *Nature Human Behaviour* 1. <<https://www.nature.com/articles/s41562-016-0021#citeas>> accessed 2 January 2025

Mungan MC and Klick J, 'Discounting and Criminals' Implied Risk Preferences' (2015) 11 *Review of Law and Economics* 19. <<https://www.law.upenn.edu/live/files/8891-11rle19pdf>> accessed 9 July 2025

Munier B and others, 'Bounded Rationality Modeling' (1999) 10 *Marketing Letters* 233, 234. <<https://doi.org/10.1023/A:1008058417088>> accessed 18 August 2025

N

Nadler J, 'Expressive Law, Social Norms, and Social Groups' (2017) 42 *Law & Social Inquiry* 60. <<https://www.jstor.org/stable/26630860>> accessed 21 November 2024

Nagin DS and Paternoster R, 'Personal capital and social control: the deterrence implications of a theory of individual differences in offending' (1994) 32 *Criminology* 581. <<https://doi.org/10.1111/j.1745-9125.1994.tb01166.x>> accessed 27 November 2024

Nagin DS, 'Moving choice to center stage in criminological research and theory' (2007) 45 *Criminology* 259. <[10.1111/j.1745-9125.2007.00078.x](https://doi.org/10.1111/j.1745-9125.2007.00078.x)> accessed 27 November 2024

Nagin DS, 'Deterrence in the Twenty-First Century' (2013) 42 *Crime and Justice in America* 1975-2025 199. <<https://doi.org/10.1086/670398>> accessed 16 June 2025

National Institute of Justice, 'Five Things About Deterrence' (*nij.ojp.gov*. 5 June 2016). <<https://nij.ojp.gov/topics/articles/five-things-about-deterrence>> accessed 8 June 2025

Nemerofsky J, 'What is a "Trifle" Anyway?' (2002) 37 *Gonzaga Law Review* 315. <<https://blogs.gonzaga.edu/gulawreview/files/2011/02/Nemerofsky.pdf>> accessed 12 February 2025

Nickerson RS, 'How we know—and sometimes misjudge—what others know: imputing one's own knowledge to others' (1999) 125 *Psychological Bulletin* 737. <<https://doi.org/10.1037/0033-2909.125.6.737>> accessed 7 November 2024

Niemcewicz P, 'Ekonomia behawioralna – hybryda teorii i eksperyment' (2018) 51 *Studia i Prace WNEiZ US* 9. <<http://dx.doi.org/10.18276/sip.2018.51/1-01>> accessed 23 August 2025

Nilsson A and others, 'Who Are the Opponents of Nudging? Insights from Moral Foundations Theory' (2020) 5 *Comprehensive Results in Social Psychology* 64.
<<https://www.tandfonline.com/doi/full/10.1080/23743603.2020.1756241#abstract>> accessed 21 August 2024

Noga M, *Neuroekonomia a ekonomia głównego nurtu* (CeDeWu 2017).

Nørnberg TR and others, 'Choice architecture interventions for increased vegetable intake and behaviour change in a school setting: A systematic review' (2015) 136 *Perspectives in Public Health* 132. <<https://journals.sagepub.com/doi/10.1177/1757913915596017>> accessed 5 November 2024

Nowacki J and Tobor Z, *Wstęp do prawoznawstwa* (6th edn, Wolters Kluwer 2020).

O

O'Donoghue T and Rabin M, 'Doing It Now or Later' (1999) 89 *American Economic Review* 103.
<<http://www.jstor.org/stable/116981>> accessed 17 June 2025

O'Donoghue T and Rabin M, 'Risky behavior among youths: some issues from behavioral economics' in Jonathan Gruber (ed), *Risky behavior among youths: An Economic Analysis* (National Bureau of Economic Research Conference Report 2001) 29.
<<https://www.nber.org/system/files/chapters/c10686/c10686.pdf>> accessed 22 November 2024

O'Donoghue T and Rabin M, 'Choice and Procrastination' (2001) 116 *Quarterly Journal of Economics* 121, 124–29. <<https://doi.org/10.1162/003355301556365>> accessed 5 July 2025

OECD, 'Behavioural Insights and Public Policy: Lessons from Around the World' (OECD Publishing 2017). <<https://doi.org/10.1787/9789264270480-en>> accessed 16 September

OECD, 'Smarter Financial Education: Key lessons from behavioural insights for financial literacy initiatives' (2019). <<https://lib.hbfu.edu.cn/res/upload/file/20210420/1618889312055007195.pdf>> accessed 13 September 2025

Ohlhausen P and Langen N, 'When a Combination of Nudges Decreases Sustainable Food Choices Out-Of-Home-The Example of Food Decoys and Descriptive Name Labels' (2020) 9 *Foods* 557. <[10.3390/foods9050557](https://doi.org/10.3390/foods9050557)> accessed 17 December 2024

Oliver A, Rayner G and Lang T, 'Is nudge an effective public health strategy to tackle obesity?' (2011) 342 *British Medical Journal* 898. <<https://www.jstor.org/stable/41150305>> accessed 17 August 2024

Oliver A, 'Nudging, Shoving, and Budging: Behavioural Economic-Informed Policy' (2015) 93 *Public Administration* 700, 703. <<https://doi.org/10.1111/padm.12165>> accessed 9 January 2025

Oliver A, *The Origins of Behavioural Public Policy* (Cambridge University Press 2017).

Oliver A, 'Nudges, shoves and budges: Behavioural economic policy frameworks' (2018) 33 *The International Journal of Health Planning and Management* 272.
<<https://doi.org/10.1002/hpm.2419>> accessed 29 August 2024

Oliver K and others, 'A Systematic Review of Barriers to and Facilitators of the Use of Evidence by Policymakers' (2014) 14 *BMC Health Services Research* 2, 7. <<https://doi.org/10.1186/1472-6963-14-2>> accessed 27 January 2025

Ondicová M and Horková G, 'Low Legal Awareness as a Criminogenic Factor' (2020) 24 *ASEJ—Scientific Journal of Bielsko-Biala School of Finance and Law* 21.
<<https://doi.org/10.19192/wsfp.sj3.2020.4>> accessed 13 July 2025

O'Neill B, 'A message to the illiberal Nudge Industry: push off' (spiked-online.com, 1 November 2010). <<https://www.spiked-online.com/2010/11/01/a-message-to-the-illiberal-nudge-industry-push-off/>> accessed 30 October 2024

Oniszczyk J, *Filozofia i teoria prawa* (2 edn, Beck 2012).

Opalek K, *Problemy metodologiczne i nauki prawa* (Państwowe Wydawnictwo Naukowe 1962).

Opalek K, *Studia z teorii i filozofii prawa* (Wydawnictwo Uniwersytetu Jagiellońskiego 1997).

Open Science Collaboration, 'Estimating the Reproducibility of Psychological Science' (2015) 349 Science 943. <<https://doi.org/10.1126/science.aac4716>> accessed 9 January 2025

Orlik K, *Makroekonomia behawioralna: Jak wyjaśnić zjawiska makroekonomiczne z wykorzystaniem ekonomii behawioralnej* (CeDeWu 2017).

Oshana M, *Personal Autonomy in Society* (Routledge 2006).

Osman M, 'An evaluation of dual-process theories of reasoning' (2004) 11 Psychonomic Bulletin & Review 988. <https://www.researchgate.net/publication/7864887_An_evaluation_of_dual-process_theories_of_reasoning> accessed 15 August 2024

Osman M and others, 'Learning from Behavioural Changes That Fail' (2020) 24 Trends in Cognitive Sciences 969. <<https://doi.org/10.1016/j.tics.2020.09.009>> accessed 13 January 2025

Ostrom E, 'Collective Action and the Evolution of Social Norms' (2000) 14 Journal of Economic Perspectives 137. <<https://www.jstor.org/stable/2646923>> accessed 12 September 2025

Oyeshile OA, 'Respect for Persons as a Principle of Governance' in Felix Adedoyin Adeigbo, Dipo Irele and Amaechi Udefi (eds) *Ethics and Public Affairs* (Ibadan University Press 2014).

P

Pariser E, *The Filter Bubble: What The Internet Is Hiding From You* (Penguin Books Ltd 2012).

Parisi F and Fon V, *The Economics of Lawmaking* (Oxford University Press 2009).

Park H and Blenkinsopp J, 'The roles of transparency and trust in the relationship between corruption and citizen satisfaction' (2011) 77 International Review of Administrative Sciences 254. <<https://journals.sagepub.com/doi/pdf/10.1177/0020852311399230>> accessed 6 November 2024

Paternoster R and others, 'Estimating perceptual stability and deterrent effects: the role of perceived legal punishment in the inhibition of criminal involvement' (1983) 74 Journal of Criminal Law and Criminology 270. <<https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=6364&context=jclc>> accessed 27 November 2024

Paternoster R, 'Decisions to Participate in and Desist From Four Types of Common Delinquency: Deterrence and the Rational Choice Perspective' (1989) 23 Law and Society Review 7. <[10.2307/3053879](https://doi.org/10.2307/3053879)> accessed 11 September 2025

Paternoster R, 'Absolute and Restrictive Deterrence in a Panel of Youth: Explaining the Onset, Persistence/Desistance, and Frequency of Delinquent Offending' (1989) 36 Social Problems 289. <<https://doi.org/10.2307/800696>> accessed 11 September 2025

Paternoster R and Simpson S, 'Sanction threats and appeals to morality: Testing a rational choice model of corporate crime' (1996) 30 Law and Society Review 549. <<https://doi.org/10.2307/3054128>> accessed 22 September 2025

Paternoster R and Pogarsky G, 'Rational Choice, Agency and Thoughtfully Reflective Decision Making: The Short and Long-Term Consequences of Making Good Choices' (2009) 25 Journal of Quantitative Criminology 103. <<https://www.researchgate.net/publication/225760176>> accessed 22 November 2024

Paunov Y, Wänke M and Vogel T, 'Transparency effects on policy compliance: Disclosing how defaults work can enhance their effectiveness' (2019) 3 Behavioral Public Policy 187. <<https://doi.org/10.1017/bpp.2018.40>> accessed 6 November 2024

Pawińska M, 'Deciphering Assumptions in Lawmaking: Towards a More Human-Centric Approach' (2024) 7 European journal of behavioral sciences 23. <[10.33422/ejbs.v7i3.1110](https://doi.org/10.33422/ejbs.v7i3.1110)> accessed 6 October 2025

Peat D, Fikfak V and Van der Zee E, 'Behavioural Compliance Theory' (2022) 13 Journal of International Dispute Settlement 167. <researchprofiles.ku.dk> accessed 13 September 2025

Petimar J and others, 'Evaluation of the Impact of Calorie Labeling on McDonald's Restaurant Menus: A Natural Experiment' (2019) 16 The International Journal of Behavioral Nutrition and Physical Activity. <<https://doi.org/10.1186/s12966-019-0865-7>> accessed 13 January 2025

Petimar J, Gibson LA and Roberto CA, 'Evaluating the Evidence on Beverage Taxes: Implications for Public Health and Health Equity' (2022) 5 JAMA Network Open 1. <<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2792849>> accessed 23 June 2025

Petrażycki L, *Teoria państwa i prawa* (vol 1, Państwowe Wydawnictwo Naukowe 1960).

Petrażycki L, *Teoria państwa i prawa w związku z teorią moralności* (vol 2, Państwowe Wydawnictwo Naukowe 1960).

Petrich DM and others, 'Custodial Sanctions and Reoffending: A Meta-Analytic Review' (2021) 50 Crime and Justice 353. <<https://doi.org/10.1086/715100>> accessed 14 September 2025

Pezzin LE, 'Earnings prospects, matching effects, and the decision to terminate a criminal career' (1995) 11 Journal of Quantitative Criminology 22. <<https://doi.org/10.1007/BF02221299>> accessed 26 November 2024

Pham N, Mandel N and Morales AC, 'Messages from the food police: how food-related warnings backfire among dieters' (2016) 1 Journal of the Association for Consumer Research 175. <<https://doi.org/10.1086/684394>> accessed 1 February 2025

Pietrzyk-Rott E, *Klauzula generalna rozsądku w prawie prywatnym* (Wydawnictwo CH Beck 2007).

Piliavin I and others, 'Crime, Deterrence and Rational Choice' (1986) 51 American Sociological Review 101. <<https://doi.org/10.2307/2095480>> accessed 11 September 2025

Pines Y, 'Legalism in Chinese Philosophy', *The Stanford Encyclopedia of Philosophy* (Winter edn 2018). <<https://plato.stanford.edu/archives/win2018/entries/chinese-legalism/y>> accessed 14 June 2025

Pingle M, 'Deliberation Cost as a Foundation for Behavioral Economics' in Morris Altman (ed) *Handbook of Contemporary Behavioral Economics: Foundations and Developments* (Routledge 2007).

Plott CR, 'Rational Choice in Experimental Markets' (1986) 59 *The Journal of Business* 301.
<<http://www.jstor.org/stable/2352762>> accessed 23 October 2024

Podgorelec V and others, 'Decision trees: an overview and their use in medicine' (2002) 26 *Journal of Medical Systems* 445.
<https://www.researchgate.net/publication/11205595_Decision_Trees_An_Overview_and_Their_Use_in_Medicine> accessed 23 August 2025

Polinsky AM and Shavell S, 'The economic theory of public enforcement of law' (2000) 38 *Journal of Economic Literature* 45. <<https://www.jstor.org/stable/2565359>> accessed 23 November 2024

Polski Instytut Ekonomiczny, 'Prościej, taniej i skuteczniej, czyli jak ekonomia behawioralna wspiera polityki publiczne w Polsce' (Polski Instytut Ekonomiczny 2019). <<https://pie.net.pl/co-druga-jednostka-z-sektora-publicznego-korzysta-z-rozwiazan-ekonomii-behawioralnej/>> accessed 7 October 2025

Posner E, *Law and Social Norms* (Harvard University Press 2009).

Prabhat D, 'Reflecting on Durkheim and His Studies on Law through Cancellation of British Citizenship' in Pettenkofer A and Joas H (eds), *OUP Handbook on Emile Durkheim* (Oxford University Press 2021).

Pratt TC and Turanovic JJ, 'Celerity and Deterrence' in Daniel S Nagin, Francis T Cullen and Cheryl Lero Jonson (eds), *Deterrence, Choice, and Crime* (Volume 23, 1st edn, Routledge 2018).

Prinsen S, De Ridder DTD and De Vet E, 'Eating by example: Effects of environmental cues on dietary decisions' (2013) 70 *Appetite* 1.
<<https://www.sciencedirect.com/science/article/abs/pii/S019566631300216X>> accessed 14 August 2024

Pūce L, 'Criticism of behavioural economics: Attacks towards ideology, evidence and practical application' (2019) 8 *Journal of WEI Business and Economics* 32, 34.
<<https://doi.org/10.36739/jweibe.2019.v8.i1.3>> accessed 23 August 2024

Q

Quintana de Medina J, 'What is wrong with nudges? Addressing normative objections to the aims and the means of nudges' (2021) Instituto Nacional de Administración Pública (INAP) no. 25.
<<https://doi.org/10.24965/gapp.i25.10865>> accessed 5 February 2025

Quong J, 'Public Reason' *The Stanford Encyclopedia of Philosophy* (Summer 2022 Edition).
<<https://plato.stanford.edu/entries/public-reason/>> accessed 5 October 2025

R

Ranchordas S, 'Nudging Citizens Through Technology in Smart Cities' (2020) 34 *International Review of Law, Computers & Technology* 254, 267. <<https://doi.org/10.1080/13600869.2019.1590928>> accessed 7 February 2025

Rapka P, 'Indywidualizm to nie pogląd na ekonomię', *Mises.pl* (19 September 2018).
<<https://mises.pl/blog/2018/09/19/rapka-indywidualizm-to-nie-poglad-na-ekonomie/>> accessed 15 July 2025

Rawls J, 'The Idea of Public Reason Revisited' (1997) 64 *University of Chicago Law Review* 765.
<<https://chicagounbound.uchicago.edu/uclrev/vol64/iss3/1>> accessed 6 October 2025

- Rawls J, *A Theory of Justice* (rev edn, Harvard University Press 1999).
- Rawls J, *Political Liberalism: Expanded Edition* (Columbia Classics in Philosophy 2005).
- Raz J, *The Authority of Law: Essays on Law and Morality* (Oxford University Press 1979).
- Raz J, *Practical Reason and Norms* (Oxford University Press 1999).
- Read D and van Leeuwen B, 'Predicting hunger: The effects of appetite and delay on choice' (1998) 76 *Organizational Behavior and Human Decision Processes* 189. <<https://doi.org/10.1006/obhd.1998.2803>> accessed 29 August 2024
- Rebonato R, *Taking liberties: A critical examination of libertarian paternalism* (Palgrave Macmillan 2012).
- Rebonato R, 'A Critical Assessment of Libertarian Paternalism' (2014) 37 *Journal of Consumer Policy* 357. <<https://doi.org/10.1007/s10603-014-9265-1>> accessed 7 January 2025
- Redelbach A, Wronkowska S and Ziemiński Z, *Zarys teorii państwa i prawa* (PWN 1994).
- Reeves AP and Stucke ME, 'Behavioral Antitrust' (2010) 86 *Indiana Law Journal*, University of Tennessee Legal Studies Research Paper No. 106, 1527. <<https://ssrn.com/abstract=1582720>> accessed 22 October 2024
- Reijula S and others, 'Nudge, Boost, or Design? Limitations of behaviorally informed policy under social interaction' (2018) 2 *The Journal of Behavioral Economics for Policy* 99. <<https://sabeconomics.org/wordpress/wp-content/uploads/JBEP-2-1-14.pdf>> accessed 23 August 2025
- Reisch LA and Sunstein CR, 'Do Europeans Like Nudges?' (2016) 11 *Judgment and Decision Making* 310. <https://www.researchgate.net/publication/305944679_Do_Europeans_Like_Nudges> accessed 4 November 2024
- Reiten P, 'Behavioral Economics and Retirement Savings: The Success of the UK's Auto-Enrolment Pension Scheme' (*Economicsonline.co*, 23 January 2025). <<https://www.economicsonline.co.uk/all/behavioral-economics-and-retirement-savings-the-success-of-the-uks-auto-enrolment-pension-scheme.html/>> accessed 21 September 2025
- Reitzel LR and others, 'The Effect of Tobacco Outlet Density and Proximity on Smoking Cessation' (2011) 101 *American Journal of Public Health* 315. <[10.2105/AJPH.2010.191676](https://doi.org/10.2105/AJPH.2010.191676)> accessed 13 December 2024
- Rescher N, *Sensible decisions: issues of rational decisions in personal choice and public policy* (Rowman & Littlefield Publishers 2003).
- Reuter PH, MacCoun RJ and Murphy P, *Money from Crime: A Study of the Economics of Drug Dealing in Washington, D.C.* (RAND 1990).
- Rick S and Loewenstein G, 'Commentaries and Rejoinder To "The Dishonesty Of Honest People"' (2008) XLV *Journal of Marketing Research* 645. <<https://scottrick.com/wp-content/uploads/2019/07/Hypermotivation.pdf>> accessed 9 July 2025
- Riordan MH, 'Uncertainty, Asymmetric Information and Bilateral Contracts' (1984) 51 *The Review of Economic Studies* 83. <<https://doi.org/10.2307/2297706>> accessed 18 August 2025
- Ritchie LD and others, 'Restaurant kids' meal beverage offerings before and after implementation of healthy default beverage policy statewide in California compared with citywide in Wilmington,

- Delaware' (2022) 25 Public Health Nutrition 794. <<https://doi.org/10.1017/S1368980021001245>> accessed 23 June 2025
- Rizzo MJ and Whitman DG, 'The Camel's Nose is in the Tent: Rules, Theories and Slippery Slopes' (2003) 51 Ucla Law Review 539. <<http://hdl.handle.net/10211.3/195767>> accessed 29 November 2024
- Rizzo MJ, 'Trust Us' (*FORBES*, 1 June 2007). <<https://www.forbes.com/forbes/2007/0618/030.html>> accessed 30 November 2024
- Rizzo MJ and Whitman DG, 'Little Brother is Watching You: New Paternalism on the Slippery Slopes' (2009) 51 Arizona Law Review 685. <<https://arizonalawreview.org/pdf/51-3/51arizrev685.pdf>> accessed 29 November 2024
- Rizzo MJ and Whitman DG, 'The Knowledge Problem of New Paternalism' (2009) 4 Brigham Young University Law Review 905. <<https://digitalcommons.law.byu.edu/lawreview/vol2009/iss4/4>> accessed 8 January 2025
- Rizzo MJ, 'Rationality – What? Misconceptions of Neoclassical and Behavioral Economics' in Matthew Todd Henderson (ed), *The Cambridge Handbook of Classical Liberal Thought* (Cambridge University Press 2018).
- Roberto CA and others, 'Influence of licensed characters on children's taste and snack preferences' (2010) 126 Pediatrics 88. <[10.1542/peds.2009-3433](https://doi.org/10.1542/peds.2009-3433)> accessed 13 December 2024
- Roberto CA and others, 'Evaluating the impact of menu labeling on food choices and intake' (2010) 100 American Journal of Public Health 312. <[10.2105/AJPH.2009.160226](https://doi.org/10.2105/AJPH.2009.160226)> accessed 17 December 2024
- Roberts JL, 'Nudge-Proof: Distributive Justice and the Ethics of Nudging' (2018) 116 Michigan Law Review 1045. <<https://repository.law.umich.edu/mlr/vol116/iss6/13>> accessed 21 September 2025
- Robinson PH and Darley JM, 'The Utility of Desert' (1997) 91 Northwestern University Law Review 453. <https://scholarship.law.upenn.edu/faculty_scholarship/604> accessed 23 August 2025
- Rodriguez-Arias D and Morgan M, '"Nudging" Deceased Donation Through an Opt-Out System: A Libertarian Approach or Manipulation?' (2016) 16 The American Journal of Bioethics 25. <<https://doi.org/10.1080/15265161.2016.1222022>> accessed 14 November 2024
- Rosenberg MJ and Hovland CI, 'Cognitive, affective, and behavioral components of attitudes' in Rosenberg MJ and Hovland CI (eds), *Attitude Organization and Change: An Analysis of Consistency among Attitude Components* (Yale University Press 1960).
- Ross D, 'The economic agent: not human, but important' in Uskali Mäki, Dov M Gabbay, Paul Thagard and John Woods (eds), *Philosophy of Economics* (Elsevier 2012).
- Rothman AJ and others, 'The strategic use of gain- and loss-framed messages to promote healthy behavior: How theory can inform practice' (2006) 56 Journal of Communication S202. <<https://doi.org/10.1111/j.1460-2466.2006.00290.x>> accessed 26 November 2024
- Rozin P and others, 'Nudge to Nobesity I: Minor Changes in Accessibility Decrease Food Intake' (2011) 6 Judgment and Decision Making 323. <<https://doi.org/10.1017/S1930297500001935>> accessed 9 December 2024
- Rubinstein IS, Lee RD and Schwartz PM, 'Data Mining and Internet Profiling: Emerging Regulatory and Technological Approaches' (2008) 75 The University of Chicago Law Review 261. <<https://chicagounbound.uchicago.edu/uclrev/vol75/iss1/12>> accessed 1 March 2025

Rzeszutek M and Szyszka A, 'Od homo oeconomicus do homo realis: o korzyściach płynących z większego otwarcia się ekonomii na psychologię' (2017) 155 *Studia i Prace. Zeszyt Naukowy Kolegium Zarządzania i Finansów* 73. <https://econjournals.sgh.waw.pl/SiP/zeszyt_naukowy_155> accessed 15 July 2025

S

Saccardo S and others, 'Assessing Nudge Scalability' (preprint research paper) <<https://ssrn.com/abstract=3971192>> accessed 6 January 2025

Saghai Y, 'Salvaging the concept of nudge' (2013) 39 *Journal of Medical Ethics* 487. <<https://jme.bmj.com/content/39/8/487>> accessed 15 August 2024

Saini M, Uppal N and Howard JL, 'Perceived financial incentive salience and its undermining effect: a moderated-mediation model' (2024) 98 *Journal of Occupational and Organizational Psychology* e70000. <<https://doi.org/10.1111/joop.70000>> accessed 13 September 2025

Šajn N, 'Vulnerable consumers' (2021) European Parliamentary Research Service, PE 690.619. <[https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690619/EPRS_BRI\(2021\)690619_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690619/EPRS_BRI(2021)690619_EN.pdf)> accessed 9 June 2025

Sanbonmatsu DM, Cooley EH and Butner JE, 'The Impact of Complexity on Methods and Findings in Psychological Science' (2021) 11 *Frontiers in Psychology* 1. <[10.3389/fpsyg.2020.580111](https://doi.org/10.3389/fpsyg.2020.580111)> accessed 3 December 2024

Sanders M and Halpern D, 'Nudge unit: our quiet revolution is putting evidence at heart of government' (*TheGuardian.com*, 3 February 2014). <<http://www.theguardian.com/public-leaders-network/small-business-blog/2014/feb/03/nudge-unit-quiet-revolution-evidence>> accessed 22 September 2025

Sasaki S, Kurokawa H and Ohtake F, 'Effective but fragile? Responses to repeated nudge-based messages for preventing the spread of COVID-19 infection' (2021) 72 *The Japanese Economic Review* 371. <<https://doi.org/10.1007/s42973-021-00076-w>> accessed 30 January 2025

Savage LJ, *The foundations of statistics* (John Wiley & Sons 1954).

Schauer F, *The Force of Law* (Harvard University Press 2015).

Schedler A, 'Conceptualizing Accountability' in Schedler A, Diamond L and Plattner MF (eds), *The Self-Restraining State: Power and Accountability in New Democracies* (Lynne Rienner 1999). <<https://doi.org/10.1515/9781685854133-003>> accessed 19 September 2025

Scheibehenne B, Greifeneder R and Todd PM, 'Can there ever be too many options? A meta-analytic review of choice overload' (2010) 37 *Journal of Consumer Research* 409. <<https://doi.org/10.1086/651235>> accessed 6 November 2024

Scheiber N, 'The Harvard Professor and the Bloggers' *The New York Times* (30 September 2023). <<https://www.nytimes.com/2023/09/30/business/the-harvard-professor-and-the-bloggers.html>> accessed 2 January 2025

Schettkat R, 'The Behavioral Economics of John Maynard Keynes' 2018) Schumpeter Discussion Papers No 2018-007, 4. <<https://hdl.handle.net/10419/206675>> accessed 15 July 2025

Schmidt AT, 'Getting Real on Rationality—Behavioral Science, Nudging, and Public Policy' (2019) 129 *Ethics* 511. <<https://doi.org/10.1086/702970>> accessed 9 November 2024

- Schmidt AT and Engelen B, 'The ethics of nudging: An overview' (2020) 15 *Philosophy Compass* 1. <<https://doi.org/10.1111/phc3.12658>> accessed 14 November 2024
- Schmidt H, Voigt K and Wikler D, 'Carrots, Sticks, and Health Care Reform - Problems with Wellness Incentives' (2010) 362 *The New England Journal of Medicine* e3. <[10.1056/NEJMp0911552](https://doi.org/10.1056/NEJMp0911552)> accessed 12 November 2024
- Schmidt P and D Witte AD, *An Economic Analysis of Crime and Justice: Theory, Methods, and Applications* (Academic Press 1984).
- Schneider W and Shiffrin RM, 'Controlled and automatic human information processing I: detection, search and attention' (1977) 84 *Psychological Review* 1. <https://www.researchgate.net/publication/232568886_Controlled_and_automatic_human_information_processing_II_Perceptual_learning_automatic_attending_and_a_general_theory> accessed 13 August 2024
- Schneider S, 'Homo economicus – or more like Homer Simpson?' (2010) Deutsche Bank Research Paper 1. <https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000475711/Homo_economicus_%E2%80%93_or_more_like_Homer_Simpson%3F.pdf?undefined&reaload=vnKoZe8QkdCgIL/WpdaxVXnSbX/fMfiZTd~LFzHfpCXVQbL7nWqj53WoJX7wy/1v> accessed 17 December 2024
- Schneider S, 'Technocracy without society: a critique of nudging as an approach to managing risk' (2024) *International Review Of Applied Economics* 1. <<https://doi.org/10.1080/02692171.2024.2384457>> accessed 8 January 2025
- Schubert C, 'On the ethics of public nudging: Autonomy and Agency' (2015) MAGKS Joint Discussion Paper Series in Economics, No. 33-2015 <<http://dx.doi.org/10.2139/ssrn.2672970>> accessed 19 April 2025
- Schubert GA, 'The Study of Judicial Decision-Making as an Aspect of Political Behavior' (1958) 52 *The American Political Science Review* 1007. <<https://doi.org/10.2307/1951981>> accessed 1 March 2025
- Schweizer M, 'Nudging and the Principle of Proportionality: Obligated to Nudge?' in Klaus Mathis and Avshalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016).
- Scoccia D, 'Paternalism and Manipulation.' <https://www.academia.edu/11382085/Paternalism_and_Manipulation> accessed 16 September 2025
- Selinger E and Whyte KP, 'Is There a Right Way to Nudge? The Practice and Ethics of Choice Architecture' (2011) 5 *Sociology Compass* 923. <<https://doi.org/10.1111/j.1751-9020.2011.00413.x>> accessed 10 February 2025
- Selinger E and Whyte KP, 'What counts as a nudge?' (2012) 12 *The American Journal of Bioethics* 11. <[10.1080/15265161.2011.634485](https://doi.org/10.1080/15265161.2011.634485)> accessed 15 August 2025
- Seymour J and Moran M, 'Review of Rethinking the Reasonable Person: An Egalitarian Reconstruction of the Objective Standard' (2004) 63 *The Cambridge Law Journal* 771. <<https://www.jstor.org/stable/4509147>> accessed 21 November 2024
- Shah AK, Oppenheimer DM, 'Easy does it: The role of fluency in cue weighting' (2007) 2 *Judgment and Decision Making* 371. <https://www.researchgate.net/publication/5140633_Easy_Does_It_The_Role_of_Fluency_in_Cue_Weighting> accessed 14 September 2025

- Shahab S and Lades LK, 'Sludge and Transaction Costs' (2024) 8 Behavioural Public Policy 327. <<https://doi.org/10.1017/bpp.2021.12>> accessed 11 December 2024
- Sharot T, 'The Optimistic Bias' (2011) 21 Current Biology R941. <<https://doi.org/10.1016/j.cub.2011.10.030>> accessed 6 December 2024
- Sheeran P, Gollwitzer PM and Bargh J, 'Non-conscious processes and health' (2013) 32 Health Psychology 460. <https://www.researchgate.net/publication/230664470_Nonconscious_Processes_and_Health> accessed 15 August 2024
- Sheeran P and Webb TL, 'The intention-behavior gap' (2016) 10 Social and Personality Psychology Compass 503. <<https://doi.org/10.1111/spc3.12265>> accessed 17 December 2024
- Shover N, *Great Pretenders: Pursuits and Careers of Persistent Thieves* (Routledge 1996).
- Shrout PE and Rodgers JL, 'Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis' (2018) 69 Annual Review of Psychology 487. <[10.1146/annurev-psych-122216-011845](https://doi.org/10.1146/annurev-psych-122216-011845)> accessed 3 December 2024
- Siipi H and Koi P, 'The Ethics of Climate Nudges: Central Issues for Applying Choice Architecture Interventions to Climate Policy' (2022) 13 European Journal of Risk Regulation 223. <<https://doi.org/10.1017/err.2021.49>> accessed 7 February 2025
- Şimşek M, 'Behavioral Economics: The Psychology of Economic Decision-Making' in Rahmi Incekara (ed), *Economy in Every Field* (Akademisyen Kitabevi A.Ş. 2022).
- Skąpska G, *Społeczne podłoże postaw wobec prawa* (Zakład Narodowy im. Ossolińskich 1981).
- Skoble AJ, 'The dangers of nudging—the use of state coercion to affect behaviour' Fraser Institute (19 January 2018). <<https://www.fraserinstitute.org/commentary/dangers-nudging-use-state-coercion-affect-behaviour>> accessed 3 January 2025
- Skov LR and others, 'Choice architecture as a means to change eating behaviour in self-service settings: A systematic review' (2013) 14 Obesity Reviews 187. <https://www.researchgate.net/publication/233723061_Choice_architecture_as_a_means_to_change_eating_behaviour_in_self-service_settings_A_systematic_review> accessed 14 August 2024
- Simon HA, *Models of Bounded Rationality. Empirically Grounded Economic Reason* (3rd edn, The MIT Press 1997).
- Sloman SA, 'The empirical case for two systems of reasoning' (1996) 119 Psychological Bulletin 3. <https://www.researchgate.net/publication/200045300_The_Empirical_Case_For_Two_Systems_of_Reasoning> accessed 15 August 2024
- Slovic P and Lichtenstein S, 'The Relative Importance of Probabilities and Payoffs in Risk-Taking' (1968) 78 Journal of Experimental Psychology 1. <<https://doi.org/10.1037/h0026468>> accessed 23 August 2025
- Smith A, *The Theory of Moral Sentiments* (London, A Millar 1759).
- Smith A, *The Essays of Adam Smith* (Joseph Black and James Hutton eds, 6th edn, Alex Murray & Co 1872).
- Smith ER and DeCoster JM, 'Dual-process models in social and cognitive psychology: conceptual integration and links to underlying memory systems' (2000) 4 Personality and Social Psychology Review 108. <https://www.researchgate.net/publication/248551974_Dual-Process_Models_in_Social_and_Cognitive_Psychology_Conceptual_Integration_and_Links_to_Underlying_Memory_Systems> accessed 15 August 2024

- Smith ER and Mackie DM, *Social Psychology* (2nd ed, Psychology Press 2000).
- Smith NC, Goldstein DG and Johnston EJ, 'Choice without awareness: Ethical and policy implications of defaults' (2013) 32 *Journal of Public Policy and Marketing* 159. <<https://doi.org/10.1509/jppm.10.114>> accessed 4 November 2024
- Smith VL, 'Relevance of Laboratory Experiments to Testing Resource Allocation Theory' in Jan Kmenta and James B Ramsey (eds) *The New Palgrave Dictionary of Economics* (Academic Press 1980).
- Smith VL, 'Theory, Experiment and Economics' (1989) 3 *Journal of Economic Perspectives* 151. <<https://www.aeaweb.org/articles?id=10.1257/jep.3.1.151>> accessed 23 October 2024
- Smith VL, 'Economics in the Laboratory' (1994) 8 *Journal of Economic Perspectives* 113. <<https://www.aeaweb.org/articles?id=10.1257/jep.8.1.113>> accessed 23 October 2024
- Smith VL, 'Constructivist and Ecological Rationality in Economics' (2003) 93 *American Economic Review* 465. <<https://www.aeaweb.org/articles?id=10.1257/000282803322156954>> accessed 29 June 2025
- Solek A, 'Ekonomia behawioralna a ekonomia neoklasyczna' (2010) 8 *Zeszyty Naukowe* 22. <https://archiwum.pte.pl/pliki/1/1066/01_Solek.doc.pdf> accessed 12 November 2024
- Sontheimer K, 'Behavioral Versus Neoclassical Economics: Paradigm Shift or Generalization?' in Morris Altman (ed) *Handbook of Contemporary Behavioral Economics: Foundations and Developments* (Routledge 2006).
- Sośniak M, *Należyta staranność* (Uniwersytet Śląski 1980).
- Sparkman G and Walton GM, 'Dynamic norms promote sustainable behavior, even if it is counternormative' (2017) 28 *Psychological Science* 1663. <<https://journals.sagepub.com/doi/abs/10.1177/0956797617719950>> accessed 6 September 2024
- Spears D, 'Economic Decision-Making in Poverty Depletes Behavioral Control' (2011) 11 *The B.E. Journal of Economic Analysis & Policy*, Article 72. <<https://doi.org/10.2202/1935-1682.2973>> accessed 13 December 2024
- Spiegel HW, *The Growth of Economic Thought* (3rd edn, Duke University Press 1991).
- Stacey D and others, *Decision Aid* (2015) The Ottawa Hospital Research Institute. <<https://decisionaid.ohri.ca/docs/das/COVID-MoveFromLongTermCare.pdf>> accessed 23 August 2025
- Stajniak K, 'Organicyzm', *Encyklopedia Zarządzania* (2024). <<https://mfiles.pl/pl/index.php/Organicyzm>> accessed 16 July 2025
- Standard Life, 'A quarter of workers unaware how much they pay into their workplace pension' (*Standardlife.co.uk*, 24 October 2022). <<https://www.standardlife.co.uk/about/press-releases/auto-enrolment-anniversary-research>> accessed 6 July 2025
- Stanovich KE, *Who is Rational? Studies of Individual Differences in Reasoning* (Lawrence Erlbaum Associates Publishers 1999).
- Stanovich KE, *The Robot's Rebellion: Finding Meaning in the Age of Darwin* (Chicago University Press 2004).
- Stanovich KE, *Rationality and the Reflective Mind* (Oxford University Press 2010).

Steele J, 'What is a Schumer Box? Understanding Your Credit Card Terms' (*Business Insider*, 13 December 2024). <<https://www.businessinsider.com/personal-finance/credit-cards/credit-card-terms-conditions-schumer-box?IR=T>> accessed 14 September 2025

Stefaniuk M, 'Postawy wobec prawa' in Kociolek-Pęksa A and Stępień M (eds), *Leksykon socjologii prawa* (C.H. Beck 2013).

Stelmach J and Sarkowicz R, *Filozofia prawa XIX i XX wieku* (Wydawnictwo Uniwersytetu Jagiellońskiego 1999).

Sterk SE, 'Accommodating Legal Ignorance' (2020) 42 *Cardozo Law Review* 213. <<https://ssrn.com/abstract=3796458>> accessed 13 July 2025

Stern J, 'An Unsettling Hint at How Much Fraud Could Exist in Science' *The Atlantic* (2 August 2023). <<https://www.theatlantic.com/science/archive/2023/08/gino-ariely-data-fraud-allegations/674891/>> accessed 9 January 2025

Stern S, 'From Clapham to Salina: Locating the Reasonable Man' (2023) 36 *Law & Literature* 391. <<https://doi.org/10.1080/1535685X.2022.2157101>> accessed 21 November 2024

Sternberg RJ, *Psychologia poznawcza* (WSiP 2011).

Stevenson DD, 'Kelsen's View of the Addressee of the Law: Primary and Secondary Norms' in Jeremy Telman (ed), *Hans Kelsen in America – Selective Affinities and the Mysteries of Academic Influence* (Springer 2016).

Stibe A and Cugelman B, 'Persuasive Backfiring: When Behavior Change Interventions Trigger Unintended Negative Outcomes' (2016) 9638 *Lecture Notes in Computer Science* 65. <http://dx.doi.org/10.1007/978-3-319-31510-2_6> accessed 3 February 2025

Stigler GJ, 'The Economics of Information' (1961) 69 *Journal of Political Economy* 213. <<http://www.jstor.org/stable/1829263>> accessed 23 October 2024

Stone R, 'Economic analysis of contract law from the internal point of view' (2016) 116 *Columbia Law Review* 2005. <<http://www.jstor.org/stable/44028184>> accessed 20 November 2024

Strack F and Deutsch R, 'Reflective and impulsive determinants of social behavior' (2004) 8 *Personality and Social Psychology Review* 220. <<https://pubmed.ncbi.nlm.nih.gov/15454347/>> accessed 13 August 2024

Strahilevitz LJ, 'Toward a Positive Theory of Privacy Law' (2013) 126 *Harvard Law Review* 2010. <<https://www.jstor.org/stable/23415064>> accessed 23 August 2025

Studnicki F, *Przeptyw wiadomości o normach* (Zeszyty Naukowe UJ Prace Prawnicze 1965).

Sugden R, 'Reciprocity: the supply of public goods through voluntary contributions' (1984) 94 *Economic Journal* 772. <<https://doi.org/10.2307/2232294>> accessed 22 August 2025

Sugden R, 'Why Incoherent Preferences Do Not Justify Paternalism' (2008) 19 *Constitutional Political Economy* 226. <[10.1007/s10602-008-9043-7](https://doi.org/10.1007/s10602-008-9043-7)> accessed 23 August 2025

Sullivan SP, 'Why Wait to Settle? An Experimental Test of the Asymmetric-Information Hypothesis' (2016) 59 *The Journal of Law & Economics* 497. <<https://www.jstor.org/stable/26456956>> accessed 18 August 2025

Sunstein CR, Jolls C and Thaler RH, 'A Behavioral Approach to Law and Economics' (1998) 50 *Stanford Law Review* 1471. <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=12172&context=journal_articles> accessed 26 October 2023

Sunstein CR, *Risk and Reason: Safety, Law, and the Environment* (Cambridge University Press 2002).

Sunstein CR and Thaler RH, 'Libertarian paternalism is not an oxymoron' (2003) 70 *The University of Chicago Law Review* 1159.

<https://www.researchgate.net/publication/5027248_Libertarian_Paternalism_Is_Not_An_Oxymoron> accessed 15 August 2024

Sunstein CR, 'It's For Your Own Good!' *New York Review of Books* (March 7 2013).

Sunstein CR and Reisch LA, 'Automatically Green: Behavioral Economics and Environmental Protection' (2013) 38 *Harvard Environmental Law Review* 127.

<https://www.researchgate.net/publication/256056706_Automatically_Green_Behavioral_Economics_and_Environmental_Protection> accessed 6 September 2024

Sunstein CR, *Simpler: the future of government* (Simon & Schuster 2013).

Sunstein CR, 'Nudges vs Shoves' (2014) 127 *Harvard Law Review Forum* 210, 216–18.

<<http://harvardlawreview.org/2014/04/nudges-vs-shoves/>> accessed 5 July 2025

Sunstein CR, *Why Nudge? The Politics of Libertarian Paternalism* (Yale University Press 2014).

Sunstein CR, 'Choosing not to choose' (2014) 64 *Duke Law Journal* 1.

<<https://scholarship.law.duke.edu/dlj/vol64/iss1/1/>> accessed 30 September 2025

Sunstein CR, 'The ethics of nudging' (2015) 32 *Yale Journal on Regulation* 417.

<<http://hdl.handle.net/20.500.13051/8225>> accessed 23 August 2025

Sunstein CR, 'Nudges, agency, and abstraction: a reply to critics' (2015) 6 *Review of Philosophy and Psychology* 511.

<https://www.researchgate.net/publication/277927867_Nudges_Agency_and_Abstraction_A_Reply_to_Critics> accessed 15 August 2024

Sunstein CR, 'People Prefer System 2 Nudges (Kind Of)' (2016) 66 *Duke Law Journal* 121.

<<https://scholarship.law.duke.edu/dlj/vol66/iss1/3>> accessed 5 December 2024

Sunstein CR, *The ethics of influence: Government in the age of behavioral science* (Cambridge University Press 2016).

Sunstein CR, 'Sludge Audits' (2020) 6 *Behavioural Public Policy* 1. <[10.1017/bpp.2019.32](https://doi.org/10.1017/bpp.2019.32)> accessed 30 September 2025

Sutherland H and others 'How People Understand Risk Matrices, and How Matrix Design Can Improve Their Use: Findings from Randomized Controlled Studies' (2022) 42 *Risk Analysis* 1023.

<<https://doi.org/10.1111/risa.13822>> accessed 21 January 2025

Swedberg R, *Economics and Sociology, Redefining Their Boundaries: Conversations with Economics and Sociologists* (Princeton University Press 1990).

Szaszi B and others 'A systematic scoping review of the choice architecture movement: Toward understanding when and why nudges work' (2018) 31 *Journal of Behavioral Decision Making* 355.

<<https://doi.org/10.1002/bdm.2035>> accessed 5 November 2024

T

Tannenbaum D, Fox CR and Rogers T, 'On the Misplaced Politics of Behavioural Policy Interventions' (2017) 1 *Nature Human Behaviour* 1. <<https://doi.org/10.1038/s41562-017-0130>> accessed 16 September 2025

Taylor JRI and Wogalter MS, 'Formatted Text Improves the Communication of Credit Card Information: Effects on Response Time' (2011) 55 Proceedings of the Human Factors and Ergonomics Society Annual Meeting 1298.
<https://journals.sagepub.com/doi/abs/10.1177/1071181311551270>> accessed 15 September 2025

Tejani R, 'Efficiency Unbound: Processual Deterrence for a New Legal Realism' (2016) 6 UC Irvine Law Review 207. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2929045> accessed 21 November 2024

Terry HT, 'Negligence' (1915) 29 Harvard Law Review 40. <<https://doi.org/10.2307/1325735>> accessed 21 November 2024

Texas A&M Transportation Institute, 'Bicycle Lanes' (*Transportation Policy Research*, 2015) <<https://policy.tti.tamu.edu/strategy/bicycle-lanes/>> accessed 23 August 2025

Thaler RH, 'Toward a positive theory of consumer choice' (1980) 1 Journal of Economic Behavior & Organization 39. <[https://doi.org/10.1016/0167-2681\(80\)90051-7](https://doi.org/10.1016/0167-2681(80)90051-7)> accessed 27 November 2024

Thaler RH, 'Doing Economics without Homo Economicus' in Medema SG, Samuels WJ (eds), *Foundations of Research in Economics: How Do Economists Do Economics?* (Edward Elgar Publishing 1996) 67

Thaler RH and Sunstein CR, 'Libertarian paternalism' (2003) 93 The American Economic Review 175. <<http://www.jstor.org/stable/3132220>> accessed 26 October 2024

Thaler RH and Benartzi S, 'Save More Tomorrow: Using behavioral economics to increase employee savings' (2004) 112 Journal of Political Economy 164. <<https://doi.org/10.1086/380085>> accessed 3 September 2024

Thaler RH and Sunstein CR, *Nudge: Improving decisions about health, wealth, and happiness* (Yale University Press 2008).

Thaler RH and Sunstein CR and Balz JP, 'Choice architecture' (2010) <<http://ssrn.com/abstract=1583509>> accessed 15 August 2024

Thaler RH, Sunstein CR and Balz JP, 'Choice architecture' in Eldar Shafir (ed), *The Behavioral Foundations of Public Policy* (Princeton University Press 2013) 428. <<https://www.jstor.org/stable/j.ctv550cbm.31>> accessed 4 October 2024

Thaler RH, *Misbehaving: The Making of Behavioral Economics* (W. W. Norton & Company 2015) 43.

Thaler RH, 'Behavioral Economics: Past, Present, and Future' (2016) 106 American Economic Review 1577, 1591. <<http://dx.doi.org/10.1257/aer.106.7.1577>> accessed 30 June 2025

The Decision Lab, 'How normative messaging increased tax compliance by 15%' (*thedecisionlab.com*, 23 January 2022). <<https://thedecisionlab.com/intervention/how-normative-messaging-increased-tax-compliance-by-15>> accessed 14 September 2025

The Decision Lab, 'How smaller plates reduced hotel food waste by 20%' (*thedecisionlab.com*, 23 January 2022). <<https://thedecisionlab.com/intervention/how-smaller-plates-reduced-hotel-food-waste-by-20>> accessed 16 September 2025

The House of Lords, Science and Technology Select Committee 'Definitions, categorisation and the ethics of behaviour change interventions' (Parliament.uk, 2011). <<https://publications.parliament.uk/pa/ld201012/ldselect/ldsctech/179/17905.htm#note23>> accessed 17 August 2024

The Linus, 'The Scarcity Heuristic: Why We Want What We Can't Have' (*TheLinusgroup.com*, 20 October 2021). <<https://www.thelinusgroup.com/blog/scarcity>> accessed 17 September 2025

Thompson VA, 'Dual-process theories: a metacognitive perspective' in JS Evans and K Frankish (eds) *In two minds: dual processes and beyond* (Oxford University Press 2009).

Thorndike AN and others 'A 2-phase labeling and choice architecture intervention to improve healthy food and beverage choices' (2012) 102 *American Journal of Public Health* 527.
<[10.2105/AJPH.2011.300391](https://doi.org/10.2105/AJPH.2011.300391)> accessed 14 December 2024

Thornton RL, 'The Demand for, and Impact of, Learning HIV Status' (2008) 98 *American Economic Review* 1829. <<https://www.aeaweb.org/articles?id=10.1257/aer.98.5.1829>> accessed 21 September 2025

Thunström L and others, 'Strategic self-ignorance' (2016) 52 *Journal of Risk Uncertainty* 117.
<<https://doi.org/10.1007/s11166-016-9236-9>> accessed 29 January 2025

Thunström L, Gilbert B and Ritten CJ, 'Nudges that hurt those already hurting – distributional and unintended effects of salience nudges' (2018) 153 *Journal of Economic Behavior & Organization* 267.
<<https://doi.org/10.1016/j.jebo.2018.07.005>> accessed 30 January 2025

Tiefenbeck V and others, 'For better or for worse? Empirical evidence of moral licensing in a behavioral energy conservation campaign' (2013) 57 *Energy Policy* 160.
<<https://doi.org/10.1016/j.enpol.2013.01.021>> accessed 3 February 2025

Tiefenbeck V and others, 'Overcoming salience bias: how real-time feedback fosters resource conservation' (2016) 64 *Management Science* 1458.
<<https://pubsonline.informs.org/doi/10.1287/mnsc.2016.2646>> accessed 6 September 2024

Tincani M and Travers J, 'Replication research, publication bias, and applied behavior analysis' (2019) 42 *Perspectives on Behavior Science* 59. <[10.1007/s40614-019-00191-5](https://doi.org/10.1007/s40614-019-00191-5)> accessed 30 January 2025

Tirole J, 'Rational irrationality: Some economics of self-management' (2002) 46 *European Economic Review* 633. <<https://www.sciencedirect.com/science/article/abs/pii/S0014292101002069>> accessed 19 November 2024

Tobia KP, 'How People Judge What Is Reasonable' (2018) 70 *Alabama Law Review* 293.
<<https://ssrn.com/abstract=3108236>> accessed 6 October 2025

Tomer JF, 'What is behavioral economics?' (2007) 36 *The Journal of Socio-Economics* 463
<<https://doi.org/10.1016/j.socec.2006.12.007>> accessed 15 July 2025

Tor A and Klick J, 'When Should Governments Invest More in Nudging? Revisiting Benartzi et al (2017)' (2022, forthcoming) *Review of Law and Economics*.
<https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4189136> accessed 15 September 2025

Tor A, 'The Target Opportunity Costs of Successful Nudges' in Mathis K and Tor A (eds), *Consumer Law and Economics* (Springer 2021).

Tor A, 'The Private Cost of Behavioral Interventions' (2023) 72 *Duke Law Journal* 1673.
<<https://scholarship.law.duke.edu/dlj/vol72/iss8/2>> accessed 15 September 2025

Torre ML, 'The Hierarchical Model and H. L. A. Hart's Concept of Law' (2013) 21 *Revus* 141.
<<https://doi.org/10.4000/revus.2746>> accessed 9 June 2025

Torres MMJ and Carlsson F, 'Direct and spillover effects of a social information campaign on residential water savings' (2018) 92 *Journal of Environmental Economics and Management* 222.
<<https://www.sciencedirect.com/science/article/abs/pii/S0095069617301651>> accessed 17 September 2025

Tremblay P and Morselli C, 'Patterns in criminal achievement: Wilson and Abrahamse revisited' (2000) 38 *Criminology* 633. <<https://doi.org/10.1111/j.1745-9125.2000.tb00901.x>> accessed 26 November 2024

Truelove V and others, 'Does Awareness of Penalties Influence Deterrence Mechanisms? A Study of Young Drivers' Awareness and Perceptions of the Punishment Applying to Illegal Phone Use While Driving' (2021) 78 *Transportation Research Part F: Traffic Psychology & Behaviour* 194. <[10.1016/j.trf.2021.02.006](https://doi.org/10.1016/j.trf.2021.02.006)> accessed 13 July 2025

Turner JH, Stets JE, *The sociology of emotions* (Cambridge University Press 2005).

Turow J, *Niche Envy: Marketing Discrimination in the Digital Age* (The Mit Press 2006).

Tversky A and Kahneman D, 'Judgment under Uncertainty: Heuristics and Biases' (1974) 185 *Science* 1124. <<https://www.jstor.org/stable/1738360>> accessed 14 August 2024

Tversky A and Kahneman D, 'The Framing of Decisions and the Psychology of Choice' (1981) 211 *Science* 453. <<https://www.jstor.org/stable/1685855>> accessed 24 October 2024

Tversky A and Kahneman D, 'Loss Aversion in Riskless Choice: A Reference-Dependent Model' (1991) 107 *Quarterly Journal of Economics* 1039. <<https://doi.org/10.2307/2937956>> accessed 29 June 2025

Tversky A and Kahneman D, 'Advances in Prospect Theory: Cumulative Representation of Uncertainty' (1992) 5 *Journal of Risk and Uncertainty* 297. <<https://doi.org/10.1007/BF00122574>> accessed 23 August 2025

Tyler TR, *Why people obey the law: Procedural justice, legitimacy, and compliance* (Yale University Press 1990).

Tyler TR, 'Trust and democratic governance' in Braithwaite V and Levi M (eds), *Trust and Governance* (Russell Sage Foundation 1998) 269. <<https://www.jstor.org/stable/10.7758/9781610440783.15>> accessed 6 November 2024

Tyler TR, 'Procedural Justice, Legitimacy, and the Effective Rule of Law' (2003) 30 *Crime and Justice* 283. <<https://doi.org/10.1086/652233>> accessed 1 October 2025

Tyler TR and Mentovich A, *Mechanisms of Legal Effect: Procedural Justice Theory* (Center for Public Health Law Research 2023). <<https://phlr.temple.edu/learn-legal-epidemiology/theory-methods-literature/mechanisms-legal-effect-procedural-justice-theory>> accessed 13 July 2025

Tyran JR and Feld LP, 'Why People Obey the Law: Experimental Evidence from the Provision of Public Goods' in Tom R Tyler (ed), *Why People Obey the Law* (Princeton University Press 2006).

U

Uggen C and Thompson M, 'The socioeconomic determinants of ill-gotten gains: within-person changes in drug use and illegal earnings' (2003) 109 *American Journal of Sociology* 146. <<https://doi.org/10.1086/378036>> accessed 25 November 2024

Ulen TS, 'Behavioral Law and Economics: An Introduction' in Morris Altman (ed) *Handbook of Contemporary Behavioral Economics* (Routledge 2006).

Ulen TS, 'Behavioral Law and Economics: Law, Policy, and Science' (2013) 21 *Supreme Court Economic Review* 5. <<https://www.journals.uchicago.edu/doi/full/10.1086/675264>> accessed 22 October 2024

Underhill K, 'Broken Experimentation, Sham Evidence-Based Policy' (2020) 38 Yale Law & Policy Review 150. <https://scholarship.law.columbia.edu/faculty_scholarship/3276> accessed 27 January 2025

United States Government Accountability Office, 'Credit Cards. Increased Complexity in Rates and Fees Heightens Need for More Effective Disclosures to Consumers' (Gao.gov, September 2006). <<https://www.gao.gov/assets/gao-06-929.pdf>> accessed 15 September 2025

Urząd Ochrony Konkurencji i Konsumentów, 'Niekończące się „promocje” – decyzja Prezesa UOKiK' (Uokik.gov.uk, 27 May 2025). <<https://uokik.gov.pl/niekonczace-sie-promocje-decyzja-prezesa-uokik>> accessed 23 September 2025

Usher D, *The Welfare Economics of Markets, Voting and Predation* (Manchester University Press 1992).

V

Valenzuela A and Raghubir P, 'Position-based beliefs: The center-stage effect' (2009) 19 Journal of Consumer Psychology 185 <https://www.researchgate.net/publication/247353185_Position-based_beliefs_The_center-stage_effect> accessed 14 August 2024

Valta M and Maier C, 'Digital nudging: A systematic literature review, taxonomy, and future research directions' The DATA BASE for Advances in Information Systems (forthcoming). <https://www.uni-bamberg.de/fileadmin/ishands/Pre-Prints/Valta_Pre_Press.pdf> accessed 16 December 2024

Van Aaken AS, 'Judge the Nudge: Legal Limits in the EU' in Alberto Alemanno and Anne-Lise Sibony (eds), *Nudge and the law: a European perspective* (Hart Publishing 2015).

Van Aaken AS, 'Constitutional Limits to Nudging: A Proportionality Assessment' (2015) University of St. Gallen Law School, Law and Economics Research Paper Series, Working Paper No. 2015-03. <https://www.researchgate.net/publication/314541952_Constitutional_Limits_to_Nudging_A_Proportionality_Assessment> accessed 18 June 2025

Van Gestel LC, Kroese FM and Denise TD De Ridder D, 'Nudging at the checkout counter – A longitudinal study of the effect of a food repositioning nudge on healthy food choice' (2017) 33 Psychology & Health 800. <<https://doi.org/10.1080/08870446.2017.1416116>> accessed 17 December 2024

Van Houten R, Nau PA and Merrigan MJ, 'Reducing elevator energy use: a comparison of posted feedback and reduced elevator convenience' (1981) 14 Journal of Applied Behavioral Analysis 377. <[10.1901/jaba.1981.14-377](https://doi.org/10.1901/jaba.1981.14-377)> accessed 14 December 2024

Van Ittersum K and Wansink B, 'Shape of Glass and Amount of Alcohol Poured: Comparative Study of Effect of Practice and Concentration' (2005) BMJ 331.7531. <<https://ssrn.com/abstract=2474664>> accessed 9 December 2024

Van Kleef E, Otten K and van Trijp HCM, 'Healthy snacks at the checkout counter: A lab and field study on the impact of shelf arrangement and assortment structure on consumer choices' (2012) 12 British Medical Journal: Public Health 1072 <https://www.researchgate.net/publication/233900383_Healthy_snacks_at_the_checkout_counter_A_lab_and_field_study_on_the_impact_of_shelf_arrangement_and_assortment_structure_on_consumer_choices> accessed 14 August 2024

Van Rooij B, 'Do People Know the Law? Empirical Evidence about Legal Knowledge and Its Implications for Compliance' in B van Rooij and DD Sokol (eds), *The Cambridge Handbook of Compliance* (Cambridge University Press 2021) ch 32.

Varga AL and Hamburger K, 'Beyond type 1 vs. type 2 processing: the tri-dimensional way' (2014) 5 *Frontiers in Psychology* 1.
<<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2014.00993/full>> accessed 29 August 2024

Venema TAG and others, 'The (bitter) sweet taste of nudge effectiveness: The role of habits in a portion size nudge, a proof of concept study' (2020) 151 *Appetite* 1.
<<https://doi.org/10.1016/j.appet.2020.104699>> accessed 17 December 2024

Viscusi WK, 'Efficiency Criteria for Nudges and Norms' (2022) 191 *Public Choice* Springer 465.
<https://ideas.repec.org/a/kap/pubcho/v191y2022i3d10.1007_s11127-019-00712-5.html> accessed 9 December 2024

Viscusi WK, 'Nudges Versus Financial Incentives' in Cass R Sunstein and Lucia A Reisch (eds), *Research Handbook on Nudges and Society* (Edward Elgar Publishing 2023) 189.

Vohs KD, Baumeister RF, Loewenstein G, *Do emotions help or hurt decision making?* (Russell Sage Foundation 2007).

Volpp KG and others, 'Financial incentive-based approaches for weight loss: a randomized trial' (2008) 300 *Journal of the American Medical Association* 2631.
<https://www.hbs.edu/ris/Publication%20Files/Volpp%20et%20al%202008%20-%20Financial%20Incentive-Based%20Approaches%20for%20Weight%20Loss_5baab50f-4876-4e90-9d0f-40a3342b5521.pdf> accessed 27 August 2024

Von Mises L, *Human Action: A Treatise on Economics* (4th edn, Liberty Fund 2007).

Vorlauffer T, Steimanis I and Plassenberg J, 'Payment for ecosystem services and crowding of conservation behavior: a meta-analysis of lab-in-the-field experiments' (2025) 74 *Ecosystem Services* 101750. <<http://www.sciencedirect.com/science/article/pii/S2212041625000543>> accessed 13 September

Votruba AM, 'Will the Real Reasonable Person Please Stand Up? Using Psychology to Better Understand and Apply the Reasonable Person Standard' (2013) 45 *Arizona State Law Journal* 703.
<<https://digitalcommons.unl.edu/psychfacpub/907>> accessed 21 November 2024

Vugts A and others, 'How autonomy is understood in discussions on the ethics of nudging' (2020) 4 *Behavioral Public Policy* 108. <<https://doi.org/10.1017/bpp.2018.5>> accessed 4 November 2024

W

Waldo GP, *Career Criminals* (Sage 1983).

Waldron J, 'It's all for your own good' (*The New York Review of Books*, 9 October 2014).
<<http://www.nybooks.com/articles/archives/2014/oct/09/cass-sunstein-its-all-your-own-good/>> accessed 14 November 2024

Wallander S, Ferraro P and Higgins N, 'Addressing participant inattention in federal programs: A field experiment with the conservation reserve program' (2017) 99 *American Journal of Agricultural Economics* 914. <<https://onlinelibrary.wiley.com/doi/abs/10.1093/ajae/aax023>> accessed 6 September 2024

Walsh DP, *Break-Ins: Burglary from Private Houses* (Constable 1980).

- Walters GD and Bolger CP, 'Procedural justice perceptions, legitimacy beliefs, and compliance with the law: a meta-analysis' (2019) 15 Journal of Experimental Criminology 341. <<https://doi.org/10.1007/s11292-018-9338-2>> accessed 6 October 2025
- Wang X, Song G and Wan X, 'Measuring "Nudgeability": Development of a Scale on Susceptibility to Physical Activity Nudges among College Students' (2022) 12 Behavioral Sciences 1. <<https://www.mdpi.com/2076-328X/12/9/318>> accessed 6 January 2025
- Wansink B and Van Ittersum K, 'Bottoms up! The influence of elongation on pouring and consumption Volume' (2003) 30 Journal of Consumer Research 455. <<https://doi.org/10.1086/378621>> accessed 13 December 2024
- Wansink B, 'Environmental factors that increase the food intake and consumption volume of unknowing consumers' (2004) 24 Annual Review of Nutrition 455. <[10.1146/annurev.nutr.24.012003.132140](https://doi.org/10.1146/annurev.nutr.24.012003.132140)> accessed 9 December 2024
- Wansink B, *Mindless Eating: Why We Eat More Than We Think* (Bantam 2006).
- Wansink B and Van Ittersum K, 'Portion size me: downsizing our consumption norms' (2007) 107 Journal of the Academy of Nutrition and Dietetics 1103. <[https://www.jandonline.org/article/S0002-8223\(07\)00747-X/abstract](https://www.jandonline.org/article/S0002-8223(07)00747-X/abstract)> accessed 16 September 2025
- Wansink B, *Mindless Eating. Why we eat more than we think* (Bantam 2010).
- Warr M, *Companions in Crime: The Social Aspects of Criminal Conduct* (Cambridge University Press 2002).
- Waterman AMC, 'The Evolution of "Orthodoxy" in Economics: From Adam Smith to Paul Samuelson' (2019) 24 The Independent Review 325. <<http://www.jstor.org/stable/45238859>> accessed 12 November 2024
- Watson JB, 'Psychology as the behaviorist views it' (1913) 20 Psychological Review 158. <<https://doi.org/10.1037/h0074428>> accessed 3 October 2025
- Webb TL and Sheeran P, 'Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence' (2006) 132 Psychological Bulletin 249, 262. <[10.1037/0033-2909.132.2.249](https://doi.org/10.1037/0033-2909.132.2.249)> accessed 14 December 2024
- Weber EU, 'Perception and expectation of climate change: precondition for economic and technological adaptation' in Max H Bazerman, David M Messick, Ann E Tenbrunsel and Kimberly A Wade-Benzoni (eds), *Environment, ethics, and behavior: The psychology of environmental valuation and degradation* (The New Lexington Press/Jossey-Bass Publishers 1997).
- Weber EU, 'Experience-based and description-based perceptions of long-term risk: why global warming does not scare us (yet)' (2006) 70 Climatic Change 103, 115. <[10.1007/s10584-006-9060-3](https://doi.org/10.1007/s10584-006-9060-3)> accessed 9 November 2024
- Weber EU, 'Doing the right thing willingly: behavioral decision theory and environmental policy' in Eldar Shafir (ed), *The behavioral foundations of policy* (Princeton University Press, 2012).
- Weber M, *Economy and Society* (Harvard University Press 2019).
- Weil G, 'Efficiency, Fairness, and the Externalization of Reasonable Risks: The Problem with the Learned Hand Formula' (2023) 75 South Carolina Law Review 155. <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4466197> accessed 21 November 2024
- Wells P, 'A Nudge One Way, A Nudge the Other: Libertarian Paternalism as Political Strategy' (2010) 4 People Place and Policy Online 111.

<<https://pdfs.semanticscholar.org/42dd/f6da25c8be757d3d3cc5156801008431c062.pdf>> accessed 1 September 2024

Wenar L, 'John Rawls' *The Stanford Encyclopedia of Philosophy* (Summer edn 2021) <<https://plato.stanford.edu/archives/sum2021/entries/rawls/>> accessed 15 June 2025

Wheeler G, 'Bounded Rationality' (Stanford Encyclopedia of Philosophy, Winter 2024 edn) <<https://plato.stanford.edu/entries/bounded-rationality/>> accessed 15 July 2025

White BA, 'Risk-Utility Analysis and the Learned Hand Formula: A Hand that Helps or a Hand that Hides?' (1990) 32 *Arizona Law Review* 77. <<https://doi.org/10.2139/ssrn.1478109>> accessed 21 November 2024

White MD, *The Manipulation of Choice: Ethics and Libertarian Paternalism* (Palgrave Macmillan 2013).

White MD, 'The Crucial Importance of Interests in Libertarian Paternalism' in Klaus Mathis and Avishalom Tor (eds), *Nudging - Possibilities, Limitations and Applications in European Law and Economics* (vol 3, Springer 2016).

White MD, 'Nudging Debt: On the Ethics of Behavioral Paternalism in Personal Finance' (2017) 28 *Journal of Financial Counseling and Planning* 225, 227. <<http://dx.doi.org/10.1891/1052-3073.28.2.225>> accessed 19 April 2025

Whitehead M, 'Homo Economicus to Homer Simpson: Psychological governance and new subjectivities' *Psychology Today* (31 March 2014). <<https://www.psychologytoday.com/intl/blog/the-psychological-state/201403/homo-economicus-to-homer-simpson>> accessed 17 December 2024

Whitman DG and Rizzo MJ, 'The Problematic Welfare Standards of Behavioral Paternalism' (2015) 6 *Review of Philosophy and Psychology* 409. <<https://doi.org/10.1007/s13164-015-0244-5>> accessed 28 December 2024

Wiecha J, 'Addressee of the Law: Actual and Rational' (2024) *Przegląd Prawniczy TBSP UJ* 2023/2 26. <[10.5281/ZENODO.12625613](https://zenodo.org/record/12625613)> accessed 11 March 2025

Wiggins JS, *Personality and Prediction: Principles of Personality Assessment* (Addison-Wesley 1973).

Wilkinson N and Klaes M, *An Introduction to Behavioral Economics* (Palgrave Macmillan 2012).

Williams K and Hawkins R, 'The Meaning of Wife Assault' (1989) 27 *Criminology* 163. <[10.1111/j.1745-9125.1989.tb00867.x](https://doi.org/10.1111/j.1745-9125.1989.tb00867.x)> accessed 11 September 2025

Wilson AL, Bogomolova S and Buckley JD, 'Lack of Efficacy of a Salience Nudge for Substituting Selection of Lower-Calorie for Higher-Calorie Milk in the Work Place' (2015) 7 *Nutrients* 4336. <[10.3390/nu7064336](https://doi.org/10.3390/nu7064336)> accessed 29 January 2025

Wisdom J, Downs JD and Loewenstein G, 'Promoting healthy choices: Information versus convenience' (2010) 2 *American Economic Journal* 164. <<https://www.aeaweb.org/articles?id=10.1257/app.2.2.164>> accessed 1 February 2025

Witte K and Allen M, 'A meta-analysis of fear appeals: Implications for effective public health campaigns' (2000) 27 *Health Education & Behavior* 591. <[10.1177/109019810002700506](https://doi.org/10.1177/109019810002700506)> accessed 11 September 2025

Wojcieszka L, 'Współczesna koncepcja Homo socio-oeconomicus' (Uniwersytet Ekonomiczny we Wrocławiu). <https://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/23_L.Wojcieszka_Wspolczesna_koncepcja....pdf> accessed 16 July 2025

Woleński J, 'Metodologiczne dążenia Petrażyckiego a współczesne teorie nauki' in Opalek K (ed), *Z zagadnień teorii prawa i teorii nauki Leona Petrażyckiego* (Państwowe Wydawnictwo Naukowe 1969).

Woleński J, 'Zbiór rozpraw o Leonie Petrażyckim' (1983) 10 *Studia Filozoficzne* 164.

Wróblewski B, 'Język prawny i prawniczy' (1948) 3 *Prace Komisji Prawniczej*.

Wróblewski J, *Zasady tworzenia prawa* (Państwowe Wydawnictwo Naukowe 1989).

X

Y

Yeung K, 'Are design-based regulatory instruments legitimate?' (2015) King's College London Dickson Poon School of Law Legal Studies Research Paper Series: Paper No. 2015-27, 1. <[10.2139/ssrn.2570280](https://ssrn.com/abstract=10.2139/ssrn.2570280)> accessed 23 August 2025

Z

Zahle J, 'Methodological Holism in the Social Sciences', *The Stanford Encyclopedia of Philosophy* (Winter edn, 2023). <<https://plato.stanford.edu/entries/holism-social/>> accessed 16 July 2025

Zanna MP and K Rempel J, 'Attitudes: A new look at an old concept' in BarTal ID and Kruglanski AW (red), *The social psychology of attitudes* (Cambridge University Press 1988) 315.

Zauberman G and Lynch Jr JG, 'Resource slack and propensity to discount delayed investments of time versus money' (2005) 134 *Journal of Experimental Psychology. General* 23. <<https://www.apa.org/pubs/journals/releases/xge-134123.pdf>> accessed 7 November 2024

Zeilstra R, 'Nudging and the Safeguards of the Rule of Law' (2024) 25 *German Law Journal* 750. <<https://doi.org/10.1017/glj.2024.30>> accessed 6 February 2025

Zeiske N, Van der Werff E and Steg L, 'The effects of a financial incentive on motives and intentions to commute to work with public transport in the short and long term' (2021) 78 *Journal of Environmental Psychology* 101718. <<https://doi.org/10.1016/j.jenvp.2021.101718>> accessed 13 September 2025

Ziembiński Z, *Problemy Podstawowe Prawoznawstwa* (Państwowe Wydawnictwo Naukowe 1980).

Ziembiński Z, *Logika praktyczna* (PWN 2001).

Zirk-Sadowski M, *Wprowadzenie do filozofii prawa* (Wolters Kluwer 2021).

Zyzik R, 'Czy Leon Petrażycki był prekursorem behawioralnej ekonomicznej analizy prawa?' (2017) 1 *Forum Prawnicze* 21. <<https://forumprawnicze.eu/wp-content/uploads/2017/07/fp39-Zyzik.pdf>> accessed 6 October 2025

Rulings:

Wyrok Sądu Apelacyjnego w Białymstoku z dnia 24 maja 2019, I ACa 102/19

Wyrok Wojewódzkiego Sądu Administracyjnego w Olsztynie z dnia 20 października 2022, I SA/OI 539/22

Wyrok Sądu Najwyższego z dnia 26 kwietnia 2022, II CSKP 585/22

Postanowienie Sądu Najwyższego, II FZ 37/23

Wyrok Sądu Najwyższego z 10 marca 2004, IV CK 151/03

Wyrok Sądu Okręgowego w Łodzi z dnia 9 czerwca 2022, X GC 861/20

Postanowienie Krajowej Izby Odwoławczej z dnia 30 września 2020, KIO 2095/20

Blyth v. Birmingham Waterworks Co (1856) 11 Exch 781.

Case C-589/15 P *Alexios Anagnostakis v European Commission* [2017] ECLI:EU:C:2017:663.

Case C-72/15 *Rosneft Oil Company OJSC v Her Majesty's Treasury and Others* [2017] ECLI:EU:C:2017:236.

Case C-331/88 *R v Ministry of Agriculture, Fisheries and Food, ex parte Fedesa and Others* [1990] ECR I-4023.

Compass Banca SpA v Autorità Garante della Concorrenza e del Mercato (Case C-646/22, Judgment 14 November 2024) CELEX 62022CJ0646.

United States v. Carroll Towing Co., 159 F.2d 169, 173 (2d Cir. 1947).

Legal acts:

Charter of Fundamental Rights of the European Union, art 41, [2012] OJ C 326/391.

Cooling-Off Rule Concerning Door-to-Door Sales, 16 CFR pt 429 (US, 2025).

Commission Regulation (EU) 2019/649 of 24 April 2019 amending Annex III to Regulation (EC) No 1925/2006 of the European Parliament and of the Council as regards trans fat, other than trans fat naturally occurring in fat of animal origin.

Consolidated version of the Treaty on the Functioning of the European Union, art 296, [2016] OJ C 202/1.

Consolidated version of the Treaty on European Union, art 5, [2016] OJ C 202/1.

Credit Card Accountability Responsibility and Disclosure Act of 2009, Pub. L. No. 111-24, 123 Stat. 1734, codified in relevant part to 15 U.S.C. §§ 1601-1667f, 1681 et seq. and 1693 et seq.

Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council ('Unfair Commercial Practices Directive').

Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union consumer protection rules

Executive Order 160 on the Content of Trans Fatty Acids in Oils and Fats (Denmark, 2003).

Fair Credit and Charge Card Disclosure Act of 1988, Pub. L. 100-583, 102 Stat. 2960 (1988) [Schumer Box].

Food Safety Program, Senate Bill (SB) 1192 Fact Sheet - Healthy by Default Children's Meal Beverage Law.

Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making [2016] OJ L 123, 12.5.2016.

Minimum standards for transactions secured by a dwelling 12 CFR § 1026.43 (US, 2025).

Protocol (No 2) on the Application of the Principles of Subsidiarity and Proportionality [2012] OJ C326/206.

Rule Concerning Cooling-off Period for Sales Made at Homes or at Certain Other Locations, 16 CFR Part 429 (2025).

Truth in Lending Act, Pub. L. 90-321, 82 Stat. 146 (1968), 15 USC §1601.

Ustawa z dnia 1 grudnia 2022 r. o zmianie ustawy o prawach konsumenta oraz niektórych innych ustaw (Dz.U. 2022 poz. 2581).

Ustawa o ochronie zdrowia przed następstwami używania tytoniu i wyrobów tytoniowych 1995 (Dz.U. 1996 nr 10 poz. 55 z późn. zm.)