

ARTICLE

CLIMATE CHOICE ARCHITECTURE

by Felix Mormann

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I. Introduction

Successful climate change mitigation and adaptation require behavioral change at an unprecedented scale.¹ The global climate crisis calls for the rethinking of deeply engrained habits. Fortunately, behavioral research has proven that minor tweaks to the choice environment can usher in a paradigm shift toward more climate-friendly decisionmaking. This Article makes the case for greater reliance on choice architectural nudges as a catalyst for more climate-friendly decisionmaking across a wide range of contexts. The time has come to place individual behavior front and center in the global response to climate change.

Subtle changes to the decision environment, or choice architecture, have enabled stakeholders to overcome biases and other cognitive limitations, resulting in welfare-enhancing choices across a wide range of contexts.² Made famous by Nobel Laureate Richard Thaler and Prof. Cass Sunstein in their seminal book *Nudge*, choice architecture refers to the way the context in which we make decisions is organized.³

As carbon pricing initiatives gather momentum, climate choice architecture offers a powerful complement to carbon taxes and cap-and-trade regimes.⁴ Recent scholarship suggests that voter opposition to carbon pricing policies is largely a function of the electorate's biases and other cognitive limitations.⁵ Choice architecture has been proven to

help voters and other decisionmakers overcome these and other cognitive challenges in a wide range of contexts.⁶

From a political economy perspective, nudges have the potential to create much-needed common ground amidst the growing political polarization over climate change.⁷ Studies have repeatedly shown that, whatever their disagreement over regulatory interventions, both Democrats and Republicans overwhelmingly support the use of nudges on high-profile policy issues.⁸

This Article does not advocate for climate nudges as a wholesale substitute for command-and-control mandates, market-based incentives, or other forms of regulation. But even within, and certainly outside, these domains, nudges can complement existing regulation to enhance the efficacy, efficiency, and equity of public policy.

Bipartisan support and well-documented successes notwithstanding, choice architectural nudges have produced their share of discontents. But even the most fervent nudge critics would struggle to find fault with the kind of externality-oriented, educative climate choice architecture proposed here to help stakeholders make less carbon-intensive choices.⁹

This Article makes three novel and distinct contributions to the literature, proceeding as follows. Part II offers a functionally derived, impact-oriented taxonomy of nudges to help policymakers and private actors identify the choice architectural tools that best serve their climate objectives.¹⁰ Part III presents the empirically grounded argument why, and how, nudges can improve the efficacy, efficiency, and equity of public and private governance responses to the climate crisis.¹¹ Part IV engages with critiques of the efficacy and ethics of nudges and explains the capacity of choice architecture to enhance the equity of climate policy.¹²

Editors' Note: This Article is adapted from Felix Mormann, Climate Choice Architecture, 64 B.C. L. REV. 1 (2023), and used with permission.

1. See Elke U. Weber, *Climate Change Demands Behavioral Change: What Are the Challenges?*, 82 SOC. RSCH. 561, 561 (2015).
2. See generally AUTOMATIC: CHANGING THE WAY AMERICA SAVES (William G. Gale, J. Mark Iwry, David C. John & Lina Walker eds., 2009); RICHARD H. THALER, MISBEHAVING: THE MAKING OF BEHAVIORAL ECONOMICS 309-22 (2016); Richard H. Thaler & Shlomo Benartzi, *Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving*, 112 J. POL. ECON. S164, S169 (2004).
3. See RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: THE FINAL EDITION 3* (Penguin Books 2021).
4. See *infra* Section III.C. Cap-and-trade programs set a limit on carbon emissions from particular industries, while also providing for markets to buy and sell "emission allowances." Michael Hiltzik, *Column: No Longer Termed a "Failure," California's Cap-and-Trade Program Faces a New Critique: Is It Too Successful?*, L.A. TIMES (Jan. 12, 2018), <https://www.latimes.com/business/hiltzik/la-fi-hiltzik-captrade-20180111-story.html> [https://perma.cc/3SW3-AX7R].
5. See Gary M. Lucas Jr., *Voter Psychology and the Carbon Tax*, 90 TEMP. L. REV. 1, 13-37 (2017).

6. See *infra* Part II.
7. See *infra* Section III.D.
8. See, e.g., Cass R. Sunstein, *Do People Like Nudges?*, 68 ADMIN. L. REV. 177, 187 tbl.1 (2016).
9. See Brian Galle, *Tax, Command . . . or Nudge?: Evaluating the New Regulation*, 92 TEX. L. REV. 837, 878, 890 (2014).
10. See *infra* notes 13-36 and accompanying text.
11. See *infra* notes 37-62 and accompanying text.
12. See *infra* notes 63-76 and accompanying text.

II. The Choice Architect's Toolkit

Human decisionmaking is embedded into a structure of contextual and task features.¹³ The choice architect's power flows from the observation that human preferences are malleable, for they are the construct of our choice environment.¹⁴ There are many ways to present options to decisionmakers and different presentations will often result in different choices. To help policymakers and practitioners identify what type of nudge best advances their climate objectives, this Article adopts a functionally derived taxonomy that groups the tools of choice architecture into three categories.¹⁵

A. Decision Information

Well-established limits in the human capacity for processing information call on choice architects to present decision-relevant information in a format that is easy to digest and understand.¹⁶ Choice architectural contributions in this space can assume a variety of forms, including: (1) the translation of available information into more meaningful formats, rendering relevant but not readily available information visible; and (2) the provision of social reference points.¹⁷

Translational strategies often rely on the simplification of existing information in a given choice environment to promote better processing.¹⁸ Whereas translational efforts aim to make existing information easier to process, other tools in the choice architect's kit seek to render previously unavailable but decision-relevant information more visible. An illustrative example is the requirement for restaurants to post hygiene ratings at the entrance, enabling potential patrons to incorporate this previously hidden but decision-relevant information into their dining choices.¹⁹

Social reference points acknowledge that humans make decisions "in a social and cultural environment," often looking to conform with the behavior of majorities or opinion leaders.²⁰ Social norms can be injunctive, estab-

lishing what the decisionmaker should do, or descriptive, communicating what other individuals are doing.²¹

B. Decision Structure

Choice architects may direct their efforts at the arrangement of options or the decisionmaking format. Common techniques in this space include setting defaults and rearranging the composition of options.²²

A default is the option that is activated should the decisionmaker not take the initiative to select a different option.²³ The literature traces the power of defaults back to three factors.²⁴ First, decisionmakers often assume that the default represents an intentional recommendation.²⁵ Second, people may view the default as an option they already possess, making it harder to give up because of the so-called endowment effect.²⁶ Third, opting out of a default takes more effort than keeping it.²⁷

Cognitive limitations open the door for heuristics and biases, such as the diversification bias, that lead decisionmakers to allocate their attention and other mental resources evenly across all available choice categories.²⁸ Choice architects can harness diversification and other biases in a variety of ways, from how these architects arrange healthy and unhealthy food items on a restaurant menu²⁹ to splitting safety, fuel economy, and other practically important attributes of a vehicle into a greater number of subcategories while condensing less important attributes, such as cup-holders and audio systems, into a single category.³⁰

C. Decision Assistance

Many people suffer from "deficits in self-control such as temptation or procrastination."³¹ Choice architecture can help overcome these deficits through commitment devices that promote greater follow-through. In the United Kingdom (U.K.), text reminders have provided effective decision assistance to learners in adult literacy and numeracy

13. See Adrian R. Camilleri & Rick P. Larrick, *Choice Architecture*, in *EMERGING TRENDS IN THE SOCIAL AND BEHAVIORAL SCIENCES 1* (Robert A. Scott, Stephen M. Kosslyn & Marlis Buchmann eds., 2015).

14. See generally *THE CONSTRUCTION OF PREFERENCE* (Sarah Lichtenstein & Paul Slovic eds., 2006).

15. See Robert Münscher et al., *A Review and Taxonomy of Choice Architecture Techniques*, 29 *J. BEHAV. DECISION MAKING* 511, 514 (2016).

16. See George A. Miller, *The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information*, 63 *PSYCH. REV.* 81, 95-96 (1956).

17. Readers interested in exploring more than the illustrative examples provided are encouraged to consult Münscher et al., *supra* note 15, at 514-16.

18. See, e.g., Richard P. Larrick & Jack B. Soll, *The MPG Illusion*, 320 *SCIENCE* 1593, 1593 (2008) (demonstrating how consumers systematically misunderstand the miles-per-gallon metric for vehicular fuel efficiency, and how a simple fix can offer dramatic improvements).

19. See Paul A. Simon et al., *Impact of Restaurant Hygiene Grade Cards on Foodborne-Disease Hospitalizations in Los Angeles County*, *J. ENV'T HEALTH*, Mar. 2005, at 32, 34 (reporting a 13% decrease in hospitalizations for foodborne illness following the requirement for restaurants to display their hygiene ratings).

20. Münscher et al., *supra* note 15, at 516.

21. Erez Yoeli et al., *Behavioral Science Tools to Strengthen Energy and Environmental Policy*, 3 *BEHAV. SCI. & POL'Y*, no. 1, 2017, at 75. See also Noah J. Goldstein et al., *A Room With a Viewpoint: Using Social Norms to Motivate Environmental Conservation in Hotels*, 35 *J. CONSUMER RSCH.* 472, 474 (2008).

22. Readers interested in exploring more than the illustrative examples provided are encouraged to consult Münscher et al., *supra* note 15 at 516-19.

23. Camilleri & Larrick, *supra* note 13, at 3.

24. See N. Craig Smith et al., *Choice Without Awareness: Ethical and Policy Implications of Defaults*, 32 *J. PUB. POL'Y & MKTG.* 159, 161 (2013).

25. *Id.*

26. See Daniel Kahneman et al., *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 *J. ECON. PERSPS.* 193, 194-97 (1991) (The endowment effect refers to "the fact that people often demand much more to give up an object than they would be willing to pay to acquire it . . .") *Id.* at 194.

27. Smith et al., *supra* note 24, at 161.

28. See Craig R. Fox et al., *How Subjective Grouping of Options Influences Choice and Allocation: Diversification Bias and the Phenomenon of Partition Dependence*, 134 *J. EXPERIMENTAL PSYCH.* 538, 540 (2005); see also Thomas W. Doellman et al., *Alphabetical Bias in 401(k) Investing*, 54 *FIN. REV.* 643, 655 (2019).

29. See Fox et al., *supra* note 28, at 545-46.

30. See Jolie M. Martin & Michael I. Norton, *Shaping Online Consumer Choice by Partitioning the Web*, 26 *PSYCH. & MKTG.* 908, 911-13 (2009).

31. Münscher et al., *supra* note 15, at 519.

programs, increasing attendance rates by nearly 20%.³² The choice architect's toolbox also features public commitment techniques that leverage external pressure and the fear of reputational damage to foster better follow-through.³³

D. Government as Choice Architect

The first government to act as a choice architect was the U.K.'s Behavioural Insights Team, better known as the "Nudge Unit."³⁴ For example, a campaign of letters from Her Majesty's Revenue and Customs to citizens behind on their taxes underscores the importance of decision information. Choice architectural variations in the letters' framing and tone produced dramatically different payment outcomes.³⁵ Consistent with other evidence supporting the power of choice architecturally designed decision structures, changing the default from opt-in to automatic enrollment in workplace pensions, requiring disinterested employees to opt out, has significantly improved participation in retirement savings programs among U.K. employees.³⁶

III. The Case for Climate Choice Architecture

The relatively sparse deployment of choice architecture to date in the war on carbon raises the question of what, if anything, nudges can contribute to climate policy.

A. Nudges Are Nimble and Adaptive

Scientific uncertainty abounds not only across but also within scenarios because global warming, sea-level rise, and other symptoms of our changing climate do not progress in linear fashion.³⁷ If scientific uncertainty is not enough to keep policymakers on their toes, then unexpected disruptions to the economic landscape are all but certain to do the trick. The proliferation of solar, wind, and other low-carbon renewables, for example, has exceeded even the most optimistic projections, requiring policymakers to make repeated course adjustments. At the turn of the new millennium, the U.S. Energy Information Adminis-

tration predicted that "[l]ess than 400 megawatts of renewable generating capacity" would be built between 2012 and 2020.³⁸ In reality, nearly 16,000 megawatts of new wind and solar capacity were added in 2015 alone.³⁹

Nudges fall on the dynamic side of the policymaking continuum because they are often easier to adopt and adapt than more traditional legislative and regulatory interventions. Choice architecture is at its most effective when deployed at the interface between regulator and regulated, where biases, heuristics, and cognitive limitations are most prominent.⁴⁰ The link connecting policymaker to citizenry tends to offer considerable discretion to the implementing agency.

B. A Proven Track Record of Nudges in Environmental Policy

Choice architecture has a proven track record of successfully nudging more pro-environment behavior in a variety of domains. Indeed, nudges have achieved impressive results in the promotion of waste reduction and water conservation.⁴¹ Energy conservation and the transition to "greener" sources of energy have produced some of the biggest success stories for choice architecture in environmental policy. A number of field experiments have confirmed the power of social norm-based campaigns to nudge households to reduce their electricity consumption.⁴²

C. Choice Architecture Complements Carbon Pricing

Thoughtful nudges can help mitigate some of the typical shortcomings of carbon taxes and cap-and-trade programs, including leakage, agency problems, and limitations in

32. See Michael Sanders et al., *Using Text Reminders to Increase Attendance and Attainment: Evidence From a Field Experiment 1* (Mar. 8, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3349116 [<https://perma.cc/GX8A-7MPM>].

33. See, e.g., Prashanth U. Nyer & Stephanie Dellande, *Public Commitment as a Motivator for Weight Loss*, 27 *PSYCH. & MKTG.* 1, 7 (2010).

34. See generally DAVID HALPERN, *INSIDE THE NUDGE UNIT: HOW SMALL CHANGES CAN MAKE A BIG DIFFERENCE* (Ebury Press 2016).

35. See Michael Hallsworth et al., *The Behavioralist as Tax Collector: Using Natural Field Experiments to Enhance Tax Compliance 4* (Nat'l Bureau of Econ. Rsch., Working Paper No. 20007, 2014) (observing a treatment effect of almost £2.4 million in additional taxes paid within 23 days for the most successful letter variant).

36. David Halpern, *Setting Smarter Defaults for Workplace Pensions*, *BEHAV. INSIGHTS TEAM: OUR BLOG* (Oct. 6, 2016), <https://www.bi.team/blogs/setting-smarter-defaults-for-workplace-pensions/> [<https://perma.cc/TE87-HJFC>].

37. Richard B. Alley et al., *Abrupt Climate Change*, 299 *SCIENCE* 2005, 2007-2008 (2003).

38. ENERGY INFO. ADMIN., *ANNUAL ENERGY OUTLOOK 2000 WITH PROJECTIONS TO 2020*, at 72 (1999).

39. For background on the 7,286 megawatts of new solar capacity installed in 2015, see Press Release, Solar Energy Indus. Ass'n, U.S. Solar Market Sets New Record, Installing 7.3 GW of Solar PV in 2015 (Feb. 19, 2016), <https://www.seia.org/news/us-solar-market-sets-new-record-installing-73-gw-solar-pv-2015> [<https://perma.cc/WAJ9-NVRK>]. For background on the 8,599 megawatts of new wind capacity installed in 2015, see *Wind Energy in the United States*, AM. WIND ENERGY ASS'N, <https://a112.awea.org/wind-101/basics-of-wind-energy/wind-facts-at-a-glance> [<https://perma.cc/SV66-LWZT>] (click the "2015" bar on the "Cumulative U.S. Wind Capacity" bar chart to view the underlying data referenced).

40. See THE CONSTRUCTION OF PREFERENCE, *supra* note 14, at 37.

41. See Goldstein et al., *supra* note 21, at 472-73; see also Aristeidis Theotokis & Emmanouela Manganari, *The Impact of Choice Architecture on Sustainable Consumer Behavior: The Role of Guilt*, 131 *J. BUS. ETHICS* 423, 426 (2015) (suggesting that people feel guilty when making choices that are bad for the environment, and that policy design can exacerbate or mitigate these feelings).

42. See, e.g., Jessica M. Nolan et al., *Normative Social Influence Is Underdetected*, 34 *PERSONALITY & SOC. PSYCH. BULL.* 913, 917 (2008) ("[B]eliefs of how often their neighbors tried to conserve showed a strong correlation with respondents' own reported conservation efforts."); Hunt Allcott, *Social Norms and Energy Conservation*, 95 *J. PUB. ECON.* 1082 (2011) (finding that the households that used the most electricity had the largest decrease in consumption after being informed of their power usage relative to their neighbors).

coverage. Some models suggest that nearly half of the emissions reductions achieved by carbon pricing in a given jurisdiction may simply shift to neighboring jurisdictions without a price on carbon.⁴³ Default enrollment of electricity customers in low-carbon plans and other choice architectural nudges—in jurisdictions with and without carbon pricing—can help reduce leakage and resource shuffling to maximize net emissions reductions.⁴⁴

Recent scholarship suggests that the tepid political support for a carbon tax or cap-and-trade policies may be rooted in a number of biases and heuristics that negatively affect the electorate's perception of carbon pricing policies.⁴⁵ Behaviorally informed campaigns can target these limitations to enhance the political viability of carbon policies.

D. A Bridge Over the Partisan Chasm of Climate Politics

The partisan divide over climate change is widely thought to follow the same fault lines as the age-old conflict over big government versus market fundamentalism.⁴⁶ Choice architectural policy interventions could help build a bridge of this topography of conflict. After all, researchers find no evidence of partisan differences in the American public's response to nudges when described without discussion of specific policy objectives.⁴⁷ Even when connected to specific policy goals and policymakers, Democrats and Republicans concurred in their overwhelming approval of recent nudge policies.⁴⁸

Deeply rooted skepticism of anthropogenic climate change does not require the wholesale dismissal of nudges as catalysts for greater climate action. Rather, data gathered via public opinion polls suggest that choice architects should use their repertoire of options to educate U.S. voters and policymakers on the findings of climate science,⁴⁹ then deploy nudges to create consensus over what form of action should be taken.

43. See Justin Caron et al., *Leakage From Sub-National Climate Policy: The Case of California's Cap-and-Trade Program*, 36 ENERGY J. 167, 167 (2015) (reporting that 45% of emissions reductions in California increase emissions in neighboring states).

44. For a survey of choice architecture's proven track record of nudging ratepayers toward low-carbon electricity plans, see *supra* note 42 and accompanying text.

45. See Lucas, *supra* note 5, at 37.

46. Riley E. Dunlap et al., *The Political Divide on Climate Change: Partisan Polarization Widens in the U.S.*, ENV'T. SCI. & POL'Y FOR SUSTAINABLE DEV., Sept./Oct. 2016, at 15; Aaron M. McCright & Riley E. Dunlap, *The Politicization of Climate Change and Polarization in the American Public's Views of Global Warming, 2001-2010*, 52 SOCIO. Q. 155, 178-80 (2011).

47. Janice Y. Jung & Barbara A. Mellers, *American Attitudes Toward Nudges*, 11 JUDGMENT & DECISION MAKING 62, 63 (2016).

48. See Sunstein, *supra* note 8, at 187 & tbl.1.

49. See *supra* Section II.A.

E. Creating Momentum for Climate-Friendly Social Norms

Descriptive social norms reflect “predominant attitudes and patterns of behavior in a social group.”⁵⁰ Reference to these positive descriptive norms can help strengthen already dominant behavior, as illustrated by the impressive success of norm-based campaigns for recycling in the United States⁵¹ and for water conservation in Australia.⁵²

The stickiness of prevailing attitudes and conduct does not bode well for social norm-based efforts to encourage more climate-friendly behavior because reduction of the meat content in our diets, less air travel, and other recommended carbon-conscious conduct are neither popular nor dominant patterns of behavior.⁵³ But in situations where “only a minority of people engage in the desired behavior, a dynamic norm that communicates the upward trend” in the preferred conduct's practice has proven significantly more effective than reliance on “static minority norm[s].”⁵⁴ Dynamic social norms prompt people to “anticipate a changed future” to which they are willing to adjust their behavior, especially when the observed change in others' behavior reflects effort and, hence, the importance of the cause.⁵⁵

F. Ample Opportunities for Private Climate Governance

Financial markets have emerged as a key battleground over private climate governance, as investors push reticent companies to adopt more climate-friendly business practices.⁵⁶ Financial experts, meanwhile, warn that “capital is flowing

50. E.g., Adrian Rinscheid et al., *What Shapes Public Support for Climate Change Mitigation Policies? The Role of Descriptive Social Norms and Elite Cues*, 5 BEHAV. PUB. POL'Y 503, 504 (2021); Kathryn L. Doherty & Thomas N. Webler, *Social Norms and Efficacy Beliefs Drive the Alarmed Segment's Public-Sphere Climate Actions*, 6 NATURE CLIMATE CHANGE 879, 880 (2016).

51. P. Wesley Schultz, *Changing Behavior With Normative Feedback Interventions: A Field Experiment on Curbside Recycling*, 21 BASIC & APPLIED SOC. PSYCH. 25, 27, 34 (1999).

52. Andrea Walton & Margee Hume, *Creating Positive Habits in Water Conservation: The Case of the Queensland Water Commission and the Target 140 Campaign*, 16 INT'L J. NONPROFIT & VOLUNTARY SECTOR MKTG. 215, 219 (2011) (attributing water conservation to multi-pronged approach, including distributing information, “naming and shaming” individuals).

53. See *Sources of Greenhouse Gas Emissions*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> [https://perma.cc/2362-NHYS] (Aug. 5, 2022); Richard L. Revesz & Burcin Unel, *Managing the Future of the Electricity Grid*, 41 HARV. ENV'T L. REV. 43, 74, 86 (2017); Joseph Poore & Thomas Nemecek, *Reducing Food's Environmental Impacts Through Producers and Consumers*, 360 SCIENCE 987, 990-91 (2018); Kayla Karimi, *Stopping Livestock's Contribution to Climate Change*, 36 UCLA J. ENV'T L. & POL'Y 347, 350-51 (2018); Jonathan Lovvorn, *Clean Food: The Next Clean Energy Revolution*, 36 YALE L. & POL'Y REV. 283, 301-06 (2018).

54. *Id.*; see Chad R. Mortensen et al., *Trending Norms: A Lever for Encouraging Behaviors Performed by the Minority*, 10 SOC. PSYCH. & PERSONALITY SCI. 201, 208 (2019); Gregg Sparkman & Gregory M. Walton, *Dynamic Norms Promote Sustainable Behavior, Even if It Is Counternormative*, 28 PSYCH. SCI. 1663, 1673 (2017).

55. Sparkman & Walton, *supra* note 54, at 1672.

56. See Madison Condon, *Externalities and the Common Owner*, 95 WASH. L. REV. 1, 6 (2020).

freely in the wrong direction, emissions continue to rise, catastrophic climate-related damages proliferate, and the threat of truly cataclysmic impacts increase[s].⁵⁷

Adding a “climate rating” to the performance metrics commonly considered by investors can boost investment in more climate-friendly stocks by over 50%.⁵⁸ Remarkably, this climate nudge proved highly effective even when other competing stocks boasted stronger performance data.⁵⁹ Additionally, climate-conscious employers can use their clout to structure the menu of investment options accordingly, featuring more sustainable funds more prominently or altogether dropping funds with a poor sustainability record.⁶⁰

G. Climate Nudging in Action: Carbon Labels for Food

The food system has largely been overlooked, even when its sizeable carbon footprint promises ample potential for mitigating climate change.

A recent study conducted by an Australian-American research team asked participants to choose from among a set of food items, displayed with carbon labels in the treatment condition and without such labels in the control condition.⁶¹ The observed results confirm the power of climate nudges, with participants in the treatment condition choosing less carbon-intensive foods more frequently than their counterparts in the control condition. The food sector is especially attractive for carbon labeling, not only because of its sizeable contribution to global greenhouse gas emissions, but also because studies indicate actual consumer demand for carbon labels.⁶²

IV. Nudge Policies and Their Discontents

Critics question both the efficacy and the ethics of choice architectural interventions.

A. Efficacy Doubts

Not all nudges work as intended. A California energy-conservation program illustrates the potential for nudges to

backfire.⁶³ A local Californian utility company sent energy reports to households informing them how their energy use compared to that of their neighbors. Democrats and environmentalists responded by lowering their energy consumption, whereas Republicans increased air conditioning use and kept the lights on, driving their energy usage up.⁶⁴

A recent meta-analysis of behaviorally informed interventions posits that nudges fail more frequently than is commonly known and that these failures provide valuable lessons for choice architects.⁶⁵ Professor Sunstein reminds us that, in the context of choice architecture:

[w]hat matters is welfare, not effectiveness A strong reason for nudges, as distinguished from more aggressive tools, is that they preserve freedom of choice and thus allow people to go their own way. In many contexts, that is indeed a virtue, and the ineffectiveness of nudges, for some or many, is nothing to lament.⁶⁶

Climate change has been aptly characterized as a “super wicked problem” that defies resolution because of the vast web of uncertainties, interdependencies, circularities, and conflicting stakeholder interests that are involved in any attempt at developing a solution.⁶⁷ Add to that the extreme urgency and daunting scope of the challenge at hand and it becomes obvious why climate nudges should be viewed as but one type of many policy tools to be deployed. In the words of Nobel Laureate Thaler: “We can’t solve climate change with nudging, but we can’t solve it without nudging.”⁶⁸

B. Ethical Concerns

Opponents often condemn nudge policies as paternalistic government interventions with potentially adverse effects on the autonomy and welfare of decisionmakers.⁶⁹ But the reality is that every decision we make takes place in a

57. Statement by Robert B. Litterman, Partner, Kepos Capital, for the Senate Special Comm. on the Climate Crisis, *Climate Change Is a Risk Management Failure That Can and Must Be Fixed Immediately* (Mar. 12, 2020), <https://www.schatz.senate.gov/imo/media/doc/Litterman%20Testimony%20short%20version%20.pdf> [<https://perma.cc/25G3-HJVS>].

58. See Felix Mormann & Milica Mormann, *The Case for Corporate Climate Ratings: Nudging Financial Markets*, 53 ARIZ. ST. L.J. 1209, 1272 (2021).

59. *Id.* at 1279.

60. See Doellman et al., *supra* note 28, at 645.

61. Camilleri & Larrick, *supra* note 13, at 57 fig.3.

62. See Meike Guenther et al., *Carbon Labeling and Consumer Attitudes*, 3 CARBON MGMT. 445, 452 (2012) (reporting consumer preference for carbon labels based on survey experiments in Japan and the U.K.); Hanna Hartikainen et al., *Finnish Consumer Perceptions of Carbon Footprints and Carbon Labelling of Food Products*, 73 J. CLEANER PROD. 285, 285 (2014) (same for Finnish consumers).

63. See Ray Fisman, *Nudges Gone Wrong*, SLATE (Apr. 23, 2010), <https://slate.com/business/2010/04/a-program-designed-to-reduce-energy-consumption-persuaded-some-republicans-to-consume-more.html> [<https://perma.cc/KK5X-4YL5>].

64. *Id.*; see also Dora L. Costa & Matthew E. Kahn, *Energy Conservation “Nudges” and Environmentalist Ideology: Evidence From a Randomized Residential Electricity Field Experiment*, 11 J. EUR. ECON. ASS’N 680, 681 (2013).

65. See Magda Osman et al., *Opinion, Learning From Behavioural Changes That Fail*, 24 TRENDS COGNITIVE SCI. 969, 970 (2020); see also Cass R. Sunstein, *Nudges That Fail*, 1 BEHAV. PUB. POL’Y 4, 6 (2017).

66. Sunstein, *supra* note 65, at 22 (citing CASS R. SUNSTEIN, *THE ETHICS OF INFLUENCE: GOVERNMENT IN THE AGE OF BEHAVIORAL SCIENCE* (2016)).

67. See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153, 1159-60 (2009) (adding time pressure, lack of institutional framework, and other exacerbating traits of the climate crisis).

68. Stephen J. Dubner, *All You Need Is Nudge*, FREAKONOMICS RADIO (Sept. 8, 2021), <https://freakonomics.com/podcast/all-you-need-is-nudge/> [<https://perma.cc/KDN3-N7PN>].

69. See, e.g., Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Law and Economics: Its Origins, Fatal Flaws, and Implications for Liberty*, 106 NW. U. L. REV. 1033, 1069-75 (2012); Jeffrey J. Rachlinski, *The Uncertain Psychological Case for Paternalism*, 97 NW. U. L. REV. 1165, 1222-23 (2003); Claire A. Hill, *Anti-Anti-Anti-Paternalism*, 2 N.Y.U. J.L. & LIBERTY 444, 445-48 (2007); Edward L. Glaeser, *Essay, Paternalism and Psychology*, 73 U. CHI. L. REV. 133, 150-56 (2006).

choice environment that already exists. Nudge policies do not create novel choice architecture where there previously was none; they merely seek to modify existing choice environments that already affect our decisionmaking.

A second, more nuanced caveat cautions against default rules and similar tweaks to the decision structure⁷⁰ that seek to guide a stakeholder's decisionmaking in a certain predetermined direction are inherently value-laden.⁷¹ Nudge critics understandably argue that choice architects cannot possibly know in every instance what the best choice option is for every decisionmaker.⁷² It is hard to dispute the critique that default rules and similar directionally weighted nudges constitute a form of paternalism that, by definition, will not be universally welfare-enhancing. Then again, pareto optimality in the sense of making everyone better off and no one worse off is beyond the reach of virtually all law and policy.⁷³

Informational nudges register far lower on the paternalism spectrum. The ethics case for informational choice architecture is especially strong when such measures seek to remedy externalities and other market failures. With their profoundly negative impact on social welfare, the greenhouse gas emissions that drive global warming represent one of the most daunting challenges of our time. Accordingly, even the most fervent nudge critics would struggle to find fault with the type of externality-oriented, educative climate choice architecture proposed in this Article.⁷⁴

Attempts to address the profound justice and equity implications of climate policy and action commonly seek to promote more widespread public participation in the deliberations and decisions how to respond to global warming and climate change.⁷⁵ Climate nudges can help

support and advance top-down institutional change by empowering more informed bottom-up decisionmaking from a broad range of stakeholders, whose collective carbon footprint represents nearly half of U.S. greenhouse gas emissions.⁷⁶

V. Conclusion

This Article offers a functionally derived, impact-oriented taxonomy of choice architecture to help policymakers and private actors identify the behavioral tools that best serve their climate objectives. Behaviorally informed policies have proven highly effective at nudging decisionmakers toward welfare-enhancing choices in a wide range of contexts. Along the way, nudge campaigns have created rare common ground amidst polarized partisan politics. Properly integrated into a broader suite of policies, climate choice architecture can improve the efficacy, efficiency, and equity of public policy and deliver more impactful private governance action on climate change.

The ethics of nudges have been the subject of heated debate as opponents decry nudging as a paternalistic wolf in sheep's clothing. But the paternalism argument holds little water with the externality-oriented, educative climate choice architecture envisioned in this Article. Moreover, climate choice architecture can mitigate growing concern over the equity and justice of climate policy by turning previously passive stakeholders into active decisionmakers along the path to a low-carbon economy.

The time has come to harness the power of nudges, at both the institutional and individual level, in public and private governance responses to the climate crisis.

70. See *supra* Section II.B.

71. See On Amir & Orly Lobel, *Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy*, 108 COLUM. L. REV. 2120-24 (2008).

72. See JOHN STUART MILL, ON LIBERTY 74 (Elizabeth Rapaport ed., Hackett Publ'g Co. 1978) (1859).

73. See, e.g., Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 YALE L.J. 1211, 1212 (1991) (noting that all policy choices "disadvantag[e] at least someone").

74. See Galle, *supra* note 9, at 872, 890-92.

75. See, e.g., Shelley Welton, *Decarbonization in Democracy*, 67 UCLA L. REV. 56, 59 (2020); Felix Mormann, *Clean Energy Equity*, 2019 UTAH L. REV. 335, 376.

76. See Shui Bin & Hadi Dowlatabadi, *Consumer Lifestyle Approach to US Energy Use and the Related CO₂ Emissions*, 33 ENERGY POL'Y 197, 197 (2005).