NUDGES, DEFAULTS, AND THE PROBLEM OF CONSTRUCTED PREFERENCES

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ABSTRACT

Regulatory bodies have increasingly become interested in "nudges," or low-cost adjustments to the environment in which people make choices. These interventions promise to give more people what they truly want while preserving freedom of choice. In theory, default rules—a type of nudge—that can survive a thorough cost-benefit analysis should both preserve liberty and enhance welfare. In reality, altering default rules can also change people's preferences. Neutral cost-benefit analysis is thus impossible, and choosing a default rule therefore influences personal freedom. This Article explains how nudges influence preferences and why this makes neutral cost-benefit analysis impossible for regulators.

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INTRODUCTION

Imagine that the U.S. Department of Energy would like to increase the number of households that have special charging units for electric vehicles ("EVs") in their garages as part of an effort to reduce carbon emissions. Having read numerous studies concerning the power of default rules,[1] the department promulgates a regulation requiring that all new home constructions that make use of federally supported loans include special EV hookups in the garage by default. The regulation allows builders to opt out of the requirement simply by completing some paperwork in which they assert that they believe the future homeowners would likely not want a charging station. In cases in which the ultimate homeowner is identifiable, such as when the homeowner has contracted directly with the builder, this assertion must be cosigned by the future homeowner. Regulators believe that many new homeowners would prefer to have these charging stations available, even considering the extra cost, in anticipation of someday owning an EV. Few new homeowners, however, currently ask builders to include them in the design for new homes. Regulators believe that changing the default will alter this norm and facilitate the use of EVs.

Is this intervention a good idea? If the assumption that many new homeowners would want a charging station for an EV is correct, then it seems like a relatively easy win. This default forces homeowners to at least consider the possibility, which they might otherwise have overlooked. Furthermore, it does so at little cost to new homeowners who do not want charging stations, who need only complete some paperwork to opt out. This is an example of an approach to regulation that Professors Cass Sunstein and Richard Thaler have called "libertarian paternalism"—using relatively low-cost interventions that "steer people in directions that will promote their own welfare."[2] In their book *Nudge*, they define such interventions as "nudges," which they see 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."[3] Nudges thus are

1. Including perhaps the book that coined the term "nudge," RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: THE FINAL EDITION 8 (2021).

2. Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1201 (2003).

3. THALER & SUNSTEIN, *supra* note 1, at 8. Thaler and Sunstein also go on to state that "[t]o count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not

intended to serve the interests of their targets and are distinct from both regulatory mandates that force people to make prosocial choices and prohibitions meant to protect people from making bad choices. Although many other kinds of nudges exist, default rules are among the most effective at changing behavior.[4]

Setting a default rule to give the majority what they truly want has enormous appeal for regulators.[5] Doing so advances the interests of the majority of consumers, overcoming what might be an industry-wide inertia while doing little harm to the minority, who can opt out if they prefer a different rule.[6]A Rather than impose a paternalistic mandate requiring an EV hookup in every new home, setting the requirement as a default with an opt-out avoids forcing some homeowners to pay for a commodity they do not truly want. Compared to a mandate, the default seems like it would promote efficient regulation while enhancing people's freedom to make their own choices.[7]

Part of the attraction of nudges is their apparent commitment to personal liberty.[8] Regulation—particularly when motivated by paternalistic instincts—has many critics.[9] Those who embrace a

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taxes, fines, subsidies, bans, or mandates." *Id.* This account does not provide a precise definition of nudges, which has been elusive. *See* Avishalom Tor, *The Law and Economics of Behavioral Regulation*, 18 REV. L. & ECON. 223, 229 (2022) [hereinafter Tor, *Law and Economics*] ("A number of scholars have noted the varied and inconsistent ways in which the nudge terminology has been employed . . . ."). The characteristics of a nudge seem to be that it still allows for choice, guides behavior in ways that are helpful to the target of the nudge, overcomes cognitive errors in judgment, does not alter the cost of the activity in traditional ways (through fines or monetary rewards), and is relatively costless to the regulator. *Id.* at 224.

4. *See* Thomas de Haan & Jona Linde, *"Good Nudge Lullaby": Choice Architecture and Default Bias Reinforcement*, 128 ECON. J. 1180, 1180 (2018) ("One prominent tactic of . . . so-called libertarian paternalists is to make an endorsed option the default choice, because many people disproportionately follow defaults.").

5. *See* Jon M. Jachimowicz, Shannon Duncan, Elke U. Weber & Eric J. Johnson, *When and Why Defaults Influence Decisions: A Meta-Analysis of Default Effects*, 3 BEHAV. PUB. POL'Y 159, 159 (2019) (noting that defaults "constitute one of the most widely employed tools in the choice architecture toolbox").

6. *See* Cass Sunstein, *Nudges vs. Shoves*, 127 HARV. L. REV. F. 210, 211 (2014) [hereinafter Sunstein, *Nudges*] ("By allowing people to go their own way, [nudges] reduce the high costs potentially associated with one-size-fits-all-solutions . . . ."). *But see* Avishalom Tor, *The Private Costs of Behavioral Interventions*, 72 DUKE L.J. 1673, 1677 (2023) [hereinafter Tor, *Private Costs*] ("[A] closer look reveals that behavioral instruments generate substantial private costs . . . .").

7. *See* Sunstein, *Nudges*, *supra* note 6, at 211 ("[N]udges have the advantage of avoiding the welfare loss that people experience when they are deprived of the ability to choose.").

8. *See id.*

9. *See* Riccardo Rebonato, *A Critical Assessment of Libertarian Paternalism*, 37 J. CONSUMER POL'Y 357, 358 (2014) ("[C]ontemporary western society is probably more ill at ease

libertarian perspective, in particular, deride any infringement on personal choice.[10] Libertarians argue that regulation commonly imposes unnecessary restrictions on personal freedom.[11] A regulation mandating the installation of hookups for EVs in all new homes would be a prime case in point. Many homebuyers would not want such a hookup but would nevertheless have to pay for it. Critics of regulation also argue that politicians do not impose regulations to further the public good but to satisfy influential constituents.[12] For its critics, regulation is the product of successful rent-seeking by interest groups, rather than an effort to benefit the public good.[13] Advocates of regulatory nudges, however, nimbly sidestep both of these criticisms: they advocate for interventions that merely facilitate choices rather than mandate specific outcomes, and they embrace cost-benefit analysis as a neutral principle to determine which interventions to adopt.[14]

With respect to the running example of EV hookups, these two responses would seem to be decisive. Were the hookups completely mandatory, critics would argue that they deprive homeowners of choice. Using a default would seem to address that concern. Cynical critics might also worry that regulators only adopted the mandate to

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than it ever has been with the idea of a universally-acknowledged superior good that a mandarin class should impose on the citizenship."); Richard H. Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175, 175 (2003) ("Many economists are libertarians and consider the term 'paternalistic' to be derogatory.").

10. *See* MILTON FRIEDMAN & ROSE FRIEDMAN, FREE TO CHOOSE: A PERSONAL STATEMENT 6 (1980) ("Sooner or later—and perhaps sooner than many of us expect—an ever bigger government would destroy both the prosperity that we owe to the free market and the human freedom proclaimed so eloquently in the Declaration of Independence.").

11. *See id.* at 67 (arguing that "[r]estrictions on economic freedom inevitably affect freedom in general").

12. *See id.* at 193 ("Every act of intervention establishes positions of power. How that power will be used and for what purposes depends . . . more on the people who are in the best position to get control of that power . . . than on the aims and objectives of the initial sponsors of the intervention.").

13. *See* Gordon Tullock, *The Welfare Costs of Tariffs, Monopolies, and Theft*, 5 ECON. INQUIRY 224, 231 (1967) ("As a successful theft will stimulate other thieves to greater industry and require greater investment in protective measures, so each successful establishment of a monopoly or creation of a tariff will stimulate greater diversion of resources to attempts to organize further transfers of income.").

14. *See* Sunstein, *Nudges*, *supra* note 6, at 213, 217 (arguing that "people reject defaults when that harm is clearly apparent to them" and stating that "the advantage of . . . [nudges] is that they . . . avoid the welfare (and other) costs associated with eliminating freedom of choice").

satisfy electricians and EV manufacturers.[15] Subjecting this intervention to a thorough cost-benefit analysis, however, arguably tests whether the intervention actually enhances social welfare.

Nudges—particularly setting default rules strategically—thus seem to be a neutral means of enhancing welfare. They are arguably immune to the usual criticism of regulation as inefficient and socially destructive. But looks can be deceiving. Inducing homebuyers to install an EV hookup in their new garage as a default could change how people think about this amenity. Homebuyers might come to see it as desirable, even though they previously did not want it. If a default rule changes people's underlying preferences, then all the complexity of a thorough cost-benefit analysis cannot save it from the critique that nudges are not truly neutral.[16] Nudges might not just change behavior; they might change minds.[17] Hence, nudges are not truly neutral. A savvy regulator who recognizes that their intervention will change underlying preferences must make a choice about the "correct" state of the world—just as a regulator who adopts a mandate does.[18]

This Article explains how nudges influence preferences and why this makes neutral cost-benefit analysis impossible for regulators. Part I reviews why defaults are attractive and how their proponents address many of the concerns that others have raised through cost-benefit analysis. Part II describes how default rules work to change behavior—and minds. Part III then elaborates on how this fact about nudges changes the analysis of the running example of EV hookups. This Article concludes by arguing that education and other methods cannot make preferences more stable. Nudges must (and can) be defended in the same way that conventional mandates are defended. That is to say,

15. *But see* Tor, *Private Costs*, *supra* note 6, at 1690 (arguing that nudges also might benefit interest groups).

16. *See* Gregory Mitchell, *Libertarian Paternalism Is an Oxymoron*, 99 NW. U. L. REV. 1245, 1250–51 (2005) ("The logical implication of the claim that normatively irrelevant features of the choice setting influence preferences is . . . the inevitability of manipulation of choices by central planners . . . ."); Rebonato, *supra* note 9, at 383 ("[I]f framing is so important, and if no framing is neutral, then the libertarian paternalists are correct in claiming that nominal ability to exercise a choice is vacuous. But surely this must apply also to the nudges that are put forth by the libertarian paternalistic choice engineer.").

17. *See infra* notes 73–137 and accompanying text.

18. *See infra* notes 139–153 and accompanying text (detailing this argument with a running example of EV hookups); *see also* Tor, *Private Costs*, *supra* note 6, at 1676 ("Behavioral interventions draw on empirical findings that reveal how real people make judgments and decisions to encourage behaviors that regulators find desirable . . . .").

default rules, and nudges in general, are not truly devoid of value judgments. Regulators must justify nudges for reasons other than just that they remove impediments to efficient choice.

I. WHY DEFAULTS ARE AN ATTRACTIVE REGULATORY TOOL

Defaults are perhaps one of the most compelling forms of nudges.[19] Defaults are effective and inexpensive to administer.[20] Regulators are also attracted to using defaults to guide behavior because using a default rule responds to the two basic criticisms of regulation: that it intrudes on personal freedom and that it often serves private interests rather than the public good.[21]

A. Defaults and Personal Freedom

The idea that nudges support personal freedom is probably one of the primary reasons that the concept has gained so much intellectual traction and acceptance in the regulatory community.[22] In a society like the United States that values personal freedom highly, being able to opt out of a regulatory intervention will enhance support for that mandate or at least dull opposition. As Thaler and Sunstein describe their approach:

> We strive to design policies that maintain or increase freedom of choice. When we use the term *libertarian* to modify the word *paternalism*, we simply mean liberty-preserving. And when we say liberty-preserving, we really mean it. Libertarian paternalists want to

19. *See* Jachimowicz et al., *supra* note 5, at 160 ("Across many other domains and governments, defaults have also attracted increasing attention from policy-makers.").

20. *See id.* at 160, 174 (citing "ease of implementation" as a reason for their popularity among regulators and, after analyzing dozens of studies on the effects of defaults, concluding that "defaults exert a considerable influence").

21. *See* Rebonato, *supra* note 9, at 358 ("Traditional paternalists have always emphasized the inability of the individual to choose what is instrumentally good either for her or for society (the 'inefficient-means' paternalistic justification) or intrinsically good in the light of some idea of what the proper goals a society or an individual should pursue . . . ."); Tor, *Law and Economics*, *supra* note 3, at 236 ("[P]olicy makers may believe that nudges are politically more feasible than their alternatives . . . .").

22. *See* Ryan Bubb & Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. 1593, 1595 (2014) ("BLE [behavioral law and economics] offers the promise of a possible political consensus — built around minimalist forms of government action that preserve freedom of choice, such as default rules and 'smart disclosure' — that cuts through today's hyperpolarized partisan conflicts . . . .").

> make it easy for people to go their own way; they do not want to burden those who want to exercise their freedom.[23]

One of the key features of this species of behaviorally informed regulatory intervention is thus avoiding prohibitions. Instead, nudges focus on the kinds of psychological barriers that prevent people from engaging in behaviors that they themselves would agree make them better off.[24] People might recognize that contributing to their health savings account would improve their personal finances, for example, but they put off taking the time to complete the forms properly. The reasoning goes that if most people should contribute to these accounts, why not make that the default? To return to the EV example, if most people would want charging stations for EVs in their homes, why not just start there as a default?

Embedded within the arguments for nudges is a subtle intellectual move. Conventional economic wisdom rejects the idea that people make serious mistakes in judgment that do not serve their own interest.[25] In fact, economists commonly critique the contemporary work on behavioral decision theory and the psychology of choice.[26] But the same economic reasoning that supports opponents of paternalistic interventions also undermines objections to the choice of a default rule.[27] So long as people who disfavor the default can opt out, a conventional economic analysis predicts that they will opt out.[28] Because (conventional) economists believe that people will opt out of choices when their preferences suggest that they should opt out, such economists have no basis for criticizing the choice of a default rule so long as opting out is relatively costless. Hence, in this important way, nudges constitute an acceptable regulatory intervention for economists

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23. THALER & SUNSTEIN, *supra* note 1, at 6.

24. *See id.* at 18 ("Choosers are human, so designers should make life as easy as possible.").

25. *See id.* at 9 ("If you look at economics textbooks, you will learn that . . . [conventional economics assumes that human beings] can think like Albert Einstein, store as much memory as Google does in the cloud, and exercise the willpower of Mahatma Gandhi.").

26. *See generally* David M. Grether & Charles R. Plott, *Economic Theory of Choice and the Preference Reversal Phenomenon*, 69 AM. ECON. REV. 623 (1979) (expressing skepticism about cognitive errors in judgment because, among other reasons, these effects have been demonstrated largely by psychologists).

27. THALER & SUNSTEIN, *supra* note 1, at 11 ("[N]udges include interventions that significantly alter the behavior of Humans, even though they would be ignored by Econs.").

28. *See* Mitchell, *supra* note 16, at 1246 ("[B]ecause individuals can easily opt out of the default option, the paternalism of the plan does not overwhelm the liberty of an individual who strongly prefers a different . . . plan . . . .").

(and perhaps libertarians who believe freedom of choice is paramount for similar reasons).[29] So long as a nudge preserves choice, it is unobjectionable to a conventional economist; at the same time, for a behavioral economist who believes that nudges guide behavior, it is welfare enhancing.

In embracing this intellectual move, Sunstein and Thaler find themselves criticized by those who think their approach remains overbearing and thus goes too far[30] and also by those who think their approach does not go far enough.[31] Members of the former camp express concerns that the opt-out is actually illusory.[32] Some default rules are so powerful that virtually no one opts out. For example, in Austria, people can opt out of being considered as an organ donor, while Germany has a system in which people have to opt in to be donors. In Austria, virtually no one opts out, but in Germany, only 12 percent opt in.[33] It is hard to see Austria's approach as any different from a mandate with which a small percentage fail to comply.[34] And yet, even in extreme cases like the opt-out for organ donation, the opt-out system still feels different from a regulatory mandate. Notably, people still want the opportunity to make the choice about organ donation, even if they hardly ever depart from the default.[35]

Those who think nudges do not go far enough argue that sometimes mandates are necessary.[36] Many of the same errors in

29. *See* THALER & SUNSTEIN, *supra* note 1, at 7 ("If people want to smoke cigarettes, eat a lot of candy, choose an undesirable health plan, or fail to save for retirement, libertarian paternalists will not force them to do otherwise—or even make things hard for them.").

30. *See* Mitchell, *supra* note 16, at 1247 ("Sunstein and Thaler's libertarian paternalism surrenders too much libertarian ground to the paternalist.").

31. *See* Bubb & Pildes, *supra* note 22, at 1604–06 (arguing that Sunstein and Thaler's "soft paternalism" fails to consider "traditional regulatory instruments, such as mandates and taxes," and to fully examine "the implications of behavioral economics for the optimal response to traditional market failures").

32. *See* Rebonato, *supra* note 9, at 383 (explaining that the very cognitive biases that libertarian paternalism seeks to address also make it unlikely that individuals will exercise their autonomy to opt out).

33. *See* THALER & SUNSTEIN, *supra* note 1, at 254 ("Only 12 percent of Germans agreed to be organ donors, while more than 99 percent of Austrians failed to opt out.").

34. *See* Rebonato, *supra* note 9, at 360.

35. *See* Sunstein, *Nudges*, *supra* note 6, at 211 ("[N]udges have the advantage of avoiding the welfare loss that people experience when they are deprived of the ability to choose. In some cases, that loss might be severe.").

36. *See* Bubb & Pildes, *supra* note 22, at 1598 ("BLE often artificially and wrongly excludes more traditional regulatory tools, such as direct mandates, from its analysis of policy options.").

judgment that produce undersaving or overeating might also lead people to opt out of defaults meant to guide them to choices that serve them better.[37] Worse yet, some businesses benefit from poor choices and might design the choice environment to goad people into opting out of helpful defaults.[38] Other businesses might include opt-outs as boilerplate language in contract terms.[39] For example, one can imagine that in the running example concerning EV hookups, homebuilders could simply include a boilerplate opt-out as part of any construction contract with a potential new homeowner. And in cases in which the homeowner has not yet been identified, a sophisticated home-construction firm would find a mechanism for supporting an assertion that the potential homeowner would not want the hookup. In such cases, mandates might be necessary to constrain choice.

Despite these criticisms, some of which this Article discusses further below, nudges only continue to grow in popularity.[40] Numerous governments have adopted behavioral insight units that embrace the concept of libertarian paternalism, implicitly or explicitly.[41] For its part, the Obama administration, perhaps at Professor Sunstein's urging,[42] issued a general executive order prompting all agencies to consider ways to enhance good decision-making by citizens.[43] Notwithstanding almost endless criticism, nudging seems here to stay, and a good part of the reason for that is that nudging preserves freedom of choice.

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37. *Id.* at 1597–98.

38. *See* Lauren E. Willis, *When Nudges Fail: Slippery Defaults*, 80 U. CHI. L. REV. 1155, 1174 (2013) ("When a party opposes a policy default imposed by the law, that party can minimize transaction barriers so that these will not bolster the default, and can even erect transaction barriers that favor opting out.").

39. *See id.* at 1184 (describing how banks have induced customers to opt out of financial protections designed to protect them).

40. Tor, *Private Costs*, *supra* note 6, at 1676 ("Governments around the world increasingly turn to behaviorally-informed policies in domains ranging from health, safety, education, and finance to environmental protection, tax compliance, public service delivery, and more.").

41. *See id.* (describing the popularity of nudges around the world).

42. Professor Sunstein served as the administrator of the Office of Information and Regulatory Affairs during President Obama's first term. *See* Cass R. Sunstein, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1839 (2013) ("From September 2009 until August 2012, I was privileged to serve as OIRA Administrator.").

43. *See* Exec. Order No. 13,707, 3 C.F.R. § 13707 (2016).

B. Neutral Principles for Evaluating Nudges

Proponents of nudges have also responded to the concern that regulation arises from rent-seeking. Thaler and Sunstein support the use of cost-benefit analysis to evaluate regulatory nudges.[44] Whatever the motives of legislators or regulators who support it, a regulatory intervention whose benefits outweigh its costs has a neutral justification.[45] Sunstein himself argues that cost-benefit analysis has become a guiding principle for all regulation.[46] Thaler and Sunstein express the hope that nudges simply reflect better and more efficient regulation that "might appeal to both sides of the political divide."[47]

To be sure, cost-benefit analysis has generated decades of criticism.[48] Critics argue that the numbers used to undertake cost-benefit analysis are too easily manipulated or biased.[49] Others worry that cost-benefit analysis underestimates intangible values that are hard to measure.[50] Still others contend that it ignores some values, like harm to future generations or distributional effects.[51] Cost-benefit analysis of regulation continues to grow in sophistication, however, and

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44. *See* THALER & SUNSTEIN, *supra* note 1, at 331 ("[A] cost-benefit test . . . could be used to decide when such laws would be imposed.").

45. *See* Bubb & Pildes, *supra* note 22, at 1599 ("From a social welfare perspective, we should engage in a cost-benefit analysis (perhaps with the full process repertoire otherwise used) to determine the optimal level at which the default ought to be set.").

46. *See* CASS R. SUNSTEIN, THE COST-BENEFIT REVOLUTION 3 (2018) [hereinafter SUNSTEIN, COST-BENEFIT REVOLUTION] ("As a result of the revolution, many public officials work under a simple principle. It operates a little like a constitutional amendment. Its text, in full: *No action may be taken unless the benefits justify the costs.*").

47. THALER & SUNSTEIN, *supra* note 1, at 18–19. They also state that they have been successful in this regard: "We are pleased to report that, far more than we could have anticipated, that belief has been vindicated." *Id.*

48. *See* SUNSTEIN, COST-BENEFIT REVOLUTION, *supra* note 46, at 25 ("Of course, cost-benefit analysis runs into a host of other concerns and objections . . . .").

49. *See generally* Brent Flyvbjerg & Dirk W. Bester, *The Cost-Benefit Analysis Fallacy: Why Cost-Benefit Analysis Is Broken and How To Fix It*, 12 J. BENEFIT-COST ANALYSIS 395 (2021) (extensively reviewing the accuracy of cost-benefit analysis).

50. *See* SUNSTEIN, COST-BENEFIT REVOLUTION, *supra* note 46, at 43 ("[T]here are many reasons to wonder whether . . . [valuation methods for cost-benefit analysis] provide an accurate measurement rather than a stab in the dark.").

51. *See id.* at 190 ("A lack of imminence suggests that the discount rate (based on the judgment that future costs and benefits should be 'discounted' to present value) will greatly matter; of course, a low probability of obtaining benefits must be recognized, and it will drive the expected value way down.").

contemporary versions attempt to address these concerns.[52] Therefore, cost-benefit analysis of regulatory nudges at least holds the promise of addressing the common contention that regulations only further the interests of self-serving politicians and rent-seeking interest groups.

As critics of nudges have argued, however, evaluating whether a nudge is welfare enhancing is more complicated than it might seem.[53] Nudges are not costless. The behavioral economic and psychological analysis that underlies the concept of nudges itself demonstrates how complicated cost-benefit analysis can become when psychological and behavioral influences are factored in.[54] For starters, regulators must determine which default homeowners prefer. A conventional economic analysis is easier, simply assuming that the preferred default is whatever consumers are already choosing. For example, a conventional economic analysis would suggest that the best default for EV hookups is not to include them in new homes because that is the way most homes are now built. A behavioral economist might instead survey potential homeowners to ask what they would prefer. Even then, knowing the majority default is not quite enough—the strength of preferences might matter. If a slight majority barely prefers the EV hookup, but the minority strongly prefers no hookup, then perhaps no hookup is the right option.[55]

A complete cost-benefit analysis must also factor in several other costs. For one, the analysis must include the cost of switching by those homeowners who prefer not to have the hookup, even if that cost is modest. A conventional economic approach would include that as well. Recognizing that many homeowners who prefer to opt out of the default might fail to do so, however, is unique to an analysis that relies on behavioral economics.[56] Behavioral economics predicts that some number of homeowners who prefer an option other than the default will procrastinate and end up with the disfavored default. A behavioral

52. *See id.* at 23 ("Cost-benefit analysis includes everything that matters to people's welfare, including such qualitatively diverse goods as physical and mental health, freedom from pain, a sense of meaning, culture, clean air and water, animal welfare, safe food, pristine areas, and access to public buildings.").

53. *See* Tor, *Private Costs*, *supra* note 6, at 1688–95 (describing the varied costs that a cost-benefit analysis of a regulatory nudge requires).

54. *See id.*

55. *See* Cass R. Sunstein, *Welfare Now*, 72 DUKE L.J. 1643, 1660–61 (2023) (evaluating "intervention[s that] would help most people by a little, but hurt some people by a lot").

56. *See* Willis, *supra* note 38, at 1161–73 (listing behavioral economics factors that discourage people from opting out of defaults).

economics approach must include this as well. Furthermore, a behavioral economist might also worry that opting out is too easy—thereby allowing people who should keep the default to make a poor choice. Finally, because many of those who fail to opt out might be of lesser means, the default might have distributional consequences.[57]

For a conventional economic libertarian, some of these phenomena are nonsense. Rational actors do not suffer from the status quo bias or other foibles of human judgment that can cause a decision maker to get stuck with a choice that they disfavor.[58] A behavioral economics analysis, however, must take these phenomena seriously. The core response of the behavioral economist to libertarians is that the behavioral economics approach uses neutral principles to guide government regulation and preserves freedom of choice. A behavioral economics analysis must therefore take impediments to making good choices into account when assessing nudges.

Not to be deterred, proponents of nudges embrace these criticisms and treat them as invitations to adopt a more elaborate process for evaluating nudges.[59] Once one factors in the relative balance of preferences, the costs of switching, and the impact on those who fail to opt out of the default, a complete cost-benefit analysis would provide a neutral way of determining when and how to adopt a particular default rule.[60] Regulators who perform a complete analysis are thus maintaining as much freedom of choice as possible while still enhancing welfare.

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57. *See* Zachary Liscow & Daniel Markovits, *Democratizing Behavioral Economics*, 39 YALE J. ON REGUL. 1274, 1315 (2022) ("[Nudges] seem to have been adopted without a single publicly available analysis of their impact on low- or middle-income families, despite the fact that many such families need immediate access to the income that they earn in order to pay for basic necessities.").

58. To be sure, rational choice theory identifies a host of impediments to switching out of a default rule that arise from rational thinking as well. *See* Marie-E. Godefroid, Ralf Plattfaut & Björn Niehaves, *How To Measure the Status Quo Bias? A Review of the Literature*, MGMT. REV. Q. 1, 5 (2022) ("Part of [the status quo bias] can be explained with the aim of individuals to avoid uncertainty and transition costs."); *see also* Omri Ben-Shahar & John A.E. Pottow, *On the Stickiness of Default Rules*, 33 FLA. ST. U. L. REV. 651, 670–81 (2006) (describing how conventional transaction costs can make default rules in contracts sticky).

59. *See* Cass R. Sunstein, *Behavioral Welfare Economics*, 11 J. BENEFIT-COST ANALYSIS 196, 197 (2020) [hereinafter Sunstein, *Behavioral Welfare*] ("[B]ehavioral welfare economics, even as used in applied work and in government circles, must at least implicitly take a stand on the best understanding of welfare.").

60. *See id.* at 215 ("In principle, efforts to answer these subsidiary questions should help with cost–benefit analysis, where it is often challenging to know how to proceed when behavioral findings seem to cast doubt on standard uses of revealed preferences.").

Consider the example above of installing a charging system. Assume for the moment that a survey indicates that most homebuyers do not want the EV hookup, preferring instead to purchase a cheaper home. If so, then requiring that home construction include a charging station by default might be inefficient. Conducting the cost-benefit analysis shows that there are four types of homebuyers in this scenario: A few homebuyers will be better off because the new default is consistent with their desires and makes it easier for them to acquire a charging station. Others might not have considered installing a charging station but recognize that they actually want one, and they are made much better off by the default, having now considered the option more carefully and made a choice that is more consistent with their preferences. Most do not want the EV hookup and will have to incur the cost of completing some paperwork to avoid the default. Finally, some of those who preferred not to have the hookup will fail to complete the paperwork and end up purchasing a charging station that they did not, and do not, want. A complete analysis would add up the costs and benefits to these four groups of implementing a default rule requiring new homes to have an EV hookup.

From this understanding of the power of defaults, regulators who are inclined to rely on behaviorally informed interventions have an ever-clearer picture of how to evaluate them. Conducting a complete cost-benefit analysis of the power of default rules and other nudges can be challenging but is not intractable.[61] Compliance costs obviously exist for any regulation, as manufacturers or financial services firms have to be careful to understand the default rule and ensure that they comply with it.[62] People who switch out of the default also must bear some costs for doing so, even if the cost is modest.[63] Some people who would be better off switching out of the default rule might also fail to do so,

61. *See generally* Schlomo Benartzi, *Should Governments Invest More in Nudging?*, 28 PSYCH. SCI. 1041 (2017) (reviewing numerous cost-benefit analyses of nudges). *But see* Avishalom Tor & Jonathan Klick, *When Should Governments Invest More in Nudging? Revisiting Benartzi et al. (2017)*, 18 REV. L. & ECON. 347, 350 (2022) (arguing that Benartzi provides only a cost-effectiveness analysis, not a full cost-benefit analysis).

62. *See* Tor, *Law and Economics*, *supra* note 3, at 249 ("[N]udges may also generate some direct economic costs. For example, behavioral instruments that facilitate deliberation also require their targets to spend more time on information search and information processing when making their decisions, irrespective of their ultimate course of action.").

63. *See* Tor, *Private Costs*, *supra* note 6, at 1691–93 (discussing costs of default rules).

leaving them worse off.[64] Some defaults also force people to make choices that they would otherwise avoid, making them worse off as well.[65] And when nudges force people to contemplate the negative choice they are making that they would rather ignore, such as with aggressive warning labels, that is also a cost.[66] Weighed against those costs are the benefits the nudge produces in terms of ensuring that people settle on choices that, by their own standards, make them better off.

Incorporating behavioral factors into the cost-benefit analysis adds enormous complexity. It is perhaps no small wonder that only a handful of complete cost-benefit analyses for nudges have been conducted.[67] Nevertheless, the methodology for making a neutral decision as to whether a regulator should adopt a particular nudge is at least available.

C. Lingering Problems with Analyzing Nudges

The power of selecting a default rule that favors the majority position to influence choice raises additional impediments to assessing all of the costs and benefits thoroughly. Choosing a default rule that the majority favors should be a success because fewer people have to incur the cost of switching. Some number of the minority who should switch out of the majority default, however, will likely not do so. In other words, the inertia that favors keeping the default rule will now fall on the minority. Assessing the cost of that inertia can be complicated.

Many nudges might be especially harmful to the poor.[68] For example, many nudges that concern financial planning help most

64. *See* Tor, *Law and Economics*, *supra* note 3, at 248 ("In addition, nudges can also produce social costs, particularly for those who resist them.").

65. *See* Cass R. Sunstein, *Forcing People To Choose Is Paternalistic*, 3 MO. L. REV. 643, 658–59 (2017) [hereinafter Sunstein, *Forcing People To Choose*].

66. *See* Cass R. Sunstein, *Ruining Popcorn? The Welfare Effects of Information*, 58 J. RISK & UNCERTAINTY 121, 123 (2019) ("Many people experience a welfare loss when they are informed about risks that they are running, even if on balance they are better off as a result of obtaining that information.").

67. *See* Tor, *Private Costs*, *supra* note 6, at 1708 (showing that only a "handful" of analyses fully address the costs of regulatory nudges).

68. For a related argument that nudges redistribute wealth from the rational to the irrational, see Mitchell, *supra* note 16, at 1269–75.

people save more.[69] Defaults that opt workers into retirement savings plans or medical savings accounts help encourage people to enter into financial arrangements that reduce their spending in the short term but have medium- or long-term advantages. For people living paycheck to paycheck, however, such an arrangement might be of no use or might even be disadvantageous.[70] If those who need immediate cash to pay bills fail to opt out, then the nudge can make it hard for poor workers to pay their bills. Hence, a full assessment of whether nudges are sensible for regulatory agencies requires a full assessment of costs and benefits and an assessment of who is harmed.

As this analysis suggests, a serious concern is that the minority might face the highest costs for not switching out of the default. This might be particularly true of financial defaults, such as retirement savings plans. An individual who has pressing financial needs might not want to enroll in the company 401(k) plan but will be stuck with the plan if their firm sets enrollment as the default and they fail to opt out. Setting an artificial deadline to discourage procrastination about the choice might impose further costs.[71] Those who want to switch out of the default but delayed beyond the deadline will end up stuck with their less favored option until another opportunity to switch out occurs. A good example of this might be the "open enrollment" periods for employee healthcare benefits. Employees commonly have a limited period in which to opt in to a benefits plan—often just a few weeks. If they fail to enroll in a desired plan during that time, they must wait until the next year. They will then incur whatever cost they must bear for not enrolling for nearly twelve months. Furthermore, efforts to motivate people to consider their choices carefully might work well on many people, but some will still choose the wrong option for their financial situation. A full cost-benefit analysis of defaults, forced choices, and artificial deadlines must thus balance the benefits of nudging people to choose carefully against the costs of trapping people who might have opted out of the default shortly after the deadline but now cannot do so until another window appears.

69. *See* Willis, *supra* note 38, at 1158 ("Employers that have adopted this change in the default rule, commonly called 'automatic enrollment,' have increased their employee participation rates dramatically.").

70. *See* THALER & SUNSTEIN, *supra* note 1, at 333 (noting that when people opt out of defaults, "[i]t is at least possible that . . . they do so for good and sufficient reasons").

71. For a discussion of deadlines' ability to reduce procrastination, see *infra* note 131 and accompanying text.

This assessment illustrates the need for a sophisticated, fully behaviorally informed cost-benefit analysis of nudges. Sensibly crafted defaults are apt to benefit many people relative to randomly set defaults, but they also might impose costs on the minority who sensibly prefer the alternative option. A full cost-benefit analysis accounts for these costs. In principle, this full accounting of costs and benefits then guides a regulatory assessment as to whether a nudge is appropriate. The calculation gets complicated, of course, as it must be informed by an empirical understanding of how many people disfavor the default, how many will switch out if an artificial deadline is imposed, and how many will get stuck in the default (who otherwise might eventually have gotten around to opting out). Recent scholarship adds distributional concerns, as many of those who get stuck might be people of lesser means.[72]

II. HOW DEFAULTS CHANGE CHOICES AND PREFERENCES

Like all cost-benefit analyses, even an analysis of nudges that accounts for all of the complex behavioral effects described above treats preferences as fixed. But what if changing the default rule affects preferences as well as behavior? As I discuss below, the three basic mechanisms through which defaults alter behavior—endorsement, endowment, and ease[73]—also change preferences.

A. Endorsement

The default option is often the correct choice.[74] People commonly set ill-functioning electronics back to factory default settings to fix them because the manufacturer likely chose default settings consistent with what most consumers would want. Employees will commonly select the default retirement or health plan from their employer because the employer chose a default that is right for most employees. Belief in the default can go too far; for example, although the standard deduction is right for most taxpayers (and thus represents a sensible nudge), some taxpayers choose the standard deduction even when

72. *See* Cass R. Sunstein, *The Distributional Effects of Nudges*, 6 NATURE HUM. BEHAV. 9, 9 (2022).

73. *See* Jachimowicz et al., *supra* note 5, at 162 ("[D]efaults are multiply determined, depending on the extent to which they activate endorsement, endowment, and ease.").

74. *See id.* at 172 ("Individuals commonly perceive defaults as conveying an endorsement by the choice architect.").

itemizing would save them money out of a mistaken belief that what is standard is what is right for them.[75] In many cases, however, the default arguably tells decision makers what is right for them.

Valuing the default is sensible. People will commonly follow the herd—or use the "copy-the-majority" heuristic.[76] In the absence of any knowledge that one is special or different in some way, doing what most other people do is probably the right choice.[77] If people believe that the default is set at the option that the majority would prefer, then relying on this strategy of imitation will sensibly lead people to value the default more than they otherwise would.[78]

Furthermore, if the person setting the default is trustworthy, has expertise, and is motivated to make a benevolent choice, then the default is apt to be the best choice for most people. An uninformed decision maker is unlikely to make a better choice than the default in such circumstances, though they might opt out foolishly or be tricked into opting out.[79] Decision makers seem to know this; defaults that a trusted entity selects tend to be stickier than one set by an untrustworthy entity.[80] Similarly, when decision makers have learned

75. *See* URB. INST. & BROOKINGS INST. TAX POL'Y CTR., BRIEFING BOOK (2020), https://www.taxpolicycenter.org/briefing-book/what-standard-deduction [https://perma.cc/2Z3N-92PL] (noting that most taxpayers chose the standard deduction "because it was larger than the itemized deductions they could claim, but some did so because it was easier than identifying and totaling the expenses they could itemize or because they did not realize that itemizing would reduce their tax liability").

76. *See* ROBERT BOYD & PETER J. RICHERSON, THE ORIGIN AND EVOLUTION OF CULTURES 190 (2005) (arguing that imitating others produces adaptive social interactions) (cleaned up).

77. *See* Craig R.M. McKenzie, Michael J. Liersch & Stacey R. Finkelstein, *Recommendations Implicit in Policy Defaults*, 17 PSYCH. SCI. 414, 417 (2006) ("We have shown that policymakers' choice of default can convey an implicit recommendation . . . .").

78. *See id.* at 418 (noting that the "[d]efault effects may occur because policymakers' choice of default leaks information regarding their beliefs or attitudes about the available options, and the public is sensitive to this information").

79. *See* Willis, *supra* note 38, at 1174 ("When a party opposes a policy default imposed by the law, that party can minimize transaction barriers so that these will not bolster the default, and can even erect transaction barriers that favor opting out.").

80. *See* Daniel Tannenbaum, Craig R. Fox & Todd Rogers, *On the Misplaced Politics of Behavioral Policy Interventions*, 1 NATURE HUM. BEHAV. 1, 3 (2017) (reporting research results that indicate that "both laypeople and practising policymakers evaluate policy nudges in ways that are coloured by their political preferences").

by experience that the default has been set in a way that benefits them, they are more likely to rely on it.[81]

In effect, people commonly act as if the entity setting the default has read *Nudge* and is following its advice even though such assumptions are probably unwarranted. Some default setters might not give any thought to what is best for most people.[82] Others might not know what the best option is. Many also have incentives to set the default at an option that benefits them, rather than those affected by their choice.[83] For example, a gig-economy company might create nudges to get workers to work harder, or an online streaming service might set defaults that encourage binge-watching.[84] Politicians setting default rules in statutes might worry more about support from well-funded lobbyists than about the well-being of their constituents.[85] Worse yet, in many settings people might have incentives to create the opposite of an optimal default; for example, cafeterias that make good money on desserts are likely to put dessert first, not last, to sell more desserts.[86]

In many of these examples, the decision maker might not fully recognize that the default is not being set in a way that is meant to be helpful to most people. In other contexts, it could be obvious the default is not being set in a helpful way. In many cases, however, decision makers are right to believe that the default has been selected in their best interest and that they would be wise to follow it.[87] It is easy to see why this endorsement function of defaults alters preferences. The default appears to convey information—maybe even in circumstances when it does not. The default seems to tell the relatively

81. *See* de Haan & Linde, *supra* note 4, at 1203 (finding experimental evidence that when people learn to rely on useful default positions, they learn to rely more heavily on defaults).

82. *See* THALER & SUNSTEIN, *supra* note 1, at 166 (arguing that "when governments make decisions, they often give too little attention to" the cost of choosing).

83. *See id.* at 107–12 (discussing the use of nudges that are not in people's best interests).

84. *See* Vaidehi Bulusu, *Retirement Accounts and Overworked Drivers: The Potential of Nudge Theory*, BERKELEY ECON. REV. EQUILIBRIUM, no. 6, May 2021, at 13, 14–15 (discussing unethical nudges by Uber and Netflix).

85. *See* THALER & SUNSTEIN, *supra* note 1, at 108 (discussing how the Nazis used nudging to help win an election in Germany).

86. *See id.* at 23–26 (noting that the director of food services at a school could focus on profit maximization, which might conflict with maximizing student well-being); *see also* Willis, *supra* note 38, at 1170 ("Firms regularly employ defaults to achieve desired outcomes.").

87. Thaler and Sunstein argue that beneficial nudges are more effective if they are transparent. *See* THALER & SUNSTEIN, *supra* note 1, at 324.

uninformed decision maker what most people choose and what experts think is right for most people.

B. Framing

A constellation of psychological phenomena related to "framing" also gives the default the power to stick. "Framing" refers to the observed difference in the way people treat gains (or improvements from the status quo) and losses (or negative departures from the status quo).[88] Framing involves loss aversion, the endowment effect, and the status quo bias. These overlap, and the first two are perhaps the same phenomenon. All favor retaining the status quo. And all affect how people value goods.

Consider an example of how decision frame influences choices and preferences. Suppose Elena wants tickets to go see Taylor Swift on her blockbuster 2023 "The Eras" tour.[89] Elena is fortunate to gain access to a ticket for $200 through a special program that her credit card offers. Tickets are in high demand, and after purchasing her ticket, Elena learns that she can sell it on StubHub for $2,000. Although Elena reports that she would not have paid $2,000 for the ticket, she is also unwilling to sell the ticket she has for $2,000. Having acquired the ticket, her frame of reference has changed. Selling would entail the loss of the once-in-a-lifetime chance to see the incomparable Taylor Swift, whereas failing to buy a ticket for $2,000 reflects the forgone opportunity. Although the show would be the same either way, Elena now treats the ticket as if it were worth more than $2,000 to her, even though she is sure she would not have paid $2,000 for it.

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88. *See* Amos Tversky & Daniel Kahneman, *The Framing of Decisions and the Psychology of Choice*, 211 SCIENCE 453, 454 (1981) ("The response to losses is more extreme than the response to gains."); Amos Tversky & Daniel Kahneman, *Loss Aversion in Riskless Choice: A Reference-Dependent Model*, 106 Q.J. ECON. 1039, 1040 (1991) [hereinafter Tversky & Kahneman, *Loss Aversion*] ("[T]he impact of a difference on a dimension is generally greater when that difference is evaluated as a loss than when the same difference is evaluated as a gain.").

89. I thank dedicated Taylor Swift fan Elena Chatrchyan for this example. Enjoy the show, Elena! For a discussion of the relationship between this type of mental accounting and framing effects, see generally Richard Thaler, *Mental Accounting*, 4 MKTG. SCI. 199 (1985). For a description of the demand for Taylor Swift tickets, see Sarah Whitten, *Taylor Swift Public Ticket Sales Canceled After Extreme Demand, Ticketmaster Says*, CBS NEWS (Nov. 17, 2022, 3:11 PM), https://www.cnbc.com/2022/11/17/fridays-public-ticket-sale-for-taylor-swift-eras-tour-canceled-after-extreme-demand.html [https://perma.cc/SP3Z-EZWS].

1. *Loss Aversion and the Endowment Effect.* Loss aversion is the tendency to treat a loss as more significant than an identical gain.[90] For example, imagine that you bet a friend fifty dollars that the Cincinnati Bengals would win Super Bowl LVI. Los Angeles won instead. How would you describe the outcome of your bet? Most people would say something like, "I lost fifty dollars." That is true as far as it goes, but it is incomplete. Not only did you lose the fifty dollars that you have to pay to your friend, but you also failed to obtain the fifty dollars that your friend would have paid you had the Bengals won. People focus on the fifty dollars they must pay as a loss while largely ignoring the fifty dollars they do not win as a forgone gain. People are so preoccupied with the losses that the gamble brings that they fail to recognize that they also failed to win.[91]

Loss aversion facilitates the influence of default rules by creating a reference point that alters value. As Russell Korobkin argued, "If the air is clean and gas expensive, you are more likely to prefer clean air and expensive gas to cheap gas and dirty air than you would if the air were dirty and gas cheap."[92] Systematic experiments bear out this prediction. One study of utility customers, for example, found that customers with historically good service expressed great unwillingness to tolerate reductions in service quality (even at reduced cost) relative to the eagerness expressed by customers with historically poor service to pay more for better service.[93] Similarly, a survey of Toronto residents showed that a majority were unwilling to accept an increase in accident rates from 0.5 percent to 1 percent per year in exchange for a $700 increase in income, but a majority were also unwilling to accept a $700 decrease in income in exchange for a reduction in accident risk from 1 percent to 0.5 percent per year.[94] Because people treat losses as

90. *See* Tversky & Kahneman, *Loss Aversion*, *supra* note 88, at 1040.

91. *See* Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 ECONOMETRICA 263, 279 (1979) ("[L]osses loom larger than gains.").

92. Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227, 1229 (2003).

93. Raymond S. Hartman, Michael J. Doane & Chi-Keung Woo, *Consumer Rationality and the Status Quo Bias*, 102 Q.J. ECON. 141, 143–44 (1991).

94. *See* Daniel Kahneman, Jack L. Knetsch & Richard H. Thaler, *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, 5 J. ECON. PERSPS. 193, 193 (1991) (defining the endowment effect as the observation that "people often demand much more to give up an object than they would be willing to pay to acquire it"); Jack L. Knetsch, *The Endowment Effect and Evidence of Nonreversible Indifference Curves*, 79 AM. ECON. REV. 1277, 1281 (1998).

more important than gains, they want to avoid the loss of whatever characteristics the default option holds.

Loss aversion implies an attachment to current possessions, also known as the endowment effect. The endowment effect is the tendency to value a commodity more once it is owned.[95] This occurs even though ownership changes nothing about the commodity, and hence the endowment effect is sometimes called the "mere ownership" effect.[96] In the classic example, researchers gave subjects either a mug or a pen—selecting which item the subjects received at random.[97] They then offered subjects the chance to swap their possession for the other item. Because the researchers determined the possession at random, each subject had a 50 percent chance of receiving the item that they would actually value most. Hence, when offered the costless opportunity to trade, half should have traded. In fact, only about one-quarter of subjects were willing to trade. Researchers argued that swapping necessarily entailed the loss of the item they already owned—a loss that seemed worse than the benefit they would obtain from the other item.[98]

Strictly speaking, defaults might not necessarily produce the sense of ownership or entitlement that produces loss aversion and the endowment effect. Merely identifying the default does not confer a right. A default retirement plan, for example, does not confer a right to retirement income—that is only earned as time passes. Nevertheless, research has shown that even modest manipulations create the kind of thinking that leads to loss aversion.[99]

The running example of EV hookups might not appear to be one in which loss aversion matters. The default requirement that a new home include an EV hookup does not involve an entitlement. In fact, the EV hookup is an obligation. Adopting EV hookups as the default in new homes, however, might change how homeowners think about EV hookups. If Korobkin's assessment of how people think about environmental amenities is accurate, then it might apply in this setting

95. *See* Kahneman et al., *supra* note 94, at 194 ("[P]eople often demand much more to give up an object than they would be willing to pay to acquire it.").

96. *See* Michael J. Barone, Terence A. Shimp & David E. Sprott, *Mere Ownership Revisited: A Robust Effect?*, 6 J. CONSUMER PSYCH. 257, 259 (1997) (describing the mere ownership effect and its potential import for understanding marketplace phenomena).

97. *See* Kahneman et al., *supra* note 94, at 195–96.

98. *Id.* at 197 ("[T]he main effect of endowment is not to enhance the appeal of the good one owns, only the pain of giving it up.").

99. *Id.* at 205 (concluding that "the endowment effect, status quo bias, and the aversion to losses are both robust and important").

as well. If the default is that a homeowner must have an EV hookup, then opting out of the default means that they will save money on their home. Choosing not to opt out would thus involve potential financial gain—which people tend to discount. In contrast, if the default does not require the hookup, then the homeowner is likely to treat the purchase of it as a financial loss—which people tend to try to avoid.

Loss aversion and the endowment effect are practically defined as a change in valuation, meaning that they change not just individuals' behavior but also how much value individuals place on commodities. Because people weigh losses more than gains, they act as if they value a possession more when they own it than when they do not. Consequently, the minimum price a person is willing to accept (their willingness to accept, or "WTA") when they sell a commodity is much greater than what they are willing to pay (their willingness to pay, or "WTP") for that same commodity.[100] In the original studies of the phenomenon involving consumer goods like coffee mugs and pens, the ratio of WTA to WTP was often two to one or more.[101] Studies of the valuation of environmental amenities in which people state a WTA for the destruction of an environmental amenity or a WTP to save or restore the same amenity show even larger effects.[102] Finally, valuations of life, health, and safety show the highest disparities between WTA and WTP.[103] For example, one study found that although farmers were willing to pay only a modest amount to buy a more expensive chemical that would reduce their lifetime cancer risk, a majority also stated that

100. *See* Jack L. Knetsch, *Values of Gains and Losses: Reference States and Choice of Measure*, 46 ENV'T & RES. ECON. 179, 179 (2010) ("Pervasive wide disparities between valuations of gains and losses have been demonstrated in survey studies, in controlled laboratory and field experiments, and in everyday decisions of people in non-experimental settings . . . and with particular attention to environmental changes."); Jack L. Knetsch & J.A. Sinden, *Willingness To Pay and Compensation Demanded: Experimental Evidence of an Unexpected Disparity in Measures of Value*, 99 Q.J. ECON. 507, 507 (1984) (presenting empirical evidence confirming that willingness to accept may be substantially greater than willingness to pay for the same entitlement); *see also* John K. Horowitz & Kenneth E. McConnell, *A Review of WTA/WTP Studies*, 44 J. ENV'T ECON. MGMT. 426, 426 (2002) (reviewing research on the disparity between willingness to pay and willingness to accept).

101. *See* Kahneman et al., *supra* note 94, at 195–96.

102. *See* Knetsch, *supra* note 100, at 180.

103. *See* W. Kip Viscusi, Wesley A. Magat & Joel Huber, *An Investigation of the Rationality of Consumer Valuations of Multiple Health Risks*, 18 RAND J. ECON. 465, 477 (1987) ("[W]hen individuals assess the implications of increases in risk from their current level, they act as if they possess a much higher rate of tradeoff of risk for money than for decisions involving risk decreases.").

they would be unwilling to switch to the more dangerous pesticide, even if it were free.[104]

Some critics of the research assert that the effect is entirely the product of methodological quirks and does not represent a meaningful disparity in value.[105] For example, in experiments in which the researchers elicit WTA and WTP amounts through auction procedures, the research participants might mistakenly believe that they should just state high WTA amounts and low WTP amounts, using what one might call a "buy-low, sell-high" heuristic.[106] Also, survey participants do not face any economic consequences for their responses.[107] Some of the results, such as those observed in the study of chemical use by farmers described in the last paragraph, seem unrealistic; after all, farmers commonly expose themselves to dangerous chemicals. Likewise, people often accept jobs that pose greater risks than the ones they have in exchange for greater compensation.[108]

Researchers, however, have used a variety of careful procedures and practices that reduce the WTA–WTP gap but do not eliminate it.[109] Furthermore, studies document marked disparities in willingness to accept risk to life and limb even while people are less willing to pay for greater safety.[110] Given the robust nature of the WTA–WTP gap, it is

104. *See id.* (reporting that for products involving even modest risk increases, "up to three-fourths of all consumers said that they would refuse to buy the product at any discount below its purchase price").

105. *See* Charles R. Plott & Kathryn Zeiler, *The Willingness To Pay–Willingness To Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations*, 95 AM. ECON. REV. 530, 530 (2005) (presenting evidence that testing errors and subject misconceptions, rather than the so-called "endowment effect," account for previous study results indicating loss aversion).

106. *Id.* at 537–38.

107. *Id.* at 537.

108. For example, people who are willing to climb trees to facilitate logging are paid more than loggers who will not perform such work; and in fact, often such work has to be contracted out because regular loggers are unwilling to accept the risk even for greater pay. *See* Robert C. Hughes, *Paying People To Risk Life or Limb*, 29 BUS. ETHICS Q. 295, 296 (2019) (describing such work).

109. *See id.*; Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LITERATURE 11, 14–15 (1998) (reviewing research on the endowment effect).

110. *See* SUNSTEIN, COST-BENEFIT REVOLUTION, *supra* note 46, at 44 ("In both experiments and the real world, people tend to demand far more to give up a good than they are willing to pay to obtain it in the first instance.").

hard to argue that it does not reflect some cognitive reality concerning how people actually value possessions, rights, and commodities.

2. *Status Quo Bias*. Long before Thaler and Sunstein wrote *Nudge*, researchers found that people express a strong preference for any option that constitutes the status quo.[111] Decades of research suggest a widespread preference for the status quo—generally called the "status quo bias."[112] In one study, research subjects choosing among a set of hypothetical investment strategies generally kept whatever was set as the status quo.[113] For example, those told that they had inherited bonds tended to keep bonds while those told that they had inherited stocks tended to keep stocks.[114] The same research team also showed that employees at a major university generally pick the default-plan status quo in health insurance plans and retirement investment funds—even when new and better options became available.[115] Another study of automobile insurance in New Jersey and Pennsylvania—which adopted different default rules regarding the availability of a "no fault" insurance plan—found that the state's choice of default tended to dictate the choice consumers preferred.[116] The status quo that the respective legislatures created determined the choices of the motorists in each state, thereby seemingly producing opposite preferences in these neighboring states. These studies suggest that "once established, altering the legislative or regulatory status quo will be difficult."[117]

Is the status quo bias actually a bias?[118] If the effect is just that of an endorsement (see above), then it is perfectly rational. If the starting point was set in an optimal way, then sticking with it is sensible. As discussed above, the default settings for one's computer, smart TV, cellphone, or even retirement savings plan might well be the best settings for most people. Furthermore, people might be uncertain

111. *See* Richard Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 44 (1980) (coining the term "endowment effect").

112. *See, e.g.*, William Samuelson & Richard Zeckhauser, *Status Quo Bias in Decision Making*, 1 J. RISK & UNCERTAINTY 7, 7 (1988).

113. *Id.* at 12–19 (describing the experiment and the results).

114. *Id.* at 19.

115. *Id.* at 26–33 (describing the results of a field study on the status quo in retirement plans).

116. Eric J. Johnson, John Hershey, Jacqueline Meszaros & Howard Kunreuther, *Framing, Probability Distortions, and Insurance Decisions*, 7 J. RISK & UNCERTAINTY 35, 48 (1993).

117. Korobkin, *supra* note 92, at 1266.

118. *See* Samuelson & Zeckhauser, *supra* note 112, at 33 ("Under several interpretations, an affinity for the status quo is perfectly consistent with rational decision making.").

about the right options. Absent some obvious indication that an alternative to the default is best, most people should stick with the default option most of the time.[119] The status quo bias might well be a useful and reliable mental shortcut (or a heuristic). Just like the assumption that the default was set in a sensible, benevolent way, the status quo bias is probably an overused mental shortcut.[120] If people assume the status quo was set in a way that was meant to convey some useful information, then it is really just the same as endorsement; but if people assume that the status quo was meant to convey an endorsement when it was not, then it is a bias.

Framing and its various manifestations—loss aversion, the endowment effect, and the status quo bias—influence preferences.[121] People value the loss of attributes associated with the default setting more than they value what they might gain from switching—hence, preferences are reference dependent.[122] As described above, experiments on the endowment effect directly reveal the influence that loss aversion has on the value people place on goods. Finally, whether the status quo bias is rational or not, the status quo influences how people value their choices.[123]

C. Ease of Opting Out and the Effect of Procrastination on Preferences

Procrastination is perhaps one of the more powerful forces that lead people to retain the default position.[124] Hidden influences on behavior, unlike obvious ones, can subtly affect preferences.[125] People

119. *See id.* at 34 ("Even when no explicit costs are associated with search or switching, uncertainty can lead to status quo inertia.").

120. *See id.* ("In some circumstances, following the optimal search rule can bestow a substantial advantage on [the status quo].").

121. *See* Yusufcan Masatlioglu & Efe A. Ok, *Rational Choice with Status Quo Bias*, 121 J. ECON. THEORY 1, 2 (2005) (arguing that "having an initial entitlement allows the agent to get 'confused/indecisive', when comparing the other alternatives with her current holdings, and she always resolves this situation in favor of her status quo; hence the *status quo bias*").

122. *See generally* Tversky & Kahneman, *Loss Aversion*, *supra* note 88 (describing how loss aversion creates reference-dependent choice).

123. *See id.* at 1039 ("There is substantial evidence that initial entitlements do matter and that the rate of exchange between goods can be quite different depending on which is acquired and which is given up, even in the absence of transaction costs or income effects.").

124. Thaler and Sunstein repeatedly cite "procrastination, inertia, and limited attention" as factors that keep people from making decisions. *See, e.g.*, THALER & SUNSTEIN, *supra* note 1, at 265 (discussing "prompted choice" as a means of overcoming these impediments to rational choice).

125. *See infra* notes 132–137 and accompanying text.

who fail to opt out of a default and do not fully appreciate why they have failed to opt out might come to see the default as their true preference. Preferences might thus come to reflect behavior rather than drive it.

Consider how procrastination influences choice. Procrastination is powerful. Every day a person delays changing out of an undesired default is a day in which they might incur costs associated with that default. The hypothetical default that all new homes must include an EV hookup provides an example. If an owner prefers not to have a hookup, they must complete some paperwork. Doing so will take time and effort to figure out how to do it properly. With no obvious date or time in which to complete the paperwork, a homeowner might put it off day after day.

In the EV hookup example, procrastination might not seem like a serious problem. So long as the homeowner who wishes to opt out of the default does so before any deadline, it hardly matters when they complete the paperwork. In many contexts, however, every day of delay matters, particularly in financial contexts. For example, delaying signing up for a 401(k) savings plan, switching to a higher-yield savings account, or enrolling in a workplace benefit plan with tax advantages is costly.[126] It is nevertheless widely recognized that people procrastinate even when doing so is costly.[127]

Economists have developed a widely accepted model of procrastination that might account for this behavior.[128] According to this model, procrastination occurs because the cost of taking an action on any given day exceeds the benefit on that day.[129] For example, if an employee needs to complete thirty minutes of complex paperwork to enroll in a 401(k) plan, that employee will have to incur that full cost on the day they complete the paperwork. If each day in which the employee is enrolled in the plan provides five dollars in benefits, the employee might well put off spending the thirty minutes of time until the next day. For most busy employees, thirty minutes of their time is worth much more than five dollars. On any given day, it thus makes

126. *See* Ted O'Donoghue & Matthew Rabin, *Choice and Procrastination*, 116 Q.J. ECON. 121, 148 (2001) (describing a similar example).

127. *See id.* at 121 ("Most of us procrastinate. We delay doing unpleasant tasks that we wish we would do sooner. Such procrastination can be very costly.").

128. *See generally id.* (developing a model that includes choosing both which task to do and when to do it).

129. *See id.* at 123–24 (summarizing this model of procrastination).

sense for the employee to forgo the five-dollar benefit in exchange for thirty extra minutes of time for work or leisure. Of course, the employee will make the same calculation the next day, and the next,[130] and so on. Over the course of a year, the employee's failure to enroll in a 401(k) will cost them nearly $2,000.

This model of procrastination has direct implications for effective nudging. Setting the default to the option that the majority prefers frees the majority from the costs of procrastination. The majority can put off thinking about their choice indefinitely—they will end up with the best option for them. Only the minority will suffer the costs of delay.

This model also suggests a remedy for procrastination. Instead of thinking about the cost per day, the decision maker would do better considering the cost per month or year. Further, the model explains why deadlines are such a useful mechanism to avoid procrastination. Failing to meet a deadline can mean facing a significant cost for a single day's delay. For example, if the employer in the example above has an enrollment period each year for its retirement plan, then failing to meet the deadline will force the employee to incur the full annual cost of failing to enroll. Hence, while delaying a single day without a hard deadline does not impose enough cost on the employee to induce them to complete the paperwork, the employee faces a completely different calculation on the last day before the deadline. If they miss the deadline for the year, they will lose out on $2,000 in benefits. Therefore, on the day of the deadline, completing the paperwork is worth thirty minutes of time.[131]

Procrastination, however, can also influence how people value a good. People do not always know how much they value a commodity. They often assess their own behavior to determine their preferences—acting in a sense like intuitive scientists (or economists).[132] This process of self-attribution does not seem like it would allow procrastination to influence preferences. Presumably, people who put off their decisions to enroll in retirement savings plans or to opt out of default rules like the EV hookup will attribute their failure to their own procrastination,

130. *See id.* at 148.

131. *See id.* at 131 n.13 (noting that deadlines render this model of procrastination inapplicable).

132. *See* Daryl J. Bem, *Self-Perception Theory*, 6 ADVANCES EXPER. SOC. PSYCH. 1, 6 (1972) (describing this theory).

rather than to some stable preference for the default. Accurate self-perception can be elusive, however, as people often fail to understand their own motives.[133] If people do not recognize that they fail to opt out of EV hookups because of procrastination, they might come to rationalize their behavior by concluding that they actually wanted and valued the hookups.

Numerous classic studies in social psychology demonstrate that misattribution is common. Consider the well-known sixty-year-old study of misattribution in the cognitive dissonance literature conducted by psychologists Leon Festinger and Merrill Carlsmith.[134] These researchers asked their subjects to engage in a lengthy and tedious task (packing spools of various sizes into a drawer, emptying the drawer, and repeating). Afterward, the researchers asked the subjects to lie to the next subject by telling them that the task was actually enjoyable. They paid half of the subjects one dollar for telling the lie and the other half twenty dollars (which was an unexpectedly large sum for participating in research in 1960). Finally, after the subjects told the lie and were paid, the researchers asked the subjects how much they actually enjoyed the task. Those who had lied for twenty dollars reported that it was an unlikeable, tedious chore; those paid one dollar reported that it was much more enjoyable, although still not pleasant. Misattribution explains the difference. Those subjects paid twenty dollars believed that they had lied for the money, rather than because of their intrinsic interest in the tedious task. Those paid one dollar lacked an external justification for their lie; after all, who would lie for just one dollar? The real reason the subjects told the lie is that the researcher had asked them to do it as a favor. Being paid one dollar, however, masked the real reason they had told the lie. The subjects were thus left to account for their own behavior and could only assume that they had actually not found the task to be unpleasant.

Decades of research on self-perception demonstrate that self-misattribution of motives is widespread.[135] People are nevertheless

133. *See* Richard E. Nisbett & Timothy D. Wilson, *Telling More Than We Can Know: Verbal Reports on Mental Processes*, 84 PSYCH. REV. 231, 231 (1977).

134. Leon Festinger & James M. Carlsmith, *Cognitive Consequences of Forced Compliance*, 58 J. ABNORMAL & SOC. PSYCH. 203 (1959). For a discussion of similar experiments, see also Elliot Aronson, Judith A. Turner & J. Merrill Carlsmith, *Communicator Credibility and Communication Discrepancy as Determinants of Opinion Change*, 67 J. ABNORMAL & SOC. PSYCH. 31, 31–32 (1963).

135. Nisbett & Wilson, *supra* note 133, at 231.

unwilling to believe that their behavior is influenced by forces that they do not perceive. Instead, they rationalize in an effort to explain their conduct. Research on implicit biases provides a compelling modern example; people who have deep egalitarian commitments are nevertheless influenced by unconscious biases.[136] At the same time, people are unable to perceive this influence and so commonly deny the influence of invidious biases about race and gender. Consequently, they rationalize their behavior towards women and people of color. People see their own behavior as the product of internally consistent, easily understandable attitudes when it is often the product of an array of hidden influences.[137]

Procrastination is likely a hidden influence on behavior. If asked why they delay choices, people are unlikely to say that they did so because the cost of thinking through a decision exceeds the short-term cost of failing to make the choice today. Instead, they are more likely to alter their attitudes to be more consistent with their behavior. So future homeowners who end up paying for an EV hookup because they failed to opt out of the default are apt to come to believe that they actually wanted the EV hookup. Selecting EV hookups as the default will thus alter underlying preferences.

III. THE IMPOSSIBILITY OF NEUTRALITY: THE EXAMPLE OF EV HOOKUPS

If nudging changes preferences, then regulators cannot conduct an accurate, reliable cost-benefit analysis of nudges. In the running example and as demonstrated in detail below, what might have been a majority who prefer not to have a charging station might become a majority who want one if the default is to have one. A conventional economic analysis cannot answer the question of whether the regulatory intervention is efficient in a neutral fashion. If nudges change preferences, then the conventional criticisms of regulation reemerge. The regulation is, in a sneaky way, getting people to conform to what the regulator wants, and the regulator's preference might stem from the influence of organized interest groups. This Part illustrates

136. *See generally* MAHZARIN BANAJI & ANTHONY GREENWALD, BLIND SPOT: HIDDEN BIASES OF GOOD PEOPLE (2013) (summarizing this research).

137. *See* Anthony G. Greenwald, *The Totalitarian Ego: The Fabrication and Revision of Personal History*, 35 AM. PSYCH. 603, 608 (1980) (discussing cognitive conservatism, or integrating new information in ways that support existing beliefs).

this problem using the running example of EV hookups in new home construction.[138]

Suppose that regulators in the Department of Energy believe more consumers need to begin using electric cars in the United States to reduce carbon emissions and thereby address climate change. Assume that the regulators do not have a comprehensive cost-benefit evaluation of a widespread adoption of EVs. The regulators are convinced that the scientific evidence supports the view that carbon emissions have triggered climate change and will only get worse. They are also convinced that the transportation sector in the United States makes a sizeable contribution to carbon emissions. They believe that a conversion of the automobile fleet to electric power combined with a transition in the generation of that power to sources that do not emit carbon will reduce the transportation sector's contribution to carbon emissions, but the precise benefit is unknowable. Under these circumstances, the regulators might well believe that switching to EVs is desirable, but the regulators lack the precise tools necessary to provide a neutral basis for the switch. Favoring EVs is therefore effectively a value judgment by the regulators.

The analysis, however, can still support adopting a default rule that new homes should have EV hookups in their garages. Many homeowners already own electric cars.[139] They will surely want to be able to charge them easily in their homes. Others do not currently own an EV, but if they think things through, they might recognize that they will eventually own one.[140] For some, this is because they either want to buy one soon or have an inchoate desire to own one to help fight climate change. Others might have no interest in EVs but have been following regulatory developments and believe that their home state or the federal government will eventually require that all new vehicles

138. Proponents of nudging have discussed vehicle mileage standards, although not EVs directly. *See* Sunstein, *Behavioral Welfare*, *supra* note 59, at 210 ("The behavioral question is whether consumers neglect fuel economy because of (for example) present bias, myopic loss aversion, or limited attention, or instead consider fuel economy but find it outweighed by other factors.").

139. *See* Sebastian Blanco, *Electric Cars' Turning Point May Be Happening as U.S. Sales Start Climb*, CAR & DRIVER (Aug. 8, 2022), https://www.caranddriver.com/news/a39998609/electric-car-sales-usa [https://perma.cc/7D8S-KU88] (reporting that 1 percent of cars on the road today in the United States are electric).

140. *See id.* (reporting a 60 percent increase in EV registrations in the first three months of 2022).

be powered by electric motors.[141] Many of these new homeowners, however, might be overwhelmed by other considerations and not think about an EV hookup. They might also procrastinate on deciding whether to have one installed or even mistakenly view it as an unnecessary amenity.

At this stage, the regulator can undertake a cost-benefit analysis. Suppose that 1.6 million new homes are expected to be constructed in the coming year.[142] Further suppose that the average cost of adding an electrical hookup for an EV is $1,300.[143] Imagine that at that price one-quarter of all homebuyers choose to install one. Economists would assert that this means that only one-quarter of homebuyers value a hookup at more than $1,300. Under a conventional approach, the regulator would likely not be able to justify adopting a mandate that all new homes include the hookup because three-quarters of the 1.6 million new homebuyers do not want the devices.

The preferences of the homebuyers are not binary, of course. Some homebuyers who do not want a hookup are only modestly interested and maybe would only be willing to pay $100. Others might be interested but are just short of being willing to spend $1,300. Similarly, some who purchase the hookup find it a close call and would not be willing to pay much more. Others really want one and would have been willing to pay much more. The range of interest in EV hookups creates a demand curve, which might look like the graph below[144]:

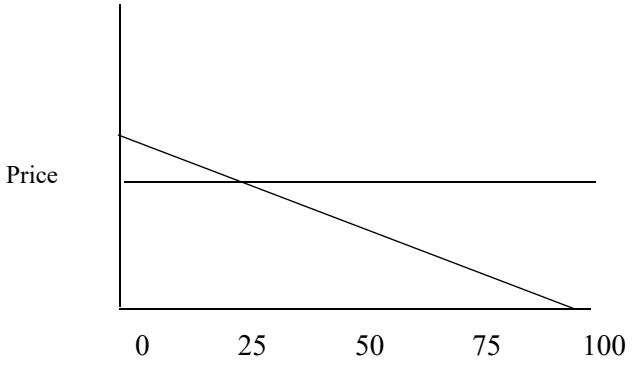
141. California has already enacted a regulation banning the sale of new gasoline-powered vehicles by 2035. *See* Nathan Rott, *California Will Ban the Sale of New Gasoline-Powered Cars by 2035*, NPR (Aug. 25, 2022, 4:58 PM), https://www.npr.org/2022/08/25/1119456396/california-is-set-to-ban-sales-of-new-gasoline-powered-cars-by-2035 [https://perma.cc/D74C-X7XC].

142. *See* NAT'L ASS'N OF HOME BUILDERS, *Single-Family Starts Post Double-Digit Percentage Gain in 2021* (Jan. 19, 2022), https://www.nahb.org/blog/2022/01/single-family-starts-post-double-digit-percentage-gain-in-2021 [https://perma.cc/59F7-2ZMM] ("Total housing starts for 2021 were 1.60 million, a 15.6% gain over the 1.38 million total from 2020. Single-family starts in 2021 totaled 1.12 million, up 13.4% from the previous year.").

143. *See* Sebastian Blanco, *What Does an EV Home Charger Cost?*, J.D. POWER (Aug. 16, 2022), https://www.jdpower.com/cars/shopping-guides/what-does-an-ev-home-charger-cost [https://perma.cc/B43N-YE5B] (explaining that "the average cost to get a Level 2 home charger installed in the United States was $1,300").

144. The graph is simply a demand curve. *See Demand Curve*, ENCYC. BRITANNICA, https://www.britannica.com/topic/demand-curve [https://perma.cc/DXF8-3RV9] (defining a demand curve as "a graphic representation of the relationship between product price and the quantity of the product demanded").

Figure 1: Demand for EV Hookups as a Function of Price



A mandate would seem to impose an unnecessary $1,300 cost on the 75 percent of new homebuyers who appear not to want the device. For some of these buyers, the harm the mandate causes is modest. Many are willing to pay a good deal for the hookup, but not quite $1,300. These buyers are only forced to pay slightly more than they would be willing to on their own. Others will be forced to pay much more than they would otherwise be willing to. Some marginal home purchasers might even find that the mandate prevents them from being able to afford a new home.[145]

Despite these adverse effects, such a mandate could be justified. Homeowners might be undervaluing the hookup. Perhaps they do not recognize other regulatory efforts that could ban the internal combustion engine within the life of the home. Or perhaps they fail to account for the potential for future trends that might make it easier for them to buy an EV.[146] Furthermore, they might be failing to account for the negative externality that the continued combustion of fossil

145. *See* Aimee Picchi, *For Most Americans, Owning a Home Is Now a Distant Dream*, CBS NEWS (Feb. 22, 2022, 11:17 AM), https://www.cbsnews.com/news/real-estate-home-prices-middle-class-affordability-2022-02-23 [https://perma.cc/JK9Y-Z8MG] (describing how rising prices dramatically reduce the number of middle-class Americans who can afford to buy a home).

146. *See* Jeff S. Bartlett, *Electric Cars Are Becoming Less Expensive*, CAR & DRIVER (June 2, 2022), https://www.consumerreports.org/hybrids-evs/electric-cars-are-becoming-less-expensive-a6548270716 [https://perma.cc/3L6Q-BTYJ] (reporting dramatic reductions in the price of electric vehicles).

fuels is causing.[147] Maybe the cost of climate change and the need to transition are so urgent that the mandate is sensible. As noted, however, the regulatory authority might not know with any precision the benefits of adding EV hookups to new homes. Absent evidence that many homeowners are undervaluing the hookup, the regulation is a costly one and perhaps not justifiable under a neutral cost-benefit analysis.

Behavioral economics complicates the analysis considerably. Many homebuyers might not purchase an EV hookup simply because they do not consider the possibility or are not inclined to think through the need for one.[148] In effect, the $1,300 price tag understates the real cost of EV hookups. To decide that they need a hookup, buyers of new homes have to spend time investigating the need for hookups and cognitive effort to decide whether they want one.[149] Switching the default lowers that effective cost of the hookups. In the graph above, the switch lowers the horizontal line representing the price of the hookups, which means more homebuyers will purchase them. Demand is somewhat elastic in the graph, meaning that a minor change in cost will produce a sizeable increase in the number of people who choose to purchase an EV hookup.[150] If that is actually the case, altering the default is likely a valuable intervention. Inasmuch as the default does not require homebuyers who are not as keen to buy a hookup to do so, the default would seem to be a victory with little cost.

Having started down the behavioral economics path, however, the analysis must go further. It is not entirely clear how to treat the shift in cost. Proponents of nudges will argue that they have reduced the costs

147. According to the U.S. Environmental Protection Agency, "[g]reenhouse gas (GHG) emissions from transportation account for about 27 percent of total U.S. greenhouse gas emissions, making it the largest contributor of U.S. GHG emissions. Between 1990 and 2020, GHG emissions in the transportation sector increased more in absolute terms than any other sector." EPA, *Carbon Pollution from Transportation*, https://www.epa.gov/transportation-air-pollution-and-climate-change/carbon-pollution-transportation [https://perma.cc/NW8W-JX25].

148. *See* Sunstein, *Forcing People To Choose*, *supra* note 65, at 646 (asserting that "people often choose not to choose").

149. *See* Tor, *Private Costs*, *supra* note 6, at 1696 (discussing the costs of forcing consumers to confront choices).

150. *See* Amy Gallo, *A Refresher on Price Elasticity*, HARV. BUS. REV. (Aug. 21, 2015), https://hbr.org/2015/08/a-refresher-on-price-elasticity [https://perma.cc/5LTA-Y4EZ] (describing price elasticity).

of adopting a technology that many people want.[151] Opponents, however, will argue that selecting EV hookups as the default adds a cost to switching out of them for people who would otherwise prefer not to have them.[152]

To complicate matters further, the default might produce more erratic effects than simply shifting the cost curves in the graph. Some homebuyers who have little or no real interest in a hookup or who have limited means might procrastinate or ignore the default and end up paying $1,300 for a device they will not use and really could not afford. In effect, even if we assume that the default shifts the line representing the cost of the hookups downward so that perhaps 40 percent of people now value the hookups more than their cost, the percentage of people who would purchase the hookups might actually be higher. People who place little value on the hookups are represented by the far-right end of the demand curve and so should not be affected by a modest change in cost. But procrastination does not track demand perfectly—people procrastinate and fail to opt out of defaults even when it is costly to do so. A full behavioral model would have to account for that cost.

Efforts to account for erratic costs have to be sensitive to the concern that nudges might adversely affect people of limited means.[153] For example, someone who can barely afford a house might fail to opt out of the default and unwittingly pay for a hookup, even though they cannot afford an EV. That outcome should perhaps be treated as more significant than a wealthy individual who simply does not want an EV also procrastinating and ending up with a hookup they do not want. On the graph of the demand curve above, both of these people might be represented at the far right of the curve in terms of their demand for a hookup, however. Accounting for the distributional effects of rules thus requires a more intricate analysis.

Even an analysis of the distributional consequences of nudges, however, would still miss the extent to which a change in the default can change preferences. Homebuyers who learn that the default rule requires a hookup might value the hookup more. Setting the default will shift the demand curve up. Even without factoring in the cost of

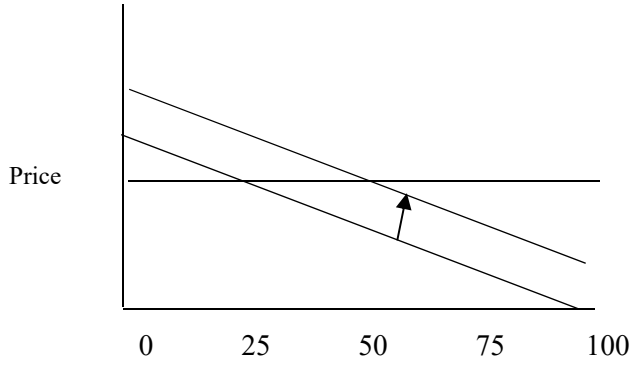
151. *See* THALER & SUNSTEIN, *supra* note 1, at 16–18 (discussing how defaults make choices easier for people, such as when employers set sensible defaults for insurance and savings plans).

152. *See* Tor, *Private Costs*, *supra* note 6, at 1691–95 (discussing the costs of nudges to consumers).

153. *See id.* at 1686 (using an example of nudges that push employees to oversave to the detriment of present consumption).

switching out of the default rule, shifting the demand curve upward could increase the percentage of homebuyers who purchase a hookup. Using the demand curve graph from above, this shift could lead to 50 percent of homebuyers purchasing the hookup. If the price also effectively shifts downward because the default is now set to favor EV hookups, then a clear majority of homebuyers will purchase hookups, rather than just 25 percent.

Figure 2: Demand Shift for EV Hookups as a Function of Price



A regulator would likely view the shift in purchasing behavior resulting from the change in default rules as a success. The switch had benefits. Many homeowners who valued the hookups, or who would have valued them had they thought about the matter, now have the hookups. Furthermore, those who knew they wanted the hookups did not need to expend any effort to get them. The switch also had costs, but these are likely low. The homebuyers who did not purchase the hookups incurred the modest cost associated with switching out of the default. Some set of homeowners also purchased a hookup even though they really did not want it. Some of these might be poorer homebuyers, who maybe suffered more than is desirable. But on the whole, the benefits probably outweigh the costs. The default achieved this desirable outcome, however, largely by altering the underlying preferences of the homebuyers. With the new default, many homebuyers will pay more than they otherwise would have for their new home or purchase an EV hookup rather than some other amenity. Is this a cost? Existing cost-benefit analyses of nudges would not count it as such. Instead, this default would likely survive scrutiny. But the

regulator achieved their goal not by making it easier for people to get what is in their interests but by actually changing their preferences.

Furthermore, the analysis shows that the choice of default cannot really be assessed in a neutral fashion. Changing the default altered the choice of 25 percent of the new homebuyers, increasing the percentage who buy hookups from 25 percent to 50 percent. Their preferences are now more closely aligned with the goals of the regulator. The regulator will likely approve of the outcome—but it is hardly a neutral one.

CONCLUSION: REMEDIES AND OBSERVATIONS

The effect of defaults and other nudges on preferences undermines the neutrality of an economic analysis. Because a change in default will change preferences, a regulator cannot always defend the change in default on the neutral ground that it is efficient. As shown in the example above, sometimes behavior changes because changing the default changes people's values. The default does not simply overcome procrastination and other impediments to decision-making; it alters what people think. Observing a change in behavior after a change in default thus does not necessarily reflect a reduction in social costs. A regulator therefore must have some independent ground for implementing a default rule. In the running hypothetical, the default rule that a home must have a charging station would thus have to be justified by some policy other than that people would want them if only it were easier to include them in the plans for a new home.

It is tempting to argue that regulators should educate people out of arguably irrational influences like the status quo bias, framing, and procrastination rather than use these influences in people's interests.[154] Recognizing that regulators have the power to change preferences through apparently subtle techniques suggests that regulators have a duty to combat these influences. It is arguably unethical for regulators to use their authority to change minds.[155] Therefore, a regulator should use education, rather than nudging. A nudged citizen might be freer

154. *See* Liscow & Markovits, *supra* note 57, at 1284 ("We propose to use BLE's descriptive insights not to nudge or otherwise manipulate ordinary people, but rather to empower them to understand their own biases and to get what they want when they understand themselves."); Mitchell, *supra* note 16, at 1255 ("[E]mpirical work ignored by Sunstein and Thaler does provide some guidance on how we might enhance freedom of choice by making persons less susceptible to choice set manipulations.").

155. THALER & SUNSTEIN, *supra* note 1, at 322–25 (expressing the concern that some nudges are "sneaky" and "manipulative").

than a citizen constrained by regulatory prohibitions, but the influence of regulators remains. And to some, the fact that nudges are hidden makes them even more pernicious than overt prohibitions.[156]

Discussions of nudges in financial regulation illustrate the argument on education. The literature on financial literacy documents a wide array of costly cognitive mistakes that financial consumers make,[157] providing a lot of grist for the nudging mill. Prohibitions on certain kinds of financial transactions can prevent people from making these mistakes, but such prohibitions also foreclose the use of financial instruments that might be valuable to some consumers. Some scholars argue that nudges are the wrong approach and that regulators should instead work to guide consumers to financial literacy.[158] Others assert that cognitive errors in finance support a firmer paternalistic hand that uses prohibitions rather than nudges.[159]

Can people be educated out of their own biases? Probably not. Financial numeracy is valuable and can keep people from making some serious errors in financial planning. Education does not, however, ameliorate some of the serious cognitive biases that lead people to make judgments that are not in their best interest. Advice to help people to avoid procrastination is plentiful, using techniques like self-imposed deadlines that should prevent the kind of thinking that can lead to procrastination.[160] And yet people still procrastinate.

Likewise, little evidence exists that suggests that people can be educated out of the status quo bias, loss aversion, or the endowment effect.[161] These phenomena are like visual illusions—even learning how

156. *Id.* at 325 (noting that a default rule may be "manipulative if people are not told about it, or if it is hard for them to opt out").

157. *See* GARY BELSKY & THOMAS GILOVICH, WHY SMART PEOPLE MAKE BIG MONEY MISTAKES AND HOW TO CORRECT THEM: LESSONS FROM THE NEW SCIENCE OF BEHAVIORAL ECONOMICS 51–105 (2000) (describing how "loss aversion," the "sunk cost fallacy," and other cognitive biases lead consumers to waste money).

158. *See* Liscow & Markovits, *supra* note 57, at 1275–84 (defending the use of broad-based education to combat cognitive biases).

159. Bubb & Pildes, *supra* note 22, at 1596 ("Behavioral findings showing the failure of individual choice often point toward policy prescriptions that limit choice or mandate outcomes.").

160. *See, e.g.*, Forbes Coaches Council, *11 Smart and Simple Ways To Overcome Chronic Procrastination*, FORBES (Mar. 25, 2022, 8:15 AM), https://www.forbes.com/sites/forbescoachescouncil/2022/03/25/11-smart-and-simple-ways-to-overcome-chronic-procrastination [https://perma.cc/67AP-2X3X] (describing ways to avoid procrastination).

161. One of the primary papers arguing that regulators should use debiasing contends that framing can be debiased, but it almost exclusively cites debiasing techniques that are applied to

they function does not eliminate the illusion. Some evidence suggests that certain kinds of experts develop ways to avoid costly pitfalls that would otherwise result from decision frames.[162] Some researchers have advocated debiasing techniques that combat these influences, most commonly by encouraging people to see a problem from a different decision frame.[163] For example, a new homeowner deciding whether to opt out of the EV hookup default might be encouraged to imagine what they would do if there were no such mandate. That kind of decision-making tactic, however, does not eliminate the illusion; it only shows the decision maker that different ways to think about their choice are available.

In short, although in some instances people can develop decision-making tools that ameliorate some aspects of cognitive biases, an effort at mass education is unlikely to succeed.[164] A society that is incapable of educating its citizenry as to the benefits of mass vaccination in the face of a pandemic that killed one million of its citizens seems unlikely to be able to convince the same citizens of the need to think about EV hookups from the perspective of both gains and losses, even if such a technique worked.[165]

Pessimism about the value of education takes the arguments about the use of default rules back to the starting point. That is, choosing a

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other cognitive errors, such as hindsight bias and overconfidence. *See* Mitchell, *supra* note 16, at 1255–56 n.40.

162. *See* John A. List, *Does Market Experience Eliminate Market Anomalies?*, 47 Q.J. ECON. 41, 41 (2003) (finding that "market experience plays a significant role in eliminating the endowment effect").

163. *See* Paul M. Miller & N.S. Fagley, *The Effects of Framing, Problem Variations, and Providing Rationale on Choice*, 17 PERSONALITY & SOC. PSYCH. BULL. 517, 521 (1991) (reporting research results indicating that "[a]sking subjects to 'briefly explain your rationale' . . . had a great effect on the occurrence of framing effects").

164. *See* THALER & SUNSTEIN, *supra* note 1, at 320–23 (discussing why educating people to avoid biases is unlikely to be fully successful).

165. *See* Meeta Shah, *The Failure of Public Health Messaging About COVID-19*, SCI. AM. (Sept. 3, 2020), https://www.scientificamerican.com/article/the-failure-of-public-health-messaging-about-covid-19 [https://perma.cc/G5ZT-K237] (discussing the difficulties of communicating health risks about COVID-19 effectively); Selena Simmons-Duffin & Koko Nakajima, *This Is How Many Lives Could Have Been Saved with COVID Vaccinations in Each State*, NPR: ALL THINGS CONSIDERED (May 13, 2022), https://www.npr.org/sections/health-shots/2022/05/13/1098071284/this-is-how-many-lives-could-have-been-saved-with-covid-vaccinations-in-each-sta [https://perma.cc/53D9-M7NU] ("Nearly 319,000 COVID-19 deaths could have been averted if all adults had gotten vaccinated.").

default rule that will affect behavior is inevitable.[166] A cafeteria manager must put desserts either at the beginning, middle, or end of the array of foods. This choice will affect how much dessert people eat.[167] Thus, a manager who wants to act in the best interests of the customers should choose a location that will reduce the number of desserts that customers eat and later regret.[168] It seems unlikely that a manager will arrange the choice environment in a benevolent fashion in a commercial setting. A regulator, however, has an ethical, and often a statutory, duty to act in the best interests of those citizens affected by the regulation.[169]

But as the discussion in this Article shows, benevolent regulators might have no choice but to impose their own value judgments when adopting nudges. Even if a regulator can engage in a fairly heroic cost-benefit analysis that includes all manner of indirect behavioral effects, the regulator cannot really identify the preferences of the targets of regulation because regulation itself influences preferences.[170] Framing effects create a kind of uncertainty principle if changing defaults changes preferences. Adopting nudges that maximize getting people what they want is just impossible. Regulators will inevitably impose their own value judgments when they decide how to set default rules and to use other nudges.[171]

Concluding that regulators must make value judgments is not necessarily a terrible state of affairs. Quite the opposite—it is the usual

166. THALER & SUNSTEIN, *supra* note 1, at 4 ("[T]here is no such thing as a 'neutral' design.").

167. *See id.* at 1–2 ("Simply by rearranging the cafeteria, [the cafeteria manager] was able to noticeably increase or decrease the consumption of many food items.").

168. One commentator argues that instead of moving desserts, the benevolent cafeteria manager should install a mirror behind the food to encourage self-reflection. Mitchell, *supra* note 16, at 1257. It is not clear why adding a mirror would be somehow less paternalistic or have less influence on preferences than moving desserts. The bottom line is still that the setting and arrangement of the food in a cafeteria line influence dietary choices. A manager can inspire healthy eating habits or can inspire less healthy habits, but neutrality in the matter is not an option.

169. *See* CASS R. SUNSTEIN, THE ETHICS OF INFLUENCE: GOVERNMENT IN THE AGE OF BEHAVIORAL SCIENCE 11 (2016) (discussing ethical obligations of the government to save people from harm).

170. *See* Sunstein, *Behavioral Welfare*, *supra* note 59, at 199 ("In addition, people's preferences may be endogenous to legal rules." (citation omitted)).

171. *See* Tor, *Private Costs*, *supra* note 6, at 1676 ("Behavioral interventions draw on empirical findings that reveal how real people make judgments and decisions to encourage behaviors that regulators find desirable . . . .").

state of affairs for regulation. Statutes that create regulatory systems invariably reflect the value judgments of the legislature. Whether the regulation is designed to save endangered species, promote workplace safety, or eliminate monopolistic practices in the marketplace, legislatures make choices about values that regulators must then implement.[172] A regulator charged with promoting the use of renewable energy in the transportation sector is likely to adopt a default requirement that new homes install an EV hookup—at least so long as the statute that creates the regulatory agency allows them to. There is nothing wrong with that—it is consistent with how a modern democracy functions to make policy choices with the aid of an expert bureaucracy. The problem is imagining that a neutral behavioral cost-benefit analysis that facilitates the unbiased, unconstrained choice of the citizenry will defend a default rule against critics who argue that the rule is meant to help the EV industry or is a paternalistic intervention.

This is not to say that there is no role for nudges. An opt-out default surely facilitates individual choice more than a mandatory rule with no opt-out. A default rule is a kinder, gentler approach that allows those consumers who avoid procrastination and truly want to make a different choice to do so. But nudges do affect consumers and preferences. Regulators cannot truly make neutral choices to free the citizenry of cognitive and behavioral biases. They must make value judgments about regulatory interventions—even nudges.

172. *See* Frank I. Michelman, *Political Markets and Community Self-Determination: Competing Judicial Models of Local Government Legitimacy*, 53 IND. L.J. 145, 149 (1977) (noting that "the legislature is regarded as a forum for identifying or defining, and acting towards [public values]").