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## Nudges vs. Shoves

Cass R. Sunstein \*

### Abstract

*Behavioral findings, demonstrating human errors, have led some people to favor choice-preserving responses (“nudges”), and others to favor mandates and bans. If people’s choices lead them to err, it might seem puzzling, or even odd, to respond with solutions that insist on preserving freedom of choice. But mandates have serious problems of their own, even in the face of behavioral market failures. Mandates might not be able to handle heterogeneity; they might reflect limited knowledge on the part of public officials or the interests of powerful private groups; and they override freedom, potentially producing welfare losses and insulting individual dignity. It is true that in some cases, a behavioral market failure (such as a self-control problem) might justify a mandate on social welfare grounds, but on those very grounds, it makes sense to begin by examining choice-preserving approaches, which are far less intrusive and often highly effective.*

Behavioral economists have identified a large number of human errors, including those that stem from self-control problems, “present bias,” unrealistic optimism, and limited attention.<sup>1</sup> Building on the underlying findings, a great deal of work has explored the possibility of enlisting libertarian paternalism, or nudges, to make people’s lives go better.<sup>2</sup> Nudges preserve freedom of choice and thus allow people to go their own way. Some people reject nudges on the ground that they are unduly intrusive.<sup>3</sup> But in light of behavioral findings, there has also been increasing interest in asking whether mandates and bans have a fresh justification.<sup>4</sup> The motivation for that question is clear: If we know that people’s choices lead them in the wrong direction, why should we insist on approaches that preserve freedom of choice?

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<sup>1</sup> A good overview is COGNITIVE ILLUSIONS (Rüdiger F. Pohl ed., 2012).

<sup>2</sup> See Richard Thaler & Cass R. Sunstein, NUDGE (2008); see also Cass R. Sunstein, WHY NUDGE? THE POLITICS OF LIBERTARIAN PATERNALISM (2014).

<sup>3</sup> See RICCARDO REBONATO, TAKING LIBERTIES (2011); Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133, 136-39 (2006); Joshua D. Wright & Douglas H. Ginsburg, *Behavioral Law and Economics: Its Origins, Fatal Flaws, and Implications for Liberty*, 106 NW. U.L. REV. 1033 (2012).

<sup>4</sup> See SARAH CONLY, AGAINST AUTONOMY (2012); Ryan Bubb & Richard Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 HARV. L. REV. (forthcoming 2014).

It should be agreed that if a mandate would increase social welfare, suitably defined,<sup>5</sup> there is a strong argument on its behalf. No one believes that nudges are a sufficient approach to violent crime. In the face of a standard market failure, coercion has a standard justification; consider the problem of air pollution. In such contexts, nudges may have an important role, but their effects might prove modest, and they hardly exhaust the repertoire of appropriate responses. We know that there are “behavioral market failures”<sup>6</sup> as well. If, for example, people suffer from unrealistic optimism, limited attention, or a problem of self-control, and if the result is a serious welfare loss, there is an argument for some kind of public response. We could certainly imagine cases in which the best approach is a mandate or a ban, because that response is preferable, from the standpoint of social welfare, to any alternative, including nudges.

Nonetheless, there are many reasons to think that if improving social welfare is the goal, nudges have significant advantages and are often the best approach. First, they tend to make sense in the face of heterogeneity. By allowing people to go their own way, they reduce the costs associated with one-size-fits-all solutions, which mandates usually impose.<sup>7</sup> Second, those who favor nudges are alert to the important fact that public officials have limited information and may themselves err (in a reflection of what is sometimes called “the knowledge problem”<sup>8</sup>). If nudges are based on mistakes, the damage is likely to be significantly less severe than in the case of mandates, because people are free to ignore them.<sup>9</sup> Third, nudges respond to the fact that public officials may be affected by the influence of well-organized private groups (the public choice problem<sup>10</sup>). If so, the fact that people can go their own way provides an important safeguard, at least when compared with mandates. Fourth, nudges 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.<sup>11</sup> Fifth, nudges recognize that freedom

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<sup>5</sup> I am bracketing the question of definition but note that freedom of choice is, on any reasonable account, an important ingredient in social welfare. See Daniel Benjamin et al., *Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference*, 104 AM. ECON. REV. (forthcoming 2014); Björn Bartling et al., *The Intrinsic Value of Decision Rights* (U. of Zurich, Dep’t of Econ. Working Paper No. 120, 2013), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2255992](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2255992). For valuable discussion of foundational issues, see Matthew Adler, *WELL-BEING AND FAIR DISTRIBUTION: BEYOND COST-BENEFIT ANALYSIS* (2011).

<sup>6</sup> See OREN BAR-GILL, *SEDUCTION BY CONTRACT* (2012).

<sup>7</sup> To be sure, we could imagine personalized mandates. Although they are not easy to design, the informational challenges might be reduced in the future. Note that personalized defaults are responsive to the fact of heterogeneity. See Cass R. Sunstein, *Deciding By Default*, 162 U. PA. L. REV. 1 (2013), and in the environmental context, Cass R. Sunstein & Lucia Reisch, *Automatically Green: Behavioral Economics and Environmental Protection*, 37 HARV. ENV. L. REV. (forthcoming 2014).

<sup>8</sup> Hayek is the best expositor. See F.A. Hayek, *MARKETS AND OTHER ORDERS*, vol. 15, *THE COLLECTED WORKS OF F.A. HAYEK* (Bruce Caldwell ed. 2014).

<sup>9</sup> To be sure, default rules can be sticky, and disclosure and warnings might be highly effective.

<sup>10</sup> REBONATO, *supra* note.

<sup>11</sup> Björn Bartling et al., *supra* note.

of choice can be seen, and often is seen, as an intrinsic good, which government should respect if it is to treat people with dignity.<sup>12</sup>

It is sometimes objected that nudges are more covert and less transparent than mandates, and therefore more insidious and difficult to monitor.<sup>13</sup> If so, there would be a distinctive argument against nudges. But in general, the objection is misplaced. For example, disclosure policies and default rules are entirely transparent. To be sure, some imaginable nudges are covert; consider those that affect unconscious processing (and the extreme case of subliminal advertising).<sup>14</sup> But covertness is a feature of particular nudges, not the general category. And while it is true that many people may not pay attention to default rules, or notice their effects, evidence suggests that people's behavior, in the face of a default, would not be changed even if they were informed that a particular default, and not another imaginable one, has been chosen for them.<sup>15</sup>

It is important to emphasize that the various arguments on behalf of choice-preserving approaches will have different degrees of force in different contexts. They suggest reasons to favor nudges over mandates, but those reasons may not be decisive. In some settings, for example, the interest in freedom of choice has overwhelming importance; in others, people do not much care about it, and its intrinsic value is at most modest. In any event, mandates typically require some kind of nudge in order to succeed (if only in the form of ensuring publicity), and hence the real question is whether nudges are preferable by themselves and unaccompanied by any form of coercion. Consider four illustrative problems.

1. Printers have default settings. For example, is the default single-sided or double-sided printing? Suppose that a large university has long had a single-sided default for its printers, and it is deciding whether to change to double-sided. On the basis of careful investigation, suppose that it has learned that at least 80 percent of its students, faculty, and other employees would prefer a double-sided default, on the ground that they would like to save paper. Armed with this information, the university has decided to switch to a double-sided default.<sup>16</sup>

Now suppose that some university administrators, enthusiastic about the idea of majority rule, ask whether double-sided printing should be mandatory. The answer to that question is plain. About one-fifth of users prefer a single-sided default, and there is little doubt that single-sided printing is often best – for example, for PowerPoint presentations

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<sup>12</sup> See REBONATO, *supra* note.

<sup>13</sup> See Rebonato, *supra* note.

<sup>14</sup> For a valuable discussion, see Gidon Felsen et al., *Decisional Enhancement and Autonomy: Public Attitudes towards Overt and Covert Nudges*, 8 *Judgment and Decision Making* 202 (2013).

<sup>15</sup> See George Loewenstein et al., *Warning: You Are About To Be Nudged* (2014) (unpublished manuscript)

<sup>16</sup> On the potential effects, see Johan Egebark & Mathias Ekström, *Can Indifference Make the World Greener?* 3 (Research Inst. Of Ind. Econ., Working Paper No. 975, 2013), available at <http://papers.ssrn.com/id=2324922>.

and for lecture notes. The assessment might be different if the use of single-sided printing imposes significant costs on non-users (for example, paper costs on the university or environmental costs).<sup>17</sup> But if the welfare of those who use printers is the only or primary variable, a nudge is clearly preferable to a mandate. From the standpoint of users, a mandate would have unnecessary costs in the face of heterogeneity across persons and projects. Here, then, is a clear example of a case in which a nudge is preferable to a mandate.

2. Many credit card holders pay only the minimum amount every month, and as a result, they face significant interest charges over time. Of those in this group, policymakers believe that many take this (potentially expensive) path because of negligence, inadvertence, or confusion. Regulators suggest a possible solution in the form of a nudge: People should be informed, in a clear and conspicuous way, of the costs of paying the minimum amount every month, as opposed to the costs of paying the full amount in a specified period.<sup>18</sup> Other regulators object that the disclosure is unlikely to be effective and that cardholders should be flatly prohibited from paying only the minimum amount for more than (say) twelve months.

The effectiveness of the nudge is an empirical question, but evidence suggests that in this context, disclosure can have a real effect, with a requirement of this general kind saving consumers \$74 million annually.<sup>19</sup> On welfare grounds, a prohibition cannot be ruled out of bounds; perhaps it would save consumers a great deal of money without having excessive costs. At the same time, enforcement would be difficult, and there is a risk that it would lead consumers to borrow money at even higher interest rates, as for example through payday loans.<sup>20</sup> Some or many of those who pay the minimum amount may be facing serious economic difficulties and hence paying the minimum for good reasons. Compare the important finding that the effects of state regulations of payday loans have been almost completely offset by the use of other high-interest credit products.<sup>21</sup> Here as elsewhere, a prohibition may have unintended adverse effects, potentially harming the very people that it is meant to help.

3. Behavioral economists have devoted a great deal of time to automatic enrollment in retirement plans. Because of inertia, many employees fail to sign up, and automatic enrollment increases participation rates, and thus people's savings, while also

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<sup>17</sup> For detailed discussion, see Sunstein & Reisch, *supra* note.

<sup>18</sup> This is the approach taken in the Credit Card Accountability Responsibility and Disclosure (CARD) Act. See Sumit Agarwal et al., *Regulating Consumer Financial Products: Evidence from Credit Cards* 4 (Nat'l Bur. Econ. Res. Working Paper No. 19484, 2013), available at <http://papers.nber.org/tmp/71400-w19484.pdf>.

<sup>19</sup> *Id.* at 3. Agarwal et al. also find that the CARD Act, which consists in large part of nudges, has saved consumers more than \$20 billion annually in fees, though they do not disaggregate the effects of nudges and more coercive instruments in the Act.

<sup>20</sup> See Tatiana Homonoff, *Essays in Behavioral Economics and Public Policy* (Sept. 2013) (unpublished Ph.D. dissertation, Princeton University), available at [http://dataspace.princeton.edu/jspui/bitstream/88435/dsp01jw827b79g/1/Homonoff\\_princeton\\_0181D\\_10641.pdf](http://dataspace.princeton.edu/jspui/bitstream/88435/dsp01jw827b79g/1/Homonoff_princeton_0181D_10641.pdf).

<sup>21</sup> *Id.*

preserving freedom of choice.<sup>22</sup> So far, so good. The problem is that if the default contribution rate is lower than what employees would choose (say, 3 percent, as it has been under many automatic enrollment plans), then the result of automatic enrollment might be to *decrease* average savings, because the default rate turns out to be sticky.<sup>23</sup> As Ryan Bubb and Richard Pildes emphasize, this is an ironic result for those who want to use nudges to increase people's welfare during retirement.<sup>24</sup>

The natural response, however, is not to abandon libertarian paternalism or choice-preserving approaches, but to choose a better default. One possibility is "automatic escalation," which increases savings rates each year until the employee hits a predetermined maximum.<sup>25</sup> And in fact, there has been a significant increase in the use of this approach; automatic escalation is increasingly popular.<sup>26</sup> Another possibility is to select a higher default contribution. No one denies that nudges can go wrong.<sup>27</sup> If they do, the challenge is to get them right. The objection to unduly low default contribution rates operates within the family of libertarian paternalism.

But there is a more fundamental objection, which questions freedom of choice altogether. Suppose that people opt out of 401(k) plans for reasons that are bad, in the sense that the decision to opt out makes their lives go worse (by their own lights). Perhaps the relevant people have a general (and unjustified) distrust of the financial system,<sup>28</sup> or of their employer, and so they elect not to save at all. Perhaps they suffer from an acute form of present bias. Perhaps those who opt-out are most likely to suffer as a result of doing so. If so, the argument for a mandate gains force on welfare grounds. If public officials know, from practice, that a behavioral market failure, or some kind of error, is leading people to make self-destructive blunders, some people contend that government should mandate savings and eliminate the right to opt out.<sup>29</sup> Indeed, such

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<sup>22</sup> Brigitte Madrian & Dennis Shea, *The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior*, 116 Q.J. ECON. 1149, 1159 (2001).

<sup>23</sup> See Bubb & Pildes, *supra* note.

<sup>24</sup> *Id.*

<sup>25</sup> Shlomo Benartzi & Richard H. Thaler, *Behavioral Economics and the Retirement Savings Crisis*, 339 SCIENCE 1152 (2013). Bubb and Pildes note that the typical maximum contribution rate even after automatic escalation may still be too low, Bubb & Pildes, *supra* note, but this problem too can be accommodated within libertarian paternalism by simply raising the maximum contribution rate.

<sup>26</sup> In 2009, 50 percent of plans with automatic enrollment includes escalation; by 2012, 71 percent did. See Employers Expressing Doubt in Retirement Readiness of 401(k) Plan Participants, Towers Watson Survey Finds, available at <https://www.towerswatson.com/en/Press/2012/10/employers-expressing-doubt-in-retirement-readiness-of-401k-plan-participants>

<sup>27</sup> The standard reason is that they do not promote individual welfare. Note, however, the important finding that nudge-induced improved choices, at the level of individuals, can undermine social welfare by substantially exacerbating adverse selection. See Benjamin Handel, Adverse Selection and Inertia in Health Insurance Market: When Nudging Hurts, 102 Am Econ Rev 2643 (2013).

<sup>28</sup> See Bubb & Pildes, *supra* note.

<sup>29</sup> *Id.*

critics might go further and argue for some kind of comprehensive welfare assessment by public officials about optimal savings rates, and ask those officials to build mandates on the basis of that assessment.<sup>30</sup>

This conclusion cannot be ruled out in principle, but there are good reasons for considerable caution. In assessing the rationality of those who opt out, public officials might be wrong (recall the knowledge problem). As compared to a nudge, a mandate might get people into the system who would benefit from inclusion, but it might also get people into the system who would be seriously harmed, and it is important, and may be difficult, to know the size of the two groups. Those who opt out might do so not for bad reasons, or because they are ignoring their future selves, but because they need the money now, and they are making a sensible tradeoff between their current and future welfare.

To say the least, a comprehensive welfare assessment of optimal savings rates is exceedingly difficult on both normative and empirical grounds, especially in view of heterogeneity in the population and changes over time. Any such assessment would have to acknowledge that different approaches make sense for different people and over time. In a recession, for example, a lower contribution rate might make sense, at least for relatively low-income people, than in a time of growth. So too, those who have to pay off their college loans might not want to save while they are struggling to do so, and people who are reasonably spending a great deal on current consumption (perhaps they have young children) might not want to save much in that period. These points suggest the need for personalized rather than one-size-fits-all mandates, which would not be easy to design.

Moreover, any form of coercion will impose a welfare loss on choosers, who want to exercise their autonomy, and who would undoubtedly be frustrated to find that they cannot. And if freedom of choice has intrinsic value, or can promote learning,<sup>31</sup> then there are additional reasons to avoid mandates.

To be sure, the social security program does compel savings, and for a mixture of reasons.<sup>32</sup> Perhaps the program should be expanded to increase the level of mandatory savings. But even if so, private retirement plans have an important place for savers, and the question is whether the current voluntary system should become more coercive. The fact of heterogeneity, and the risk of government error, argue strongly in the direction of nudges.

It is true that default rules tend to be “sticky,” and for that reason, poorly chosen defaults can do real harm. The fact that people can opt out in principle does eliminate the risk that bad defaults will be damaging. But it is also true that people reject defaults when that harm is clearly apparent to them. That is an important safeguard.<sup>33</sup>

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<sup>30</sup> *See id.*

<sup>31</sup> *See* REBONATO, *supra* note.

<sup>32</sup> Bubb & Pildes, *supra* note.

<sup>33</sup> *See* John Beshears et al, *The Limitations of Defaults* \*8 (Sept. 15, 2010) (unpublished manuscript), available at <http://www.nber.org/programs/ag/rrc/NB10->

3. Much motor vehicles emit pollution, and the use of gasoline increases American dependence on foreign oil. On standard economic grounds, there is a market failure, and some kind of tax seems the best response, designed to ensure that drivers internalize the social costs of their activity. Behaviorally informed regulators would be inclined to think that at the time of purchase, many consumers do not give sufficient attention to the costs of driving a car. Even if they try, they might not have a sufficient understanding of those costs, because it is not simple to translate differences in miles per gallon (MPG) into economic and environmental consequences.<sup>34</sup> An obvious nudge would be disclosure, in the form of a fuel economy label that would correct that kind of behavioral market failure.<sup>35</sup>

But it would be possible to wonder whether the label would prove effective; this is an empirical question. If it is not, people will purchase cars that are less fuel-efficient than would be socially optimal. True, a corrective tax might solve that problem, but if consumers neglect fuel costs at the time of purchase, it might be best to combine the tax with some kind of subsidy for fuel-efficient cars. And if consumers are genuinely inattentive to the costs of operating a vehicle (at the time of purchase), then it is not impossible that fuel economy standards, which are not favored on standard economic grounds, might themselves turn out to be justified.

In arguing for mandates rather than nudges, Bubb and Pildes make precisely this argument.<sup>36</sup> In support of that argument, they might have explored two kinds of consumer savings from fuel economy standards, not involving externalities at all: money and time. In fact, the vast majority of the quantified benefits from recent fuel economy standards come not from environmental improvements, but from money saved at the pump; turned into monetary equivalents, the time savings are also significant.<sup>37</sup> For the most recent and ambitious of those standards, the Department of Transportation found consumer economic savings of about \$529 billion; time savings of \$15 billion; energy security benefits of \$25 billion; carbon dioxide emissions reductions benefits of \$49 billion; other air pollution benefits of about \$14 billion; and less than \$1 billion from reduced fatalities.<sup>38</sup> The total projected benefits are \$633 billion over fifteen years, of which remarkable 84 percent come from savings at the pump, and 86 percent from those savings along with time savings.

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02,%20Beshears,%20Choi,%20Laibson,%20Madrian.pdf. In an important article, Lauren Willis also finds a high level of opt-outs in cases in which regulated entities dislike the default and work hard to convince people to opt out; in such cases, it is not clear whether this finding shows that freedom of choice is the solution or the problem. See Lauren Willis, *When Nudges Fail: Slippery Defaults*, 80 U Chi L Rev 1155 (2013).

<sup>34</sup> For an overview, see CASS R. SUNSTEIN, SIMPLER (2013).

<sup>35</sup> Id.

<sup>36</sup> Bubb & Pildes, *supra* note.

<sup>37</sup> See Ted Gayer & W. Kip Viscusi, *Overriding Consumer Preferences With Energy Regulations* (2012), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2111450](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2111450).

<sup>38</sup> Nat'l High. Traf. Safety Administration, *Final Regulatory Impact Analysis: Corporate Average Fuel Economy for MY 2017–MY 2025*, August 2012, table 13.

The problem is that on standard economic grounds, it is not at all clear that these consumer savings should count in the analysis, because they are purely private savings, and do not involve externalities in any way. In deciding which cars to buy, consumers can certainly take account of the private savings from fuel-efficient cars; if they chose not to buy such cars, it might be because they do not value fuel efficiency as compared to other vehicle attributes (such as safety, aesthetics, and performance). Where is the market failure? If the problem lies in a lack of information, the standard economic prescription overlaps with the behaviorally informed one: Provide that information so that consumers can easily understand it.

In this context, there is a serious risk that a nudge will be inadequate. Even with the best fuel economy label in the world, consumers might well be insufficiently attentive to those benefits at the time of purchase, not because they have made a rational judgment that they are outweighed by other factors, but simply because they focus on other variables.<sup>39</sup> (How many consumers think about time savings when they are deciding whether to buy a fuel-efficient vehicle?) If so, a suitably designed fuel economy mandate – hard paternalism, and no mere nudge – might well produce an outcome akin to what would be produced by consumers who are at once informed and attentive. If the benefits of the mandate greatly exceed the costs, and if there is no significant consumer welfare loss (in the form, for example, of reductions in safety, performance, or aesthetics), then there is reason to believe that the mandate does serve to correct a behavioral market failure.<sup>40</sup> It is also possible that a mandate will promote technological innovation and thus drive down costs in ways that are difficult to anticipate.

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<sup>39</sup> See Xavier Gabaix & David Laibson, *Shrouded Attributes, Consumer Myopia, and Information Suppression in Competitive Markets*, 121 Q.J. Econ. 505, 511 (2006).

<sup>40</sup> The Environmental Protection Agency has so argued. See *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, Part II*, 75 Fed. Reg. 25,324, 25,510-11 (May 7, 2010), available at <http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf>:

The central conundrum has been referred to as the Energy Paradox in this setting (and in several others). In short, the problem is that consumers appear not to purchase products that are in their economic self-interest. There are strong theoretical reasons why this might be so:

- Consumers might be myopic and hence undervalue the long-term.
- Consumers might lack information or a full appreciation of information even when it is presented.
- Consumers might be especially averse to the short-term losses associated with the higher prices of energy-efficient products relative to the uncertain future fuel savings, even if the expected present value of those fuel savings exceeds the cost (the behavioral phenomenon of “loss aversion”).
- Even if consumers have relevant knowledge, the benefits of energy-efficient vehicles might not be sufficiently salient to them at the time of purchase, and the lack of salience might lead consumers to neglect an attribute that it would be in their economic interest to consider.

Of course we should be cautious before accepting that conclusion. Behavioral biases have to be demonstrated, not simply asserted; perhaps most consumers do pay a lot of attention to the benefits of fuel-efficient vehicles.<sup>41</sup> The government's numbers, projecting costs and benefits, might be wrong; recall the knowledge problem. It is important to emphasize that consumers have highly diverse preferences with respect to vehicles, and even though they are not mere nudges, fuel economy standards should be designed to preserve a wide space for freedom of choice. The use of fleet-wide averages helps to ensure that such space is maintained.

With these qualifications, the argument for fuel economy standards, made by reference to behavioral market failures, is at least plausible.<sup>42</sup> In this context, nudges (in the form of an improved fuel economy label) and mandates (in the form of standards) might march hand-in-hand. With an understanding of behavioral findings, a command-and-control approach, promoting consumer welfare, might turn out to be far better than the standard economic remedy of corrective taxes. Recall that well over 80 percent of the benefits of fuel economy standards come from consumer savings.

### Conclusion

The fuel economy example is important, but it should not be read for more than it is worth. It certainly does not establish that in the face of human error, mandates are *generally* preferable to choice-preserving alternatives. As we have seen, the advantage of such alternatives is that they often have higher net benefits, because they reduce the costs of imposing solutions on heterogeneous populations, reduce the risks associated with government error,<sup>43</sup> and avoid the welfare (and other) costs associated with eliminating freedom of choice. In light of the frequently unanticipated and sometimes harmful effects of mandates, nudges are generally less risky (even though they may have unanticipated harmful effects as well).

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-- In the case of vehicle fuel efficiency, and perhaps as a result of one or more of the foregoing factors, consumers may have relatively few choices to purchase vehicles with greater fuel economy once other characteristics, such as vehicle class, are chosen.

<sup>41</sup> Hunt Allcott & Michael Greenstone, *Is There an Energy Efficiency Gap?*, 26 J. ECON. PERSP. 3 (2012).

<sup>42</sup> We can also imagine settings in which a mandate has a strong signaling effect, suggesting a public commitment of one or another sort; that signaling effect might influence social norms. See Ronald Benabou and Jean Tirole, *Law and Social Norms* (2011), available at [http://www.law.yale.edu/documents/pdf/LEO/Benabou\\_Tirole\\_LawsNorms.pdf](http://www.law.yale.edu/documents/pdf/LEO/Benabou_Tirole_LawsNorms.pdf). A nudge might have a similar effect, but the signal that accompanies a mandate might well be stronger (though it could also breed resentment and backlash).

<sup>43</sup> One question is whether mandates or nudges are more likely to be based on evidence and information. Design of sensible mandates might well be more demanding, but because of their very intrusiveness, policymakers might be especially likely to ensure that they are grounded in evidence (and perhaps in careful consideration of costs and benefits). If nudges, and particularly default rules, are thought to have low stakes, there is a risk that they will not be based on adequate information.

It is true that in the end, mandates might turn out to be justified. But here as elsewhere, it makes sense to give careful consideration to less intrusive, choice-preserving alternatives, and at least where standard market failures are not involved, to adopt a rebuttable presumption in their favor.<sup>44</sup>

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<sup>44</sup> In this light, the interest in choice-preserving approaches should hardly be seen to reflect a capitulation to political constraints or as an artificial effort to truncate the set of potential policy responses, as suggested in Bubb & Pildes, *supra* note.