5

A Fairly Mechanical Method for Policy Innovation

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INTRODUCTION

Defaults exert a strong and predictable influence over behavior (Goldstein et al. 2008; Johnson, Belman & Lohse, 2002). In European countries with opt-in organ donor pools, it is rare for greater than 20% of the population to opt in, while in opt-out countries, it is not unusual to find that over 99% of the population are organ donors (Johnson and Goldstein, 2003). This example is a situation where a *no-action default* drastically affects outcome. More generally, as argued by Thaler and Sunstein (2008), defaults can be used to encourage individual behavior to increase societal welfare in a way that a law, which removes all personal responsibility for the decision, cannot.

The effect of defaults can be measured in millions or even billions of dollars. For example, two US states, Pennsylvania and New Jersey, underwent a legal change in the early 1990s such that all motorists had to pick between a high-cost insurance policy that provided the right to sue or a low-cost insurance policy that lacked this right. The two states chose opposite defaults, setting up an interesting natural experiment. New Jersey chose the limited policy as the default and Pennsylvania chose the more comprehensive one. In New Jersey, 21% of residents purchased the right to sue, while 70% of Pennsylvania residents purchased that same right (Johnson et al. 1993). That is, 70% to 79% of people on both sides of the river went with the default, leading to large financial consequences for the insurance sales industry. More recently, Beshears et al. (2009) find that when employees are defaulted to participate in a pension program through their employer, nearly all do, while less than two-thirds follow suit when the default is to not participate.

TABLE 5.1 Matrix of Objectives and Tools

	Tool 1	**Tool 2**	**…**	**Tool *n***
Objective 1	Idea (1,1)	Idea (1,2)	…	Idea (1,*n*)
Objective 2	Idea (2,1)	Idea (2,2)	…	Idea (2,*n*)
…	…	…	…	…
Objective *m*	Idea (*m*,1)	Idea (*m*,2)	…	Idea (*m*,*n*)

Defaults can have strong implications in nearly all societal policy, and in particular, ones pertaining to mobilizing consumers to execute actions that are more sustainable. In this chapter we examine ways that default situations can be used to induce actions that boost sustainable development. Specifically, we employ a fairly mechanical and simple method to generate ways in which default configurations can be used to reduce carbon emissions. We choose carbon emissions as the objective focus because, as recently shown by Attari et al. (2010), this is an area where individuals have difficulty quantifying energy savings and defaults can lead the decision process and also have a serious impact. We begin by outlining an idea-generation method before discussing ways in which default options can reduce carbon emissions, and then close with a discussion of policy.

IDEA GENERATION: A FAIRLY MECHANICAL AND SIMPLE METHOD

Here we outline an easy method for generating ideas that can impact policy using a set of *tools* and *objectives*. In the following example, the objectives will be a set of carbon-decreasing activities, although any social objective could be used. The tools will be different types of default frames that can impact social policy, but could also include other methods of information sharing and policy. The simplicity of this method should not necessarily undermine the quality of the ideas it generates, as even important scientific discoveries are thought to have arisen from the application of heuristics for discovery (Langley et al., 1987; Gigerenzer & Goldstein, 1996). To apply this method, a policy maker begins with a list of objectives to be achieved. This list is then crossed with a list of policy tools to generate a matrix populated with strategic ideas as shown in Table 5.1.

For each possible combination of objective and tool, the policy designer asks how each tool could be applied to each objective. The creative process was helped along by flattening the matrix so that each combination of tool and objective is given unique inspiration as a *tool*-based approach to an *objective*. The spreadsheet to model this arrangement might be structured as seen in Table 5.2.

The method is described as fairly mechanical because the steps listed only do some of the work. The rest is left to the creativity of the policy maker. As a caveat, this has not been tested against other methods of generating ideas, structured or unstructured. However, since the process is quick, pleasant, and may at least generate a few good ideas, there is little risk in its implementation.

For this volume, we applied the method using sustainable actions as objectives and defaults as the tools. We will now step through both in detail.

TABLE 5.2 Spreadsheet Model of a Tool-Based Approach to an Objective

Objective	Tool	Imaginary Article Title	Idea
Objective 1	Tool 1	A tool 1-based approach to objective 1	Idea (1,1)
Objective 1	Tool 2	A tool 2-based approach to objective 1	Idea (1,2)
…	…	…	
Objective 1	Tool *n*	A tool *n*-based approach to objective 1	Idea (1,*n*)
Objective 2	Tool 1	A tool 1-based approach to objective 2	Idea (2,1)
Objective 2	Tool 2	A tool 2-based approach to objective 2	Idea (2,2)
…	…	…	
Objective 2	Tool *n*	A tool *n*-based approach to objective 2	Idea (2,*n*)
…	…	…	
Objective *m*	Tool *n*	A tool *n*-based approach to objective *m*	Idea (*m*,*n*)

OBJECTIVES: ACTIONS THAT REDUCE CARBON EMISSIONS

To best suit a general audience, we searched for a list of sustainable actions that could plausibly be achieved by typical households, as opposed to specialized corporations. Thomas Dietz and colleagues' paper "Household Actions Can Provide a Behavioral Wedge to Rapidly Reduce US Carbon Emissions" in the *Proceedings of the National Academy of Sciences* (2008) lists a series of actions, which, if undertaken in the United States, would reduce carbon emissions by an amount roughly equal to the carbon emissions of France (p. 18452). We took said actions and re-expressed them in the form of measurable objectives, as follows:

1. Increase the proportion of windows without drafts
2. Better align heating and air conditioning settings to time of day, season, and presence of people home
3. Decrease the average amount of standby electricity used by appliances
4. Decrease the average temperature settings of clothes washers
5. Decrease the average temperature settings of water heaters
6. Decrease the weight carried in automobile trunks
7. Increase air conditioner tune-up rates
8. Increase automobile oil change rates
9. Increase heating, ventilation, and air-conditioning filter change rates
10. Increase the proportion of insulated attics
11. Increase the proportion of drivers who minimize acceleration and deceleration rates
12. Increase the proportion of highway drivers who maintain a speed of 55 mph
13. Increase the proportion of drivers who use cruise control
14. Increase the proportions of Energy Star furnaces, air conditioners, water heaters, refrigerators, and clothes washers and dryers in use
15. Increase the proportion of fuel efficient vehicles in use

16. Increase the proportion of LED televisions in use (relative to plasma screens)
17. Increase the proportion of low-flow showerheads in use
18. Increase the proportion of low-rolling-resistance tires in use
19. Increase the proportion of triple-pane windows in use
20. Increase the proportion of wash loads dried on the line
21. Increase tire inflation rates
22. Increase vehicle tune-up rates
23. Reduce the number of motor vehicle trips made per day
24. Reduce the proportion of single-passenger motor vehicle trips
25. Reduce the time vehicles spend idling

Dietz et al. categorize the actions as: a onetime investment in building shells, purchases made to increase the energy efficiency of household appliances, infrequent actions that can be maintained by habit, infrequent actions that are maintained automatically, and frequently repeated actions maintained by habit or conscious choice (p. 18454). Since these particular categorizations contain ideas about how to achieve the objectives, they were not included in the spreadsheet to avoid interfering with generation of different solutions. With an ambitious set of concrete and measurable objectives before us, we turn to the tools of policy: defaults.

TOOLS: A VARIETY OF DEFAULTS

While the effects of defaults are great, they have garnered limited academic attention and literature. A few years back, Goldstein et al. (2008, pp. 102–103) proposed a taxonomy of default types and ideas about choosing the most appropriate default for specific situations. This list is a starting point for policy idea generation, and will ultimately be revised as a result of this exercise.

To understand these examples, consider a product that is available in various configurations. For instance, a new car might come with a passenger-side airbag enabled (but can be switched off) or disabled (but can be switched on) by default. The enabled default would be ideal if the passenger is a large adult, but potentially fatal if the passenger is a small child. Nonetheless, the manufacturer ultimately must choose one of these two settings as a default. In addition to product defaults, services can have default settings as well. For example, by default, employees might participate or not participate in their company's pension plan. Note: For something to be a default, the customer must have the ability to switch states. If the customer was not able to switch, defaults would not preserve freedom of choice. Here is the list of tools of policy that will be applied:

Benign Defaults. When policy makers set a benign default, they take their best guess about which configuration would be most acceptable and present the least risk to most people. These are *mass defaults*, meaning that they are applied to all people uniformly, and not on a case-by-case basis.

Random Defaults. To enact random defaults, policy makers randomly assign customers to one of several default configurations and track change rates. They are often used to learn about preferences or the consequences of alternatives. They are only recommended when there is little foreseeable harm in someone receiving either default.

Hidden Options. When a single default configuration is presented as the only choice when alternatives do exist, the policy maker is using hidden defaults. For instance, the availability of special meals on airlines is not widely publicized, though customers who are knowledgeable enough to know of the hidden option are able to switch. Hidden options violate the spirit of choice-preserving defaults in that they limit the ability of the consumer to switch states.

Forced Choice. In forced choice, the default is to deny providing the product or service unless a configuration is actively chosen. In some cases, defaults exist even when forced choice is used. For instance, if people must answer a question about whether they consent to be organ donors when applying for a driver's license, those who do not apply for licenses dodge the question and would be classified according to the prevailing regional law (e.g., they would not be considered donors in the United States). In other cases, forced choice implies no default at all. For instance, imagine an installer for a web browser that will not proceed unless a default search engine is chosen. Those who do not answer the question will not be able to install the browser and their default search engine for that browser will be undefined.

Persistent Defaults. A persistent defaults policy assumes that a customer's last choice should be used as the default for the next choice. For example, if a customer requests an aisle seat on one flight, they might be assigned one by default on the next flight. This last choice could be a result of an application of a default, an active departure from the default, or a forced choice question.

Reverting Defaults. A reverting defaults policy ignores a customer's last active choice that departed from the default, treating it an exception, and reverts back to the long-term default.

Smart Defaults. This is a kind of personalized default that can sense and react; smart defaults use information about an individual or a situation to generate tailored configurations. An example would be assigning employees in a pension program to one of several target retirement funds based on their age.

Adaptive Defaults. Another kind of personalized default, adaptive defaults dynamically update based on current, often real-time, decisions that a person has made and attempt to guess remaining defaults. Examples include product configurators that use a small set of questions to guess a user's needs (e.g., home or business) and recommend finished products.

Applying the Process

A spreadsheet was constructed like that in Table 5.2, nesting tools within objectives (though the alternative nesting, or a random order, might have its merits). This sheet was filled in 200 rows (8 tools by 25 objectives) where possible. While completing the task, certain cells failed to create ideas or raised unappealing ones. These cells were left blank and we moved on to the next row to avoid hindering the flow of ideas. It was also decided that the spreadsheet would not be made public, for the thought of doing so may have caused internal censorship. Instead, we took the chance of possibly generating many bad ideas in the hopes of ending up with a few good ones. A creative writing teacher of Dan's once referred to this as "letting the faucet run to clear out the rusty water."

Revising the Classification of Defaults

An unexpected benefit of the exercise was that it caused us to rethink the classification of defaults cited previously. Here is a revised classification:

1. Policies for establishing initial configurations
   a. *Forced choice*: Ask user one or more questions to determine the configuration.
   b. *Simple defaults*: Use a default configuration set by the policy maker.
   c. *Sensory defaults*: Choose among multiple sets of configuration based on any available data other than individual usage data (which does not exist at initial use).
   d. *Random defaults*: Choose a configuration randomly from several alternatives.
2. Policies for establishing configurations for reuse
   a. *Predictive defaults*: Apply learning algorithms to the past configuration and user data to adjust the configuration automatically.
   b. *Persistent defaults*: Reuse the configuration from the last session.
   c. *Reverting defaults*: Establish the configuration anew according to the initial default policy; that is, treat each use as the first use.
3. Techniques for adjusting configurations
   a. *Manual adjustment*: Ask the user to review each setting, thus providing the user the opportunity to change. The choice default for each choice must be determined by another method.
   b. *Predictive adjustment*: Review each setting, thus providing the user the opportunity to change. Each change causes the subsequent choice option defaults to update dynamically so that they are likely to be acceptable.

What's new? One realization is the distinction between the default and the configuration. The *configuration* is the collection of settings. *Default policies* determine the default configuration, which can be adjusted. When adjusting a configuration, *choice option defaults* are preselected options that a person can simply approve or make an active choice to change. The policy designer may choose to have the system prompt the user to adjust the configuration, or simply respond to users' requests to adjust. With *predictive adjustment* the process can be streamlined by a kind of autocompletion, taking educated guesses about the levels of the remaining choice-option defaults on the basis of past choices.

Policies for determining a configuration differ between the initial use of a product or service and its subsequent reuses. At the first use, there is no previous use data about the user to exploit for determining the configuration. However, in *sensory defaults* the system may be able to detect some things about the user (demographics, a case-history file, directly observable information) that it may use to make an educated guess when setting the configuration. At reuse, this sensory data is still available, but now the system also has data on how the user interacts with the product or service and can start to extrapolate, updating the configuration through *predictive defaults*. For instance, a thermostat, after noticing that the user increases it two degrees each morning and decreases it three degrees each night, might adjust the daytime and nighttime settings in the configuration accordingly. The distinction between *sensory* and *predictive* defaults is that the former do not have past usage data and take the form of if–then rules, while the latter have past usage data and take the form of learning algorithms.

REFLECTIONS COMING OUT OF THE PROCESS

In applying this process, we found that one idea might apply to a range of objectives that group together thematically. To begin, we flesh out some of these higher-level ideas.

Defaults and Shopping

Many of the actions suggested by Dietz et al. involve purchasing new products. An unappealing and narrow application of defaults to shopping involves placing a product in a customer's cart by default, a process actually tried by some airlines trying to sell trip insurance alongside airline tickets. One does not see this attempted much these days, perhaps due to laws concerning unintentional purchases as well as a general distaste for the practice by consumers. Seeing this as unviable, we thought that defaults might apply not to the product itself, but to the presentation of the product. In online settings, what appears first is favored. In auctions by Google and Yahoo!, for instance, advertisers bid to be placed above the others on the page knowing that, all else equal, this top position will yield more clicks. Online retailers could set defaults such that Energy Star products (those meeting a certain standard of efficiency in the United States) could be presented to customers first on vendors' web pages that display products within a category. For it to truly be a default, consumers would need the ability to change the ordering of products, so an Energy Star First checkbox would be visible in the filtering options of the page. Setting product displays to list energy-efficient appliances first is a *simple defaults* solution. Vendors could be incented to present and precheck such a box through tax breaks or by selective membership to a responsible business organization. With the sale of many products moving online, the domain of Internet commerce could be the ideal territory to test defaults.

Previous research on a customer's self-proclaimed consideration set predicts that an item will be chosen over an item not in the set (Hauser, 1978), and a hypothesis worth testing is whether items placed into an artificial consideration set have a similar favored status. Today, virtual consideration sets are routinely created in the form of online product comparison engines and recommender systems. It would be instructive to place energy-efficient products in virtual consideration sets by default. Doing so would not lead to unintentional purchases, but it could increase the probability of an efficient device being chosen. Smart consideration sets are an instance of *predictive defaults* because the users' virtual consideration set is originally set to be empty and is endowed with an appropriate energy-efficient product only after the user has specified what they are shopping for.

A *forced-choice* mechanism for online purchases might allow shoppers to proceed as usual, but then before checkout, ask them to decide between the product they have chosen and a comparable energy-efficient model, presented alongside cost-of-ownership information.

Predictive defaults and *persistent defaults* could also be employed online when customers shop for multiple products from the same retailer on one or multiple visits. For instance, imagine someone in the market for a refrigerator, clothes washer, dryer, and television. After they choose one energy-efficient good, the website could learn to display energy-efficient models at the top of their list of search results for the other products. That is, predictive defaults would be responsible for changing the sort order of products to Energy Star first on the basis of the first product placed in the cart. Persistent defaults would be responsible for retaining this configuration for future visits by this customer.

Defaults and Services

Many energy-inefficient goods are, unfortunately, already in use. Replacing or improving them will cause a great decrease in carbon emissions according to Dietz et al. (2008), but old products cannot replace or improve themselves by default. A service provider is thus desirable to do jobs such as servicing air conditioners, replacing an automobile's oil or tires, inflating tires, insulating an attic, or replacing thin, drafty windows.

Consumers are accustomed to some services, such as sanitation, taking place by default, but in the case of some paid services, provision by default is unthinkable. At the same time, many people wish that certain maintenance activities would simply happen by themselves, even if they are just a phone call away.

One solution would be to create appointments by default, or more specifically *options for appointments* by default. An option for an appointment means that one has the right to convert the option into an appointment, but if one does not, nothing will happen. Consider the servicing of an air conditioner. Imagine that every five years you received an e-mail from the local government stating that an appointment has been made for you to have your air conditioner serviced at a certain date and time. If you don't want that appointment, you do nothing and nothing happens. If you do want the service at that time, you click through on the e-mail to accept, and a service person shows up at your house at the specified time. If you want the appointment at a different time, you can click to reschedule. This example employs two configuration settings. The first is to receive options for appointments via e-mail. The *simple default* for this is to be "yes", and can be set to "no" to preserve choice. The second is to have the appointment take place. The *choice-option default* for this setting is "no" (the appointment will not take place unless confirmed), but the consumer has the opportunity to change this through prompted *manual adjustment* (the prompt being the e-mail). One might think that this is nothing more than getting reminders by default, but it is. A unilateral offer to commit to a particular time does have value, just as options in financial markets do. They save the consumer some deliberation and effort because it is easier to confirm than it is to generate a proposed time and reach out to the other party. (Consider how often you get e-mails asking you to propose a meeting time from a person who could have done the same.)

Beyond visits that take place at home, appointment options could be used to schedule services at the vendor's place of business (such as changing oil or inflating or replacing tires). The result could be better maintained equipment and shelter that consumes less energy. Vendors should appreciate the business as well, though coordination by a trusted authority (e.g., a local government) would be necessary.

Defaults and Devices

Defaults built into technology have strong effects. When installing software, many of us click Next in response to most every question the installer asks. When installing web browsers, many people do not reset the default home page, and it has been argued that AOL's $4 billion purchase of Netscape was motivated less by its software and more by its default home page, which was not changed by some 40% of users (Kesan and Shah, 2006). Technology defaults are so powerful that companies like Google and Microsoft face legal regulations regarding the degree to which they can make a search engine a default (Johnson and Goldstein, 2006).

Changing human behavior is hard, but changing the behavior of devices usually boils down to trivial engineering. We live in an age in which the size and cost of computers is approaching zero and the cost of powerful software (such as the Linux operating system) is free, both in the sense of *gratis* and *libre*. We suspect that many of the ideas that follow have already been implemented, or could be implemented at very low cost.

Consider the case of standby electricity, the small amounts of power consumed by appliances (such as television sets) in a sleeping state that allows them to be powered on by remote control (as opposed to manually flipping a switch). Standby electricity is estimated conservatively by Dietz et al. (2009, Appendix, p. 6) at 440 kilowatt hours per household annually. That is roughly 4% of household electricity consumption in the United States, and by appliances that no one is using. Since widespread adoption of Energy Star appliances would reduce standby power consumption by 80%, some improvement could be made with the above ideas for influencing energy-efficient online purchasing decisions.

The remaining 20% could be attacked as well. The default configuration of many appliances is to enter standby mode when turned off by remote control. The alternate setting of shutting appliances all the way down is unattractive as it would essentially undo the convenience of standby power. A *predictive default* solution would be to move an appliance from standby to off when no one is around to use it, and to move it from off to standby when someone might. What is needed is a *people presence detector* that monitors when people are at home and awake (via sensors at the doors and light switches, or by motion and sound detectors) incorporated into a meta-appliance that controls the standby power consumption of televisions, stereo systems, computer monitors, or anything the requires a human being present to be used. No magic is necessary to move an appliance between standby and off—all one needs is to plug it into an outlet that can be turned on or off remotely. Ironically, the meta-appliance would itself consume standby electricity, but the net savings are obvious because of the one-to-many effects.

Predictive defaults could reduce the energy needed for heating water and regulating the temperature of homes. Going beyond people presence detectors, *people presence predictors* could record people's comings, goings, and behaviors (again by monitoring light switches, doors, and manual adjustments to thermostats) and use simple learning algorithms to predict when they would likely want the heat or air conditioning on, or hot water available. On a daily basis, it could switch appliances from low- to regular-power modes when they are likely to be used. Similarly, it could detect when the occupant is out of town and reduce power consumption accordingly.

As a result of engaging in this exercise, the previous classification of defaults (Goldstein et al., 2008) is refined to introduce some new concepts, clean out some old ones, and to clarify some terminology. In addition, some general purpose policy ideas like options for appointments and smart consideration sets have arisen. Before concluding, we offer some suggestions as to how these concepts and ideas might apply to the 25 objectives that aided in their creation.

25 Objectives and at Least 25 Ideas

1. Increase the proportion of windows without drafts.
   a. Options for appointments (simple defaults and prompted manual adjustment)
   b. Smart consideration sets for new purchases (predictive defaults)
   c. "Energy Star First" display options for new purchases (simple defaults)
2. Better align heating and air conditioning settings to time of day, season, and presence of people in the home.
   a. People presence detectors (sensory default)
   b. People presence predictors (predictive default)
3. Decrease the average amount of standby electricity used by appliances.
   a. Smart consideration sets for new purchases (predictive defaults)
   b. "Energy Star First" display options for new purchases (simple defaults)
   c. People presence detectors (sensory default)
   d. People presence predictors (predictive default)
4. Decrease the average temperature settings of clothes washers.
   a. Clothes washers that detect the color of clothing and set temperatures accordingly (sensory default)
   b. Clothes washers that ask color and set temperature accordingly (forced choice then adaptive auto completion)
5. Decrease the average temperature settings of water heaters.
   a. For new purchases, manufacturers set heaters to recommended levels, which user can readjust (simple default)
   b. Smart consideration sets for new purchases (predictive defaults)
   c. "Energy Star First" display options for new purchases (simple defaults)

  d. People presence detectors (sensory default)
  e. People presence predictors (predictive default)

6. Decrease the weight carried in automobile trunks.
   a. No good ideas arose.
7. Increase air conditioner tune-up rates.
   a. Options for appointments (simple defaults and prompted manual adjustment)
8. Increase automobile oil change rates.
   a. Options for appointments (simple defaults and prompted manual adjustment)
9. Increase heating, ventilation, and air-conditioning filter change rates.
   a. Options for appointments (simple defaults and prompted manual adjustment)
10. Increase the proportion of attics insulated.
    a. Options for appointments (simple defaults and prompted manual adjustment)
11. Increase the proportion of drivers who lessen acceleration and deceleration rates.
    a. No good ideas arose.
12. Increase the proportion of drivers who maintain 55 mph speed.
    a. Have cruise control turn on by default when 55 mph speed or greater is maintained for more than 10 minutes (predictive default).
13. Increase the proportion of drivers who use cruise control.
    a. Have cruise control turn on by default when 55 mph speed or greater is maintained for more than 10 minutes (predictive default).
14. Increase the proportion of Energy Star furnaces, air conditioners, water heaters, refrigerators, and clothes washers in use.
    a. Smart consideration sets (predictive defaults)
    b. "Energy Star First" display options for new purchases (simple defaults)
15. Increase the proportion of fuel-efficient vehicles in use.
    a. Smart consideration sets (predictive defaults)
    b. "Energy Star First" display options for new purchases (simple defaults)
16. Increase the proportion of LED televisions in use (relative to plasma screens)
    a. Smart consideration sets (predictive defaults)
    b. "Energy Star First" display options for new purchases (simple defaults)
17. Increase the proportion of low-flow showerheads in use.
    a. Smart consideration sets (predictive defaults)
    b. "Energy Star First" display options for new purchases (simple defaults)
    c. Options for appointments for replacement (simple defaults and prompted manual adjustment)
18. Increase the proportion of low-rolling-resistance (LRR) tires in use.
    a. Smart consideration sets (predictive defaults)
    b. "LRR First" display options for new purchases (simple defaults)

  c. Options for appointments for tire replacement (simple defaults and prompted manual adjustment)
19. Increase the proportion of triple-pane windows in use.
  a. Smart consideration sets (predictive defaults)
  b. “Energy Star First” display options for new purchases (simple defaults)
  c. Options for appointments for window replacements (simple defaults and prompted manual adjustment)
20. Increase the proportion of wash loads dried on the line.
  a. If the outdoor temperature is warm, clothes washer asks if it should tumble dry (sensory default)
  b. Options for deliveries. Like options for appointments, but recipient would receive an option to have a free clotheslines delivered to their home (simple defaults and prompted manual adjustment)
21. Increase tire inflation rates.
  a. Options for appointments, combined with other auto maintenance objectives (simple defaults and prompted manual adjustment)
22. Increase vehicle tune-up rates.
  a. Options for appointments (simple defaults and prompted manual adjustment)
23. Reduce the number of motor vehicle trips made per day.
  a. Online mapping software could list public transportation alternatives before providing driving directions (simple defaults).
24. Reduce the proportion of single-passenger motor vehicle trips.
  a. Online mapping software could list public transportation alternatives before providing driving directions (simple defaults).
25. Reduce the time vehicles spend idling.
  a. After 5 minutes of idling, automobile asks driver if it should shut down (sensory default)
  b. For busses, a GPS tracks places where a bus idles for more than 5 minutes on its route. When the bus next stops at such a place for 1 minute, it automatically shuts off after a warning period (predictive defaults)

CONCLUSION: PRESERVING CHOICE

Since defaults are so powerful, one might expect that the changes proposed would have substantive effects. Are defaults acceptable in societies that put a high value on freedom of choice? In the strict sense, defaults preserve free choice, and advocates of libertarian paternalism emphasize this (e.g., Sunstein and Thaler, 2003). At the same time, defaults are manipulative: the evidence is great that they change behavior.

In practice, decisions need defaults. Attempts to make all choice into forced choices would result in citizens spending all their time deciding, and still would not address those who choose not (or who are unable) to choose. Free choice and defaults may seem at odds, but even the most choice-loving societies require them. Furthermore, while a given default configuration may be seen as manipulative, so are its alternatives. One configuration must be chosen and ultimately there is no shortcut to weighing the costs and benefits of making courageous policy decisions.

The acceptability of defaults has much to do with the reasons why defaults are effective in a particular situation. People follow defaults for various reasons. They may interpret them as recommendations (McKenzie, Liersch, and Finkelstein, 2006), or they may see them as indications of what other people might do (Samuelson and Zeckhauser, 1988). People are capable of reasoning about defaults, as consumers make shrewd assumptions about a vendor's motives when they see its choice-option defaults (Brown and Krishna, 2004).

However, apart from situations in which people think and reason about defaults, some default effects may be due to transaction costs or ignorance. If people find it too difficult to choose against the default, or if they do not know how to, we depart from the practice of setting defaults and enter the territory of creating obstacles to choice. Defaults whose effects depend on such barriers are not ideal instruments of policy. Policy makers should design defaults that are nearly as easy to change as to follow, and they may be surprised at how many people prefer intelligent defaults to bans and appeals.

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