

Personalizing Precommitment

Lee Anne Fennell[†]

This Essay examines the potential for law to facilitate tailored precommitments to help people address self-control problems. This flavor of personalized law is unique in that it is voluntarily chosen and self-administered. There are practical and normative limits on the degree to which people can bind themselves in ways that they cannot later escape, but law can offer mechanisms that would help people design and implement flexible precommitments. Research suggests two potential lines for innovation. First, partitioning access to resources may constrain consumption in contexts from dieting to saving, even when the partitions can be unilaterally broken. Second, the chunkiness of the increments in which people make choices can have a powerful influence on behavior. In public finance and regulatory contexts, law could support choice design and menu personalization aimed at harnessing these effects, based on individualized data, to better serve people's own objectives.

INTRODUCTION

Many people experience self-control problems in domains from saving money to losing weight. Just as externalities can cause private payoffs to diverge from social payoffs in interpersonal contexts, the intrapersonal version of externalities—“internalities”—can cause the payoffs for the present self to diverge from what is in an individual's overall, long-term best interest.¹ Thus, the present self may be inclined to pay too little attention to how her decisions will affect her later selves. Compounding this tendency is what Professor Drazen Prelec has termed “scale mismatch,” where the relevant benefit (or cost) of a decision is experienced only at an aggregate scale, while the

[†] Max Pam Professor of Law, The University of Chicago Law School. I thank Ellen Aprill, Adam Hirsch, and participants in The University of Chicago Law Review Symposium on Personalized Law and in the 2018 Annual Meeting of the American Law and Economics Association for helpful comments and questions. Research support from the Harold J. Green Faculty Fund and the SNR Denton Fund is also gratefully acknowledged. Some of the analysis contained here will appear in Lee Anne Fennell, *Slices and Lumps: Division and Aggregation in Law and Life* (Chicago, forthcoming 2019).

¹ See R.J. Herrnstein, et al, *Utility Maximization and Melioration: Internalities in Individual Choice*, 6 J Behav Dec Making 149, 150 (1993) (defining an “internality” as a “within-person externality”).

corresponding inputs must be made at a decision-by-decision scale.² To take familiar examples, attaining a fitness goal, losing weight, saving up for a down payment, or completing a writing project all require consistent inputs of effort or forbearance over an extended period of time before a favorable return can be experienced. An individual must get many temporal selves to cooperate on a project that even a small subset holds the power to sabotage.³

These difficulties can cause people to overcorrect with rigid rules that prove either unsustainable or unnecessarily welfare reducing. Government may get involved as well, typically with command-and-control approaches or untailed corrective taxes. But given heterogeneity among individuals, these approaches coercively constrain choice in ways that are likely to miss the mark for large numbers of people. This Essay examines an alternative: enabling people to make precommitments that are tailored to their own preference patterns and that embed the flexibility to make bounded exceptions as new circumstances arise. Emerging research suggests some ways to approach that goal through attention to partitions and menus.⁴ Parts I and II consider how partitioning and menu-design strategies, respectively, could support personalized precommitments. Part III examines how law might advance these efforts.

I. SEGMENTS AND PARTITIONS

The way in which resources or contributions are broken into segments can influence the success of informal solutions to

² Drazen Prelec, *Values and Principles: Some Limitations on Traditional Economic Analysis*, in Amitai Etzioni and Paul R. Lawrence, eds., *Socio-economics: Toward a New Synthesis* 131, 134–35 (M.E. Sharp 1991).

³ Intrapersonal dilemmas are often metaphorically framed as conflicts among different “selves” in the literature, although the precise framing varies. See, for example, Jon Elster, *Introduction*, in Jon Elster, ed., *The Multiple Self* 1, 6 (Cambridge 1985) (discussing “the notion of the divided self” that suffers “some breakdown of internal communication in the mind”). See also generally Richard H. Thaler and H.M. Shefrin, *An Economic Theory of Self-Control*, 89 J Pol Econ 392 (1981) (modeling the interactions between a “planner” self and a series of present-focused “doer” selves).

⁴ The approaches this Essay discusses are only a subset of the many ways that personalized precommitments might proceed. For example, self-imposed “sin taxes” could be personalized based on the preferences of successive selves. See generally, for example, Jay Bhattacharya and Darius Lakdawalla, *Time-Inconsistency and Welfare* (National Bureau of Economic Research Working Paper No 10345, Mar 2004) (proposing “smoking licenses” that smokers could purchase in order to commit their future selves to pay compensated cigarette taxes), archived at <http://perma.cc/8TBN-38NS>. See also Lee Anne Fennell, *Revealing Options*, 118 Harv L Rev 1399, 1482–85 (2005) (describing a choose-your-own-sin-tax scheme).

collective action problems.⁵ The same is true when the harvesters or contributors are different temporal versions of the same person.

A. Segmentation and Consumption

Consider a person who is trying to diet. It is well known that portion sizes can influence consumption. Research also suggests the existence of a “unit bias,” in which people tend to regard one unit of a good as the appropriate amount to consume—at least within limits.⁶ For example, people may be inclined to consume exactly one cookie in a social setting, whether the cookie has a diameter of three inches or five inches. For food that does not come presegmented, “harvesting equipment” like serving spoons or tongs introduce a form of artificial segmentation that may provide cues about the appropriate amount to take. People seeking to control their intake may, therefore, try to control the size and segmentation of the units that they encounter.⁷

Significantly, segmentation enables people to meter and monitor consumption—their own and that of others. This can be instrumental in solving both interpersonal and intrapersonal dilemmas.⁸ For example, the physical partitioning of chocolates (by wrapping them) appears to slow consumption among those who reported a desire to constrain their consumption.⁹ A possible explanation is that partitions underscore the amount being consumed or draw attention to the consumption choice.¹⁰ Indeed, simply dividing tempting foods into smaller pieces (for

⁵ See, for example, Lee Anne Fennell, *Slicing Spontaneity*, 100 Iowa L Rev 2365, 2368–77 (2015).

⁶ See Andrew B. Geier, Paul Rozin, and Gheorghe Doros, *Unit Bias: A New Heuristic That Helps Explain the Effect of Portion Size on Food Intake*, 17 Psychological Science 521, 521 (2006) (proposing the heuristic of “unit bias,” defined as “a sense that a single entity (within a reasonable range of sizes) is the appropriate amount to engage, consume, or consider”).

⁷ For similar reasons, people may avoid bulk purchases of tempting goods like cigarettes in an effort to ration their consumption, even if it means forgoing volume discounts. See, for example, Klaus Wertenbroch, *Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice*, 17 Marketing Sci 317, 318–23 (1998).

⁸ On the role of monitoring in solving common pool resource problems, see Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* 45, 94–100 (Cambridge 1990).

⁹ Amar Cheema and Dilip Soman, *The Effect of Partitions on Controlling Consumption*, 45 J Marketing Rsrch 665, 667–68 (2008) (finding that participants who were averse to overconsumption spread their consumption of a box of six chocolates over a larger number of days when the chocolates were individually wrapped).

¹⁰ See id at 674–75.

example, cutting brownies into smaller pieces) appears to reduce consumption.¹¹

Segmentation that facilitates metering and monitoring can also help people avoid consuming *less* than is in their long-term interest. In one experimental treatment of a replenishing resource dilemma, each participant was given exclusive control of a sector of the (virtual) harvesting terrain, which made the game an intrapersonal commons problem.¹² When the number of available resource units remained visible as the game progressed, participants got closer to the optimum harvesting strategy than in any other treatment. But when the current state of the resource units was *not* visible, participants harvesting from their own terrain were overly cautious and took too little of the resource.¹³ We might see the same effect, for example, in instances of overdieting or overwork. If it is opaque to the individual how much progress she is making, she may fail to consume as much food or leisure as would be optimal.

Tempting snacks that are packaged in single-serving pouches might be expected to produce a constraining effect (both by enabling metering and by suggesting a serving norm) and, for some, a liberating effect (knowing that one can open up a packet without ruining one's diet altogether). Such single-serving packages are increasingly available, and people appear willing to pay extra for them, but the evidence of their effects is mixed.¹⁴ Holding the size of the food morsels themselves constant, dividing treats up among a larger number of smaller packages can at times actually lead to more consumption. For example, researchers found that packaging six pieces of brownie in one bag led to *less* brownie consumption than packaging the same six pieces of brownie in three smaller bags containing two pieces each.¹⁵

¹¹ See, for example, Gudrun Roose, Anneleen Van Kerckhove, and Elke Huyghe, *Honey They Shrank the Food! An Integrative Study of the Impact of Food Granularity and Its Operationalization Mode on Consumption*, 75 J Bus Rsrch 210, 217 (2017).

¹² Robert C. Cass and Julian J. Edney, *The Commons Dilemma: A Simulation Testing the Effects of Resource Visibility and Territorial Division*, 6 Hum Ecol 371, 374–77 (1978).

¹³ See id at 378, 383.

¹⁴ See Roose, Van Kerckhove, and Huyghe, 75 J Bus Rsrch at 210–11 (cited in note 11).

¹⁵ Id at 215–17 (describing the research design and discussing the results). See also Myla Bui, Andrea Heintz Tangari, and Kelly L. Haws, *Can Health “Halos” Extend to Food Packaging? An Investigation into Food Healthfulness Perceptions and Serving Sizes on Consumption Decisions*, 75 J Bus Rsrch 221, 224–26 (2017) (finding that undivided packages containing sixteen discrete pieces led to more consumption than when subdivided into packets of four items for items perceived as healthy (granola bites) but not for items perceived as unhealthy (cookies)).

One possible explanation for this result is that packaging operates to redefine the choice menu.¹⁶ Whereas the single sack containing six segments may have appeared to offer six discrete consumption intervals (one for each piece), the three-sack arrangement may have reduced the perceived menu to three nodes: two pieces, four pieces, and six pieces. While a participant could have chosen to eat just one piece of brownie from a given sack, bundling the two brownies together may have made it more likely that both would be consumed once the choice was made to open a new sack. The possibility that the size of choice intervals can influence behavior will be discussed further in Part II.

B. Granularity in Contributions

Just as the segmentation of resources can influence cooperation, so too can the segmentation of units of effort or time. There are two factors in play here—how easy or feasible it is for different temporal selves to make contributions and whether the different selves will be motivated to make those contributions. The first factor is a function of the *granularity* of the inputs, while the second factor depends on the *payoff structure* that the selves confront—which often turns on how goals are defined and how different inputs stack together to achieve them.

Consider first granularity. In multiperson collective projects like barn raising and quilt making, as well as more newfangled collaborative computing projects, much turns on the segments in which tasks or other contributions can be parceled out to participants. The ideal, as Professor Yochai Benkler explains, is to find a level of granularity that lets people make contributions that are meaningful yet manageable enough to fit within their schedules.¹⁷ So too when the collaborators are different versions of oneself.

Professors Sendhil Mullainathan and Eldar Shafir use the metaphor of packing to illustrate granularity, contrasting the ease with which jellybeans can be packed into a bag with the

¹⁶ For a different interpretation, see Roose, Van Kerckhove, and Huyghe, 75 J Bus Rsrch at 212, 217–18 (cited in note 11) (arguing that the physical partitioning of food leads to a self-control conflict around eating, producing restraint among certain eaters, whereas the bundling of food into small packages did not trigger such a conflict). See also generally Bui, Tangari, and Haws, 75 J Bus Rsrch 221 (cited in note 15) (reporting findings about the effects of packaging partitions that suggest people may rely on internal self-control for unhealthy foods but eat apparently healthy foods without restraint).

¹⁷ Yochai Benkler, *Sharing Nicely: On Shareable Goods and the Emergence of Sharing as a Modality of Economic Production*, 114 Yale L J 273, 336 (2004).

difficulty of packaging up an assortment of whole fruit.¹⁸ Because the former is highly granular, the different pieces automatically settle around each other to efficiently use the space available, whereas careful packing is required to fit bananas, pineapples, and oranges into a relatively constrained space.¹⁹ Making tasks more granular can make it easier for people's various temporal selves to make contributions. For example, an author writing a book might break the book into chapters, and the chapters into subsections, so that it is possible to fit meaningful stints of work into an otherwise busy schedule. If tasks do not come in easy-to-divide segments, however, more time and effort must be devoted to slicing up the tasks and reaggregating the results. And dividing up work among more selves, just like dividing up work among more workers, presents management challenges and raises concerns about shirking. This brings us to the second factor—the question of motivation.

When faced with a large project, people are often advised to break it down into manageable chunks so that each is less daunting to accomplish.²⁰ Sometimes this advice is meant as a trick to get a person working on a task that is, in fact, inherently lumpy or indivisible in character. When tasks are lumpy, a small initial push may be enough to alter incentives.²¹ Thus, we have books like *Writing Your Dissertation in Fifteen Minutes a Day*,²² which recommends a facially inadequate unit of effort that is designed to help people overcome the fear of working on a large project. Someone who has committed even fifteen minutes to the project, the theory goes, will have become so engrossed in the work that she will keep going. If she can continue to trick herself into beginning her work day after day, eventually she will end up with a dissertation.

Nonetheless, breaking tasks down is a double-edged sword from a motivational perspective, especially if the tasks are not inherently lumpy or intrinsically engrossing. The smaller the

¹⁸ Sendhil Mullainathan and Eldar Shafir, *Scarcity: The New Science of Having Less and How It Defines Our Lives* 84–85 (Picador 2013).

¹⁹ See *id.*

²⁰ See Thomas C. Schelling, *Choice and Consequence* 79 (Harvard 1984).

²¹ See Mark P. Gergen, *The Use of Open Terms in Contract*, 92 *Colum L Rev* 997, 1015–16 (1992) (discussing agency contexts in which getting someone to start work on a lumpy task can incentivize her to complete it).

²² Joan Bolker, *Writing Your Dissertation in Fifteen Minutes a Day: A Guide to Starting, Revising, and Finishing Your Doctoral Thesis* (Owl Books 1998). See also Joli Jensen, *Write No Matter What: Advice for Academics* 17, 20–21 (Chicago 2017) (advising spending at least fifteen minutes per day on a writing project).

chunks, the easier each one is to schedule and complete, but the more each of them seems like a drop in the bucket relative to the overall goal, and the less it might seem to matter whether any particular task gets accomplished on any particular day. If units of effort are highly granular but goals are lumpy, the problem of scale mismatch arises.²³ Each self may find her best intentions undermined by the realization that whatever she does today will come to nothing if her unreliable other selves fail to follow through.

What is needed is a way to commit each of the selves to doing her part. At times, this may require focusing not on the work units themselves but rather on the time spent *not* working. For example, breaks from work might be segmented in ways that discourage overconsumption so that continuing beyond a set limit feels a bit like opening another package of snacks.

C. Partitioning Money

Saving money is difficult. Not only must one get one's various selves to contribute to the savings fund, one must also keep one's various selves (as well as friends and family members) from raiding the stockpile. As Professor David Laibson has observed, people can use illiquid goods like homes as a form of forced savings, although the ability to readily access their equity through mechanisms like home equity loans can undermine the potency of this strategy.²⁴ But tying up money so that it can never be accessed presents risks too—in the case of a financial shock, it can greatly limit one's options. Often, people want neither an ironclad and unopenable lockbox for their money nor an open-ended ATM that can be accessed at a whim, but rather something in between.

Could a type of permeable partitioning similar to that which appears to slow food consumption help in achieving this balance? Work by Professors Dilip Soman and Amar Cheema offers some support for this idea.²⁵ They conducted a study in rural India involving married laborers with children, all of whom were engaged in the same profession and earning the same amount.²⁶ The experimental design involved setting aside part of

²³ See Prelec, *Values and Principles* at 134–35 (cited in note 2).

²⁴ David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q J Econ 443, 444–45, 461–63 (1997).

²⁵ See generally Dilip Soman and Amar Cheema, *Earmarking and Partitioning: Increasing Saving by Low-Income Households*, 48 J Marketing Rsrch S14 (2011).

²⁶ Id at S16.

each worker's weekly pay in sealed envelopes, earmarked as savings. Some of the workers had all of each week's earmarked savings placed in one envelope, while others had it partitioned into two envelopes. The experimental design also varied the savings target across these conditions so that some workers had about 6 percent of their wages sealed into either one or two envelopes, while others had a target twice that high, 12 percent, sealed into either one or two envelopes.²⁷ Finally, half of the participants received their earmarked savings in plain white envelopes, while the other half received the savings in envelopes printed with photographs of their children.²⁸

The study found that partitioning had a significant effect in increasing savings. Even though the two-envelope households with high savings targets were very likely to open *one* envelope during a given week, the partitioning helped to guard the rest of the savings from being raided. This partitioning effect was accentuated when children's pictures appeared on the envelopes.²⁹ Those with the high savings target and an unpartitioned single envelope saved the least.³⁰ The researchers concluded that "a high saving target helps when partitions are present but hurts when partitions are absent. Because the high saving target is difficult to maintain, the presence of partitions prevents households from sliding down a slippery slope of goal failure."³¹

Sometimes the function of partitions is not to discourage spending but rather to encourage spending for particular purposes—which may, counterintuitively, make it easier to save money in other parts of the budget. Prelec and his coauthor, Professor George Loewenstein, provide this example: A couple was deciding between two apartments—one that was very expensive but near many good restaurants and one that was much less expensive but a cab ride away from the good restaurants.³² The pair calculated that the cheaper apartment would save them so much money that they could spend freely on cabs and still come out well ahead, but they feared they would be deterred from actually going to the good restaurants by the high marginal

²⁷ *Id.* at S17.

²⁸ *Id.*

²⁹ Soman and Cheema, 48 *J Marketing Rsrch* at S18–19 (cited in note 25). The children's pictures also helped participants with the lower savings target avoid opening an envelope at all.

³⁰ *Id.* at S19.

³¹ *Id.*

³² Drazen Prelec and George Loewenstein, *The Red and the Black: Mental Accounting of Savings and Debt*, 17 *Marketing Sci* 4, 20 (1998).

cost of the cab rides. Their solution was to set aside money for cab rides to restaurants, as a means of precommitment.³³

More broadly, setting aside money for small splurges and occasional treats may help households guard against spending too much on large, irreversible purchases.³⁴ A lumpy purchase like a car or a home, once made, cannot be scaled back after the fact. By contrast, an envelope of money set aside for restaurant meals or discretionary cab rides can be readily repurposed if an emergency arises.³⁵ Savings obviously serve the same precautionary purpose (and should be part of any family's budget plan), but the way a family formulates its consumption budget can also influence its financial resilience. Counterintuitively, precommitting to some relatively frivolous short-term expenditures can keep valuable slack in the budget to address financial shocks while at the same time interjecting some (bounded) fun into what might otherwise be an overly rigid spending plan.³⁶

The idea of using partitions to segment and earmark money is not new; many people grew up in families that used envelope or coffee can budgeting systems. An interesting question is whether the effects associated with physical partitioning into jars or envelopes can be replicated in virtual space, within ordinary bank accounts or mortgages. Soman and Cheema discuss the possibility of software that could visually represent different "envelopes" or earmarked categories within a single bank account.³⁷ The virtual representations of these envelopes could be digitally adorned with pictures designating goals, be accompanied by sound effects or animations when "opening an envelope," or even require more steps (or time delays) to open certain envelopes. Similarly, homeowners could commit in advance to segment their home equity so that it would be possible to access, say, only half of it within a given period of time or in any particular transaction. Below, I discuss some ways that law and policy could support experimentation in this domain.³⁸

³³ Id.

³⁴ See Elizabeth Warren and Amelia Warren Tyagi, *The Two-Income Trap: Why Middle-Class Mothers and Fathers Are Going Broke* 164–66 (Basic Books 2003) (suggesting that families keep some discretionary expenditures in their budget while finding ways to reduce fixed and long-term financial obligations).

³⁵ See id at 164–65.

³⁶ See id at 165.

³⁷ Soman and Cheema, 48 *J Marketing Rsrch* at S20–21 (cited in note 25).

³⁸ See Part III.

II. MENUS AND PATTERNS

Segmentation effectively creates a menu of options defined by the number of discrete units available to consume or access, whether brownies or envelopes of money. But menus can be more explicitly manipulated to advance people's self-control objectives.³⁹ This need not mean eliminating all tempting choices. Indeed, well-designed menus might enable people to make bounded exceptions to general rules—a way of choosing a behavioral pattern that includes some variation.

A. Pruning Menu Choices

Most economic analysis assumes that choices are made from a continuous menu. As a result, standard graphs translate any disconnect between private and social payoffs (or between a person's short- and long-term interests in the intrapersonal context) into a corresponding deadweight loss. The analysis changes profoundly, however, when people's choices come in discrete intervals or chunks. Sometimes this chunkiness will render spillovers irrelevant to behavior; the individual ends up making the socially optimal (or intrapersonally optimal) choice even though other people (or other selves) are affected by her choice.⁴⁰ In other cases, however, the chunkiness can drive an individual's choice even further from the social optimum.⁴¹

Consider, for example, the effect of removing a medium drink size from the menu. This creates a forced choice between small and large sizes (or multiples of those sizes). The effect of this change is indeterminate—some people who would have consumed the medium size will consume less (drop down to the small size), while others will consume more (step up to the large size). But suppose that tapping into an individual's own consumption data would reveal which of these two effects would dominate. An individual could then figure out how to adjust the menu to pursue a goal of consuming less (or more). While restaurants and stores cannot adjust their physical offerings for each customer, online ordering apps could enable profile-based

³⁹ See Faruk Gul and Wolfgang Pesendorfer, *Temptation and Self Control*, 69 *Econometrica* 1403, 1403–04 (2001).

⁴⁰ See Fennell, 100 *Iowa L Rev* at 2377–81 (cited in note 5) (examining and illustrating this point). See also James M. Buchanan and Wm. Craig Stubblebine, *Externality*, 29 *Economica* 371, 374–77 (1962) (distinguishing Pareto-relevant from Pareto-irrelevant externalities).

⁴¹ See Fennell, 100 *Iowa L Rev* at 2381–82 (cited in note 5).

customization that simply removes certain sizes from a customer's default option set.

An important and counterintuitive aspect of this analysis is that people would not necessarily want to take the largest sizes off the menu. In fact, offering *only* a larger size can sometimes be a highly effective way to deter consumption. Imagine that you are walking past a drugstore and have a sudden craving for a regular-sized (1.5 ounce) candy bar. This drugstore, let us suppose, has decided to stop offering single-serving candy bars to its customers, although it still sells larger bags and multipacks of candy. You discover that you can buy a value pack containing six bars of the candy you had been planning to buy at a price four times higher than what the single candy bar would have cost. It's possible you would go ahead and buy the value pack. But despite your craving and the favorable per-ounce cost, there's a decent chance you would pass it up—you just don't want *that much* candy.

To determine which effect will dominate, we need to know more about the elasticity of your demand for immediate chocolate.⁴² In short, you would need exactly the kind of data about past consumption that is increasingly available. Of course, even if you pass up the larger quantum of candy, it isn't clear that the constrained menu served your best interests—that depends on whether your originally planned single-bar purchase would have undermined your overall life goals as opposed to fitting comfortably and deliciously within them. Nonetheless, it is interesting that offering only a *larger* size than most people want—a lumpier choice—could potentially *curtail* consumption among some individuals who would otherwise struggle with self-control issues. The ability for such a person to opt into a world in which only large packages of candy are available could be quite valuable—enabling buying in quantity for events and parties while effectively removing the temptation to consume a little bit now and then.

Consider how predictions about future behavior play out here. Some people, well attuned to their self-control struggles, might say, "I'm not getting that big package of candy because then I'd just eat it all." Others with similar self-control problems but without awareness of those problems might say, "I'm not

⁴² For an examination of the elasticity of consumption in response to changes in portion size, see generally Natalina Zlatevska, Chris Dubelaar, and Stephen S. Holden, *Sizing Up the Effect of Portion Size on Consumption: A Meta-analytic Review*, 78 *J Marketing* 140 (2014).

buying that big package of candy because I'd just eat one bar and throw out the rest—it's not a good value." In other words, both sophisticated and naïve individuals with self-control problems might well resist buying the multipack but for opposite reasons—one because she expects to eat all the candy, and the other because she doesn't.⁴³ Even though the naïf is wrong about how much of the chocolate she would actually eat if she bought the pack—from a value-for-money perspective, the purchase would probably work out just fine—her reluctance to make the purchase on value grounds turns out to protect her from a purchase that would have tempted her into overconsumption.⁴⁴

A creative use of supersizing as a self-control tool was hypothesized by Professors Ted O'Donoghue and Matthew Rabin.⁴⁵ They envisioned a plan in which people who wished to purchase cigarettes would be required to first obtain a special photo ID that would cost \$5,000 and would entitle its bearer to 2,500 tax-free packages of cigarettes. Because only those who planned to smoke a great deal would get their money's worth out of the license, it would attract only those who had decided in advance to pursue a cigarette addiction and not those who planned to smoke just a little and then quit.⁴⁶ If most long-term smokers fall into the latter category, then a decision made on value grounds could sidestep a self-control trap.

B. Rules, Firewalls, and Patterns

Product sizes and quantities are just one example of how menu design might influence choices. Consider how rigid personal rules (like "no cake" in the dieting context) implicitly

⁴³ See Ted O'Donoghue and Matthew Rabin, *Studying Optimal Paternalism, Illustrated by a Model of Sin Taxes*, 93 Am Econ Rev 186, 189–90 (2003) (presenting an example in which "naïfs" who do not expect to encounter self-control problems behave the same way as "sophisticates" who are aware of their self-control problems—but for very different reasons).

⁴⁴ For similar mechanisms, see *id.* (explaining how allowing people to opt into a scheme that taxes potato chips and subsidizes carrots could encourage the participation—on purely financial grounds—of those who do not expect to be, but would be, tempted to eat unhealthy foods); M. Keith Chen and Alan Schwartz, *Intertemporal Choice and Legal Constraints*, 14 Am L & Econ Rev 1, 5–6 (2012) (discussing how illiquid savings instruments that attract naïfs for the higher interest rate could wind up protecting them from themselves).

⁴⁵ O'Donoghue and Rabin, 93 Am Econ Rev at 190 (cited in note 43).

⁴⁶ *Id.* For perspectives on the rationality of addiction, compare generally Gary S. Becker and Kevin M. Murphy, *A Theory of Rational Addiction*, 96 J Pol Econ 675 (1988), with Jonathan Gruber and Botond Köszegi, *Is Addiction "Rational"? Theory and Evidence*, 116 Q J Econ 1261 (2001).

construct menus pruned to just two choices, an on-off binary of compliance or noncompliance. By conceptually bundling together all instances of a given choice and proclaiming a once-and-for-all answer, rules eliminate the need for case-by-case deliberation as each tempting situation arises.⁴⁷ Such rules are, unsurprisingly, a common self-control strategy.⁴⁸ And the reason that they can be so effective—the extreme chunkiness of the choices they present—is also the reason why they often fail.

Rules change the payoff structure associated with the choices that they govern, both by reducing the costs of making the “better” choice by rendering it more automatic and by artificially raising the costs associated with departing from it. This stake-raising characteristic of personal rules has both positive and negative effects.⁴⁹ On the plus side, it tends to enlarge the decision unit so that people view the operative choice as one between aggregate patterns of conduct, rather than merely between individual acts.⁵⁰ This reframing can be extremely valuable in settings in which one pattern, such as sobriety, plainly dominates another pattern, such as alcoholism, but at each decision point the chooser would prefer having a drink to not having a drink.⁵¹

But rules have their costs as well. By raising the stakes, they make each failure more monumental than its direct implications would suggest. Like take-it-or-leave-it offers in bargaining settings, rules attempt to remove intermediate alternatives (for example, “cake once in a while”) to push actors toward the preferred chunky choice (“cake never”)—but not without the risk that the actor will decide to switch to a different chunky choice (“cake anytime”). A lapse, instead of causing the lapser to redouble her efforts, can too often have the opposite effect of undermining her efforts and inducing further failures.⁵² Thus, we observe what has been termed the “what the hell” effect, where failure to live up to a goal such as a daily caloric

⁴⁷ See George Ainslie, *Breakdown of Will* 112–13 (Cambridge 2001) (explaining how habits bypass the need for continuous negotiation among one’s temporal selves).

⁴⁸ See, for example, George Ainslie, *Picoeconomics: The Strategic Interaction of Successive Motivational States within the Person* 163–70 (Cambridge 1992); Roland Bénabou and Jean Tirole, *Willpower and Personal Rules*, 112 *J Pol Econ* 848, 867–73 (2004).

⁴⁹ On the bundling and stake-raising character of rules, see, for example, Bénabou and Tirole, 112 *J Pol Econ* at 851–52 (cited in note 48); Ainslie, *Picoeconomics* at 192–93 (cited in note 48).

⁵⁰ On the distinction between acts and patterns, see, for example, Howard Rachlin, *Self-Control: Beyond Commitment*, 18 *Behav & Brain Sci* 109, 115–17 (1995).

⁵¹ See Howard Rachlin, *The Science of Self-Control* 63–65 (Harvard 2000).

⁵² See, for example, Ainslie, *Breakdown of Will* at 148–49 (cited in note 47).

restriction leads the individual to throw aside all caution and eat with abandon for the rest of the day.⁵³

This example illustrates a general principle about what we might call behavioral firewalls. Considered *ex ante*, it can be powerfully motivating to believe that no firewall exists between behaviors so that a single mistake will doom all efforts at pursuing a preferred pattern. If an ex-drinker believes that a single drink will consign her to a life of alcoholism, if an ex-smoker is convinced that one cigarette will make her addicted again, if a dieter believes a single slip will lead to a life of obesity, and if a PhD student believes that a single day spent goofing off means that she will never finish her dissertation, then compliance with rigid, hard and fast rules (no drinking, no smoking, no cake, no goofing off) will be more likely. But once a slip-up occurs, the situation reverses: it is now no longer in the individual's interest to see her single act as an irrevocable choice of the entire disfavored pattern of conduct. Instead, she wants firewalls that will protect her future choices—and her hope of obtaining her goal or preferred consumption pattern—from contamination by the lapse. Allowing a single failure to infect other sectors compounds the problem, but believing that it *will* infect other sectors makes the failure less likely to occur.

The problem of firewalling off lapses illustrates both the value of exceptions and their vulnerability to expansion. Closely related to this dynamic is the undue rigidity that bright-line rules can create for their adherents.⁵⁴ Finding a way to make *bounded* exceptions turns out to be very valuable, yet also very difficult.⁵⁵ Another way to express this problem is to observe, as Professor Howard Rachlin does, that sometimes the most valuable sequence or pattern of conduct for a given individual might not be total abstinence from or complete indulgence in whatever

⁵³ Winona Cochran and Abraham Tesser, *The 'What the Hell' Effect: Some Effects of Goal Proximity and Goal Framing on Performance*, in Leonard L. Martin and Abraham Tesser, eds, *Striving and Feeling: Interactions among Goals, Affect, and Self-Regulation* 99, 101 (Lawrence Erlbaum 1996). See also C. Peter Herman and Janet Polivy, *Dieting as an Exercise in Behavioral Economics*, in George Loewenstein, Daniel Read, and Roy Baumeister, eds, *Time and Decision: Economic and Psychological Perspectives on Intertemporal Choice* 459, 466–68 (Russell Sage 2003).

⁵⁴ See, for example, Ainslie, *Breakdown of Will*, at 143–60 (cited in note 47); Tyler Cowen, *Self-Constraint versus Self-Liberation*, 101 *Ethics* 360, 365–69 (1991).

⁵⁵ See, for example, Herman and Polivy, *Dieting as an Exercise in Behavioral Economics* at 469–70 (cited in note 53) (discussing dietary plans that build in some amount of cheating). See also generally Ran Kivetz and Itamar Simonson, *Self-Control for the Righteous: Toward a Theory of Precommitment to Indulgence*, 29 *J Consumer Rsrch* 199 (2002) (examining the possibility that people could precommit to indulgences).

temptation the person finds problematic.⁵⁶ An individual might instead prefer something in between—stretches of abstinence punctuated by well-spaced instances of indulgence, for example, or a general pattern of moderation.⁵⁷ But how to achieve it? Reverting to an act-by-act method of choosing is not the answer—in many contexts consistently choosing most-preferred acts will generate deeply suboptimal overall patterns.⁵⁸

Very often, then, goals turn out to be lumpy or all-or-nothing simply because it is difficult to come up with a way to make them less so without compromising the benefits of personal rules. Those who manage to follow rigid rules may suffer from behaviors like workaholism or miserliness.⁵⁹ For others, the all-or-nothing nature of a goal may mean shunning lesser efforts that might nonetheless prove valuable. For example, the idea that exercise needs to be conducted at a certain frequency, duration, and intensity may keep people from, say, taking the stairs. Similarly, the idea that “being a vegetarian” is an all-or-nothing proposition may keep people from reducing the amount of meat in their diets.⁶⁰ Finding ways to foster and maintain mixed patterns is thus an important policy challenge. Personalized data can further this endeavor by helping people tailor precommitments that build in flexibility.

III. THE ROLE OF LAW

The discussion to this point suggests why people might find partitioning and menu construction helpful. But why should law get involved? Certainly, private solutions are possible in many instances, and the government should not be the only actor innovating in this domain. However, there are at least two ways that law might contribute to an agenda of making personalized precommitments more broadly available. First, in devising tax and benefit programs, law can take a leading role in incorporating behaviorally informed, data-driven precommitment options. Second, law can support private innovation that enables personalized precommitments.

⁵⁶ Rachlin, *The Science of Self-Control* at 65–69 (cited in note 51).

⁵⁷ See *id.*

⁵⁸ See *id.* at 72–74 (discussing “the primrose path”).

⁵⁹ See, for example, *id.* at 69; Bénabou and Tirole, 112 *J Pol Econ* at 872–73 (cited in note 48).

⁶⁰ For one workaround that retains the power of a bright-line rule, see Ian Ayres, *Vegetarianism as a Sometimes Thing* (Freakonomics Blog, June 19, 2009), archived at <http://perma.cc/XR9T-663U> (adopting vegetarianism on Wednesdays only).

A. Personalized Precommitments in Public Finance

Below, I focus on three contexts where the ideas I discuss above might be incorporated into public finance policy: income tax refunds, nutritional assistance, and retirement savings subsidies.

1. Income tax refunds.

Close to three-quarters of US taxpayers receive tax refunds annually,⁶¹ in amounts averaging nearly \$2,900.⁶² Refunds are primarily generated because people have had more income tax than necessary withheld from their paychecks or receive the Earned Income Tax Credit (EITC), which currently pays out only in the form of a tax refund.⁶³ The lump-sum format appears to be preferred by refund recipients;⁶⁴ it can be used to finance large and often lumpy expenditures that are difficult to save for otherwise. Many refunds go to purchase durable goods like cars or to knock out debt.⁶⁵ The large payment also grants many recipients a temporary sense of financial plentitude that frees them to enjoy extras like dinners out.⁶⁶ Nonetheless, many refund recipients plan to save a portion of their refund.⁶⁷

⁶¹ The IRS cumulative 2017 filing season report for the week ending December 29, 2017 showed 151,916,000 returns processed, with 111,873,000 receiving refunds—about 73.6 percent. *Filing Season Statistics for the Week Ending December 29, 2017* (Internal Revenue Service, July 5, 2018), archived at <http://perma.cc/TE3X-A2VH>. See also Damon Jones, *Inertia and Overwithholding: Explaining the Prevalence of Income Tax Refunds*, 4 *Am Econ J: Econ Pol* 158, 158 (Feb 2012).

⁶² The average refund for the 2017 filing season, as of December 29, 2017, was \$2,895. See *Filing Season Statistics for the Week Ending December 29, 2017* (cited in note 61).

⁶³ The Advance Earned Income Tax Credit (AEITC), which was eliminated after the 2010 tax year, allowed the EITC to be received in advance installments—but very few families elected that option. See *Report to the Joint Committee on Taxation, Advance Earned Income Tax Credit: Low Use and Small Dollars Paid Impede IRS's Efforts to Reduce High Noncompliance*, GAO-07-1110, 3 (Government Accountability Office, Aug 2007), archived at <http://perma.cc/54C3-HSGB> (reporting that only about 3 percent of EITC recipients chose AEITC in tax years 2002 through 2004).

⁶⁴ See *id.* (“IRS officials, other experts, and our prior work suggest that individuals often do not elect the AEITC because they prefer receiving the entire EITC as a lump sum when filing their tax return.”). Another explanation was recipients’ concern about receiving too much money in advance and having to pay some of it back. See *id.*

⁶⁵ See, for example, Andrew Goodman-Bacon and Leslie McGranaham, *How Do EITC Recipients Spend Their Refunds?*, 32 *Econ Persp* 17, 30 (2008) (finding that “recipients spend more on durables than on nondurables in response to the EITC” and that “recipients are far more likely to purchase vehicles after receiving EITC refunds”); Nicholas S. Souleles, *The Response of Household Consumption to Income Tax Refunds*, 89 *Am Econ Rev* 947, 952–53 (1999) (presenting findings examining households’ spending response to refunds, which indicate “most of the response to refunds comes in durables”).

⁶⁶ See Jennifer L. Romich and Thomas Weisner, *How Families View and Use the EITC: Advance Payment versus Lump Sum Delivery*, 53 *Natl Tax J* 1245, 1257 (2000)

A controversial wrinkle in the tax refund story involves the widespread use of refund anticipation products sold by tax preparers.⁶⁸ In addition to getting the money to families a little bit earlier,⁶⁹ these products carry a significant advantage for liquidity-constrained households: the tax preparer does not require an upfront payment for preparation services but can instead take the fee out of the refund when it arrives.⁷⁰ Yet the fact that people are willing to incur costs to receive refunds slightly sooner is not necessarily inconsistent with a desire to save *some* of the proceeds. Could public policy make achieving this goal easier?

One promising avenue involves splitting up the refund.⁷¹ Some people who plan to save part of the refund would find it easier to do so if they could immediately receive a portion of the refund to address especially pressing financial needs—including the need to pay for tax preparation services in order to get the

(concluding based on their study that “[p]eople will splurge during tax time in ways they would not normally”). See also Sarah Halpern-Meehan, et al, *It’s Not Like I’m Poor: How Working Families Make Ends Meet in a Post-welfare World* 43–48 (California 2015) (describing EITC expenditure patterns, which include durable goods, debt repayment, and “treats” like dining out).

⁶⁷ See, for example, Timothy M. Smeeding, Katherin Ross Phillips, and Michael O’Connor, *The EITC: Expectation, Knowledge, Use, and Economic and Social Mobility*, 53 Natl Tax J 1187, 1198 (2000) (finding that “fully one-half of all respondents with qualifying children” in a sample of Chicago-area households “stated that their priorities included saving some or all of their EITC check.”); Matthew Frankel, *The Average American’s 2017 Tax Refund—and How They’ll Spend It*, (USA Today, May 2, 2017), archived at <http://perma.cc/HK4V-3XZL> (citing survey results indicating that over 40 percent of refund recipients planned to save their tax refunds).

⁶⁸ These products have been widely used by EITC recipients and, to a lesser extent, by other tax filers. See Andrew T. Hayashi, *The Effects of Refund Anticipation Loans on the Use of Paid Preparers and EITC Take-Up* *7 (Virginia Law and Economics Research Paper No 2016-9, Oct 27, 2017), archived at <http://perma.cc/A4WM-9B56> (reporting that in 2008 “44% of EITC recipients obtained a RAL [refund anticipation loan] or RAC [refund anticipation check], as compared with only 7% of non-EITC recipients”). Although a regulatory change in 2010 essentially eliminated refund anticipation loans, many recipients now use an alternative product, refund anticipation checks. See *id.* at *3, 11–12.

⁶⁹ By facilitating direct deposit for otherwise unbanked customers, a refund anticipation check makes funds available about one week quicker than having a check sent in the mail. See *id.* at *8; Brett Theodos, et al, *Who Needs Credit at Tax Time and Why: A Look at Refund Anticipation Loans and Refund Anticipation Checks* *33–34 (Urban Institute, Nov 2010), archived at <http://perma.cc/BV2D-3YCU>.

⁷⁰ See Hayashi, *The Effects of Refund Anticipation Loans on the Use of Paid Preparers and EITC Take-Up* at *8 (cited in note 68); Theodos, et al, *Who Needs Credit at Tax Time and Why* at *33 (cited in note 69).

⁷¹ See Theodos, et al, *Who Needs Credit at Tax Time and Why* at 40 (cited in note 69). For an overview of approaches to splitting up the EITC, including a recent Chicago pilot project that delivered half of the EITC in four advance payments, see generally Steve Holt, *Periodic Payment of the Earned Income Tax Credit Revisited* (Brookings Metropolitan Policy Program, Dec 2015), archived at <http://perma.cc/55PZ-8WXF>.

refund in the first place.⁷² For families that have fallen behind on their rent and utilities, even a short delay could make the difference in being evicted or having their power cut off.⁷³ Yet the funds necessary to get current on essential bills and pay for tax preparation need not be temporally bundled with the rest of the refund, some of which might be earmarked for savings.⁷⁴

A step in this direction is the IRS's "split refund" option, which allows taxpayers to designate up to three separate accounts to divide their refunds among.⁷⁵ This approach allows refund recipients to put a portion of their refund directly into one or more savings accounts while placing the balance into a different account for immediate spending.⁷⁶ Recipients can have part of the money put into the form of a paper check or prepaid card—formats that make the split refund mechanism accessible to people without bank accounts. Although allocating money to different accounts is not a binding form of precommitment, it can nonetheless make keeping some of the money in savings a default choice.

Customized segmentation of refunds based on individual needs could produce effects similar to splitting savings among multiple envelopes. But relatively few taxpayers elect the split refund alternative.⁷⁷ Enabling taxpayers to precommit to the split refund itself, perhaps by designating percentage allocations well in advance of tax time, could make this alternative more popular—and more personalized.

⁷² See Theodos, et al, *Who Needs Credit at Tax Time and Why* at 40 (cited in note 69) ("[E]ven taxpayers who do need money right away—whether for paying a preparer or for paying old bills—do not always need all of it.").

⁷³ See Hayashi, *The Effects of Refund Anticipation Loans on the Use of Paid Preparers and EITC Take-Up* at *10 (cited in note 68).

⁷⁴ For example, Brett Theodos and his coauthors describe a low-cost program in which recipients were able to access 80 percent of their anticipated refund right away with the rest provided later after the IRS had processed the return and issued the refund; this latter amount reportedly "tends to stay in the customers' accounts." Theodos, et al, *Who Needs Credit at Tax Time and Why* at 40 (cited in note 71).

⁷⁵ See *Frequently Asked Questions about Splitting Federal Income Tax Refunds* (Internal Revenue Service, June 25, 2018), archived at <http://perma.cc/8XUJ-DLF2>.

⁷⁶ Taxpayers can also use the split refund form to purchase US Series I Savings Bonds. See Form 8888 (Internal Revenue Service, 2017), archived at <http://perma.cc/M8DJ-E5CW>.

⁷⁷ The IRS reported that 469,886 taxpayers split their refunds during the 2016 filing season and an additional 26,097 used some or all of the refund to purchase savings bonds, totaling less than half a percent of the 101,244,000 refund returns processed that season. *Results of the 2016 Filing Season* *5–6 (Treasury Inspector General for Tax Administration, Jan 31, 2017), archived at <http://perma.cc/JEG8-6F2J>. In an innovative effort to increase take-up of the split-refund option (and realize its savings potential), the non-profit Commonwealth, in conjunction with America Saves, offers a prize-linked promotion. See *Save Your Refund* (SaveYourRefund, 2018), archived at <http://perma.cc/BJK2-BBB4>.

2. Nutritional assistance.

The Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps, delivers food assistance to households via electronic benefit cards on a once-monthly basis.⁷⁸ Food purchase and consumption patterns appear to be frontloaded toward the date of the benefit reload, with less food purchased and consumed later in the monthly cycle.⁷⁹ This pattern has prompted discussion about whether recipients should be able to receive their SNAP payments semi-monthly.⁸⁰

The analysis above suggests another alternative: partitioning the benefits so that each weekly or biweekly allotment can be accessed only through the electronic equivalent of deliberately opening an envelope. This form of soft segmentation would offer a more flexible alternative for families with fluctuating purchase needs while still providing a useful budgeting nudge. More generally, the electronic benefit format would make it relatively inexpensive to let recipients slice up their benefits in the ways that best fit their preferences and consumption patterns. For example, households could request that their assistance be segmented into *unequal* allotments if they wish to concentrate spending power within a particular portion of the month rather than spread it evenly.

These segmentation choices could be managed by recipients at prespecified intervals through an online platform or phone app. This same interface could store data about spending patterns and make personalized recommendations for segmentation based on self-reported spending preferences, such as evenly spaced spending (“spread it out”), backloaded spending (“save the best for last”), or mixed spending strategies (“alternate high-low spending weeks”). Bounded exceptions could be incorporated into the benefit card design as well. For example, households could earmark a portion of the allotment to support particular consumption lumps, like a family gathering or a holiday meal, with past spending patterns informing the appropriate size of the earmarked chunk.⁸¹

⁷⁸ See Karen S. Hamrick and Margaret Andrews, *SNAP Participants’ Eating Patterns over the Benefit Month: A Time Use Perspective*, 11 PLOS One 1, 2 (2016).

⁷⁹ See *id.* at 2–3; Jacob Goldin, Tatiana Homonoff, and Katherine Meckel, *Is There an Nth of the Month Effect? The Timing of SNAP Issuance, Food Expenditures, and Grocery Prices* *3 (National Bureau of Economic Research Working Paper, Feb 25, 2016), archived at <http://perma.cc/97RY-E9PG>.

⁸⁰ See Hamrick and Andrews, 11 PLOS One at 15 (cited in note 78).

⁸¹ To be sure, these ideas presume a baseline adequacy in the nutrition assistance program. If the overall amounts allotted to recipients are simply too stingy to adequately

3. Retirement savings subsidies.

The previous examples involve partitioning money or in-kind benefits, but the logic of menu customization could also inform the temporal partitioning of choices or behaviors. Consider subsidies for retirement savings, which can include not only tax-advantaged treatment of earnings but also government or private matching contributions.⁸² For example, the federal government's Retirement Savings Contributions Credit (Saver's Credit) offers earners under certain income limits a nonrefundable tax credit of up to half of their retirement savings contributions up to \$2,000 annually (\$4,000 if married filing jointly).⁸³

From the standpoint of an earner deciding whether to participate in such a plan, the choice can appear quite lumpy. The subsidy may be attractive, but it requires an all-or-nothing decision: placing funds out of reach for most purposes until retirement, unless one wishes to pay heavy penalties. As Professor Adi Libson has observed, taking advantage of the Saver's Credit requires forgoing the option value of money—liquidity—for an extended period of time.⁸⁴ Yet the act of saving over time is a continuous one, and it makes little sense to reward only those savers who make an *ex ante* choice to lock up money for an arbitrarily long period if saving for shorter periods can also generate social benefits. For one thing, enough short periods of savings stacked end to end will eventually make up a long period of savings. But even short-term savings that are never transformed into long-term savings can help families weather financial hard times that might otherwise require them to seek assistance from public or private programs, undertake costly measures like

feed the household for a month, then the problem is not amenable to a precommitment-style solution. In such a case, more intensive resort to food pantries and soup kitchens in the latter portion of the month, after the benefits run out, highlights a basic inadequacy in the assistance program itself—one that could actually be masked by budgeting that spreads the pain temporally rather than concentrating it in ways visible to social service organizations. I thank participants in the Symposium on Personalized Law for raising this point.

⁸² See, for example, *Retirement Savings Contributions Credit (Saver's Credit)* (Internal Revenue Service, Aug 6, 2018), archived at <http://perma.cc/U6QV-SVW9>; *Individual Development Accounts* (Office of the Comptroller of the Currency, Jan 2018), archived at <http://perma.cc/E4MJ-327U>.

⁸³ 26 USC § 25B et seq. See also *Retirement Savings Contributions Credit* (cited in note 82).

⁸⁴ Adi Libson, *Confronting the Retirement Savings Problem: Redesigning the Saver's Credit*, 54 Harv J Legis 207, 233 (2017) (arguing that an important factor that discourages use of the Saver's Credit "is the elimination of the option value of funds, which is especially high for low-income earners").

payday loans or title loans, or even suffer spillover-producing losses like foreclosures.

From this standpoint, it seems odd that the subsidized retirement-savings menu contains only a single choice node: “from now until retirement.” Participants can shorten that interval only by waiting until later in life to start saving for retirement—an approach that has a pernicious effect on savings outcomes. Libson proposes an intriguing alternative: Retirement savings could be rewarded bit by bit, encouraging the desired behavior in bite-sized temporal chunks while simultaneously extending continuous opportunities to exercise the option of withdrawal.⁸⁵ Instead of receiving a lump-sum subsidy at the initial point of committing the money to the retirement fund, individuals could choose to receive the subsidy in installments as they complete each period of savings.⁸⁶ Workers who started saving and then stopped would not incur a penalty but rather would simply cease receiving further benefits now that they are no longer engaging in a subsidy-eligible behavior.⁸⁷

In other words, “saving for retirement” might be a dauntingly lumpy activity for many young earners, but “saving for the next month” might be comfortably achievable—and potentially repeatable. There are downsides. Just as breaking up a difficult task into smaller chunks makes each chunk easier to complete but harder to motivate, the existence of continual exit ramps from the savings plan could draw more people into the program but cause a larger percentage of them to defect from the desired behavior. Although the aggregate empirical effects are unclear, a finer-grained saving option would likely be beneficial on net for some subset of potential savers. A personalization program could enable that subset to benefit without harming the incentive structure of other participants if the former are able to self-identify or if other markers like age or earnings correlate with their capacity to benefit from such an alternative. Here, as in some of the other examples above, personalization may mean making a precommitment *less* binding than it would otherwise be in order to make it both attractive at the outset and sustainable over time.⁸⁸

⁸⁵ See generally *id.* (proposing the “Saver’s Continuous Credit” in place of the existing “Saver’s Credit”).

⁸⁶ *Id.* at 238–39.

⁸⁷ *Id.*

⁸⁸ One might question whether Libson’s “Saver’s Continuous Credit” represents a precommitment at all. See Libson, 54 *Harv J Legis* at 238 (cited in note 84) (stating that the proposal “does not impose any commitment element”). However, it does embed a soft

B. Supporting Tools for Personal Finance and Behavior

The examples above involved government programs into which a personalized precommitment option could be directly incorporated. But law could also facilitate and subsidize private innovation directed at developing and delivering personalized precommitment products. Although private initiatives along these lines could be launched without government involvement, such involvement may be indicated when behaviors produce significant positive spillovers that cannot be fully internalized by the innovator. Legal institutions could help to standardize products, incorporate safeguards, or ensure enforcement of particular features to which an individual has precommitted.

These ideas need not imply an expansion of law into private decision-making or autonomy. On the contrary, using law to support voluntarily elected private precommitment tools could substitute for command-and-control regulation or untailed corrective taxes. Such substitution might be most attractive in contexts where individuals' long-term best interests align relatively well with the social optimum. Consider, for example, policies aimed at the consumption of unhealthy items like sugary sodas or cigarettes, or at behaviors like overspending or excessive borrowing. Enabling people to address internalities in these settings through personalized precommitments could have the socially beneficial side effect of addressing externalities without the need for government coercion.

1. Spending and borrowing.

The Consumer Financial Protection Bureau's Project Catalyst offers one avenue for fostering private consumer-focused innovation.⁸⁹ The program encourages innovators to pitch ideas for pilot programs, which then provide opportunities to study the programs' effects.⁹⁰ One pilot program involved American Express's "Serve" prepaid cash card, which offers a "Reserve" feature into which money can be set aside for an

precommitment akin to sealing funds in an envelope. The funds remain accessible if needed, but they have been earmarked in a way that should generate some resistance to accessing them.

⁸⁹ *Project Catalyst* (Consumer Financial Protection Bureau, 2018), archived at <http://perma.cc/5WQ4-2D6U>.

⁹⁰ *Project Catalyst Let's Collaborate: Pitch a Project* (Consumer Financial Protection Bureau, 2018), archived at <http://perma.cc/YEY2-4AM4>. See also generally *Project Catalyst Report: Promoting Consumer-Friendly Innovation* (Consumer Financial Protection Bureau, Oct 2016), archived at <http://perma.cc/92L8-G95A>.

upcoming large purchase.⁹¹ A study of the program found that offering a \$10 incentive for meeting a savings target of \$150 within three months was remarkably effective in encouraging take-up and that savings continued for months after the promotion had ended.⁹² Like some of the other examples above, this feature offers a psychological partition that does not completely eliminate access to funds but nonetheless appears to increase savings behavior.

A similar partitioning approach could be extended to borrowing contexts. For example, instead of placing a hard legal cap on the amount of equity people can access from their homes, a home equity partitioning tool could encourage people to limit their own access to equity by selectively adding delays, warnings, or other procedural frictions. These barriers would not completely preclude a homeowner from accessing more equity if she really wished to do so, but it would require taking affirmative steps that would emphasize the significance of the move—the equivalent of opening another envelope.

2. Consumption.

Publicly supported personalized menu customization could also provide an alternative to directly taxing or mandating maximum sizes of sugary beverages or other unhealthy items. For example, the government might subsidize restaurants or convenience stores that adopt programs encouraging customers to precommit to consuming less.

Imagine a customer frequents a particular convenience store on her daily commute and would like to precommit to buying only small-sized sodas rather than medium or supersized options. This goal might be difficult for her to accomplish on a visit-by-visit basis—the larger size looks refreshingly tempting after a long day, and the marginal cost of stepping up to a larger size will often be disproportionately low. But suppose this customer could prepay for a batch of e-coupons that can be redeemed for one small soda per visit. Nothing would keep her from buying a larger-sized soda on her own, but the ready availability of the small-drink coupons would be likely to alter her calculus. The same idea could be extended to other tempting

⁹¹ *The Help Center for Your Prepaid Debit Account* (American Express, 2018), archived at <http://perma.cc/5R7T-9DRT> (describing the Reserve feature as “an easy way to set aside money for a large purchase or vacation” and explaining how it works).

⁹² See *Tools for Saving: Using Prepaid Accounts to Set Aside Funds* (Consumer Financial Protection Bureau, Sept 29, 2016), archived at <http://perma.cc/9AAR-XATM>.

choices, such as choosing a lower-calorie sandwich at one's regular lunch spot or a pizza with fewer or healthier toppings. The prepaid coupon idea could even accommodate mixed patterns that build in bounded exceptions: for those who will be unable to resist a larger soda now and then, the prepaid package could include coupons for a few larger sizes along with the smaller ones.

To be sure, such a strategy could backfire. For instance, the coupons might cause our convenience store denizen to go to the store more frequently to enjoy the "free" soda or to add a candy bar to (over)compensate for the smaller soda size. Yet for at least some customers, this style of precommitment could offer an easy way to stick to a plan of reducing unwanted consumption—and personalized data could help customers learn whether they are in this category and how best to tailor the precommitment. Significantly, even those who are naïve about their self-control problems could benefit from such a program if the small-sized sodas were modestly discounted when prepaid as a package.⁹³ Such consumers would see the package as an easy way to save money on what they plan to buy anyway (the smaller size). Yet the prepayment could end up helping them stick to this plan even when their resolve flags.⁹⁴

One might nonetheless worry that people without good insight into their own future preferences would bind themselves in ways that would turn out to be self-defeating. Perhaps prepayment for particular sizes would leave a person short of necessary cash or deprive her of the options that would, in fact, make her happiest—even in the long run. Certainly this is possible. Yet many people's unbundled spur-of-the-moment consumption choices generate self-defeating patterns as well. What a personalization program can aspire to offer is a way to choose what is (for a given individual) the more preferred pattern, informed by her past consumption data.

CONCLUSION

The other contributions to this Symposium have examined many ways that personalization might improve law's governance of human behavior. In this Essay, I have suggested some ways that personalization might enable people to improve their

⁹³ The point is identical to one that Professors O'Donoghue and Rabin make about subsidies for healthy foods and taxes for unhealthy foods—those who assume they will eat healthily will be attracted to the savings but end up being constrained when temptation strikes. O'Donoghue and Rabin, 93 *Am Econ Rev* at 189–90 (cited in note 43).

⁹⁴ See *id.*

own self-governance. Such a self-administered version of personalization could dovetail with larger societal goals, such as improving financial well-being and promoting healthy consumption behaviors. While there are many ways that precommitments might be designed, this Essay has focused on the levers of resource partitioning and menu design. Such interventions, whether built into public benefit programs or offered through publicly supported private innovations, provide only soft precommitments that can be unilaterally broken. Yet like externally applied nudges, they can be powerful influences on behavior.⁹⁵ As the capacity for personalization continues apace, law and policy should not neglect the possibility that the best nudges may be ones that people design for themselves.

⁹⁵ See generally Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth, and Happiness* (Yale 2008).