AEA Papers and Proceedings 2018, 108: 98–102
https://doi.org/10.1257/pandp.20181042

Rationalizations and Mistakes: Optimal Policy with Normative Ambiguity[†]

By Jacob Goldin and Daniel Reck*

A wealth of evidence from behavioral economics suggests that people behave in ways that contradict neoclassical models of decision-making. One can often model such behavior by assuming decision-makers must incur a utility cost to optimize over the available options. Decision-makers who don't incur this cost don't optimize; instead, they choose according to a heuristic or make choices subject to some bias, and may end up selecting a suboptimal option.

To illustrate, consider a choice from a list of options (e.g., health insurance plans on a website) and suppose a study finds that any given option is more likely to be chosen when it appears earlier on the list. We could explain this behavior with a model in which decision-makers consider the items on the list from the top down, and in which it is mentally taxing or otherwise costly to consider each additional option. With these assumptions, decision-makers rationally tend to choose options earlier on the list because doing so avoids incurring the costs associated with considering the later options. In many settings, this is a perfectly good approach for explaining what would otherwise be a puzzling behavior.

Yet, a different possibility is that decision-makers are acting as if there was some utility cost to choosing later options even though no such cost is actually present. That is, a decision-maker who considers more items in a list might not be worse off, in any meaningful sense, than someone who considers fewer options, even though the decision-maker behaves as if this were the case. Or more commonly, the decision-maker might be slightly worse off by considering later options, but not as much worse off as her behavior would suggest.

In both of these cases, decision-makers behavior can be well described by a model in which they act as if there was some cost to making a fully optimal decision. Whether these "as-if costs" are *normative*—by which we mean whether they enter into the decision-makers welfare function—does not typically matter if one's goal is solely to predict behavior. In contrast, if one wishes to use the model to inform policy, it turns out that in many cases the optimal policy varies depending on whether the opt-out costs are normative or not. Highlighting and elaborating on this point is our goal in this paper.

Explaining behavior with as-if cost models of decision-making is common in the behavioral economics literature, but relatively little attention has been paid to the question of whether the costs are normative. Researchers modeling a particular behavior frequently assume that such costs either are normative or *behavioral* (i.e., nonnormative), with little discussion of the alternative, even though both cases are typically possible. In this paper, we highlight how assumptions about whether as-if costs are normative shape optimal policy. We illustrate the point in a number of settings: default options, health insurance plan inertia, tax salience, social benefit take-up, and neighborhood residence decisions.

I. Defaults

In many choice settings, decision-makers who do not actively select an option are assigned one of the available options that has been designated as the default. An influential line of research documents that decision-makers are

*Goldin: Stanford Law School, 559 Nathan Abbott Way, Stanford, CA 94305 (email: jsgoldin@law.stanford.edu); Reck: Department of Economics, London School of Economics and Political Science, Houghton Street, London WC2A 2AE, United Kingdom (email: d.h.reck@lse.ac.uk).
We thank Alex Rees-Jones for an excellent discussion of our work at the ASSA Annual Meeting and Dmitry Taubinsky for organizing the session of which this work was a part.

[†]Go to https://doi.org/10.1257/pandp.20181042 to visit the article page for additional materials and author disclosure statement(s).

more likely to select an option when that option is the default than when it is not (e.g., Madrian and Shea 2001; Johnson and Goldstein 2003). Such default effects offer policymakers a potentially powerful tool for structuring the choices made by decision-makers to raise social welfare (Sunstein 2015).

In Goldin and Reck (2017), we explore the optimal choice of default and the role of normative ambiguity in determining policy based on observed default effects. One can model decision-makers' sensitivity to the default by supposing that selecting an option other than the default requires incurring an additional utility cost (see Bernheim, Fradkin, and Popov 2015). Whether this "as-if cost" to opting out of the default actually reduces decision-makers' welfare depends on the reason decision-makers are sensitive to the default in the first place. In many cases, at least some degree of costly effort is required for a decision-maker to opt out of a default, but the decision-maker may behave as if this cost was larger than it actually is. For example, the cost of opting out may be more salient than the benefit of doing so, or more temporally proximate, and these factors could cause the decision-maker to over-weight the former relative to the latter. Similarly, decision-makers may simply forget to consider the decision at all; in that case, the as-if costs of opting out of the default might appear large (or even infinite), even though considering the non-default options would not significantly reduce a decision-maker's welfare.

Important questions about how defaults ought to be set turn on whether or not these as-if costs are deemed to be normative. In particular, when the as-if costs associated with a default are entirely behavioral, the optimal policy is generally to induce decision-makers to make active choices. This policy results in decision-makers selecting their most-preferred option, without any reductions in welfare associated with opting out of the default.[1] Conversely, when a large share of the costs is normative, active choice policies are extremely undesirable because they force decision-makers to incur large reductions in welfare. In that case, the optimal policy tends to lead many decision-makers to choose the default by setting as the default an option that is close to the most-preferred choice of a large number of decision-makers.

II. Inertia in Health Insurance Plan Choice

Several recent papers study inertia in health insurance plan choices (e.g., Handel 2013; Handel and Kolstad 2015). Consumers frequently fail to change plans in situations where it would be advantageous for them to do so, for example when their plan becomes inferior to available alternatives along all dimensions. This type of inertia operates similarly to a default: the plan that the consumer initially chooses effectively becomes the default in future periods. Like defaults, the exact cause of inertia is difficult to ascertain.

While much recent literature has focused on distinguishing various potential causes of inertia (Heiss et al. 2016; Abaluck and Adams 2017), resolving that question does not necessarily overcome the normative ambiguity required to conduct optimal policy. For example two sources of inertia, plan switching costs and inattention, can both be modeled with as-if costs, associated with switching plans or with paying attention to alternative plan options, respectively. However, as-if switching costs may be due to a real preference to avoid the hassle of signing up for a new plan (e.g., paperwork aversion) or to a bias in which the decision-makers' evaluation of alternative plans is clouded by the fact that they represent deviations from the status quo. Similarly, as-if costs used to model inattention may or may not be normative: decision-makers may inadvertently fail to consider the possibility of switching plans or they may choose not to consider other plans because they rationally predict that the time and effort required to do so will reduce their welfare more than the new plan will raise it.

With respect to optimal policy, the role of normative ambiguity here is similar to the case of defaults.[2] When as-if costs are normative, policies that encourage or force consumers to switch plans will tend to lower welfare, even when the new plans are preferable to the old ones. Consider,

[1] This result relies on the assumption that when individuals make active choices, they do so optimally. See Goldin and Reck (2017) for a discussion of this point and an extension that relaxes this assumption.

[2] See Handel (2013) for an example of a welfare calculation in this setting that explicitly considers whether as-if costs are normative.

for example, a policy that eliminates a plan from the menu of options when it is dominated by other choices, e.g., when some other plan becomes cheaper along all dimensions for the same coverage. Such a policy is unambiguously good for maximizing the quality of the selected plan. However, when as-if costs are entirely normative, eliminating the dominated option can only harm the consumer: by revealed preference, the consumer would have already searched for and switched plans if the expected benefits of doing so exceeded the costs. Conversely, when as-if costs are mostly behavioral, eliminating the dominated option forces this consumer to choose a better health plan with little to no welfare downside.

III. Take-Up of Social Programs

A persistent feature of many social safety net programs is that not all individuals eligible to participate choose to do so. In the United States, for example, incomplete take-up has been documented with respect to programs including the Earned Income Tax Credit (EITC), the Supplemental Nutrition Assistance Program (SNAP, formerly "food stamps"), and Temporary Assistance for Needy Families (TANF) (see Currie 2006). Governments and nonprofit organizations devote significant resources to this issue, encouraging take-up through a number of programs and regulations.

The welfare effects of such efforts depend critically on whether barriers to participation are normative or behavioral. One can model the decision of whether to participate in a program by comparing the program benefit amount one would receive to the as-if cost of participating. When as-if costs are normative, a policy that raises participation by lowering costs or increasing benefits yields only second-order improvements in welfare for the individuals induced to participate; the envelope theorem eliminates any welfare effect for marginal participants. In contrast, when as-if costs are less than fully normative, the individuals who are induced to participate because of the policy change are discretely better off for doing so, since their prior decision not to participate was suboptimal.[3]

[3] See Mullainathan, Schwartzstein, and Congdon (2011) for a formal derivation and additional discussion of this point.

As in other contexts, it is difficult for outside observers to confidently assess whether observed as-if costs are primarily normative or behavioral. To illustrate, consider the EITC, which provides a refundable tax credit to qualifying individuals who file a tax return. On the one hand, claiming the credit may reduce decision-makers' welfare in a number of ways. For example, it requires filing one's taxes, which may entail costly tax preparer fees and burdensome record-keeping. These costs may not be large for taxpayers who were already planning to file a return, but many of those eligible for the EITC have income below the threshold at which they are required to file. In addition, claiming the EITC may subject those who were already planning on filing a return to additional costs, such as the mental effort required to undertake the complex eligibility determinations associated with the credit or the additional audit risk that claiming the credit entails.

Apart from these normative costs, decision-makers may fail to claim the EITC for nonnormative reasons as well. For example, some taxpayers may opt against claiming the credit because they perceive the costs of doing so to be larger than they actually are. Similarly, because the costs of claiming the credit must be incurred in the present whereas the refund associated with the credit is not typically received for at least a couple of weeks after filing, present-biased taxpayers may overweight the costs relative to the benefits. Finally, taxpayers may simply forget that the credit exists, or fail to pay attention to it when deciding whether to file or when filling out their return.

IV. Moving to a New Neighborhood

A number of studies have estimated large benefits for low-income families from moving to better neighborhoods, as measured by lower crime rates, better school quality, or more employment opportunities (recent examples include Chetty, Hendren, and Katz 2016; Chetty and Hendren forthcoming; Chyn 2017). Despite these large apparent benefits, many low-income families do not choose to move neighborhoods even when an equally affordable alternative is available to them. The decision of whether to move neighborhoods can be modeled with a benefit of moving—perhaps depending on crime rates, school quality, employment opportunities, and cost of

living—and an as-if cost of moving imposed by the observer to rationalize observed behavior. Normative ambiguity arises from the question of whether and to what extent these as-if costs are normative or behavioral. Behavioral frictions may contribute to families' decisions not to move: perhaps they perceive moving to be costlier than it really is, or they procrastinate moving due to present bias, or the benefits of moving are not salient to them. Alternatively, the bulk of the as-if costs to moving may be normative; after all, moving neighborhoods requires that families incur moving expenses, undertake the hassle of finding a new place to live, and uproot themselves from an established community and social network.[4]

Normative ambiguity lies at the heart of important controversies in housing policy. Consider a policy that creates housing vouchers to subsidize low-income families who choose to move to better neighborhoods, as in the Moving to Opportunity experiment studied by Chetty, Hendren, and Katz (2016) and others. Because the direct monetary cost of moving is surely a part of the normative cost, we can think of vouchers as a policy that reduces the normative component of as-if costs. As with social benefit take-up, when as-if costs are fully normative, the envelope theorem implies that vouchers have no welfare effects on families induced to move because of them. But when the as-if costs are not normative, vouchers can have a large positive effect on these families' welfare by inducing some families to move who would have been better off moving even absent the existence of the voucher. Hence, the overall welfare benefits of a voucher program may hinge critically on the fraction of as-if moving costs that are normative.

V. Tax Salience

A number of recent studies find that consumers under-react to taxes when the after-tax price is not prominent (or "salient") to the decision-maker (Chetty, Looney, and Kroft 2009; Feldman and Ruffle 2015). A natural way to model this behavior is to assume that taxpayers must incur a cost in order to account for a low salience tax, and the taxpayer pays attention to the tax when the gains from doing so exceed the cost (Chetty, Looney, and Kroft 2007; Reck 2014).[5] Normative ambiguity in this setting concerns whether decision-makers who incur this cost suffer a reduction in welfare by the same amount, or whether the failure to consider the tax represents a mistake on the part of the decision-maker.

As in the other settings we have considered, welfare analysis requires resolution of normative ambiguity, which here refers to the as-if costs of paying attention to a tax. To illustrate, consider an increase in a low-salience tax from some nonzero starting point. This increase will cause some decision-makers to start paying attention to the tax. The resulting reduction in demand mechanically increases the efficiency cost of the tax, but it also causes those newly attentive individuals to incur whatever normative costs of attention are present. Compared to the case in which the as-if cost is purely behavioral, the marginal efficiency cost of increasing the low-salience tax will therefore be larger when the as-if cost of attention is normative. This fact makes low-salience taxes relatively less attractive when as-if costs of attention are normative, though it is straightforward to show that the optimal tax is not fully salient even when as-if costs are fully normative.

VI. Discussion

The examples discussed above are a small sample of the settings in which normative judgments about as-if costs will matter for optimal policy determinations.[6] For example, Benzarti (2017) shows that many individuals who would benefit from itemizing their income tax deductions fail to do so, and explains this behavior by assuming taxpayers must incur a utility cost to itemize. Whether this cost is normative determines whether it can be interpreted as the price taxpayers are willing to pay to avoid itemizing, which is crucial for assessing policies like changes in the amount of the standard deduction. As another example, Allcott and Kessler (2015)

[4] Chetty (2015) formalizes this reasoning and discusses a few related points like the relative merits of nudging people toward moving versus subsidizing moving with housing vouchers in the presence of the kind of ambiguity we describe.

[5] Feldman, Goldin, and Homonoff (2015) and Taubinsky and Rees-Jones (forthcoming), investigate the empirical plausibility of this model.

[6] Handel and Schwartzstein (2018) provide an illuminating discussion of several such policy problems.

model decision-makers as having to incur a cost to deviate from the advice implicit in a nudge toward energy efficiency; whether such costs are normative shapes the resulting welfare analysis. More generally, a wide array of non-neoclassical behaviors can be rationalized by incorporating frictions into a decision-maker's utility function. Assessing whether these frictions are welfare-relevant is a central challenge in behavioral welfare analysis.

REFERENCES

Abaluck, Jason, and Abi Adams. 2017. "What Do Consumers Consider Before They Choose? Identification from Asymmetric Demand Responses." National Bureau of Economic Research Working Paper 23566.

Allcott, Hunt, and Judd B. Kessler. 2015. "The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons." National Bureau of Economic Research Working Paper 21671.

Benzarti, Youssef. 2017. "How Taxing Is Tax Filing? Using Revealed Preferences to Estimate Compliance Costs." National Bureau of Economic Research Working Paper 23903.

Bernheim, B. Douglas, Andrey Fradkin, and Igor Popov. 2015. "The Welfare Economics of Default Options in 401(k) Plans." *American Economic Review* 105 (9): 2798–837.

Chetty, Raj. 2015. "Behavioral Economics and Public Policy: A Pragmatic Perspective." *American Economic Review* 105 (5): 1–33.

Chetty, Raj, and Nathaniel Hendren. Forthcoming. "The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects." *Quarterly Journal of Economics*.

Chetty, Raj, Nathaniel Hendren, and Lawrence F. Katz. 2016. "The Effects of Exposure to Better Neighborhoods on Children: New Evidence from the Moving to Opportunity Experiment." *American Economic Review* 106 (4): 855–902.

Chetty, Raj, Adam Looney, and Kory Kroft. 2007. "Salience and Taxation: Theory and Evidence." National Bureau of Economic Research Working Paper 13330.

Chetty, Raj, Adam Looney, and Kory Kroft. 2009. "Salience and Taxation: Theory and Evidence." *American Economic Review* 99 (4): 1145–77.

Chyn, Erik. 2017. "Moved to Opportunity: The Long-Run Effect of Public Housing Demolition on Labor Market Outcomes of Children." Unpublished.

Currie, Janet. 2006. "The Take-Up of Social Benefits." In *Public Policy and the Income* Distribution, edited by Alan J. Auerbach, David Card, and John M. Quigley, 80–148. New York: Russell Sage Foundation.

Feldman, Naomi E., and Bradley J. Ruffle. 2015. "The Impact of Including, Adding, and Subtracting a Tax on Demand." *American Economic Journal: Economic Policy* 7 (1): 95–118.

Feldman, Naomi E., Jacob Goldin, and Tatiana Homonoff. 2015. "Raising the Stakes: Experimental Evidence on the Endogeneity of Taxpayer Mistakes." Unpublished.

Goldin, Jacob, and Daniel Reck. 2017. "Optimal Defaults with Normative Ambiguity." Unpublished.

Handel, Benjamin R. 2013. "Adverse Selection and Inertia in Health Insurance Markets: When Nudging Hurts." *American Economic Review* 103 (7): 2643–82.

Handel, Benjamin R., and Jonathan T. Kolstad. 2015. "Health Insurance for "Humans": Information Frictions, Plan Choice, and Consumer Welfare." *American Economic Review* 105 (8): 2449–500.

Handel, Benjamin R., and Joshua Schwartzstein. 2018. "Frictions or Mental Gaps: What's Behind the Information We (Don't) Use and When Do We Care?" *Journal of Economic Perspectives* 32 (1): 155–78.

Heiss, Florian, Daniel McFadden, Joachim Winter, Amelie Wuppermann, and Bo Zhou. 2016. "Inattention and Switching Costs as Sources of Inertia in Medicare Part D." National Bureau of Economic Research Working Paper 22765.

Madrian, Brigitte C., and Dennis F. Shea. 2001. "The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior." *Quarterly Journal of Economics* 116 (4): 1149–87.

Mullainathan, Sendhil, Joshua Schwartzstein, and William J. Congdon. 2011. "A Reduced-Form Approach to Behavioral Public Finance." *Annual Review of Economics* 4: 511–40.

Reck, Daniel. 2014. "Taxes and Mistakes: What's in a Sufficient Statistic?" Unpublished.

Sunstein, Cass R. 2015. *Choosing Not to Choose: Understanding the Value of Choice.* Oxford, UK: Oxford University Press.

Taubinsky, Dmitry, and Alex Rees-Jones. Forthcoming. "Attention Variation and Welfare: Theory and Evidence from a Tax Salience Experiment." *Review of Economic Studies*.