

# THE POLITICAL PSYCHOLOGY OF REDISTRIBUTION

Edward J. McCaffery<sup>\*</sup> and Jonathan Baron<sup>\*\*</sup>

*Welfare economics suggests that the tax system is the appropriate place to effect redistribution from those with more command over material resources to those with less: in short, to serve “equity.” Society should set other mechanisms of private and public law, including public finance systems, to maximize welfare: in short, to serve “efficiency.” The populace, however, may not always accept first-best policies. Perspectives from cognitive psychology suggest that ordinary citizens react to the purely formal means by which social policies are implemented, and thus may reject welfare-improving reforms.*

*This Article sets out the general background of the problem. We present the results of original experiments that confirm that the means of implementing redistribution affect its acceptability. Effects range from such seemingly trivial matters as whether tax burdens are discussed in dollars or in percentage terms, to more substantial matters such as how many different individual taxes there are, whether the burden of taxes is transparent, and the nature and level of the public provision of goods and services. The findings suggest a deep and problematic tension between the goals of equity and efficiency in public finance.*

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\* Edward J. McCaffery is the Robert C. Packard Trustee Professor in Law and Political Science at the University of Southern California Law School, and visiting Professor of Law and Economics at the California Institute of Technology.

\*\* Jonathan Baron is Professor of Psychology at the University of Pennsylvania. Much of the research was supported by NSF grant 02-13409. This Article was presented at the UCLA Law Review Symposium, *Rethinking Redistribution: Tax Policy in an Era of Rising Inequality*; we thank all the participants, and especially Bill Blatt for his helpful commentary. We also thank Nina Kang for excellent research assistance.

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## INTRODUCTION

How should society redistribute wealth? In particular, what role should tax systems play in redistribution?

The two welfare theorems of neoclassical economics suggest a certain, definitive answer. The first theorem holds, in essence, that free markets reach welfare maximizing or, equivalently, pareto optimal allocations of resources.<sup>1</sup> This means that, left to their own devices in normally functioning markets, people will trade and produce until wealth—the social “pie,” as it is often called—is as large as possible. The second theorem holds that a suitable distribution or redistribution of entitlements can lead to different positions along the social optimum or, equivalently, paretian frontier.<sup>2</sup> This means that once society has the larger pie, it can be divided differently. Practitioners of law and economics, most extensively Louis Kaplow and Steven Shavell, have used these two theorems to develop a comprehensive agenda for law reform.<sup>3</sup> Optimal “welfare economics” legal policy has two parts. One, laws should be arranged so as to maximize social welfare, that is, to serve “efficiency.” Two, the tax system should be used to redistribute social resources so as to maximize the sum of individual well-being, that is,

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1. A given transaction is “pareto superior” if it benefits at least one party and harms no one. A “pareto optimal” allocation of resources occurs when no further pareto superior trades are possible.

2. See, e.g., ROBIN BOADWAY & NEIL BRUCE, *WELFARE ECONOMICS* 3 (1984); JOSEPH E. STIGLITZ, *ECONOMICS OF THE PUBLIC SECTOR* 60–61 (3d ed. 2000). For a more general discussion of the two welfare theorems and an application to income tax policy, see Kyle Logue & Ronen Avraham, *Redistributing Optimally: Of Tax Rules, Legal Rules, and Insurance*, 56 *TAX L. REV.* 157, 159 n.8 (2003).

3. LOUIS KAPLOW & STEVEN SHAVELL, *FAIRNESS VERSUS WELFARE* 52–58 (2002).

to serve “equity.”<sup>4</sup> The two-part approach satisfies a paretian constraint: The greater social pie facilitated by the first step can be used in the second step’s redistribution to assure that no one is harmed by any reform.

Kaplow, Shavell, and other scholars toiling in this vein of welfare economics have devoted their efforts principally to the field of private law—matters of property, contracts, and torts. Our research project follows from the insight that the analysis can apply to public finance as well. Public finance concerns the economic actions of the government, most importantly, its tax and spending functions.<sup>5</sup> The two-part approach to welfare economics suggests that government fiscal actions should be limited to allocative measures that wealth-maximize, on the one hand, and to redistributive measures that move around social wealth,<sup>6</sup> on the other. The larger social pie enabled by government intervention (or nonintervention) can be redistributed through the tax system to meet the paretian constraint.

More specifically, allocatively oriented government fiscal interventions ought to be limited to correcting for market failures, where, by definition, the free market has failed to reach a pareto optimum allocation of resources. Within the spirit of neoclassical economics, government fiscal actions can only increase welfare if there is such a market failure, and only then if the government action is well designed.<sup>7</sup> Examples include public goods, such

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4. Kaplow and Shavell first proposed that the tax system be used as the exclusive means for redistribution. Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient Than the Income Tax in Redistributing Income*, 23 J. LEGAL STUD. 667 (1994); see also Louis Kaplow & Steven Shavell, *Should Legal Rules Favor the Poor? Clarifying the Role of Legal Rules and the Income Tax in Redistributing Income*, 29 J. LEGAL STUD. 821 (2000) [hereinafter Kaplow & Shavell, *Should Legal Rules Favor the Poor?*]. Economists had long been making similar arguments. See, e.g., Arnold C. Harberger, *On the Use of Distributional Weights in Social Cost-Benefit Analysis*, 86 J. POL. ECON. S87 (1978). For criticisms of the Kaplow-Shavell argument, see Ronen Avraham et al., *Revisiting the Roles of Legal Rules and Tax Rules in Income Redistribution: A Response to Kaplow & Shavell*, 89 IOWA L. REV. 1125 (2004); Logue & Avraham, *supra* note 2; Chris William Sanchirico, *Deconstructing the New Efficiency Rationale*, 86 CORNELL L. REV. 1003 (2001); Chris William Sanchirico, *Taxes Versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. LEGAL STUD. 797 (2000). For one among several replies by Kaplow and Shavell, see Kaplow & Shavell, *Should Legal Rules Favor the Poor?*, *supra*.

5. See, e.g., RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, *PUBLIC FINANCE IN THEORY AND PRACTICE* 4 (5th ed. 1989); STIGLITZ, *supra* note 2, at 27.

6. It is compelling to consider that tax or other “redistributive” programs are better understood as setting the normatively appropriate initial distribution of material resources, as opposed to their redistribution. See, e.g., LIAM MURPHY & THOMAS NAGEL, *THE MYTH OF OWNERSHIP: TAXES AND JUSTICE* 7–10 (2002); David Duff, *Private Property and Tax Policy in a Libertarian World: A Critical Review*, 18 CANADIAN J. L. & JURISPRUDENCE 23, 30–31 (2005). For ease of exposition, however, we follow convention and write about the distributive prong of the optimal welfare economics approach as being “redistributive.”

7. See R.H. COASE, *THE FIRM, THE MARKET, AND THE LAW* 179–85 (1988).

as national defense or clean air;<sup>8</sup> informational asymmetries leading to sub-optimal private ordering, such as in social insurance programs;<sup>9</sup> and excess market power, as in the case of monopolies. In such cases, government intervention can increase net social welfare. Using the second welfare theorem and prong of the Kaplow-Shavell analysis, equity or fairness can then be served by redistributing via the tax system from the greater social pie.

This optimal welfare economics approach depends on a simple, stark contrast between the redistributive and allocative functions of government, with efficiency norms serving as the sole guide to the allocative functions. Whatever one chooses as an optimal distribution of end-state resources to serve the equity goal—whatever the social welfare function is—collective well being can only improve by following the two prongs.

So it is in theory. But we do not live in theory.

In this Article, we question whether optimal welfare-enhancing public finance systems can obtain in the real world, as currently constituted. There are many impediments standing between theory and practice today.<sup>10</sup> We are concerned with a particular set of problems, ones that reside in the minds of ordinary citizens. Cognitive psychology or “behavioral economics” in the tradition of Daniel Kahneman and Amos Tversky has long demonstrated that people do not always perceive economic and other matters in a logically consistent fashion.<sup>11</sup> We all suffer from many “heuristics and biases” in our perceptions. Everybody likes her glass half full; no one likes it half empty. Our research project lies at the intersection of behavioral economics and public finance. We ask whether misperceptions characterize

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8. A public good is one whose benefits are nonexcludable and not rivalrous (one person's enjoyment does not affect another's). HARVEY S. ROSEN, *PUBLIC FINANCE* 53 (4th ed. 1995).

9. See Michael Rothschild & Joseph Stiglitz, *Equilibrium in Competitive Insurance Markets: An Essay on the Economics of Imperfect Information*, 90 Q.J. ECON. 629 (1976).

10. For example, Kyle Loque and Ronen Avraham, in work addressing the Kaplow-Shavell approach, raise questions of whether all goods are truly commensurate with money. Loque & Avraham, *supra* note 2, at 169 n.38. Richard Bird and Eric Zolt raise questions about the practical administration and political feasibility of redistributive taxes in developing countries, suggesting that redistribution can best be effected by the “transfer” prong of a tax and transfer system (a result to which our research lends support, as discussed *infra* note 58). Richard M. Bird & Eric M. Zolt, *The Limited Role of the Personal Income Tax in Developing Countries*, 52 UCLA L. REV. 1627; see also Louis Kaplow, *Optimal Income Transfers* 1–3 (2004) (unpublished manuscript, on file with authors). Christine Jolls, taking a behavioral economics approach, suggests that optimism and other biases, such as the use of “mental accounts,” related to our invocation of the *isolation effect*, discussed *infra* note 20 and accompanying text, mean that nontax systems are often better at redistribution than tax systems are. Christine Jolls, *Behavioral Economics Analysis of Redistributive Legal Rules*, 51 VAND. L. REV. 1653, 1669–73 (1998).

11. See, e.g., CHOICES, VALUES, AND FRAMES (Daniel Kahneman & Amos Tversky eds., 2000); JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES (Daniel Kahneman et al eds., 1982).

the ordinary citizen's understanding of public finance systems. What might these misconceptions be? Will citizens accept pareto-improving reforms, however alien they appear? Or does the *form* of public finance systems matter, such that citizens will choose more or less efficiency, and/or more or less redistribution, depending on the purely formal properties of tax and spending systems—on how they are worded, or presented to them?<sup>12</sup> Absent citizen education or other institutional reforms, can we trust the system to get the level of redistribution down “right”?<sup>13</sup>

The answers to these questions lie at the heart of what we mean by the “political psychology of redistribution.” We argue that public finance systems have a psychological dimension, such that ordinary citizens will react inconsistently based on a system's appearance. Sometimes the manipulation may seem trivial. For example, under the *metric effect* discussed below, ordinary citizens prefer more redistribution when tax systems are discussed in percentage rather than in dollar terms. Other cases are more troubling. For example, widespread cognitive psychological tendencies can lead people to prefer hidden over transparent taxes, even if the former are less efficient. In such cases, the first prong of the optimal welfare economics approach cannot be followed because a wealth-enhancing tax option is not chosen. Real wealth is left on the table, an homage to our cognitive illusions. In other cases, people will accept more redistribution with the public than with the private provision of goods and services, even if public provision is not efficient. In these cases, the second prong of the welfarist approach cannot be followed independently of the first prong; equity is pitted against efficiency. In a wide range of cases, the extent of governmental redistribution will depend on the form of public finance systems, contrary to the stark logic of the optimal welfare economics approach.<sup>14</sup> Reformers, just like successful politicians, must therefore pay attention to the polity's psychological tendencies.

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12. A characteristic finding of the cognitive psychology literature is that subjects answer questions differently that present the same choices in different words—for example, half empty versus half full, child bonus versus child penalty. See generally sources cited *supra* note 11.

13. We hasten to add that we are not stating, by fiat, what this “right” level of redistribution is. We follow the standard economics approach of remaining agnostic on this question. See, e.g., KAPLOW & SHAVELL, *supra* note 3, at 27; Logue & Avraham, *supra* note 2, at 157. Rather we mean that the overall system may not effect the level and type of redistribution that citizens themselves desire, because of framing and other effects.

14. Thomas Griffith makes a related but different point in a recent article. Thomas D. Griffith, *Progressive Taxation and Happiness*, 45 B.C. L. REV. 1363, 1398 (2004). Griffith argues that people oppose progressive taxation even though these very taxes make them happy, because they misestimate the effects of declining marginal utility and positional status. Griffith's argument tracks the concept explored by Daniel Kahneman, of a distinction between people's *decision* versus *experienced* utility, whereby people systematically used the “wrong” weights, by their own lights, in

These possibilities raise troubling issues for normative welfare economics in the public sphere. In this Article, drawing largely on our original experiments, we set out the problems. We also note some paths towards a better future.

## I. METHOD

To both illustrate and substantiate our main concerns, we conducted a series of experiments over several years, testing how ordinary subjects perceive matters of tax and public finance. The results we discuss here cluster around a common theme: The nature and extent of redistribution that people support depends on the purely formal properties of public finance. If we were to measure the degree of inequality in society by some constant, objective measure, such as Gini coefficients,<sup>15</sup> this measure would vary with such factors as the size of the public sector, what goods and services it provides, and how many tax systems are in place. This pattern is in contrast to strict logical necessity, and counter to the spirit of the two-part approach to welfare enhancing reforms: How much inequality or redistribution people tolerate should not depend on the allocative matters of what the government does or does not do, or how it performs its functions. Contrary to standard rational choice social theory, however, we find that individual preferences over end-state distributions of wealth are not invariant to the purely formal properties of the relevant choice sets.

There are three connected elements supporting our general conclusions: prior theory, our experiments, and real-world observations. In sum, prior theory generated hypotheses, our experiments for the most part confirmed them, and a look to reality bore out their significance.

### A. Theory

We draw on two bodies of theory: behavioral economics and public finance in a welfare economics tradition. The key finding of behavioral economics

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reaching decisions. See Daniel Kahneman, *Experienced Utility and Objective Happiness: A Moment-Based Approach*, in CHOICES, VALUES AND FRAMES, *supra* note 11, at 673. This is an example of *dynamic* inconsistency manifesting itself over time. The inconsistency we find and explore in this Article is, in contrast, *static*. Our concerns are with what Kahneman would call decision utility: We find that people are inconsistent in making decisions in the present tense.

15. Gini coefficients are measures of inequality in income distribution in countries. They vary from zero, indicating perfect equality where everyone has the same income, to one, indicating perfect inequality where one household has 100 percent of the country's income. Office for Nat'l Statistics, *Measuring Inequality in Household Income: The Gini Coefficient*, available at [http://www.statistics.gov.uk/about/methodology\\_by\\_theme/gini/default.asp](http://www.statistics.gov.uk/about/methodology_by_theme/gini/default.asp).

is that ordinary people are inconsistent in their judgment and decision-making.<sup>16</sup> They react to the form of a choice or decision problem, even where the substance is held constant. Preferring a half-full to a half-empty glass is a canonical example of a *framing effect*. Other common traits are *loss aversion*, the *endowment effect* or *status quo bias*, and *overgeneralized heuristics*.<sup>17</sup> In each instance, people reach inconsistent decisions, violating the simplest axioms of the rational choice model, such as *preference invariance* and *transitivity*.<sup>18</sup> A simple application of loss aversion, for example, is penalty aversion. People will act to avoid penalties but not necessarily to obtain bonuses in rhetorically different presentations of the same underlying facts. As Richard Thaler noted in a real-world observation, when a gas station charged a “penalty” for using credit cards (\$2.00 versus \$1.90, say), people paid cash; when a gas station across the street gave a “bonus” for using cash (\$1.90 versus \$2.00), people used credit cards.<sup>19</sup>

Many findings in the heuristics and biases literature have a common element, which we (and others) call an *isolation effect* (also called a *focusing effect*).<sup>20</sup> People tend to isolate or focus on a narrow choice problem before them, ignoring relevant information and otherwise failing to integrate their logically connected judgments and decisions into a coherent whole. An early example of this in the literature is Thaler’s “mental accounts.”<sup>21</sup> Thaler found that many, perhaps most people treat the source of funds as relevant to their use, even though money is fungible. People who are normally frugal and even risk averse would spend lottery proceeds on luxury items or

16. See, e.g., RICHARD H. THALER, *THE WINNER’S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE* (1992). Behavioral economics also has important roots in the work of Herbert Simon on “bounded rationality.” Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q.J. ECON. 99 (1955). Daniel Kahneman and Amos Tversky advanced the field considerably beginning in the 1970s; the field reached full flower with the award of the Nobel Prize in Economics to Kahneman in 2002. Researchers such as Richard Thaler have applied the insights to standard consumer or financial settings.

17. See, e.g., JONATHAN BARON, *THINKING AND DECIDING* 277–302 (3d ed. 2000).

18. Transitivity holds that if a person prefers good or choice set A to B, she should not also prefer good or choice set B to A.

19. Richard H. Thaler, *Toward a Positive Theory of Consumer Choice*, 1 J. ECON. BEHAV. & ORG. 39, 45 (1980), reprinted in RICHARD H. THALER, *QUASI RATIONAL ECONOMICS* 3, 9 (1991).

20. Lorraine Chen Idson et al., *Overcoming Focusing Failures in Competitive Environments*, 17 J. BEHAV. DECISION MAKING 159, 159–61 (2004); Steven K. Jones et al., *Choices and Opportunities: Another Effect of Framing on Decisions*, 11 J. BEHAV. DECISION MAKING 211, 211–14 (1998); Paolo Legrenzi et al., *Focusing in Reasoning and Decision Making*, 49 COGNITION 37, 38–39 (1993); Edward J. McCaffery & Jonathan Baron, *The Humpty Dumpty Blues: Disaggregation Bias in the Evaluation of Tax Systems*, 91 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 230, 232 (2003); Daniel Read et al., *Choice Bracketing*, 19 J. RISK & UNCERTAINTY 171, 172–73 (1999).

21. Richard H. Thaler, *Mental Accounting and Consumer Choice*, 4 MARKETING SCI. 199 (1985), reprinted in *QUASI RATIONAL ECONOMICS*, supra note 19, at 25.

binge purchases. In doing so, they viewed their windfall gains in isolation and failed to integrate their newfound wealth with all their liabilities and assets.

The isolation effect is central to our findings on the political psychology of redistribution. We found that subjects are hard pressed to integrate multiple tax systems, in the *disaggregation bias* discussed below, or to integrate the tax and spending dimensions of public finance to achieve constant levels of redistribution, in the *privatization effect* that we also discuss. The seemingly harmless tendency to separate out matters in one's mind can lead to disturbing anomalies in one's acceptance of global public finance systems.

Public finance in a welfare economics tradition provides the second prong of our approach. It is important to note as a threshold matter that taxes, however much hidden, have real effects, and that these effects have implications for actual welfare. Taxes can be more or less efficient, creating more or less "deadweight loss," and the gains from efficiency generate real resources to be used. Traditional public finance can demonstrate the costs of the choices that behavioral biases generate. We draw on an understanding of current public finance systems in advanced democracies, such as the United States, and on basic economics principles, such as incidence and efficiency analysis, in our experimental designs.<sup>22</sup> The relevant ideas are set out below as they relate to individual experiments.

## B. Experiments

We followed a similar procedure in all our experiments. About 50–200 subjects, depending on the study, completed a questionnaire on the World Wide Web. Subjects were paid three or four dollars each. Subjects came to the studies through postings on various web sites or Usenet news groups, or through prior participation in other studies. Subjects were paid by check (after some minimum amount was accumulated) after they registered their address and (for U.S. residents) their Social Security number. Subjects identified themselves only with e-mail addresses after they registered, and these e-mail addresses were stored separately from the data to assure privacy and anonymity.

Individual studies or experiments were programmed in Java-Script so that one case was presented on one web page or screen, and subjects were required to answer all questions appropriately before proceeding to the next

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22. Incidence concerns the subject of who ultimately bears the burden of a tax. See, e.g., Arnold C. Harberger, *The Incidence of the Corporation Income Tax*, 70 J. POL. ECON. 215 (1962). Efficiency analysis concerns the welfare loss or "deadweight costs" of various alternative taxes.

screen. After a brief introductory description and explanatory page, including pertinent background, subjects saw between 24 and 32 screens asking for their responses. Although our experiments typically considered complex issues in a realistic manner, the screens that the subjects saw presented the material in clear, simple formats. We recorded the time spent on each response, and we usually eliminated subjects who went noticeably faster than everyone else (outliers, typically 2–3 percent). Many of our experiments had internal checks to assure that subjects understood the questions, and answered in the appropriate range. We found that an overwhelming percentage of subjects acted reasonably within objective parameters.

Consistent with standard methods in cognitive psychology, our experimental designs were all within-subject.<sup>23</sup> That is, we tested the same people and asked the same question in different ways, using different frames or formal manipulations to change how the facts were presented. We wanted to see if subjects would react differently—whether they like their glasses half full, but dislike them half empty. In almost all cases, our null hypothesis was simply that subjects should be consistent—and we found repeatedly that they were not, with strong statistical significance.<sup>24</sup> Problems such as selection bias, common in across- or between-subject analysis—the standard method of public opinion research—were not of much concern to us. Our interest was in the existence and nature of inconsistencies in individual judgment and decisionmaking. In most cases, we found inconsistencies heavily tilted in one direction and consistent with the predictions of prior theory: Subjects preferred policies described as “bonuses” to the self-same policies described as “penalties,” preferred hidden to transparent taxes, tended to be affected by starting points, and failed to integrate their judgments across relevant fields of data. Because the evidence converged with well established theory, we can assert with some confidence that these biases are likely widespread in the population—all the more so because they predict features actually evident in the U.S. tax system, as discussed below. As it happens, our subject pool was roughly representative of the adult U.S. population in terms of income, age, and education, but not in terms of sex, because (for unknown reasons) women predominated our respondent pool.<sup>25</sup>

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23. BARON, *supra* note 17, at 44–46.

24. In the interests of general readership, we omit almost all technical statistical terms and analyses in this Article. Formal analysis is readily available in the underlying, cited studies.

25. See, e.g., Linda Babcock et al., *The Propensity To Initiate Negotiations: A New Look at Gender Variation in Negotiation Behavior* (2002) (unpublished paper presented at the 15th Annual Conference for the International Association of Conflict Management, June 9–12, 2002).

Within-subject inconsistency is especially germane to the subject of redistribution. Unlike the case with the first prong of the welfare economics analysis, where some policies can be shown to increase or decrease the social pie in an objectively observable manner, there is no universally agreed on benchmark for the “right,” “just,” or “fair” degree of redistribution. Importantly, we did not impose a benchmark for “appropriate” redistribution in our experiments. Rather, we intended to show that the same people, asked about what level of redistribution they supported in differently framed but substantively equivalent choice problems, reached inconsistent results. If society were to base the appropriate level of redistribution on some aggregation of individual preferences (as in common voting procedures), these preferences themselves would be affected by the choice setting.

In terms of our experiments, the various choice settings include how large the government sector happened to be, what goods and services it provided, and how many tax systems there were. Generally, we found that the average subject favored some redistribution—some taking from the rich to give to the poor.<sup>26</sup> A common finding of the polling literature is that subjects fall into three roughly equal pools: those favoring no progression (that is, flat taxes), those favoring moderate progression, and those favoring steep progression, with the moderate middle holding the swing vote.<sup>27</sup> But, again, calculating the “correct” or even the “desired” level of redistribution is not our concern. Rather we show that what even *counts* as “moderate” redistribution depends on the form of public finance systems; subjects’ preferences for progressivity or redistribution change with the setting.

### C. Reality

The final aspect of our analysis is to show that our experimental results can explain real-world anomalies such as why hidden taxes persist, why payroll taxes keep rising, and why the income tax is salient. Our experiments were designed to reflect such anomalies, after all, so this should be possible. We did not take off-the-shelf findings from the psychology of judgments and decisions. Rather, we looked for extensions of the psychological approach that fit the problems we saw outside the experimental laboratory. One obvious danger of this approach is that “the problems we see” are affected by our own political leanings. Thus, for example, we worry about

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26. See, e.g., Peggy A. Hite & Michael L. Roberts, *An Experimental Investigation of Taxpayer Judgments on Rate Structure in the Individual Income Tax System*, 13 J. AM. TAX’N ASS’N 47 (1991).

27. See *id.* at 49–50.

redistribution, so many of our experiments concern it. There are other dimensions of public finance well worth studying; others are free to use our methods to study different problems.

## II. RESULTS

This part canvasses seven broad sets of results that show how the form of public finance systems affects the understanding of and support for redistribution: (1) the metric effect; (2) penalty aversion; (3) tax aversion; (4) hidden tax bias; (5) disaggregation bias; (6) privatization effect; and (7) the “starve-the-beast” phenomenon.

### A. Metric Effect

We begin with a rather simple, and seemingly minor, application of our general theme: that people are inconsistent in their reactions to public finance issues, on account of focusing or isolating effects. Throughout our experiments, we found interesting interactions between subjects’ perceptions of and desire for progressivity—expecting the better-able to pay more, in absolute or percentage terms—and the form of the question. The interactions might relate to some basic ambiguity or uncertainty over what “progression” even means. For example, subjects gave systematically different answers based on whether the question was asked using dollars or percents, in what we call a *metric effect*.<sup>28</sup> Subjects consistently wanted more progressivity when the matters were framed in percentage rather than in dollar terms. There is, after all, a sort of progressivity illusion when a question about tax burdens is framed in dollars, because the high income pay more, in absolute dollars, even under a flat percentage tax. At a constant 20 percent rate, for example, a \$100,000 household pays \$20,000 in taxes, whereas a \$20,000 household pays \$4000. The tax *appears* progressive when stated in dollar terms, even though it is not progressive when phrased in percentage terms. This result is an example of an *isolation effect*, because the subjects seem to have a norm—to tax the rich more than the not-rich—but they react quickly to the salient optics of the choice set, failing to translate their judgments back into a single, consistent metric. They apply the norm blindly, as it were. The effect is analogous to the finding that subjects—even experienced clinical psychology professionals—make different

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28. McCaffery & Baron, *supra* note 20, at 233.

decisions when considering risk data stated in probability as opposed to frequency metrics.<sup>29</sup> In tax, the metric effect can lead to confusion.

The first two tables come from an experiment in which we asked subjects about their attitudes about both the level of taxation (Table A) and the slope of its distribution (Table B).<sup>30</sup> The experiment was concerned primarily with how subjects accommodated for marriage and children, but it also gives a good look at the metric effect. There were four types of taxpayers: single persons, married equal-earner couples with incomes presented on a per person basis (Equal 1), married equal-earner couples with incomes presented per couple (Equal 2), and married one-earner couples, all with and without children.<sup>31</sup>

We asked subjects simply to fill in blanks for how much they thought each household/couple ought to pay in taxes at four income levels: \$25,000, \$50,000, \$100,000 and \$200,000. Sometimes we asked the subjects to use dollars, others times percents. Table A gives the mean responses across all income categories for the various household types. We converted subjects' answers originally given in dollars into percent, so that the metric effect is eliminated from our presentation of the results.

TABLE A  
MEAN OVERALL LEVEL OF TAX (IN PERCENT)  
AS A FUNCTION OF HOUSEHOLD TYPE AND METRIC FRAME

<i>Answer in Dollars</i>				
	<i>Single</i>	<i>Equal 1</i>	<i>Equal2</i>	<i>One-earner</i>
No child	14.7	14.0	13.8	13.4
Child	12.4	13.3	12.5	11.9
<i>Answer in Percent</i>				
	<i>Single</i>	<i>Equal 1</i>	<i>Equal2</i>	<i>One-earner</i>
No child	17.5	17.6	17.3	16.5
Child	15.1	17.4	15.2	14.7

29. See generally Daniel Kahneman & Amos Tversky, *Variants of Uncertainty*, 11 COGNITION 143 (1982), reprinted in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, *supra* note 11, at 509; Paul Slovic et al., *Violence Risk Assessment and Risk Communication: The Effects of Using Actual Cases, Providing Instruction, and Employing Probability Versus Frequency Formats*, 24 LAW & HUM. BEHAV. 271 (2000).

30. Edward J. McCaffery & Jonathan Baron, *Framing and Taxation: Evaluation of Tax Policies Involving Household Composition*, 25 J. ECON. PSYCHOL. 679, 692-95 (2004).

31. *Id.* at 698-700.

Note that the levels are consistently and significantly higher when subjects gave their answers in a percentage metric.

Table B shows that the slope of desired progression is also higher when the question was asked in percent. There is a *progressivity illusion* when the values are given in dollars.

TABLE B  
MEAN FAIR TAXES (IN PERCENT)  
AS A FUNCTION OF INCOME AND METRIC FRAME

	\$25,000	\$50,000	\$100,000	\$200,000
Dollars	9.3	11.7	15.2	16.8
Percent	9.2	13.0	18.8	24.6

Tables A and B demonstrate that people support both higher and more steeply progressive taxes when they are thinking about taxes in percentage as opposed to in dollar terms. This finding suggests that the optics of progressive marginal rates might lead to instability in tax systems, or to an undue premium on rhetoric as opposed to reality in political portrayals of public finance. For example, candidates who favor progressive taxes ought to talk in percentage terms, and those who favor flatter taxes in dollar terms.<sup>32</sup>

#### B. Penalty Aversion and the Schelling Effect

There are more troubling applications of cognitive psychology to redistribution. For example, people do not like “penalties” but they do like “bonuses.” In standard economics, however, these are simply two sides of the same coin: A bonus is the absence of a penalty, a penalty the absence of a bonus. Yet whether one describes an issue as a bonus or as a penalty can have dramatic effects on its evaluation. This problem abounds in tax. A child bonus is a childless penalty, a marriage bonus is a singles penalty, and so on. We hypothesized that subjects would have a more positive impression of a policy stated in its bonus than in its penalty frame.

Following a classroom demonstration from Thomas Schelling,<sup>33</sup> and drawing on our own knowledge of the metric effect, we also suspected that

32. Paul Slovic and his colleagues found just such selective use of metrics by experts in seeking to influence public opinion. See Slovic et al., *supra* note 29, at 292–93.

33. Thomas C. Schelling, *Economic Reasoning and the Ethics of Policy*, 63 PUB. INTEREST 37, 53–56 (1981).

this *penalty aversion* would be exacerbated by progressive rates. Schelling asked his students if they thought that there should be a larger child bonus for the rich or for the poor. Students predictably answered that there should be a larger child bonus for the poor. Schelling next pointed out that this rule presumed a childless default; if we start with the assumption that people have children, what is needed is a childless penalty to achieve the same result. Should a childless penalty be steeper for rich or for poor? Students predictably reversed their preferences, opining that the penalty should be higher on the rich. We dub this result the *Schelling effect*, an interaction of penalty aversion and a certain progressivity illusion. This is another instance of an isolation effect, because we can surmise that subjects were thinking about the extent of the bonus in the bonus frame, and the magnitude of the penalties in the penalty frame, not noticing that there were bonuses and penalties in all cases—not paying attention to the off-stage, logical converse of the perspective they were confronting.

In our experiments, we found several instances of both penalty aversion and the Schelling effect, involving penalties and bonuses for marriage (or nonmarriage) as well as for children (or childlessness).<sup>34</sup> We presented items like the following:

A married couple with one income of \$25,000 pays \$3,000 in taxes. The same income earner, if not married, would pay a surcharge of \$2,000.

A married couple with one income of \$100,000 pays \$30,000 in taxes. The same income earner, if not married, would pay a surcharge of \$6,000.<sup>35</sup>

For each item of this sort, another item presented exactly the reverse situation, in which the taxes of the unmarried earners were \$5000 and \$36,000, respectively, and the *bonuses* for married earners were \$2000 and \$6000, respectively. In both cases, married couples with children paid \$3000 or \$30,000, depending on income level; childless couples paid \$5000 or \$36,000. What varied was whether or not the question looked at the movement from high to low taxes (a bonus) or from low to high taxes (a penalty).

We asked the subjects about both the fairness of the bonus or the penalty, and about its allocation or magnitude. The results confirmed our hypotheses. In every case, far more subjects showed the predicted pattern than the reverse. First, they judged bonuses as fairer than penalties, even though they were identical but simply described using different baselines (married or single, with or without children). Second, like Schelling's

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34. McCaffery & Baron, *supra* note 30, at 685.

35. *Id.* at 688.

students, they judged the bonus as too high for high income and too low for low income, but they judged the surcharge (penalty) as too low for high income and too high for low income. We thus confirmed the existence of both penalty aversion and the Schelling effect in tax. The conjunction of penalty aversion with progressive rates gives a good look at the compounding effects of complexity and biases in perceptions of tax and fiscal systems.

### C. Tax Aversion

Penalty aversion is related to classic biases studied in the psychology literature, such as loss aversion: Penalties seem like losses measured or evaluated from a status quo baseline (from \$30,000 to \$36,000 in taxes), whereas bonuses seem like gains from a different status quo baseline (from \$36,000 to \$30,000). We suspected that people are also affected simply by what things are called, without any change in reference point. Labeling the very same monetary charge as a “tax” versus a “fee” changes neither the starting point nor the ending point in terms of an individual’s finances. For some people, however, and for some kinds of programs, we hypothesized that the label “tax” would be enough to arouse a negative reaction, with everything else held constant. The word “tax” itself implies a burden.

We did an experiment to assess the effect of simply calling something a tax.<sup>36</sup> We asked how people thought payments should be made for fifteen various services and goods, including: primary and secondary education; basic health care; services of a fire department; and Social Security (basic pensions). We asked subjects about two types of cases that were otherwise identical in their beginning and ending financial states. We contrasted cases where a service was funded by government through a tax with cases where the users of the service paid its provider directly without the government’s acting as an intermediary. We also asked subjects about various factors: the status quo in their home jurisdiction; whether the services are provided more efficiently by government or others; the subject’s perceived self-interest; and the extent to which the subject thought that the rich should pay more, that people differ greatly in their use of the service, or that the case involved “public goods.”

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36. Edward McCaffery & Jonathan Baron, *Heuristics and Biases in Thinking About Tax*, 96 PROC. ANN. CONF. ON TAX’N 434, 438 (2003).

Questions differed in whether the way of raising funds was called a “tax” or a “payment,” and in whether the distributive properties of the tax/payment were lump sum (same for everyone), progressive (based on ability to pay), or based on use of the service in question.

We found that labels mattered. Subjects reacted differently to levies called a tax than to those called payments, even where the economics were identical. In one particular experiment combining tax and spending programs, we found no overall preference for or against “taxes.” However, different goods and services differed in whether subjects favored taxes to pay for them. In some cases, such as Social Security, subjects may have considered that the very nature of the service varied with the payment mechanism. Those services significantly favorable for “tax” were fire, education, and Social Security. Least favorable were phone service and theft insurance. Regressing across factors that we asked subjects about, we found that the status quo—how the good or service was paid for in the subject’s local jurisdiction—was highly significant. Thus, subjects seem to accept “taxes” as compared to “user fees” for items already being paid for by taxes, but to prefer user fees to taxes where there were presently no taxes in place. Hence “tax aversion” might better be understood as a *no new taxes heuristic*, as we have heard it said.<sup>37</sup>

In other experiments reported below, we found that subjects have an aversion to the income tax, even when they favor redistribution.<sup>38</sup> We also found—consistent with much polling data—that given a general, abstract choice, subjects prefer to cut both taxes and spending to fairly low levels. When confronted with particular spending programs, however, they are unable to make aggregate cuts.<sup>39</sup> A recent experiment by Catherine Eckel, Phil Grossman, and Rachel Johnston<sup>40</sup> has shown that there are different reactions to an exaction labeled as a “tax” and an unlabeled exaction. Eckel and her colleagues set up a “dictator” game for subjects, where individuals were handed an envelope containing a set amount of money and

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37. “No new taxes” was the infamous pledge of the elder George Bush, 41st President of the U.S.; his alleged violation of the pledge is said to have cost him reelection. We also have been informed by experts who advise on global tax reform that citizens often vehemently oppose user fees for services that they perceive as “free,” that is, paid through general taxes. Thanks to Richard Bird for discussions on point.

38. For more on the hidden tax bias discussion, see Part II.D.

39. This is a general finding of our “starve-the-beast” experiments, reported below. For general polling data reaching similar conclusions, see a compilation of different polls on the federal budget and taxes, available at <http://www.pollingreport.com/budget.htm> [hereinafter Federal Budget and Taxes].

40. Catherine C. Eckel et al., *An Experimental Test of the Crowding Out Hypothesis*, J. PUB. ECON. (forthcoming 2005).

given the chance to contribute some, all, or none of it to a specific charity. In all cases, the subjects were given fifteen dollars and told that the charity had been given five dollars. In half the cases, the subjects were told that they had started with twenty dollars, which had been “taxed” with five dollars given to the charity; in the other cases, nothing was said. When subjects were told that they had been “taxed,” the researchers noted a crowding out effect: Subjects reduced their voluntary contributions to offset the tax.<sup>41</sup> When the same values were simply taken from their pay in an unlabeled manner and sent to charity, crowding out did not occur.

In sum, labels matter, and “tax” tends to be a bad one.

#### D. Hidden Tax Bias

If people are tax averse, especially vis-à-vis new taxes, then governments have an incentive to hide taxes in various ways. One way is to call them something else, for example, “user fees” or “surcharges,” as we have just discussed. Another approach is to get a third party nominally to pay the tax so that it becomes an indirect tax on individuals. We hypothesized that people would prefer such hidden taxes in part because they would not think through to the next step in economic equilibrium, in which they bore the true incidence or burden of the tax. This would be another instance of an isolation effect.

The relevant principles of public finance are not profound. When a business pays a tax, the money must come from somewhere: Businesses are not real people, so they cannot pay real taxes but must pass them on.<sup>42</sup> Yet ordinary people seem not to think this many steps ahead. Hidden taxes nonetheless have real effects on prices. Suppose that hidden taxes are relatively regressive compared to subjects’ own preferences. There is reason to believe that people, having chosen hidden taxes in the first place, will not then adjust other, more transparent taxes to offset the regressivity. This result will occur, in part, because the people have not thought through to understand the relative regressivity in the first place. Again, this is a result of isolation effects.

Taxes can be hidden partially or fully.<sup>43</sup> The incidence of partially hidden taxes is known or easily knowable, but hidden from the payor’s direct view. For example, the employer’s “share” of Social Security contributions

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41. James Andreoni, *An Experimental Test of the Public-Goods Crowding-Out Hypothesis*, 83 AM. ECON. REV. 1317, 1325–26 (1993).

42. Of course, the question of the ultimate incidence of the corporate tax is among the hardest practical questions facing public finance. See, e.g., Harberger, *supra* note 22.

43. Edward J. McCaffery, *Cognitive Theory and Tax*, 41 UCLA L. REV. 1861, 1874–86 (1994), reprinted in BEHAVIORAL LAW AND ECONOMICS 398, 400–08 (Cass R. Sunstein ed., 2000).

works this way. The ultimate incidence of a fully hidden tax, in contrast, is not easily known or knowable; in fact, leading experts debate exactly who bears the real incidence of the tax. Corporate or business taxes of all forms are examples of fully hidden taxes. Standard findings in prospect theory<sup>44</sup> and the endowment effect<sup>45</sup> predict that subjects will prefer such hidden taxes to direct levies. Subjects will not feel as if they are “losing” wealth because they never felt they that were entitled to it in the first place. Behavioral economics suggests that partially or fully hiding taxes is a good move for a government that wants to maximize its revenue while minimizing its subjects’ hedonic pain.

We conducted several experiments to test some related hypotheses.<sup>46</sup> Consistent with the general behavioral economics literature, we expected subjects to focus on what was being asked in the most direct way, ignoring indirect or long-term effects. We expected subjects to prefer hidden to transparent taxes, and, in particular, to ignore negative indirect effects unless these were made salient.<sup>47</sup>

We examined the two classic dimensions of public finance: tax and spending. We looked at *raising* money (Raise) and *payment* (Pay) for four different types of insurance that could be provided either privately or by the government.<sup>48</sup> To assess the Raise aspect, we compared raising money by an income tax with raising it by a payroll or a business tax. We hypothesized that people would tend to oppose an income tax both because of tax aversion and its greater salience, until they thought about its redistributive effects from rich to poor, as our educational prompting led them to do. Conversely, we suspected that subjects might favor a business tax until they thought about its effects on workers, consumers, managers, and owners, as our prompts suggested.

To analyze the Pay aspect, we compared payment through tax deductions with payment through tax credits or direct government payment. Given a progressive income tax structure, paying through tax deductions is regressive: All things being equal, the higher income earners get more benefit. Direct payments or tax credits—that do not depend on one’s income—are not regressive. We

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44. Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk*, 47 *ECONOMETRICA* 263, 274–77 (1979).

45. Daniel Kahneman et al. *Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias*, *J. ECON. PERSPECTIVES*, Winter 1991, at 193, 194–97.

46. McCaffery & Baron, *supra* note 30.

47. The principal experiment we report also involved an attempt at educating subjects, a theme to which we return in conclusion. See *infra* Part IV.A.

48. The four types of insurance were health, disability, unemployment, and “terrorism” insurance for property.

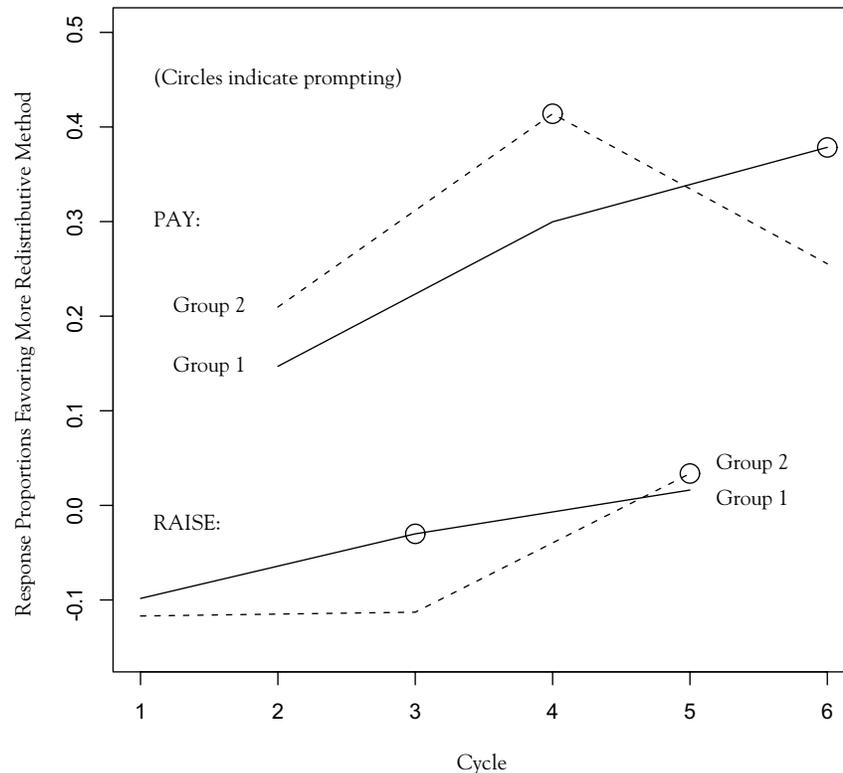
hypothesized that people would favor deductions until they thought about their redistributive effects, helping the rich more than the other two methods.

Subjects were sorted into two groups. Each group received six screens about each of the four types of insurance, with the Raise questions in the odd positions (1, 3, 5) and the Pay questions in the even positions (2, 4, 6). All subjects saw the same baseline condition on screens 1 and 2, followed by two educational prompts. The order of the prompts was counterbalanced: Group 1 got a prompting screen in position 3 (for Raise) and 6 (for Pay); Group 2 got a prompting screen in position 5 (for Raise) and 4 (for Pay). The educational prompting consisted of asking questions about the distributive effects of the tax options, and explaining the distributive consequences of using deductions. The intent was to get subjects to consider that, on the revenue-raising side, income taxes are progressive, while payroll and business taxes are not. On the expenditure side, we wanted subjects to see that paying through a progressive income tax, using deductions, is regressive; conversely, the use of direct payments or tax credits is not.

Our main hypotheses concerned attitudes toward raising the money through income taxes (versus payroll or business taxes) and attitudes against paying through deductions (versus direct payments or tax credits). We call these “favorable” attitudes, because they are favorable toward redistribution—a point of view that most subjects adopted. Once again, an income tax is redistributive when it is being used to raise revenues, but not when it is being used to subsidize private spending. Note that the only variables in this experiment were the *form* of tax or payment mechanism, and its distributive consequences. Whether or not the good or service was to be provided, and at what level, were not issues subjects faced. Thus, logically and optimally, subjects should have focused on the distributive consequences of the policies: who paid and who benefited. Instead, subjects focused on the form of the tax or the payment.

Figure 1 shows the proportion of favorable attitudes, where “favorable” means supportive of the poor or lower income—a perspective that most subjects took when asked separately about their attitudes—plotted against the sequence of trials. There are separate lines for Pay and Raise, and also separate lines for the two groups of subjects, which differed in where the prompting came in the ordering, as shown by the circled items. In general, attitudes were more “favorable” in the trial where subjects read the educational prompt than in the most comparable control conditions. However, the overall effect of these educational prompts was very slight and did not much endure to subsequent trials.

FIGURE 1  
 “FAVORABLE” ATTITUDES TOWARD REDISTRIBUTIVE POLICY  
 AS A FUNCTION OF WHERE DEBIASING OCCURRED



Note that subjects on the whole did not support raising the money through an income tax; the Raise responses are generally below 0 percent pro-redistribution. Notably, the income tax is the least hidden of all taxes. Contrary to our initial expectations, on Pay, subjects preferred direct payments or credits to using the income tax system to pay for services even before the educational prompting, although they were happy enough to further abandon the income tax as a spending system after that debiasing. What is most striking in Figure 1 is that subjects were inconsistent when it comes to redistribution, favoring it in the Pay condition but not overall in the Raise condition, but consistent in opposing the income tax. The subjects simply did not like the income tax as a vehicle to raise

or to spend money as a matter of substance. An aversion to the income tax—a formal matter—seemed to trump a desire for redistribution.<sup>49</sup>

#### E. Disaggregation Bias

Our next two results concern the splitting of public finance systems into parts, where the isolation effect is in full view and the subject matter of redistribution is central. These effects work with the hidden tax bias just discussed, because they suggest that subjects generally will not use one system to offset the properties of another. Thus, for example, subjects will not counteract the effects of relatively regressive tax and spending systems elsewhere in reforming the income tax system. We begin with the tax system writ large, split in two.

One of the striking features of the U.S. tax system in the last half century has been the rise of Social Security and Medicare contributions, or payroll taxes.<sup>50</sup> Such taxes now account for roughly 80 percent as much government revenue as personal income taxes. The fact that the payroll tax is flat, even regressive, has led to an increasing number of criticisms and suggestions that the system should be integrated with the income tax.

Were people fully rational, however, it should not matter that any particular tax in a multitax system is regressive. Any level of regressivity in the payroll tax can be counterbalanced by changes in the income tax. As long as a policymaker has full degrees of freedom in one tax having the same base as another tax, she can effect the same global distribution of tax burdens as if she had control over the whole. It should not matter that taxes are split in two.

Yet it does matter. Our experiments showed that subjects were apt to focus on the one tax they were asked to evaluate, not factoring in a parallel tax easily available to their recall. These results strongly confirm the isolation effect and demonstrate the relevance of the political psychology of redistribution.

In the experiment,<sup>51</sup> we simply asked subjects to fill in the blanks. After an initial page in which we gave instructions, stipulating that the bases of the “income” and the “payroll” taxes were identical, we presented a series of screens. Sometimes we listed a payroll tax, other times an income tax. For

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49. This adds to the argument of Bird and Zolt, *supra* note 10, against using progressive income taxes to redistribute wealth in developing countries.

50. See generally Deborah A. Geier, *Integrating the Tax Burdens of the Federal Income and Payroll Taxes on Labor Income*, 22 VA. TAX REV. 1 (2002); Deborah A. Geier, *The Payroll Tax Liabilities of Low- and Middle-Income Taxpayers*, 106 TAX NOTES 711 (2005); Andrew Mitrusi & James Poterba, *The Distribution of Payroll and Income Tax Burdens, 1979–1999*, 53 NAT'L TAX J. 765 (2000).

51. McCaffery & Baron, *supra* note 20, at 234–35.

each tax, we had four levels and rates of graduation, across households with \$20,000, \$40,000, \$80,000, \$160,000, and \$320,000, including one “no tax” (0) option. In half the cases, we asked subjects to set a total distribution; in the other half, we asked them to set only the “other” tax. In half the cases, we asked for the answers in dollars, and in the other half we asked for the answer in percent.

This design generated 32 screens: 2 taxes given x 4 levels and rates x 2 (other/total) x 2 (dollars/percent). Note that there was no rational reason for the bottom-line responses—the overall tax system—to vary. Subjects easily could have adjusted what they could adjust to effect the same overall tax in each case. But the bottom lines did vary, and dramatically so.

Table C lists the mean overall tax rates, across income levels, converted into percent and total (where we were asking in dollars and/or about the “other” tax alone), to get the presentation into a common metric.

TABLE C  
OVERALL LEVEL OF TAXES (IN PERCENT)  
AS A FUNCTION OF MULTIPLE FRAMES

Given Rates					Response				Mean
\$20k	\$40k	\$80k	\$160k	\$320k	Dollars		Percent		
					Total	Other	Total	Other	
<i>Payroll Tax Given, Income Tax Response</i>									
0	0	0	0	0	14.97	14.60	17.56	16.90	16.01
0	5	10	15	20	14.89	21.13	17.60	23.68	19.32
5	10	15	15	15	15.25	21.68	17.20	24.28	19.60
10	10	10	5	5	15.28	18.84	17.55	22.51	18.54
<i>Income Tax Given, Payroll Tax Response</i>									
0	0	0	0	0	15.66	13.24	17.02	16.15	15.52
0	5	10	15	20	15.44	20.35	17.13	22.01	18.73
0	8	16	24	32	16.00	24.13	17.79	27.36	21.32
10	10	10	10	10	14.75	18.71	16.92	22.11	18.12
<i>Mean</i>					15.28	19.09	17.35	21.87	

Table C reveals that the frames (other versus total, dollars versus percent) and the starting points mattered. As hypothesized, the overall level or magnitude of taxation was higher when responses were in terms of the “other tax” than when they were in terms of the total tax. Except for the case in which the given tax was set at zero, the aggregation frame mattered: Subjects did not add.<sup>52</sup>

52. Ten subjects did not respond differently at all when they were asked for total tax or the other tax. The results were essentially the same when these subjects were removed from the analysis.

The metric frame also mattered, as the level of taxation was higher when responses were in percent than in dollars.

Additionally, subjects were insufficiently responsive to changes in the given rates. They anchored on whatever rates they were given and did not adjust to make all the rows the same. In particular, total taxes were lower when the given rate was zero than when it was not (compare the first and fifth rows versus the mean of the others).

Table D shows graduation. We define this as the slope of the percent tax as a function of income step, with each income step (that is, each doubling of income) defined as one unit. Graduation is logically independent of the level of taxation, shown in the prior table.

TABLE D  
GRADUATION (TAX CHANGE FOR EACH INCOME LEVEL STEP)  
AS A FUNCTION OF MULTIPLE FRAMES

Given Rates					Response				Mean
\$20k	\$40k	\$80k	\$160k	\$320k	Dollars		Percent		
					Total	Other	Total	Other	
<i>Payroll Tax Given, Income Tax Response</i>									
0	0	0	0	0	3.73	4.47	5.99	5.99	5.05
0	5	10	15	20	3.89	7.38	5.85	9.20	6.58
5	10	15	15	15	3.83	5.75	6.03	7.16	5.69
10	10	10	5	5	3.80	2.70	6.05	5.43	4.50
<i>Income Tax Given, Payroll Tax Response</i>									
0	0	0	0	0	4.46	3.74	6.11	5.61	4.98
0	5	10	15	20	4.26	6.53	5.85	8.33	6.24
0	8	16	24	32	4.30	9.20	5.76	10.95	7.55
10	10	10	10	10	3.76	3.31	5.67	5.68	4.60
<i>Mean</i>					4.00	5.39	5.91	7.30	

Once again, the frames mattered. Subjects could have—and to be consistent, should have—adjusted what they could to produce the same level of graduation in each instance. They did not. Graduation rates were higher for percent than for dollars, showing the effect of the metric frame. As hypothesized, subjects were also insufficiently sensitive to the extent to which the given “other” tax was graduated. Subjects appeared to focus only on what they were asked to judge. A clear comparison to illustrate this effect is between the sixth and eighth rows of the table, where the overall rate of the given

income tax was the same, despite the difference in its graduation.<sup>53</sup> Given a flat rate tax in the eighth row, subjects ended up with a relatively flatter tax, overall.

This experiment revealed several biases. The *metric effect* is manifest in the fact that the mean levels (in Table C) and the slopes (in Table D) are all higher in the percent columns than in the dollar ones. The *disaggregation bias* is evident in the fact that the “other” columns in Table D, for both dollars and percent, are higher than the “total” columns. And an *anchor and adjustment* process—whereby subjects “anchor in” on a starting point and under-adjust it to their preferred end result<sup>54</sup>—is evident in the significant variation across the rows, and their correlation with the left-hand, “offstage” tax. Counter to logic, the disaggregation bias suggests that ordinary people will have a difficult time accepting a steeply progressive tax system, even if it is simply to compensate for other relatively regressive elements of public finance that are offstage.

The wider series of experiments we conducted in this vein<sup>55</sup> revealed several related matters of interest to real-world tax system design. For example, subjects seem willing to consider higher taxes if there are more smaller taxes. Additionally, negative tax brackets in one tax to offset positive brackets in others (as under the Earned Income Tax Credit in U.S. law)<sup>56</sup> are salient and disfavored. Finally, the total progression of a tax system may be a function of its size and constituent parts. We pick up several of these themes in the next series of experiments.

#### F. Privatization Effect

Just as tax systems can be combined or torn asunder, so too can the two broad functions of government: allocation and redistribution, tax and spending. Recall the two-part welfare economics analysis that forms a rational-choice baseline for our analysis. In choosing if and how much to intervene in the economy, the government can in the first instance relentlessly

53. Additionally, compare the results in Table C. Even after adjustment, the level of taxation in these two conditions is about the same, yet subjects favored a far less graduated overall tax system when the given income tax was flat, in Row 8, then when graduated, in Row 6.

54. Amos Tversky & Daniel Kahneman, *Judgment Under Uncertainty: Heuristics and Biases*, 185 SCIENCE 1124, 1128–30 (1974), reprinted in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES, *supra* note 11, at 3, 14–18; Daniel Kahneman et al., *Economic Preferences or Attitude Expressions?: An Analysis of Dollar Responses to Public Issues*, 19 J. RISK & UNCERTAINTY, 203, 225–28 (1999), reprinted in CHOICES, VALUES, AND FRAMES, *supra* note 11 at 642, 665–68; BARON, *supra* note 17, at 375–76.

55. McCaffery & Baron, *supra* note 20, at 236.

56. I.R.C. § 32 (2000); see also Lawrence Zelenak, *Tax or Welfare? The Administration of the Earned Income Tax Credit*, 52 UCLA L. REV. 1867.

pursue an efficiency or wealth-maximizing agenda. The government can then use the tax system in a second stage to achieve the level of end-state distribution that it considers fair or just. Specifically, decisions such as whether to have public provision of a good or service should be decided on the basis of efficiency alone, to make the “pie” as big as possible. In the limiting case, the government would do nothing in affecting allocative matters because private markets are efficient. But even then the government can still redistribute through the tax system, which would serve a pure, “zero sum” redistributive tax and transfer function. Not only are the two functions logically separate, but by thinking about them differently and discretely, social welfare can be maximized while the paretian constraint is met. Yet once again we ask: Do ordinary people ordinarily think in a way consistent with this approach?

After looking at a single tax system split into two (payroll and income), we turned next to tax and spending systems. When governments raise taxes by a progressive tax scheme and then pay to provide services that benefit rich and poor alike, the net effect is to redistribute income, a “cross-subsidy” through the provision of the good. The rich pay more, the poor less, but both income classes benefit the same. This is a paradigm example of the “bundling” together of two distinct governmental actions, allocation (providing the good or service in the first place) and redistribution. Were the government simply to “privatize” or otherwise cut government services, without continuing the redistribution effected through the tax and spending program, a greater burden would fall on those who are relatively poor—redistribution as well as allocation would be affected. Yet, logically, the government could continue to redistribute resources through the tax system without the provision of the good or service. The disaggregation and more general isolation effect, however, suggest that subjects may not support a consistent level of redistribution independent of government provision of goods or services.

To test our hypothesis, we asked subjects to imagine that their national government could provide five basic services, spending equal amounts on each: defense, education, health care, social security, and “everything else.”<sup>57</sup> We presented sixteen cases in which government provided all possible combinations of the first four. In each case, we asked subjects to choose the fairest level of progressiveness, and we gave subjects the option of choosing negative taxes for the poorest taxpayers. Using actual

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57. Jonathan Baron & Edward J. McCaffery, *Masking Redistribution (or Its Absence)*, in BEHAVIORAL PUBLIC FINANCE (Edward J. McCaffery & Joel Slemrod eds., forthcoming), available at <http://ssrn.com/abstract=528165>.

government statistics, we divided taxpayers into three groups, each supplying a third of the national income (hence there were far more taxpayers in the bottom third, because of the far lower per capita income levels), and listed the median income for each group. The baseline, a flat percent tax, had a tax level of 25 percent for each group. Each cut of a good or service lowered the baseline by 5 percent. Subjects could adjust progressivity up or down. Consistent with our prior research on disaggregation effects, we anticipated that subjects would not maintain the same level of redistribution—would not fully take into account or integrate the effects of the service cuts on household welfare—and hence would choose less overall redistribution with fewer services. We were correct.

Six subjects always chose the least progressive distribution, which was equal percentage rates for all three groups—a flat percent tax—and 2 subjects always chose the most progressive. The mean choice was 3.42, on a 1–6 scale, with 6 being the most progressive. The mean choice amounted to a difference in tax rate of 24.2 percent (in absolute percentage terms) between the high and low income groups: the difference, say, between a 15 percent and a 39.2 percent effective tax rate.

For each subject, we calculated the mean effect of each cut on progressiveness, first ignoring the effect of cuts on out-of-pocket costs. The mean effects in the change in percentage difference between high and low groups were 1.1 percent for defense,  $-0.1$  percent for health care, 0.4 percent for education, and  $-0.4$  percent for social security, where a positive effect indicates less progressiveness with the cut than without it. Of these means, only the defense item was statistically significant. The mean of all these effects combined was not significantly positive, and the four services were not significantly different. Thus, subjects basically maintained the same degree of progressiveness without taking into account the effect of the cuts on out-of-pocket cost. That is, subjects continued to view the remaining, residual tax system in isolation of the privatization effects they were witnessing, and they had a sense of what a good tax system, *in isolation*, should look like.

But cuts do affect out-of-pocket costs both in the experiment and in the real world, at least for three of the goods of interest: health care, education, and social security. The relevant data for social well-being therefore includes the effects of these cuts in public services on net—after public tax and spending—household welfare. Do subjects use the tax system to compensate for the effects of public spending cuts? If so, they would increase the progressiveness of taxes when any or all of these three goods were cut.

We found that for all three of the cost-yielding cuts (health care, education, social security), subjects corrected far less than would be required even to get close to maintaining constant redistribution across conditions. While some subjects attempted to offset the cost-increasing effects of cuts, on average the attempt fell far short of what was needed to maintain progression.

Figure 2 shows the mean response of subjects, using the same type of graph they saw, in the absence of any cuts and in the presence of three cuts. The lowest panel represents the results of including out-of-pocket costs.

FIGURE 2  
 MEAN AND INFERRED RESPONSES FOR TAX RATES IN PRESENCE  
 AND ABSENCE OF HEALTH CARE, EDUCATION, AND SOCIAL SECURITY

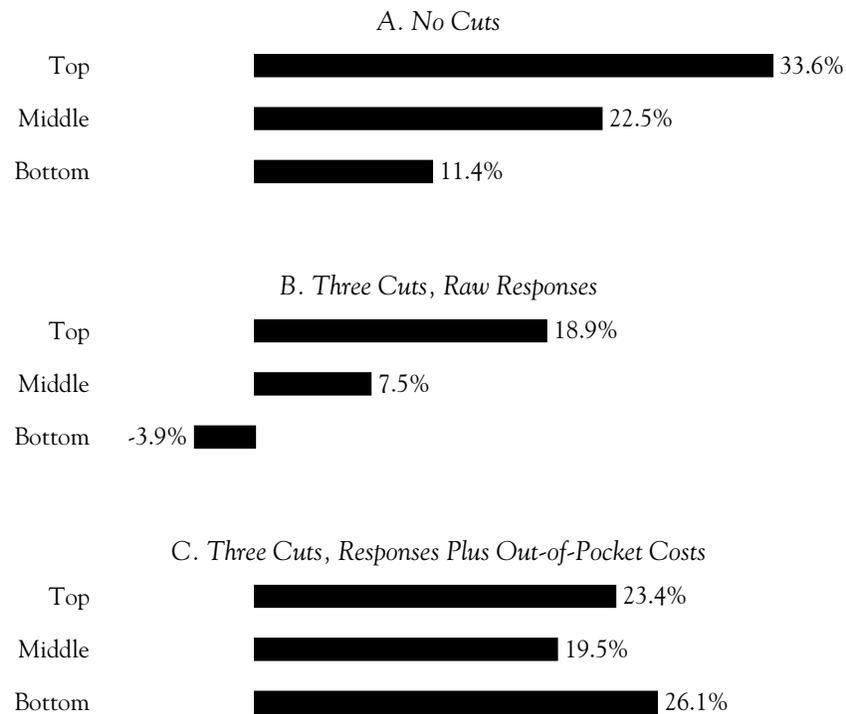


Figure 2 gives an excellent look at the isolation effect or disaggregation bias, as it played out in a unified tax and spending system. Subjects preferred at least moderate progressivity in the baseline, global condition (Panel A), with government provision of all five sets of goods and services. With three major private-cost items removed from the mix of public goods (Panel B),

subjects continued to choose a tax system reflecting moderate progressivity, even accepting a negative tax bracket for the poor. But when realistic private replacement costs were built back in, showing a global tax and out-of-pocket effect, the overall system then looked regressive (Panel C). Compared to the subjects' own chosen baselines, the bottom line reflected a steep cut in costs (taxes plus out-of-pocket) for the upper income level, a slight drop for the middle income level, and a dramatic (230 percent) rise in effective burdens on the lowest income level. By focusing on the "optics" of taxes alone, a preference reversal in the bottom-line effects followed.

Note that aversion to progressivity cannot explain the results, given that subjects (on average) consistently chose progressive taxes, as Panel A illustrates. Nor can ignorance of the financial effects of public spending cuts explain the results. We asked subjects a test question about the extra cost per household caused by cuts. Subjects made mistakes, but the most common error seemed to be simply to count the number of cuts, including defense cuts, which (by specification) should have had no effect on household spending. Ninety-five percent of the subjects gave the correct answer or chose a *larger* effect than we had posited. The mean answer to the test question was 2.53 on a scale from 1–4, where the mean correct answer was 2.5. In sum, subjects did not underestimate the effects of public spending cuts on net household costs. And for good measure, we calculated that the results were essentially unchanged when we examined only the subjects who estimated cost correctly, or overestimated it, on the average.

What can explain the results is the disaggregation bias or isolation effect. Even though they knew about the effects of service cuts on households, subjects looked only (or primarily) at the tax system when adjusting the tax system. They did not adequately factor in the effect of public spending cuts on the slope of progressivity in the remaining tax system. The result was that effective progressivity decreased as the number of cuts increased—disappearing altogether with enough "downsizing" of government.<sup>58</sup>

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58. Our results lend additional credence to the work of Bird & Zolt, *supra* note 10. Bird and Zolt find that expenditure programs are more important to redistribution, on net, than are tax systems. The fact that subjects seem to have a difficult time redistributing outside of expenditure programs supports this finding. Of course it also makes more problematic the choice of ethically appropriate redistribution in the first place, especially if this is to be determined by some aggregation of individual preferences.

### G. The “Starve-the-Beast” Phenomenon

Our final example of heuristics and biases affecting ordinary judgments about public finance is the most dynamic and systematic, because it shows how government policy over time can have effects. Specifically, we examined the “starve-the-beast” strategy proffered by some current reformers: The idea is to cut taxes now, as a means of cutting spending later.<sup>59</sup> This example allows us to pull together many of the effects found in isolation (pun intended) above.

As background, consider a familiar debate about government. Politicians, social scientists, and citizens disagree sharply about the appropriate size of government. The issue captures perhaps the major fault line between parties in two-party democracies. Some argue that big government is bad, but that people can be led to support it because they do not think about long-term issues and thus desire overly generous present programs.<sup>60</sup> Others argue that government is if anything too small, because of pressure for low taxes, which appeal to citizens on the basis of narrow and myopic self-interest. A common element between the two extremes is the perception that there is a disconnect between the present and the future; there is an implicit understanding that citizens will fail to integrate their beliefs and actions over time. Antigovernment partisans fear that citizens will want programs now, neglecting their long-term costs, and then will be reluctant to cut these programs later, such that a bloated Leviathan results. Social Security and Medicare in the United States are leading case studies for such critics. Pro-government partisans fear that citizens will support tax cuts now, ignoring the long-term effects of any resulting deficit (or diminished surplus) on the ability of the government to continue to provide public goods and services in the future.

The predicates of both of these sets of attitudes stand in stark contrast to the “rational choice” or “rational expectations” model of politics, where citizens properly integrate their actions over time. Thus, Robert Barro has argued that government deficits may not even matter, because forward-looking citizens in an overlapping generations framework will rationally

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59. For some related discussions, see William G. Gale & Peter R. Orszag, *Bush Administration Tax Policy: Starving the Beast?*, 105 TAX NOTES 999 (2004), Daniel N. Shaviro, *Can Tax Cuts Increase the Size of the Government?*, 18 CAN. J.L. & JURIS. 135 (2005), and Daniel N. Shaviro, *Reckless Disregard: The Bush Administration's Policy of Cutting Taxes in the Face of an Enormous Fiscal Gap*, 45 B.C. L. REV. 1285 (2004).

60. See, e.g., JAMES M. BUCHANAN & GORDON TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* 31–39 (1962).

save today in anticipation of increased taxes tomorrow.<sup>61</sup> Conversely, surpluses today can lead to greater private debt in anticipation of lower taxes tomorrow.

Where does the truth lie? How do ordinary citizens really think? Standard findings in cognitive psychology, most notably prospect theory and the endowment effect,<sup>62</sup> support the popular understanding that the timing of issues and decisions matters. Once a government program is in place, it will become part of the status quo and can be hard to cut. Thus, the thumb is on the side of continued government growth. On the other hand, citizens are averse to taxes, a phenomenon that itself has cognitive psychological dimensions. People react disproportionately to salient taxes and fail to consider the offsetting benefits of government programs.<sup>63</sup> People are also likely to believe that a tax increase is a loss, making it difficult to raise taxes.

A psychologically savvy political strategy, used by those who favor smaller government, is called “starve the beast.”<sup>64</sup> The idea is to cut taxes before cutting spending, then use the resulting deficit as a political argument to reduce spending or to reject new spending. Most commentators agree that this strategy has been used by both former President Reagan and the current president, George W. Bush. In both cases, large deficits resulted from fiscal policies. Although spending was not cut concurrently with taxes, government may have grown less than it would have without the tax cuts because the baseline for future judgments changed.

Can the “starve-the-beast” strategy gain public support? Will people support tax cuts now, even with no specified spending cuts, because of a failure to think through what will happen—that is, because the bifurcation of tax and spending has created an isolation effect, between tax and spending programs? In our experiments, we presented people with information about current levels of taxation and spending, and we asked them to adjust both levels to what they would prefer. We tested three hypotheses about why citizens might accept tax cuts in the absence of spending cuts.

Our first hypothesis was that people simply might not be bothered by deficits. They might prefer lower taxes and higher spending. When people are asked to adjust rates of taxation and spending, they will tend to choose lower levels of taxation and higher levels of spending.

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61. Robert J. Barro, *Are Government Bonds Net Wealth?*, 82 J. POL. ECON. 1095, 1101–06 (1974).

62. See, e.g., Kahneman & Tversky, *supra* note 44 (prospect theory); Kahneman et al., *supra* note 45 (endowment effect).

63. McCaffery & Baron, *supra* note 36, at 442.

64. This term is usually attributed to David Stockman, the budget director in President Ronald Reagan’s administration. See John Maggs, *Feeding the Beast*, NAT’L J., Mar. 5, 2005, at 689.

Second, people might think excessively or even exclusively about the short-term. They neglect the fact that deficits must be covered in the future. More generally, they engage in a kind of *optimism bias*,<sup>65</sup> believing that matters will work out in the end. In this case, they would favor budget deficits in the short-term and respond differently when asked about the future than when asked about the present.

Third, people might think differently about tax cuts and spending cuts because public discussion tends to focus on taxation as a single large category and on spending as a set of specific programs. When spending is presented as a single total category, people prefer spending cuts to match tax cuts. When the spending cuts are unpacked, however, people will oppose cuts in spending on particular programs.<sup>66</sup> Deficits result. We tested this instance of an isolation effect by asking about spending in the abstract and cuts in particular programs.

Overall, we also considered whether responses to the adjustment question are influenced by the starting point. Did people have an ideal government size in mind? Or were they influenced by the status quo? If people do not adjust to the same ideal level, then once deficits (or surpluses) are in place, people will not be inclined to remove them immediately.

In our first experiment on point, we presented people with hypothetical government budgets in which taxes and spending varied independently, leading to deficits, surpluses, or balanced budgets. Taxes and spending levels were set at 15, 20, or 25 percent of GDP in all nine possible permutations (so that tax at 15, spend at 25 would have a large deficit, and so on). We then asked people for their preferences about taxes and spending in the long-term and short-term. We compared subjects' preferred levels to the starting levels they were given, and we also considered whether subjects would adjust completely so as to maintain a constant balance and size of government. Conversely, we considered whether they would anchor and under-adjust, failing to correct surpluses and deficits.<sup>67</sup>

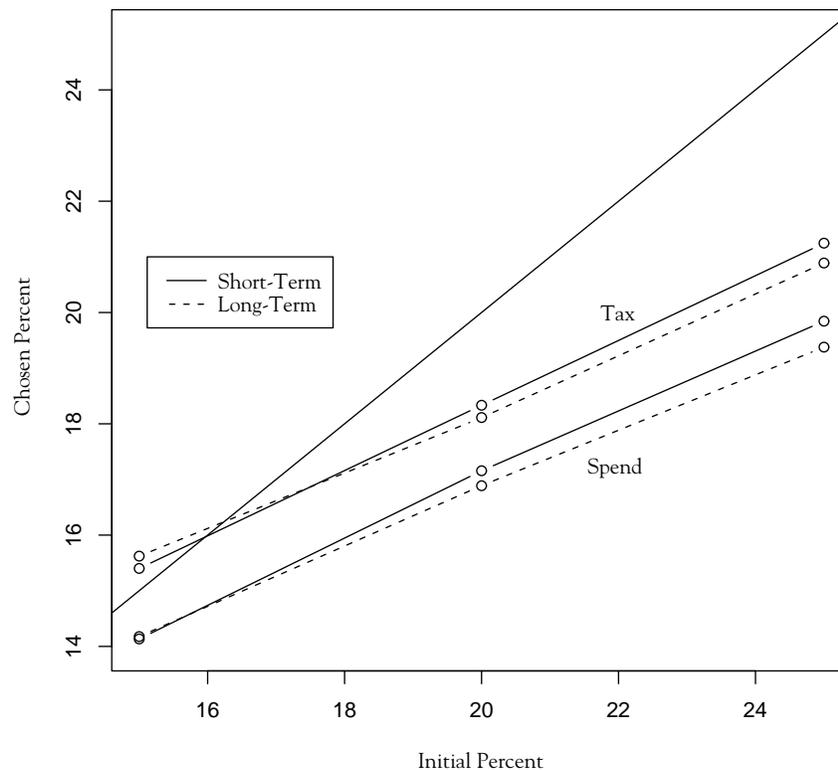
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65. The optimism bias is discussed in Jolls, *supra* note 10; see also Colin Camerer & Dan Lovallo, *Overconfidence and Excess Entry: An Experimental Approach*, 89 AM. ECON. REV. 306, 310–13 (1999); Daniel Kahneman & Dan Lovallo, *Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking*, 39 MGMT. SCI. 17, 24–29 (1993); Dan Lovallo & Daniel Kahneman, *Delusions of Success: How Optimism Undermines Executives' Decisions*, HARV. BUS. REV., July 2003, at 56.

66. Such an effect would be analogous to the "identified victim" effect. See Karen Jenni & George Loewenstein, *Explaining the Identifiable Victim Effect*, 14 J. RISK & UNCERTAINTY 235, 235–36 (1997); Deborah A. Small & George Loewenstein, *Helping a Victim or Helping the Victim: Altruism and Identifiability*, 26 J. RISK & UNCERTAINTY 5, 5–7 (2003); Tehila Kogut & Ilana Ritov, *The "Identified Victim" Effect: An Identified Group, or Just a Single Individual?* (unpublished paper presented at the 19th Biannual Conference on Subjective Probability, Utility, and Decision Making, Aug. 25–27, 2003).

67. See sources cited *supra* note 54.

FIGURE 3  
PREFERRED LEVELS OF TAXATION AND SPENDING



(The diagonal line—the one at the 45° angle—represents no change from starting point)

Figure 3 shows subjects' preferred levels of taxation and spending as a function of the starting levels of each. Three features of the results are especially interesting.

One, subjects preferred lower taxes, reflecting once again a general tax aversion. In the high (25 percent) and medium (20 percent) initial tax conditions, subjects lowered the tax rate. In the low (15 percent) initial tax condition, they supported a slight but insignificant tax increase, although it is worth noting that the introductory page had set a current condition default at 20 percent, so subjects might indeed have taken this particular starting point as a tax cut.

Two, subjects generally favored a surplus over a deficit. Preferred levels of taxation were higher than preferred levels of spending by an average of 1.3 percent of GDP. Surpluses were created because the subjects cut spending

by more than they cut taxes. There was no significant difference between the short-term and long-term conditions. The optimism-bias hypothesis received no support, nor did any other hypothesis holding that people prefer deficits. No subject showed a significant pro-deficit inclination across the eighteen cases.<sup>68</sup>

Three subjects adjusted their responses to the posited current balance of spending and taxation, although it was trivial not to do so. This recalls the disaggregation and anchor-and-adjustment biases discussed above.<sup>69</sup> Subjects easily could have maintained a constant level of tax and spending independent of the artificially set initial conditions, but they did not. Responses depended on the starting levels of both spending and of taxation. But subjects did not go far enough to maintain a constant level of taxes, spending, or the balance between them, showing once again an anchor and under-adjustment effect. The upshot was that their preferences led to significant surpluses when surpluses were already present or even when the budget was balanced. When deficits already existed, however, they were maintained.

This experiment revealed that subjects are generally tax averse but are also deficit averse. Given free rein, people generally support cutting taxes but aim to balance the budget by cutting general levels of spending even more. They are not naively optimistic, but are influenced by initial conditions, however thinly framed or presented.

A second experiment in this vein tested the specific hypothesis that people prefer spending cuts in the abstract but not in particular. The second experiment was similar to the first, except that we removed the short-term condition because we found no short-term/long-term divergence. We also added a new condition for subjects to make particular judgments about categorical spending. We attempted to approximate the major categories of spending in the U.S. federal budget. In this way, we tested an *identified-victim bias*—the idea that people oppose particular budget cuts, even though they are happy with spending reductions in the abstract.<sup>70</sup>

Specifically, we set tax and spending levels at 16, 20, and 24 percent of GDP. We asked the subjects to adjust the levels, as in the prior experiment. Screens were presented in two sets of pairs. In the first set, “Tax 1” and “Total Spend” were precisely parallel to the tax and spending questions in the prior experiment. In the second set, “Tax 2” and “Category Spend,” we asked the same question about tax level but asked about spending by budget categories.

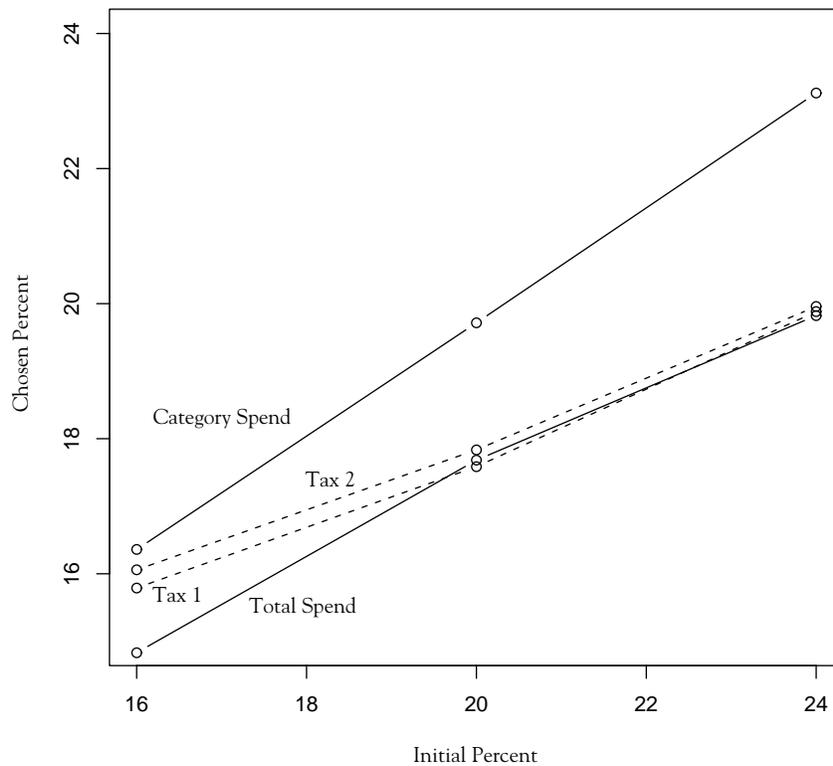
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68. See *supra* note 24.

69. See *supra* Part II.E.

70. See generally George Lowenstein et al., *Statistical, Identifiable and Iconic Victims and Perpetrators*, in BEHAVIORAL PUBLIC FINANCE, *supra* note 57, available at [http://papers.ssrn.com/5013/papers.cfm?abstract\\_id=678281](http://papers.ssrn.com/5013/papers.cfm?abstract_id=678281).

FIGURE 4  
LEVELS OF TAXATION AND SPENDING IMPLIED BY JUDGMENTS



(Taxation questions are dashed lines spending questions are solid lines)

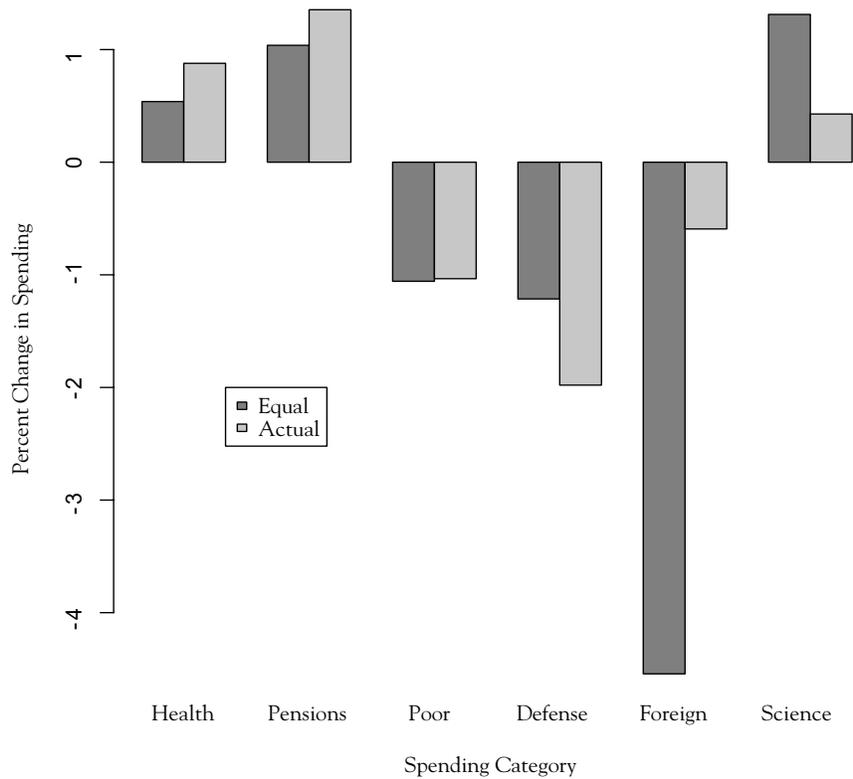
Figure 4 shows the mean judgments for the four conditions. In Tax 1 and Total Spend, subjects wanted less spending and less taxation on the whole, especially when the starting level of each was high, confirming the results of the prior experiment. As before, too, subjects made some attempt to adjust toward a constant level of desired tax and spending, but not enough to remove the influence of the starting point (perfect adjustment would have made the lines horizontal, with tax and spending invariant to starting point). Because of this under-adjustment, all deficits and surpluses remained incompletely corrected. On the whole, however, subjects favored neither surpluses nor deficits, although they favored reductions in both spending and taxation.

Tax 1 and Tax 2 did not differ significantly. In all trials, subjects wanted on average to cut taxes, except when these were already at the lowest level in

the range, here 16 percent. But subjects did not integrate their tax decisions with their attitudes on spending, as noted above, such that deficits persisted.

Total Spend and Category Spend, however, differed significantly. Although subjects adjusted Category Spend somewhat by reducing spending more when initial spending was higher, the amount of adjustment (change from the starting point in Figure 4) was a mere 7 percent of the amount of the downward adjustment found in Total Spend. Moreover, the Category Spend and Tax 2 judgments together implied much higher deficits than the starting point on the average. Subjects wanted to cut taxes but did not want to change spending significantly when, and only when, they were faced with questions by specific category of spending.

FIGURE 5  
CATEGORY SPENDING CHANGES, IN PERCENT OF SPENDING



(Calculated both as if all categories were equal parts of the budget, and the actual percents given to the subjects)

Figure 5 shows desired overall spending changes by category. It does so both for the actual changes, calculated on the assumptions given to the subjects about the relative spending on each category, and for changes under an “equal” condition in which each of the six categories was assumed to be equivalent: that is, on the (incorrect) assumption that each category took up one-sixth of the total spending listed (92 percent of all government spending). It is apparent that subjects were willing to cut some spending. Their favorite target for cuts was foreign aid. But, interestingly, foreign aid is already a small share of the U.S. budget—some suggestive evidence that popular opinion matters. *If* foreign aid were a major item of expenditure, subjects would have been making significant cuts. Yet analysis of the data even on the assumption that all categories were equal in spending (as shown in Figure 4) does not change the main result. Although spending cuts were greater when analyzed this way (because subjects were greatly cutting the small category of foreign aid), spending was still substantially greater than it was chosen to be by the very same subjects in Total Spend, the condition in which spending cuts were made globally. The overall deficit was also therefore much greater when calculated using the category spend responses. It appears that a primary reason why subjects were reluctant to cut particular categories was because these categories were identified, and made salient, versus lumped together and kept nonsalient and abstract.

In sum, we found no support for two hypotheses about why the “starve-the-beast” strategy might gain political support. People do not favor deficits, even in the short-term. Nor are people naively optimistic that deficits today will somehow disappear tomorrow. We found strong support, however, for a third hypothesis: People favor spending cuts in general but not in particular. The “starve-the-beast” strategy can work—in the sense of getting subjects to support policies of tax cuts today that they would not otherwise support—by separating out decisions about tax and spending, making the former concrete while keeping the latter abstract, thereby generating the conditions for an isolation effect to take hold.

### III. WHY IT MATTERS

Why do these various heuristics and biases in understanding and accepting redistributive public finance programs, which we grouped under the common label of *isolation effects*, matter? We realize that there is still much work to be done in connecting our findings to actual tax systems,

which are the product of complex and multilayered political processes.<sup>71</sup> But we have a strong belief that these isolation effects are relevant. Citizen input matters. Actual public finance systems show a tendency towards hidden taxes, the income tax does not compensate for the relative lack of progressivity in other tax systems, privatization seems to affect redistribution, and deficits appear to arise, persist, and affect policy decisions.

We address in this section the prescriptive challenges in moving from the *is* of cognitive bias in the understanding of tax to any compelling *ought*.<sup>72</sup> It is important to attempt this movement. There is a tendency to conclude that if tax and other public finance systems appeal to popular perceptions, so much the better, because there will be psychological gains from putting the pain of tax in its most pleasing light. We believe that this happy tale is wrong—dangerously wrong—for several reasons.

First, as we have stated throughout, even psychologically pleasing taxes have real effects. In particular, pleasing taxes can be inefficient, violating the first prong of the optimal welfare economics analysis. The corporate tax is a leading example of a popular hidden tax. Although the tax seems to please people because it does not strike them as a “tax”—or at least not one that they personally pay—a corporate tax has real effects on prices and other allocative decisions. If the distorting costs of the tax are higher than those of any alternative equal revenue-raising measure, then, *ceteris paribus*, society is paying a real welfare cost for its psychological preferences. In such a case, the first prong of the optimal welfare economics approach cannot be followed because people will not accept efficiency-enhancing or wealth-maximizing reforms on account of their cognitive errors.

Second, and perhaps worse, equity can suffer from cognitive errors as well. Equity can be pitted against efficiency in a tradeoff not mandated by the optimal welfare-economics approach. Psychologically pleasing hidden taxes, such as corporate income ones, generally will not be as progressive as subjects themselves desire taxes to be in the abstract. If the isolation or disaggregation effect were not so widespread, this equity effect may not matter all that much, although the efficiency losses noted in the prior paragraph would still occur. Society could have as many regressive taxes or surcharges

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71. See generally SVEN STEINMO, *TAXATION AND DEMOCRACY: SWEDISH, BRITISH, AND AMERICAN APPROACHES TO FINANCING THE MODERN STATE* (1993) for a discussion of the role that popular democratic input may or may not have in formulating tax policies. We discuss some of these issues at greater length in Edward J. McCaffery & Jonathan Baron, *Thinking About Tax*, *PSYCHOL. PUB. POL'Y & L.* (forthcoming), available at <http://srrn.com/abstract=567767>.

72. See generally DAVID HUME, *A TREATISE ON HUMAN UNDERSTANDING* (Ernest Mossner ed., 1969) (1739) for the classic statement of the difficulty in moving from a descriptive fact, an “is,” to a moral position, an “ought.”

as it desired, as long as it had a single system, such as the personal income tax, in which to redistribute. We have seen, however, that ordinary subjects have a hard time understanding extreme progressivity in any single system, viewed in isolation. This fact counsels against the earned income tax credit's strategy, of using a negative income tax bracket to offset positive taxes elsewhere,<sup>73</sup> because the negative tax becomes salient and draws fire. The reformer concerned with redistribution needs to look at all tax systems individually because the polity will not adequately integrate them. The same tension is evident in the privatization effect. The two-part optimal welfare economics analysis suggests that efficiency alone should dictate whether the government provides a good or service. But because ordinary subjects have a difficult time integrating the effect of spending cuts or government downsizing on the residual tax system, bottom-line redistribution can suffer on account of even an efficiency-enhancing reform. The paretian constraint will not hold with privatization; the rich will get richer, the poor, poorer.

These two findings—that equity and efficiency can both suffer on account of prevalent heuristics and biases—constitute major ethical challenge to the status quo, and to traditional welfare economics. They are thus our principal concerns. Consistent with many other researchers in diverse disciplines, we have found that most subjects want at least moderate redistribution, viewed as a baseline matter. Yet citizen support for redistribution can change with the institutional setting. This is puzzling and troubling. And thinking about public finance raises still other concerns.

Third, for example, the resolution of public finance matters can be fragile and volatile, as equivalent frames can shift public opinion. Instability in public finance systems is itself a bad because it alone reduces welfare.<sup>74</sup> Cognitive psychology suggests that people's preference shifts or reversals can obtain with no change in the underlying substance, so it is not a matter of people seeing the light and adopting "better" resolutions of public finance issues. People will simply choose more progressivity if they can be led to think in percentage terms, and less in dollar terms. They will choose policies that can be understood as bonuses, and then reject the same policies when they come to see them as penalties. This back and forth, on purely formal grounds, is problematic.

Fourth, given the importance of framing and related effects, politics will reward rhetoric over substance. "Great communicators" will be prized, not because they advocate "better" policies, but because they make their

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73. See Zelenak, *supra* note 56.

74. See generally Martin Feldstein, *On the Theory of Tax Reform*, 6 J. PUB. ECON. 77 (1976).

policies *sound* better to voters. This diverts political resources from the potentially welfare-enhancing study of substantive policy effects to the purely formal rhetorical presentation of matters. This leads to the next concern, which is especially great.

Finally, and perhaps most disturbingly, a skilled politician or political party can manipulate public opinion and get a public finance system in place that conflicts with prevalent democratic preferences. Suppose for example that a politician or party wanted to reverse course, and to reduce the degree of redistribution prevailing throughout public finance systems. Our research provides an eerie roadmap for success. Our findings suggest that a policy position to lessen social redistribution would likely lose in a straight up or down vote because a majority of people favor at least moderate redistribution.<sup>75</sup> The rhetorically skilled politician, however, could effect a collective preference reversal. She might first choose hidden taxes, with a regressive incidence, and raise money through a series of relatively flat surcharges not labeled as taxes. People would likely support these, and a surplus might even result. Larger surpluses might follow from selective “privatization” of government goods and services, reducing the need for taxes. Cuts could then be made to the most salient tax—the income tax—which would continue to reflect moderate progressivity, even as its importance in the overall budget declined. Indeed, the politician could take this a step further, and separate out the topics of tax and spending cuts, cutting taxes now and postponing spending cuts until later. The resulting deficit would curtail government growth, and it could lead to replacement taxes less progressive than the initial baseline; ultimately, the pressures of the deficit and tax aversion would lead to support for even category spending. The net result would be a smaller government and less dependence on the single remaining progressive tax system, a tax system that would continue to have only moderate levels of progressivity. Overall, the series of steps would lead to dramatically less redistribution than the people themselves wanted at the outset, and along the way, there would be many “losers,” concentrated in the lower-income classes. The cumulative changes would also fail to meet the basic paretian constraint. Of course, the astute observer might notice that this is what has been done in the United States, under Republican Party leadership, beginning with Ronald Reagan in 1981.<sup>76</sup>

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75. Our findings that people generally support moderate redistribution are confirmed by others. See Hite & Roberts, *supra* note 26; Michael L. Roberts et al., *Understanding Attitudes Towards Progressive Taxation*, 58 PUB. OPINION Q. 165, 184–86 (1994); Federal Budget and Taxes, *supra* note 39.

76. See generally C. EUGENE STEUERLE, CONTEMPORARY U.S. TAX POLICY (2004).

#### IV. WHAT IS TO BE DONE?

We hope to have motivated readers and related researchers that how ordinary citizens perceive public finance systems is important, and that the stakes for collective social welfare in improving thinking about taxing and spending can be large. In our ongoing work, we have only begun to think about systematic solutions to these problems.

To start the analysis, consider our final result on “starving the beast.” Our research shows that the strategy might work to effect a preference reversal in the citizenry, getting the people to support deficits and spending cuts against their own initial judgments. The key to the technique’s success is to match specific tax cuts today—which subjects will support—with the abstract, general idea of spending cuts today, which subjects will also support. If tax cuts today must be matched by specific spending cuts today, then the opposition to both specific cuts and deficits is likely to preserve the status quo. On the other hand, if the tax and spending decisions can be separated in time and (logical) space, then the specificity of the spending cuts can recede, and a disaggregation bias effect can take hold. Subjects will focus on the tax cuts alone, where a generic tax aversion will lead them to support cuts. A budget deficit results. Once this deficit is created, the preference for fiscal prudence causes people to want to raise taxes and cut spending. But these desires are not strong enough to reduce the deficit to zero, even when people are asked about the “long run.”

There is inconsistency here, and it does not seem to follow from a simple optimism bias. It is not that subjects seem to have a naive belief that things somehow will be better tomorrow, miraculously closing the deficits without the pain of tax increases or spending cuts. Rather the inconsistency follows from a failure properly to anticipate the difficulty in making specific cuts tomorrow—the depth of the endowment effect. At a high level of generality, the “starve-the-beast” strategy works by pairing a specific (salient) tax cut with an abstract (nonsalient) set of spending cuts.

This conceptualization suggests two broad ways for governments to avoid deficits. One way is to keep everything abstract: to pass laws about balanced budgets, as in the form of constitutional restrictions. Our experiments showed that, in the abstract, subjects supported fiscal balance. Many state governments in the U.S. are indeed required to have balanced budgets each year, and the U.S. government has occasionally tried to bind itself in advance by various budgetary rules.

An alternative is to make everything concrete and specific. We could break taxes down into categories earmarked for particular services, as in the case of the various wage taxes in the United States. If citizens come to think of each tax as linked with a particular service, they may be less willing to cut taxes.<sup>77</sup> This could help explain why the Social Security and Medicare payroll tax in the United States, now the largest tax for most American taxpayers, is also the one major federal tax that has never been cut.<sup>78</sup> This alternative would probably lead to a larger, more active government than the first method (binding in the abstract).

It may also be possible simply to confront people with the conflict in their opinions. Advocates of larger government are often tempted to answer their opponents who want to cut both taxes and spending by saying, “O.K., but where? Exactly what do you want to cut?” The usual answer, “government waste,” may stop working after a while, given that practically every politician elected to public office has been against “waste.” But then that would be rational, as politics seldom are.

These reflections lead to our final thoughts on three broad approaches to mitigating the problems we have noted.

#### A. Individual-Level Education

Possibly the most common grounds for hope is to help individuals become consistent in their judgment and decisionmaking through “debiasing”—public education being perhaps the best mechanism. Our experiments give some, but rather little, grounds for hope here. The experiment on hidden taxes showed that people react somewhat to an explanation that hidden taxes are less progressive than the income tax, or to the fact that deductions under a progressive income tax have a regressive effect. But they did not react much to these explanations. People seemed more driven by a visceral opposition to the income tax. We also have little reason to believe that such debiasing would endure. In other cases, as in the work on disaggregation bias with multiple tax systems, our experimental designs made matters quite transparent. Subjects simply had to be globally consistent, and yet they were not. These and other related findings give us reasons to doubt that individual-level debiasing or education will eradicate the root problem.

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77. Elizabeth Garrett, *Harnessing Politics: The Dynamics of Offset Requirements in the Tax Legislative Process*, 65 U. CHI L. REV. 501, 546–47 (1998).

78. McCaffery & Baron, *supra* note 20, at 231.

This is not surprising. Situating heuristics and biases in a basically rational framework, we see that most such biases are handy rules of thumb or guides to action in most cases. The isolation effect reflects a person's prudential principle of paying attention only, or mainly, to what is in front of him or her. Experts can transcend or at least mitigate these biases in specific contexts,<sup>79</sup> but how can we get the ordinary citizen to think better—more consistently—about public finance? The subject matter is complex, though all of our experiments concerned important issues and we took pains to present the information simply. Thinking about specific public finance issues is an unfamiliar activity to all but a small handful of experts. Precise questions such as those about marriage penalties, child-care credits, private Social Security accounts, and increased user fees are ever-changing. Perhaps worst of all, the stakes for the individual citizen in becoming better informed are extremely low. For one thing, the dollars-and-cents consequences of incremental decisions to ordinary citizens are often insignificant. For another thing, individual citizen input is limited to single votes in crude, multi-issue, winner-take-all elections. It is hard to expect that ordinary citizens, consumed enough with far more pressing matters, can or will become consistent decisionmakers on complex public finance subjects.<sup>80</sup> More hope might lie in better voting procedures.<sup>81</sup>

On the other hand, debiasing might not be so hard if people could learn to think more logically and consistently, like economists and other social scientists do. Economics is complicated in part because it attempts to take many factors into account simultaneously. The discipline overcomes isolation effects by looking at indirect and hidden effects. But economics also simplifies by integrating. Often the simplification is striking. Simple principles like “conservation of money” (analogous, perhaps to conservation of mass in Newtonian physics) or “no free lunch” can make public policy easier to understand. Such principles would lead to immediate questions about how tax cuts will be covered, who will pay after privatization, and so on. It is not hard to learn that truly free lunches are rare. Perhaps economics should be a requirement for high school graduation.<sup>82</sup>

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79. Geoffrey T. Fong et al., *The Effects of Statistical Training on Thinking About Everyday Problems*, 18 *COGNITIVE PSYCHOL.* 253 (1986); Darrin R. Lehman & Richard E. Nisbett, *A Longitudinal Study of the Effects of Undergraduate Training on Reasoning*, 26 *DEVELOPMENTAL PSYCHOL.* 952 (1990); Richard Nisbett et al., *Teaching Reason*, 238 *SCIENCE* 625 (1987).

80. *But cf.* JOHN G. MATSUSAKA, *FOR THE MANY OR THE FEW: THE INITIATIVE, PUBLIC POLICY, AND AMERICAN DEMOCRACY* 29–52 (2004) (finding that the results of popular referendums and initiative votes are generally efficient).

81. See, e.g., John Baron et al., *Approval Voting and Parochialism* 5–6 (July 21, 2004) (unpublished manuscript, on file with authors).

82. A quick way to make this happen is for Educational Testing Service to put economics questions on the SAT.

## B. System-Level Changes

Another possibility for structural reform would be to leave individuals to be individuals, and to implement system-wide changes instead. We consider here two broad possibilities, the first anticipated by our prior discussion of “starving the beast.”

### 1. Institutional and Constitutional Constraints

One promising path for further exploration is to put in place constitutional or other legal constraints. The “starve-the-beast” analysis supports the wisdom of such constraints: In times of cool, global reflection, consistent and sensible policy outcomes might prevail. Thus, for example, “balanced budget” amendments or rules would create constraints that, our research has found, most subjects would favor. “Paygo” mechanisms requiring legislators to tie tax cuts to specific spending cuts may also improve policy outcomes.<sup>83</sup> Other ideas include requiring the government to produce “fiscal impact statements,” along the lines of environmental impact statements, to make the effects of various fiscal actions more transparent. A helpful analogy in tax policy is the “tax expenditure” budget championed by Stanley Surrey.<sup>84</sup> This budget requires the government to list, as a form of expenditures, the various amounts of foregone revenue occasioned by deductions, exclusions, and credits in the Internal Revenue Code. Although there are inevitably questions and controversies in arriving at definitions and figures,<sup>85</sup> the device has served a kind of consciousness-raising or debiasing function. Of course, such informational mechanisms, alone, may not always produce results; one wonders if the annual statement of accrued Social Security benefits that American taxpayers receive each year does any more than confuse them.<sup>86</sup> This leads us back to the idea of tying government’s hands to some mast, as with constitutional constraints.

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83. See, e.g., Garrett, *supra* note 77, at 555–68.

84. See, e.g., STANLEY S. SURREY, PATHWAYS TO TAX REFORM: THE CONCEPT OF TAX EXPENDITURES 6–14 (1973); McCaffery, *supra* note 43, at 1941–42; Daniel N. Shaviro, *Rethinking Tax Expenditures and Fiscal Language*, 57 TAX L. REV. 187, 187–88 (2004).

85. See, e.g., Boris I. Bittker, A “Comprehensive Tax Base” as a Goal of Income Tax Reform, 80 HARV. L. REV. 925 (1967); Boris I. Bittker, *Effective Tax Rates: Fact or Fancy?*, 122 U. PA. L. REV. 780 (1974).

86. See Howell Jackson, *Accounting for Social Security Benefits*, in BEHAVIORAL PUBLIC FINANCE, *supra* note 57.

## 2. Competition

A more fundamental idea is to look to the example of private markets, where competition selects the more efficient producers notwithstanding widespread cognitive error. After all, in private markets, ordinary actors (typically consumers) can easily be lead astray by their heuristics and biases. Yet market forces serve as a kind of arbitrage mechanism, lessening, if not altogether eliminating, the effects of individual biases.<sup>87</sup> Thus, for example, financial markets such as the stock market ought to feature efficient pricing, as long as there are enough rational actors without liquidity constraints to set things aright; consumer markets likewise tend towards marginal cost pricing. The irrational heuristics of some are a source of profit for others; this is a kind of “arbitrage” of irrationality, in which one person’s mistake is another’s gain.

Competition seems to play some role in public finance. Consider that the general hidden tax bias suggests that all taxes should be hidden, and thus that the corporate tax in particular should be quite large. Yet corporate taxes in the United States and other advanced democracies are limited and falling.<sup>88</sup> Why? A compelling answer is that capital is fluid, such that any overly high corporate tax rates would lead companies to locate elsewhere. Indeed, competition might lead to the elimination of the tax, which is not necessarily a bad thing. In general, creating competition across fiscal units might push public finance in a more optimal direction, away from wastefulness or inefficiency.<sup>89</sup>

But arbitrage in public settings has its limits. Arbitrage against heuristics and biases is a private good in private markets, but a public good in public markets. The private actor, noticing an anomaly in private markets, can profit from her insight: The invisible hand of competition works to effect marginal cost pricing, for example. In the public sphere, in contrast, an

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87. See, e.g., Nicholas C. Barberis & Richard H. Thaler, *A Survey of Behavioral Finance*, in 1B HANDBOOK OF THE ECONOMICS OF FINANCE 1054 (George M. Constantinides et al. eds., 2003) (questioning the view of others that arbitrage mechanisms eliminate the effect of heuristics and biases in private financial markets); McCaffery & Baron, *supra* note 36.

88. In 1965, taxes on corporate income as a percentage of total taxation were 16.4 percent, 22.2 percent, and 7.8 percent for the U.S., Japan, and Germany respectively. By 2002, they had fallen respectively to 6.7 percent, 7.8 percent, and 2.9 percent. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, REVENUE STATISTICS 1965–2003, at 73 (2004).

89. It is disturbing in this regard that large fiscal powers, such as the United States, use their power to restrict competition along these lines—requiring, for example, effective corporate taxes among developed nations (as discussed by Ehud Kamar)—in a way that would be objectionable and indeed potentially illegal among private actors. See Ehud Kamar, *Beyond Competition for Incorporations* (2005) (unpublished manuscript, on file with authors), available at [http://papers.ssrn.com/sol3/papers/cfm?abstract\\_id=720121](http://papers.ssrn.com/sol3/papers/cfm?abstract_id=720121).

actor who notices an inefficient tax or spending program—a violation of the first prong of the optimal welfare economics analysis—cannot thereby capture any gains for herself or even her party. Public goods are predictably undersupplied.<sup>90</sup> Thus, for example, one is hard pressed to find a major politician or political party campaigning against hidden taxes such as the corporate income tax.<sup>91</sup>

More generally, the arenas in which competition can occur are limited and inconsistent. Consider some possibilities.

a. Politics

Politicians compete, of course, for votes and increasingly for money. But they do not necessarily compete on the basis of wealth maximization, to which private markets relentlessly head. Rather, as we have noted, politicians might compete on the basis of their purely rhetorical success and thus can exacerbate, not lessen, the effects of citizen heuristics and biases.

b. Investment

To some extent, government can compete for investment, including the location of plants that employ workers. However, this kind of competition is often destructive in several ways.<sup>92</sup> Governments often pay too much in a “winner’s curse” phenomenon.<sup>93</sup> And they end up providing subsidies to some industries at the expense of others that might be more productive. The biases of politics towards the immediate and the salient once more can lead public policy astray.

c. Immigration and Emigration

In principle, people can vote with their feet.<sup>94</sup> Greater competition among governments under a regime of free exit and entry could lead to more people living in places with better systems of public finance overall. To some

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90. STIGLITZ, *supra* note 2, at 128–30.

91. See Jennifer Arlen & Deborah M. Weiss, *A Political Theory of Corporate Taxation*, 105 YALE L.J. 325, 335–62 (1994), for a discussion of why no one is seemingly opposed to corporate income taxes.

92. MAX BAZERMAN ET AL., “YOU CAN’T ENLARGE THE PIE”: SIX BARRIERS TO EFFECTIVE GOVERNMENT 67–98 (2001).

93. THALER, *supra* note 16, at 50–62.

94. William A. Fischel, *Public Goods and Property Rights: Of Coase, Tiebout, and Just Compensation*, in PROPERTY RIGHTS: COOPERATION, CONFLICT AND LAW 343 (Terry L. Anderson & Fred S. McChesney eds., 2002); Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 J. POL. ECON. 416 (1956).

extent, the states of the United States compete in this way.<sup>95</sup> Such competition also occurs now among nations for immigrants, who often risk their lives to escape nations that are very badly governed. Yet, it is not clear that nations even benefit from expanding populations or want the immigrants who want to come. Thus, competition among governments is probably not a complete, long-term solution.

In sum, the idea of competition in public finance settings seems attractive, and it might work in some ways. However, many of the ways in which it might work have problems and do not offer easy answers to all of the challenges raised by behavioral public finance.

### 3. Role of Experts

Finally, another possible way out of the problem of widespread cognitive bias is to take matters out of the hands of the people and ordinary legislatures, as has been done in other areas such as environmental regulation and drug approval. Legislators tend to micromanage tax, which leads to a complicated tax code built by accretion, like a coral reef.<sup>96</sup> Could citizens come to trust a government agency that designed the tax code itself? The legislature would give the agency general guidance, as it does to the Food and Drug Administration, say. It also would be able to take away any powers given.

Arguably, large governments have been turning over more power to regulatory agencies. Justice Stephen Breyer has described such changes in France, and has advocated similar changes in the United States (for risk regulation in particular).<sup>97</sup> Cass Sunstein has shown in detail how this sort of idea might work.<sup>98</sup> Central banks have essentially de-politicized the setting of interest rates. What may be crucial, however, is that citizens have sufficient understanding of the domains in question so that they can trust the regulators. Although we cannot expect everyone to be able to think like an economist, we can more reasonably expect that secondary education would lead people to understand, in the context of a few examples, what it is that economists try to do, and how.<sup>99</sup>

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95. Marcel Kahan & Ehud Kamar, *The Myth of State Competition in Corporate Law*, 55 STAN. L. REV. 679 (2002).

96. See generally Edward J. McCaffery, *The Holy Grail of Tax Simplification*, 1990 WISC. L. REV. 1267 (discussing complexity of tax).

97. Stephen Breyer, BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION (1993).

98. Cass R. Sunstein, RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT 116–19 (2002).

99. Jonathan Baron, *Why Teach Thinking?—An Essay*, 42 APPLIED PSYCHOL.: INT'L REV. 191 (1993), available at <http://www.sas.upenn.edu/~baron/>.

## CONCLUSION

Our primary concern in this Article has been with how ordinary people think about redistribution through a public tax and transfer system, and how widespread cognitive errors might interfere with a welfare improving, optimal public finance system. We have presented evidence of several distortions in judgments about redistribution. Some are minor, such as the effect of presenting information in percentage versus dollars terms. Others are more serious:

- People dislike penalties and feel that they should fall more heavily on the rich, while the poor should get bonuses; the preferred distribution depends, however, on whether a difference is described as a penalty or bonus.
- Judgments are affected by whether or not something is described as a “tax,” even when the consequences are held constant.
- People prefer hidden taxes in part because they do not think through to the next step of who actually will pay them. When they are prompted to think about this, their support for hidden taxes declines, but not dramatically.
- People prefer tax deductions to direct subsidies in part because they do not think about the regressiveness of deductions under a progressive marginal rate system. When prompted to think about distributional effects, their support for deductions declines, but again not dramatically.
- When people are asked to make judgments about a distribution, they isolate what they are asked to distribute, ignoring the possibility of using distribution in one system to correct maldistribution elsewhere.
- Similarly, people, even when they favor progressive taxation, fail to compensate in the tax system for the regressive effects of spending cuts.
- People favor lower taxes and lower government spending in general, but they are unwilling to cut specific programs anywhere near enough to constitute the general cuts they say they want.

We have focused on the *isolation effect* as an explanation for this panoply of phenomena. People make judgments about what is in front of their noses. They ignore logically connected information and data that is “off-stage,” however slightly. This natural tendency leads to instability, easy manipulation, and attempts to hide possible consequences of public fiscal policies as a part of winning support for them. All too often, the result is that redistributive policies are undermined because people do not think about the distributional consequences of some policy change, such as privatization or the use of tax deductions. Our work thus helps to understand

some of the difficulties of making democracy work. In public finance, everyone primarily wants good outcomes, but democracy still does not quite produce them.

We also have suggested various ways to remedy these effects, such as through education, and redesigning institutions, for example, by relying more heavily on expert regulatory agencies to design tax policy. These answers are far from final. Our hope is that, in the long run, better understanding of the imperfections of democratic government can bring it closer to perfection, as we can see no better alternative to democracy itself for answering its own challenges.