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Paternalism and Psychic Taxes: The Government's Use of Negative Emotions to Save Us from Ourselves

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ARTICLES

PATERNALISM AND PSYCHIC TAXES: THE GOVERNMENT'S USE OF NEGATIVE EMOTIONS TO SAVE US FROM OURSELVES

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I. INTRODUCTION

Paternalism has become increasingly popular among policymakers.[1] Governments at all levels are seriously considering or have recently adopted many paternalistic proposals. For example, the Obama Administration has increased cigarette taxes and adopted a tax on indoor tanning.[2] Similarly, New York City Mayor Michael Bloomberg has proposed a ban on the sale of soda and other sugary drinks in containers larger than sixteen ounces.[3] All of these policies are motivated to some degree by a desire to save people from themselves.

This Article analyzes whether the government should use "psychic taxes" as a tool for achieving paternalistic goals. A psychic tax is a government policy that imposes a psychic cost by provoking negative

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1. For purposes of this Article, I define paternalism broadly as the government's interference with a person's self-regarding choices with the intent to further that person's welfare. *Cf.* Bill New, *Paternalism and Public Policy*, 15 ECON. & PHIL. 63, 65–71 (1999) (using a similar definition).

2. Anna Tinsley, *A Drag for Tobacco Users: Levy to Fund Children's Health Insurance Begins April 1*, CHI. TRIB., Mar. 29, 2009, http://articles.chicagotribune.com/2009-03-29/news/0903280378_1_tobacco-tax-increase-sin-taxes; Michelle Andrews, *In All Those Pages, a Surprise or Two*, N.Y. TIMES, Mar. 30, 2010, http://www.nytimes.com/2010/03/30/health/30fine.html (discussing the tax on indoor tanning found in the Patient Protection and Affordable Care Act).

3. Michael M. Grynbaum, *New York Plans a Ban on Big Sizes of Sugary Drinks*, N.Y. TIMES, May 30, 2012, http://www.nytimes.com/2012/05/31/nyregion/bloomberg-plans-a-ban-on-large-sugared-drinks.html.

emotions such as fear, anxiety, or shame.[4] As with traditional sin taxes, the government may adopt psychic taxes to modify behavior. This Article argues that, while psychic taxes hold out the promise of making us healthier, they are not without potentially serious drawbacks, many of which have received little or no attention in legal literature. As a result, this Article expresses skepticism that psychic taxes will serve as a useful form of paternalistic intervention.

Although many government policies may impose psychic costs (including policies that simply require disclosure of information),[5] this Article focuses only on graphic warnings on cigarette and food packages. Two features of graphic warnings make them particularly interesting. First, proponents of graphic warnings support them at least in part precisely because they impose psychic costs. Second, while the empirical evidence is not conclusive, some research suggests that these warnings may reduce consumption of unhealthy goods, thereby improving public health and perhaps even saving lives.[6]

In 2011, the Food and Drug Administration ("FDA") adopted regulations that would have required graphic warnings on cigarette packages beginning in September of 2012.[7] Subsequently, the United States Court of Appeals for the District of Columbia Circuit ruled that these regulations violate the First Amendment.[8] The government is reviewing the

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4. *See* Edward L. Glaeser, *Paternalism and Psychology*, 73 U. CHI. L. REV. 133, 135 (2006); George Loewenstein & Ted O'Donoghue, *"We Can Do This the Easy Way or the Hard Way": Negative Emotions, Self-Regulation, and the Law*, 73 U. CHI. L. REV. 183, 190 (2006) [hereinafter Loewenstein & O'Donoghue, *Easy Way*].

5. For instance, traditional sin taxes have a psychic tax component. They signal that society disapproves of the taxed good, which could cause consumers to feel guilty about consuming it. Similarly, textual warnings on cigarettes can impose a psychic cost. By highlighting certain risks, textual warnings may cause consumers to experience negative emotions that they would not experience absent the warnings. *See* Loewenstein & O'Donoghue, *supra* note 4, at 190.

6. *See infra* Part V.C.

7. 21 C.F.R. § 1141.10(a)(1) (2012).

8. R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205 (D.C. Cir. 2012). The United States Court of Appeals for the Sixth Circuit has also addressed whether requiring graphic warning labels on cigarettes violates the First Amendment. Disc. Tobacco City & Lottery, Inc. v. United States, 674 F.3d 509, 518 (6th Cir. 2012). Section 201 of the Family Smoking Prevention and Tobacco Control Act directs the FDA to adopt regulations requiring graphic warnings on cigarette packages. After adoption of the Act in 2009, the tobacco companies filed suit and challenged the statute as unconstitutional on its face. *Id.* at 552–54. The Sixth Circuit held that the statute did not violate the First Amendment. *Id.* at 518. Because the tobacco companies filed suit prior to the FDA's adoption of the graphic warning regulations, the Sixth Circuit did not specifically address whether the nine images chosen by the FDA in its final regulation are unconstitutional. *Id.* at 552–54. Rather, the Sixth Circuit simply held that the statute's requirement of graphic warnings on cigarettes is not itself unconstitutional. *Id.* at 568–69.

appellate court's decision to determine whether to seek review by the United States Supreme Court. If the Supreme Court finds that the FDA's regulations are constitutional, the regulations will require that each cigarette package include one of nine images on a rotating basis.[9] The images must cover half of the package, and they are quite explicit.[10] They include a corpse with staples in its chest, a man expelling smoke out of a tracheotomy hole in his throat, and a pair of diseased lungs juxtaposed with a pair of healthy lungs.[11] The regulations would also require that the new labels contain a textual component, which would include statements such as "Smoking can kill you" and "Cigarettes cause cancer."[12] Finally, the warnings would include a telephone number that smokers can call if they want help with quitting: "1-800-QUIT-NOW."[13]

Policymakers are also considering graphic warnings on food packages. One possibility is a system that uses traffic-light color-coding.[14] The front of each food package would contain a green, yellow, or red label. Green would signify the healthiest foods, yellow would signify less healthy foods, and red would signify the least healthy foods.[15] A second possibility is graphic warnings indicating the expected body type of a person who consumes a particular food on a regular basis.[16] Healthy foods would

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9. Required Warnings for Cigarette Packages and Advertisements, 76 Fed. Reg. 36,648–57 (June 22, 2011) (to be codified at 21 C.F.R. pt. 1141).

10. 21 C.F.R. § 1141.10(a)(1) (2012).

11. You can download the images from the FDA's website. *Tobacco Products: Product Requirements, Marketing & Labeling*, FDA, http://www.fda.gov/TobaccoProducts/Labeling/ucm259214.htm (last updated Feb. 24, 2012).

12. Family Smoking Prevention and Tobacco Control Act, Pub. L. No. 111-31, § 201(a), 123 Stat 1776 (2009).

13. 21 C.F.R. § 1141.

13. *Id.* § 1141.10(a)(1).

14. Traffic-light color-coding is used in the United Kingdom. *Food Labels*, NAT'L HEALTH SERV., http://www.nhs.uk/Livewell/Goodfood/Pages/food-labelling.aspx (last updated Mar. 21, 2011). Researchers in the United States have studied its potential effectiveness. *See, e.g.*, Anne N. Thorndike et al., *A 2-Phase Labeling and Choice Architecture Intervention to Improve Healthy Food and Beverage Choices*, 102 AM. J. PUB. HEALTH 527, 527 (2012).

15. Thorndike, *supra* note 14, at 527–28. In the United Kingdom, rather than indicate the overall healthfulness of the food, the color-coding scheme applies to each of the various food components, specifically fat, saturated fat, salt, and sugar. Green indicates that the food is low in these items, amber indicates a medium amount of these items, and red indicates a high amount. According to the National Health Service, "[i]f you buy a food that has all or mostly green lights, you know straight away that it's a healthier choice." On the other hand, "a red light means the food is high in fat, saturated fat, salt or sugars and these are the foods we should cut down on." *Food Labels*, *supra* note 14.

16. At a conference hosted by the United States Department of Agriculture Economic Research Service, George Loewenstein presented the preliminary results of a study that examines the effectiveness of graphic food warnings that indicate expected body type. The discussion in this Article

contain an image (for example, a drawing) of a thin person, and unhealthy foods would contain an image of an obese person. Foods that fall in the middle of the health spectrum would contain an image of a person who is somewhere between thin and obese.

Graphic warnings and other psychic taxes are a form of paternalism. Despite its increasing popularity, paternalism remains highly controversial. Parts II through IV of this Article discuss the debate over whether paternalism is ever justifiable. An understanding of this debate will assist in following the arguments made in Parts V and VI, which address specifically whether psychic taxes are a useful policy instrument. Parts V and VI constitute the core of the Article and contain its main contribution. Parts II through IV provide background information that should be useful for those readers not versed in the literature on paternalism.

Part II explains the objections to paternalism offered by traditional economists and economically oriented legal scholars. These scholars view people as rational actors who carefully weigh costs and benefits and make choices that maximize their own utility (or well-being).[17] If this view is correct, paternalism in general, and psychic taxes in particular, should play no role in government policy. If we make the best possible choices for ourselves, then the government harms us when it interferes with those choices.

Nonetheless, the rational actor model has its detractors.[18] Part III discusses several empirical observations that raise questions about the model's application to smoking and eating. These observations provide evidence that people are not perfectly rational. Instead, they suffer from self-control problems and engage in behavior that seems inconsistent with rational utility maximization. Paternalists use the evidence presented in Part III to argue that the rational actor model does not accurately explain

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is based on Loewenstein's presentation. George Loewenstein, *The Price Is Wrong, Economics, Behavioral Economics, and Obesity* (Apr. 15, 2010), https://admin.acrobat.com/_a934360949/p22312150.

17. *E.g.*, N. GREGORY MANKIW, PRINCIPLES OF MICROECONOMICS 496 (2007); Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for "Asymmetric Paternalism"*, 151 U. PA. L. REV. 1211, 1214–18 (2003) (discussing and rejecting the traditional rational actor model).

18. *See generally* Ted O'Donoghue & Matthew Rabin, *Optimal Sin Taxes*, 90 J. PUB. ECON. 1825 (2006); Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 U. CHI. L. REV. 1159 (2003); Camerer et al., *supra* note 17; Jonathan Gruber & Botond Köszegi, *Is Addiction "Rational"? Theory and Evidence*, 116 Q.J. ECON. 1261 (2001) [hereinafter Gruber & Köszegi, *Is Addiction "Rational"?*]; Jon D. Hanson & Kyle D. Logue, *The Costs of Cigarettes: The Economic Case for Ex Post Incentive-Based Regulation*, 107 YALE L.J. 1163, 1180–86 (1998).

how people decide whether to smoke and how much to eat.[19] Paternalists invoke a number of alternative theories in support of psychic taxes and other types of government intervention. Part IV describes these theories.

Parts V and VI focus specifically on psychic taxes. Part V discusses the potential benefits of psychic taxes. It explains that if people are not perfectly rational, then the government could use psychic taxes to correct welfare-reducing mistakes. Part V also reviews the empirical evidence regarding whether graphic warnings actually reduce unhealthy consumption.

Despite the potential benefits of psychic taxes, Part VI argues that in practice, they may do more harm than good and that they will often be unnecessary. People who are not perfectly rational may be able to cope with self-control problems and other failures of rationality without government intervention. For example, many people have developed strategies for overcoming their self-control problems and other limitations. Also, market-based solutions to the problems posed by irrationality often reduce the need for government involvement. In addition, psychic taxes carry with them potential costs, and these costs, which are often hidden, may outweigh any benefits. Heterogeneity is a major obstacle. For example, some people may eat to excess, while others do not. But psychic taxes on food are a one-size-fits-all solution, and they impose a psychic cost on everyone, even those who are not at risk of becoming obese. Psychic taxes on food may also further stigmatize obesity, which could have regrettable consequences. And special interest groups, such as the food industry, may exert excessive influence over any government-mandated labeling scheme so that the resulting labels deceive consumers rather than informing them. Moreover, widespread acceptance of psychic taxes as a legitimate policy tool may create a slippery slope, leading to the adoption of laws that many people will find objectionable or even abusive. For instance, some state governments currently use psychic taxes to dissuade women from having abortions.[20] Abortion-rights advocates will likely find it easier to oppose this practice if the public generally views

19. *See, e.g.*, Gruber & Köszegi, *Is Addiction "Rational"?*, *supra* note 18, at 1277–79; O'Donoghue & Rabin, *supra* note 18, at 1825–26.

20. *See infra* Part VI.F.3. *Cf.* Jeremy A. Blumenthal, *Abortion, Persuasion, and Emotion: Implications of Social Science Research on Emotion for Reading Casey*, 83 WASH. L. REV. 1, 36 (2008) (discussing the possibility that the information presented to women to satisfy informed-consent abortion laws might cause women "to be inappropriately persuaded by emotional biases") [hereinafter Blumenthal, *Abortion*].

psychic taxes with suspicion than if psychic taxes are an established instrument for manipulating behavior.

II. THE RATIONAL ACTOR MODEL

Smoking and obesity are major public health concerns. In 2010, 19 percent of American adults smoked.[21] Smoking can reduce life expectancy by an estimated range of 3.6 to 8 years.[22] Moreover, over 60 percent of Americans are either overweight or obese.[23] Obesity may contribute to hypertension, type 2 diabetes, coronary heart disease, stroke, and numerous other diseases.[24] Given these statistics, psychic taxes and other paternalistic policies have obvious appeal. These policies promise to reduce smoking and overeating, which should lead to longer, healthier lives.

Nonetheless, some economists and economically oriented legal scholars argue that the fact that a policy might improve public health does not necessarily mean the government should adopt it. These scholars claim that the government should avoid policies that distort consumption decisions, even if those policies reduce consumption of unhealthy goods.[25] The reason is that people might be willing to trade off health to achieve other goals.

Traditionally, economists have based their policy recommendations on the doctrines of consumer sovereignty and revealed preference.[26] Consumer

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21. U.S. DEP'T OF HEALTH & HUMAN SERVS., SUMMARY HEALTH STATISTICS FOR U.S. ADULTS: NATIONAL HEALTH INTERVIEW SURVEY, 2010, at 10 (Jan. 2012), *available at* http://www.cdc.gov/nchs/data/series/sr_10/sr10_252.pdf.

22. W. Kip Viscusi & Jahn K. Hakes, *Risk Beliefs and Smoking Behavior*, 46 ECON. INQUIRY 45, 48–49 (2008).

23. Adam Drewnowski & SE Specter, *Poverty and Obesity: The Role of Energy Density and Energy Costs*, 79 AM. J. CLINICAL NUTRITION 6, 6 (2004).

24. NAT'L INST. OF HEALTH, CLINICAL GUIDELINES ON THE IDENTIFICATION, EVALUATION, AND TREATMENT OF OVERWEIGHT AND OBESITY IN ADULTS, NAT'L INST. HEALTH PUBL'N NO. 98-4083 12 (1998). The extent to which overweight and obesity adversely affect health is a controversial question. *See infra* Part VI.F.

25. *E.g.*, W. KIP VISCUSI, SMOKING: MAKING THE RISKY DECISION 144–46 (1992) [hereinafter VISCUSI, RISKY DECISION]; ROBERT D. TOLLISON & RICHARD E. WAGNER, THE ECONOMICS OF SMOKING ix–xi, 162–64 (1992). *See also* Thomas A. Lambert, *The Case Against Smoking Bans*, 13 MO. ENVTL. L. & POL'Y REV. 94, 103 (2005) (arguing that since smokers "appear to believe that the benefits that they experience from the activity outweigh the costs [it is] not at all clear that eliminating smoking will enhance social welfare").

26. *E.g.*, JOSEPH E. STIGLITZ, ECONOMICS OF THE PUBLIC SECTOR 59, 86–88 (1999); B. Douglas Bernheim & Antonio Rangel, *From Neuroscience to Public Policy: A New Economic View of Addiction*, 12 SWED. ECON. POL'Y REV. 99, 126–28 (2005) [hereinafter Bernheim & Rangel, *New Economic View*]; Paul Calcott, *Paternalism and Public Choice*, 17 VICTORIA ECON. COMMENT. 39, 39 (2000).

sovereignty is the principle that—except to the extent necessary to prevent harm to others—the government should respect people's preferences regarding what products to consume.[27] The government does not know better than the individual what consumption pattern will maximize the individual's utility. Moreover, policymakers should not force their preferences onto others.[28] The doctrine of revealed preference is the notion that people's choices reveal their preferences.[29] So if you drink Dr. Pepper rather than Coke, we can infer that you like Dr. Pepper more than you like Coke.

Both consumer sovereignty and revealed preference are consistent with the rational actor model. Economists generally assume that people are rational. This means that we are informed and forward looking, and we accurately weigh the costs and benefits of our decisions to maximize our utility in light of our preferences.[30] Consumer sovereignty, revealed preference, and the rational actor model leave no room for paternalism.[31] The government should respect what we (as individuals) want for ourselves. And since we rationally maximize our own utility, the government can infer our preferences from the choices we make. So government interference with our self-regarding decisions, for example, decisions about whether to smoke or what to eat, makes us worse off.

At this point, a non-economist might ask the following question: can the rational actor model really explain phenomena as seemingly irrational as obesity and smoking? Perhaps the answer is yes. For example, empirical evidence confirms that people eat more when they like a particular food than when they do not.[32] Moreover, foods that contain sugar and fat generally "provide more sensory enjoyment and more pleasure than do

27. *E.g.*, STIGLITZ, *supra* note 26, at 86–88; Calcott, *supra* note 26, at 39–41.

28. Bernheim & Rangel, *New Economic View*, *supra* note 26, at 126.

29. *Id.*

30. *E.g.*, MANKIW, *supra* note 17, at 496; Jonathan Gruber, *Government Policy Toward Smoking: A View from Economics*, 3 YALE J. HEALTH POL'Y, L. & ETHICS 119, 120 (2002); Camerer et al., *supra* note 17, at 1214–15; Gary S. Becker & Kevin M. Murphy, *A Theory of Rational Addiction*, 96 J. POL. ECON. 675, 675 (1988).

31. *E.g.*, Bernheim & Rangel, *New Economic View*, *supra* note 26, at 127–28; Gruber, *supra* note 30, at 120.

32. Brian Wansink, *Environmental Factors that Increase the Food Intake and Consumption Volume of Unknowing Consumers*, 24 ANN. REV. NUTRITION 455, 464–65 (2004) [hereinafter Wansink, *Environmental Factors*].

foods that [do] not."[33] So it is possible that at least some people rationally accept weight gain in exchange for eating foods that they enjoy.

In addition, the rational actor model might also apply to addictive goods like cigarettes. Gary Becker and Kevin Murphy have shown that addiction is not necessarily inconsistent with rational utility maximization.[34] Addiction simply complicates the cost-benefit calculation. Instead of weighing the costs and benefits of smoking a single cigarette, the smoker must account for the possibility of addiction.[35] Addiction means that smoking today increases the desire to smoke in the future. Because future smoking increases both monetary costs and health damage, rational smokers consider the current and future costs of smoking, taking addiction and health damage into account. In other words, according to rational addiction theory, smokers might know they could become addicted and harm their health, but still choose to smoke anyway because they have rationally determined that smoking is worth the risk.

The idea that smoking may be rational is not as far-fetched as it might seem. Some evidence is broadly consistent with the theory.[36] For example, smoking appears to produce benefits that make it attractive to certain people, including reducing stress, depression, and anxiety; aiding in concentration and memory; preventing weight gain;[37] and facilitating social interaction.[38] So at least some people might rationally decide that the risks

33. Drewnowski & Specter, *supra* note 23, at 8. This could be because in times of scarcity, these foods conferred a survival advantage. *Id.*

34. Becker & Murphy, *supra* note 30, at 675.

35. *Id.* at 675–82; JONATHAN GRUBER & BOTOND KÖSZEGI, A MODERN ECONOMIC VIEW OF TOBACCO TAXATION 4 (2008) [hereinafter GRUBER & KÖSZEGI, MODERN VIEW]; Gruber, *supra* note 30, at 120.

36. For an in-depth review of this evidence, see Gary Lucas, Jr., *Saving Smokers from Themselves: The Paternalistic Use of Cigarette Taxes*, 80 CIN. L. REV. 693, 698–706 (2012).

37. For a discussion of whether quitting smoking leads to weight gain, see *infra* Part VI.F.

38. Stephen Heishman, a scientist at the National Institute on Drug Abuse, and his colleagues recently published a meta-analysis of 41 studies of the effects of nicotine on both smokers and nonsmokers. Stephen J. Heishman, Bethea A. Kleykamp & Edward G. Singleton, *Meta-Analysis of the Acute Effects of Nicotine and Smoking on Human Performance*, 210 PSYCHOPHARMACOLOGY 453, 453–64 (2010). The study finds "significant positive effect sizes of nicotine on motor abilities, attention, and memory, which likely represent true performance facilitation." *Id.* at 464. Because the study finds significant positive effects for nonsmokers as well as smokers, Heishman concludes that "nicotine's performance enhancing effects might be one reason people decide to start smoking." *Id. See also* Cynthia S. Pomerleau, *Co-Factors for Smoking and Evolutionary Psychobiology*, 92 ADDICTION 397, 400–01 (1997); Naomi Breslau, M. Marlyne Kilbey & Patricia Andreski, *Nicotine Dependence, Major Depression, and Anxiety in Young Adults*, 48 ARCHIVES GEN. PSYCHIATRY 1069, 1071–73 (1991). In a survey of smokers aged 50–70, 41 percent reported that they had relapsed after quitting due to stress. Only 14 percent reported relapse due to habit or physical addiction. Ahmed Khwaja, Dan

associated with smoking are worth it in the same way that people rationally decide to engage in other risky activities, such as driving on busy highways and skiing.[39]

Moreover, people are not blind to the costs of smoking, both monetary and nonmonetary. Smokers cut back or quit in response to cigarette price increases, including price increases that they anticipate will occur in the future.[40] And increased public awareness of the risks associated with smoking has contributed to cutting the smoking rate in half over the past fifty years.[41] Similarly, smokers have reduced smoking duration (the period of time a smoker smokes before quitting) in response to evidence that quitting smoking prolongs life.[42] In fact, many smokers now quit smoking by their mid-thirties, which means that they avoid most of the excess mortality caused by smoking.[43]

In sum, if the standard economic view of eating and smoking is correct, then paternalistic policies—including psychic taxes designed to curb overeating and smoking—are harmful. The government cannot help rational actors by interfering with their self-regarding decisions.

This conclusion comes with two important caveats. The first caveat relates to imperfect information. If people underestimate the addictive nature of smoking or the health risks of smoking and obesity, then, even if they are otherwise rational, people may smoke and eat suboptimally.[44] In that case, the government could potentially make people better off by supplying pertinent information. However, the government could accomplish this goal simply by providing the information in a textual format that is not specifically designed to elicit an emotional response. In other words, the rational actor model does not provide a theoretical basis for packaging information so as to maximize psychic costs. For instance, according to the rational actor model, imperfect information might justify a

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Silverman & Frank Sloan, *Time Preference, Time Discounting, and Smoking Decisions*, 26 J. HEALTH ECON. 927, 929–30 (2007).

39. *Cf.* Khwaja, Silverman & Sloan, *supra* note 38, at 930 ("Judging from the reasons that people give for quitting and relapsing, more is at work than simple physical addiction.").

40. FRANK A. SLOAN ET AL., THE PRICE OF SMOKING 9 (2004).

41. *See* Lucas, *supra* note 36, at 700–01.

42. John P. Pierce & Elizabeth Gilpin, *How Long Will Today's New Adolescent Smoker Be Addicted to Cigarettes?*, 86 AM. J. PUB. HEALTH 253, 253–54 (1996).

43. Donald Taylor et al., *Benefits of Smoking Cessation for Longevity*, 92 AM. J. PUB. HEALTH 990, 994 (2002). *See also* U.S. DEP'T OF HEALTH & HUMAN SERVS., THE HEALTH BENEFITS OF SMOKING CESSATION vi (1990).

44. A number of studies suggest that in general, smokers and nonsmokers overestimate the risks associated with smoking. For a review of the literature, see Lucas, *supra* note 36, at 712–13.

requirement that tobacco manufacturers warn consumers that smoking increases their risk of lung cancer. But the model does not supply a rationale for requiring provocative images, such as diseased lungs, in an effort to trigger an aversive emotional response.

The second caveat relates to negative externalities. Even if people are rational, government intervention might be justified to protect third parties. For example, smoking and obesity might produce external costs such as additional medical expenses paid for by Medicaid, Medicare, and other taxpayer-funded programs.[45] Because these costs fall on third parties, rational consumers will ignore them. This means that people may smoke and eat more than the socially optimal amount. In theory, government intervention could avoid this problem by forcing people to internalize any external costs.

Nonetheless, if external costs provide the rationale for intervention, then a traditional sin tax is arguably superior to a psychic tax. After all, a psychic tax does not raise revenue that the government can use to defray the additional costs it incurs as a result of smoking and obesity. Moreover, the extent of the external costs associated with both smoking and obesity is extremely controversial, which makes it difficult to determine the degree to which the government should intervene.[46] Some economists have concluded that existing cigarette taxes already exceed the external costs of smoking so that additional regulation is unnecessary.[47] Similarly, recent research challenges the argument that government intervention to reduce obesity is justifiable on externality grounds.[48] In any event, if the government adopts a sin tax reflecting the external costs of smoking and

45. For a review of the literature on smoking externalities, see Lucas, *supra* note 36, at 708–11. For a review of the literature on obesity externalities, see Colin Hector, *Nudging Towards Nutrition? Soft Paternalism and Obesity-Related Reform*, 67 FOOD & DRUG L.J. 103, 105–08 (2012); Katherine Pratt, *A Constructive Critique of Public Health Arguments for Anti-obesity Soda Taxes and Food Taxes*, 87 TUL. L. REV. 73, 79–87 (2012); Jay Bhattacharya and Neeraj Sood, *Who Pays for Obesity?*, 25 J. ECON. PERSP. 139, 147–55 (2011); and Armineh Zohrabian & Tomas J. Philipson, *External Costs of Risky Health Behaviors Associated with Leading Actual Causes of Death in the U.S.: A Review of the Evidence and Implications for Future Research*, 7 INT'L J. ENVTL. RES. & PUB. HEALTH 2460, 2464–65 (2010).

46. For a discussion of the controversy surrounding smoking externalities, see Lucas, *supra* note 36, at 708–11. For a discussion of the controversy surrounding obesity externalities, see Hector, *supra* note 45, at 105–08 and Pratt, *supra* note 45, at 79–87.

47. For a review of the literature, see Lucas, *supra* note 36, at 708–11.

48. *See, e.g.*, Bhattacharya and Sood, *supra* note 45, at 153 (concluding "that the classic Pigovian case for intervention—that social welfare can be improved if those who impose externalities on others are required to internalize the social costs—does not apply especially well to obesity").

obesity then, according to the rational actor model, it should not also adopt a paternalistic psychic tax.

III. PROBLEMATIC EMPIRICAL OBSERVATIONS

Paternalists reject the consumer sovereignty doctrine, the revealed preference doctrine, and the rational actor model.[49] They cite a number of empirical observations that suggest that people do not make rational decisions about smoking and eating. This Part discusses those problematic observations.[50]

A. SELF-CONTROL PROBLEMS

A self-control problem exists when a person cannot carry out the consumption plan that he or she deems best.[51] Rational actors exercise complete self-control. For example, once they decide that the costs of continuing to smoke outweigh the benefits, rational smokers have no problem quitting cigarettes, even if they are addicted. Quitting might be unpleasant, but the rational smoker will do it anyway so long as the costs of smoking exceed the benefits. Similarly, rational dieters stick to a chosen diet because, according to their own calculations, the benefits of dieting outweigh the costs.

But real people differ from the rational actors of economic theory. Although some smokers quit and some dieters lose weight, many people have trouble following through on their long-term plans.[52] The notion of rational utility maximization is hard to reconcile with smokers who repeatedly attempt, but fail to quit, and dieters who try one diet after another without success.

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49. *See, e.g.*, sources cited *supra* note 18.

50. For additional discussion of some of these empirical observations, see B. Douglas Bernheim & Antonio Rangel, *Behavioral Public Economics: Welfare and Policy Analysis with Nonstandard Decision-Makers*, *in* BEHAVIORAL ECONOMICS AND ITS APPLICATIONS 7, 43–45 (Peter Diamond & Hannu Vartiainen eds., 2007) [hereinafter Bernheim & Rangel, *Nonstandard Decision-Makers*].

51. *See* Gruber & Köszegi, *Is Addiction "Rational"?*, *supra* note 18, at 1277–79.

52. About half of all Americans who have ever smoked have successfully quit. CENTERS FOR DISEASE CONTROL & PREVENTION, SUMMARY HEALTH STATISTICS FOR U.S. ADULTS: 2009 NATIONAL HEALTH INTERVIEW SURVEY 10, 85 (2010). But over 40 percent of smokers report attempting to quit each year, and only 4–7 percent of those attempts are successful. U.S. DEP'T OF HEALTH & HUMAN SERVS., TREATING TOBACCO USE DEPENDENCE: 2008 UPDATE 15 (2008). Similarly, a review of studies on the effects of dieting concludes that, in general, diets do not lead to long-term weight loss, and many people actually regain more weight than they lost while on the diet. *See generally* Traci Mann et al., *Medicare's Search for Effective Obesity Treatments: Diets Are Not the Answer*, 62 AM. PSYCHOLOGIST 220 (2007).

B. COMMITMENT DEVICES

People often control their behavior by intentionally limiting their available options.[53] A smoker may throw cigarettes away, and a dieter may avoid keeping snacks at home. The apparent purpose is to commit to quitting smoking or to losing weight by taking steps either to avoid anticipated cravings or to avoid giving in to those cravings when they occur. Commitment devices are common but are inconsistent with the standard rational actor model. In the rational actor model, a person is better off (or at least no worse off) when the set of possible choices increases.[54] Put differently, because rational actors have complete self-control, they have no need to commit to their long-term plans by placing certain options off limits.[55] Yet people frequently do just that.

C. REGRET

Because they are well informed and forward looking, rational actors carefully plan and carry out the lifetime consumption path that maximizes their utility. Rational actors would not conclude that they made a mistake by smoking at some point in the past. Yet people often express regret about smoking and claim that they would be better off if they did not smoke.[56] In other words, the stated preferences of smokers sometimes conflict with their actual behavior. Paternalists interpret this as evidence that the revealed preference doctrine is wrong and that smokers recognize that smoking reduces their utility.[57]

Nonetheless, defenders of the revealed preference doctrine point out that stated preferences are often unreliable. One reason is that our incentive to say that we prefer a course of action may differ from our incentive to actually choose that course of action.[58] For example, smokers may claim that they regret smoking and would like to quit, not because they truly do,

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53. For a discussion of the use of commitment devices by smokers, see Gruber & Köszegi, *Is Addiction "Rational"?*, *supra* note 18, at 1278. For a discussion of commitment devices used for other purposes, including weight loss, see generally Gharad Bryan, Dean Karlan & Scott Nelson, *Commitment Devices*, 2 ANN. REV. ECON. 671 (2010).

54. Simona Botti & Sheen S. Iyengar, *The Dark Side of Choice: When Choice Impairs Social Welfare*, 25 J. PUB. POL'Y & MARKETING. 14, 25–26 (2006).

55. *See* Gruber & Köszegi, *Is Addiction "Rational"?*, *supra* note 18, at 1278.

56. *See, e.g.*, U.S. DEP'T OF HEALTH & HUMAN SERVS., *supra* note 52, at 15 ("Epidemiologic data suggest that more than 70 percent of the 45 million smokers in the United States today report that they want to quit, and approximately 44 percent report that they try to quit each year.").

57. *See, e.g.*, Hanson & Logue, *supra* note 18, at 1193–1209.

58. Mario J. Rizzo & Douglas Glen Whitman, *The Knowledge Problem of New Paternalism*, B.Y.U. L. REV. 905, 919–21 (2009) [hereinafter Rizzo & Whitman, *Knowledge Problem*].

but because in a society that frowns upon smoking, this is what they are expected to say.[59] They may also simply mean that they would prefer it if they could smoke without risk.[60] Or perhaps those who have smoked over a long period recognize that the pleasure of smoking is in the past.[61] They are simply unhappy with their current options and regret that the bill has come due. But if they could go back in time, they would still make the choice to smoke.

In fact, some evidence suggests that, although many smokers want to quit eventually, they are not serious about quitting in the near future. For example, a national survey of daily smokers finds that approximately 60 percent report that they do not intend to quit in the next six months.[62] Smokers also frequently fail to take advantage of proven cessation treatments, such as nicotine replacement therapy.[63] And smokers generally oppose government regulation that might facilitate quitting, such as high cigarette taxes and public smoking bans.[64]

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59. W. Kip Viscusi, *The New Cigarette Paternalism*, 25 REG. 58, 58 (2002) [hereinafter Viscusi, *Paternalism*].

60. VISCUSI, RISKY DECISION, *supra* note 25, at 120. Viscusi points out that people often express dissatisfaction with some attribute of a particular product or activity. *Id.* For example, nearly one-third of blue-collar workers claim that they would like to leave their jobs. *Id.* Their failure to quit does not prove irrationality. *Cf.* Becker & Murphy, *supra* note 30, at 693 (stating that the claims of smokers that they want to quit are "no different from the claims of single persons that they want to but are unable to marry or from the claims of disorganized persons that they want to become better organized").

61. Robert S. Goldfarb, Thomas C. Leonard & Steven M. Suranovic, *Are Rival Theories of Smoking Underdetermined?*, 8 J. ECON. METHODOLOGY 229, 235 (2001).

62. Mary Ellen Wewers et al., *Distribution of Daily Smokers by Stage of Change: Current Population Survey Results*, 36 PREVENTATIVE MED. 710, 714 (2003). Only 15 percent of smokers plan to quit in the next 30 days. Gregory Colman & Dahlia Remler, *Vertical Equity Consequences of Very High Cigarette Tax Increases: If the Poor Are the Ones Smoking, How Could Cigarette Tax Increases Be Progressive?*, 27 J. POL'Y ANALYSIS & MGMT. 376, 396 (2008).

63. Cessation aids such as varenicline and nicotine gum substantially increase the likelihood of successful abstinence. U.S. DEP'T OF HEALTH & HUMAN SERVS., *supra* note 52, at 109. As a result, the medical community strongly supports cessation aids and generally recommends their use in connection with all quit attempts. *Id.* at 106. But one study finds that fewer than 22 percent of current smokers who attempted to quit for at least one day in the preceding year used medication. *Id.* at 12.

64. For example, in one survey, nearly 70 percent of people who had never smoked supported a ban on smoking in restaurants, while that figure was only 26 percent among smokers. Joni Hersch, *Smoking Restrictions as a Self-Control Mechanism*, 31 J. RISK & UNCERTAINTY 5, 14 (2005). Among Connecticut voters surveyed in 2002, 66 percent of smokers opposed a proposed cigarette tax increase, while 78 percent of nonsmokers supported it. Faruk Gul & Wolfgang Pesendorfer, *Harmful Addiction*, 74 REV. ECON. STUD. 147, 151 (2007).

Nonetheless, while people's statements about their preferences might be suspect, those statements may also reveal valuable information.[65] After all, if the goal is to determine what people want, it probably makes sense to consider their stated views on the subject. So policymakers should arguably take seriously the fact that many smokers say that they regret smoking.

D. CUE-TRIGGERED CONSUMPTION

The rational actor model assumes that people make decisions based on their underlying preferences. But behavior is sometimes affected by environmental cues, many of which seem irrelevant to rational decision making.

Cues play a role in addiction.[66] For example, a smoker who has successfully abstained from smoking for several weeks may find a forgotten pack of cigarettes (the cue) in a drawer and then experience a sudden, unexpected craving. Because of the power of cues, successful quitting may require significant changes in lifestyle and environment.[67] Successful addiction therapies often teach cue-management and cue-avoidance.[68]

Cues also play a role in eating.[69] For example, people tend to eat substantially more when food is served on large plates rather than small ones.[70] If random cues like plate size influence consumption decisions, then the theory that people make eating decisions according to their true preferences becomes questionable.

E. UNDERESTIMATING ADDICTION

Most of the health damage due to smoking results from smoking over a long period of time, so a person might rationally choose to smoke for a short period and then quit before the damage becomes serious and irreversible. In fact, many smokers appear to fit this pattern. Roughly half of modern-day smokers will quit by their mid-thirties, which means that

65. *See* John Beshears et al., *How Are Preferences Revealed?*, 92 J. PUB. ECON. 1787, 1792 (2008).

66. George Loewenstein, *A Visceral Account of Addiction*, *in* GETTING HOOKED: RATIONALITY AND ADDICTION 235, 243–45 (Jon Elster & Ole-Jørgen Skog eds., 1999) [hereinafter Loewenstein, *Addiction*].

67. *Id.* at 245.

68. Bernheim & Rangel, *Nonstandard Decision-Makers*, *supra* note 50, at 44–45.

69. Wansink, *Environmental Factors*, *supra* note 32, at 458–68.

70. *Id.* at 468–69.

they have virtually the same life expectancy as someone who has never smoked.[71]

Nonetheless, some smokers may underestimate their susceptibility to addiction. For example, one study asked high school seniors who smoked whether they would quit within five years.[72] Many of those who stated that they would quit did not in fact do so.[73] This finding is potentially important, because people who underestimate addiction may start smoking when they otherwise would not.

IV. ALTERNATIVES TO THE RATIONAL ACTOR MODEL

This Part describes several theories that attempt to account for some or all of the problematic empirical observations discussed in Part III. The theme underlying these theories is that people are not perfectly rational, and the choices they make with respect to smoking and eating do not always maximize their utility.

In analyzing psychic taxes on cigarettes and food, it is important to understand the theories discussed in this Part. These theories form the foundation for modern health paternalism. Paternalists use these theories to argue that, contrary to the standard economic view, paternalism is sometimes justifiable.[74] In other words, if at least one of the theories explained in this Part is correct, then government intervention, including psychic taxes, could yield substantial benefits by avoiding people's welfare-reducing mistakes.[75]

Moreover, paternalists argue that intervention based on the theories discussed in this Part would make people better off as judged by those people's own internal standards, not the standards of the paternalists who advocate regulation. Put differently, instead of forcing the values of paternalists upon us, the government could help us make the choices that we would make ourselves if we were perfectly rational.[76]

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71. Pierce & Gilpin, *supra* note 42, at 253–54; Taylor et al., *supra* note 43, at 994.

72. U.S. DEP'T OF HEALTH & HUMAN SERVS, PREVENTING TOBACCO USE AMONG YOUNG PEOPLE: A REPORT OF THE SURGEON GENERAL 68–71 (1994).

73. *Id.*

74. *See, e.g.*, sources cited *supra* note 18.

75. *E.g.*, Sunstein & Thaler, *supra* note 18, at 1162; Camerer et al., *supra* note 17, at 1218.

76. *E.g.*, Sunstein & Thaler, *supra* note 18, at 1162 (stating that "it is legitimate for private and public institutions to attempt to influence people's behavior even when third-party effects are absent" because "in some cases individuals make inferior decisions in terms of their own welfare—decisions that they would change if they had complete information, unlimited cognitive abilities, and no lack of self-control").

The theories described in this Part are also important because determining whether psychic taxes are a suitable response to irrationality requires a theory as to the exact nature of the problem and its specific source. Psychic taxes may not be an appropriate means of addressing all types of irrationality. So it is necessary to identify precisely why we believe that people smoke and eat suboptimally.

A. MINDLESS EATING

Food researcher Brian Wansink argues that people often unknowingly eat more than they intend. Wansink refers to this phenomenon as mindless eating.[77] One reason for mindless eating is that environmental cues and other factors may affect the accuracy with which we monitor the amount of food we eat.[78] Our bodies are not good at signaling when we have consumed just enough calories to maintain our current weight,[79] so we often rely on external cues to monitor our consumption.[80] For example, many people follow a rule whereby they routinely eat or drink everything on their plate or in their glass.[81] The problem is that we tend to put more food onto larger plates than smaller plates, and we pour more into short, wide glasses than into tall, slender glasses.[82] When combined with the habit of cleaning the plate or drinking the entire glass, this tendency can lead us to consume more calories than we intend.[83] In fact, a number of studies show that people eat more when eating out of a large container or package

77. BRIAN WANSINK, MINDLESS EATING 15 (2010) [hereinafter WANSINK, MINDLESS EATING].

78. Wansink, *Environmental Factors*, *supra* note 32, at 458–59.

79. *See* Brian Wansink, David R. Just & Collin R. Payne, *Mindless Eating and Healthy Heuristics for the Irrational*, 99 AM. ECON. REV. PAPERS & PROC. 165, 166–67 (2009) [hereinafter Wansink, Just & Payne, *Healthy Heuristics*].

80. Wansink, *Environmental Factors*, *supra* note 32, at 458–59.

81. Brian Wansink, James E. Painter & Jill North, *Bottomless Bowls: Why Visual Cues of Portion Size May Influence Intake*, 13 OBESITY RES. 93, 93–94 (2005) [hereinafter Wansink, Painter & North, *Bottomless Bowls*].

82. The effects of plate size and glass shape may be explained in part by optical illusions. For example, a given amount of food appears smaller on a large plate than a small one. For a review of the literature on the effects of plate size and glass shape, see Wansink, *Environmental Factors*, *supra* note 32, at 468–69.

83. In one study, participants ate soup. Some participants received regular bowls. Others received bowls that, unbeknownst to the participants, were hooked to an apparatus that caused the bowls to slowly and imperceptibly refill as they ate. Those eating out of the self-refilling bowls ate 73 percent more soup, yet they did not perceive that they ate more or felt fuller. Wansink, Painter & North, *Bottomless Bowls*, *supra* note 81, at 96–98.

or off of a large plate rather than out of a small container or package or off of a small plate.[84]

Mindless eating may also result from the tendency to eat food simply because it is visible or otherwise salient.[85] One study finds that secretaries eat substantially more chocolates out of a container sitting on their desk if the container is clear rather than opaque.[86] When food is salient, not eating it requires willpower.[87] Eventually, we wear down and give in to temptation. Additionally, salient food may trigger physiological processes that cause us to feel hungry even though we otherwise would not.[88]

Is mindless eating consistent with the rational actor model? That model assumes that people decide how much to eat based on underlying preferences, such as enjoyment of food and desired body type. It might be possible to reconcile certain mindless eating research with rationality but, in most cases, doing so is difficult.[89] For example, it seems unlikely that people eat more off of large plates because large plates make food taste better. Moreover, in many of Wansink's studies, participants who eat more as a result of environmental cues also underestimate the calories that they

84. Wansink, *Environmental Factors*, *supra* note 32, at 467–69; Brian Wansink & Junyong Kim, *Bad Popcorn in Big Buckets: Portion Size Can Influence Intake as Much as Taste*, 37 J. NUTRITION EDUC. & BEHAV. 242, 242–45 (2005). In one study, researchers randomly gave moviegoers either a medium or large container of popcorn. The moviegoers who received the large container ate an average of 53 percent more popcorn. One possible explanation is that large containers make it difficult to keep track of how much you have eaten, which makes it easier to eat mindlessly. Brian Wansink & SeaBum Park, *At the Movies: How External Cues and Perceived Taste Impact Consumption Volume*, 12 FOOD QUALITY & PREFERENCE 69, 69–74 (2001). Interestingly, a follow-up study finds that the tendency to eat more out of larger containers applies (though to a somewhat lesser extent) even when the popcorn tastes bad because it is stale. Wansink & Kim, *supra*, at 242–45. Another determinant of how accurately people monitor consumption is how distracted they are while they eat. People tend to eat more if they eat while distracted, for example, while watching television or dining with others. When distracted, they may rely heavily on easy-to-monitor visual cues to determine when to stop (for example, whether the plate is clean or their dinner companion has stopped eating). So distractions may lead people to eat or drink whatever is in front of them. Brian Wansink & Collin R. Payne, *Counting Bones: Environmental Cues that Decrease Food Intake*, 104 PERCEPTUAL & MOTOR SKILLS 273, 273–74 (2007); Wansink et al., *Bottomless Bowls*, *supra* note 81, at 94; Wansink, *Environmental Factors*, *supra* note 32, at 462–64.

85. Wansink, *Environmental Factors*, *supra* note 32, at 465.

86. Brian Wansink, James E. Painter & Yeon-Kyung Lee, *The Office Candy Dish: Proximity's Influence on Estimated and Actual Consumption*, 30 INT'L J. OBESITY 871, 872–73 (2006).

87. Wansink, *Environmental Factors*, *supra* note 32, at 465.

88. *Id.*

89. For Wansink's views on eating and rationality, see Wansink, Just & Payne, *Healthy Heuristics*, *supra* note 79, at 166–67.

consume, often by a substantial amount.[90] This finding suggests a failure to rationally maximize utility.

B. THE VISCERAL FACTORS PERSPECTIVE

Visceral factors exert substantial influence over our behavior.[91] Visceral factors include moods, emotions, pain, drug craving, and drive states, such as thirst, hunger, and sexual desire.[92] Visceral factors like hunger focus our attention on achieving certain goals.[93] Although visceral factors are generally adaptive, George Loewenstein argues that they sometimes drive people to act against their self-interest.[94] People cope with visceral factors in an optimal way when experienced at low levels of intensity, such as mild hunger.[95] But as visceral factors become more intense, Loewenstein argues that behavior becomes less volitional.[96] People begin to experience internal conflict between their behavior and the behavior they perceive to be in their self-interest. At very high levels of intensity, visceral factors may overwhelm volitional choice altogether.[97] In other words, as visceral factors become more intense, behavior becomes non-normative. For example, a person who is extremely tired may fall asleep while driving.

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90. For example, in the bottomless bowl study discussed *supra* note 81, participants given the self-refilling soup bowls ate 140 more calories than they estimated. By comparison, participants given regular bowls ate only 32 more calories than they estimated. Wansink, Painter & North, *Bottomless Bowls*, *supra* note 83, at 96. In general, people seem unaware that environmental cues influence how much they eat. In fact, when Wansink asks the participants in his studies whether a particular cue might affect their consumption, the participants generally acknowledge that the cues might influence others but claim that they themselves are immune to these effects. WANSINK, MINDLESS EATING, *supra* note 77, at 23–24.

91. *See generally* Loewenstein, *Addiction*, *supra* note 66; George Loewenstein, *Out of Control: Visceral Influences on Behavior*, 65 ORG. BEHAV. & HUM. DECISION PROCESSES 272 (1996) [hereinafter Loewenstein, *Out of Control*].

92. Loewenstein, *Addiction*, *supra* note 66, at 237.

93. Visceral factors focus our attention in several ways. First, they increase the relative value of the activities and the forms of consumption associated with the visceral factor. For example, hunger increases the value of food relative to sex. Second, visceral factors cause people to become present-oriented with respect to the associated good. For example, hunger might cause people to make shortsighted trade-offs between food today and food tomorrow, even if they will likely be hungrier tomorrow than today. Third, visceral factors focus attention inwardly and away from others. People who are extremely hungry or craving drugs become selfish. Loewenstein, *Out of Control*, *supra* note 91, at 274–75.

94. Loewenstein, *Addiction*, *supra* note 66, at 238–40.

95. *Id.* at 238.

96. *Id.* at 239.

97. *Id.* at 239–40.

For purposes of this Article, a visceral factor that is of particular interest is cue-triggered craving, which may result from classical conditioning. To illustrate classical conditioning, consider an example based on Ivan Pavlov's well-known dog experiments.[98] The researcher presents the dog with a bell (the conditioned stimulus) in conjunction with food (the unconditioned stimulus). Initially, the food causes the dog to salivate (the unconditioned response), but the bell does not. Yet, after repeated pairings with food, the bell will cause salivation (the conditioned response), even in the absence of food.

Conditioned responses are often physiologically preparatory and assist in the body's effort to maintain homeostasis—an equilibrium across a range of internal conditions such as body temperature and blood sugar.[99] For example, food cues (which may be visual, oral, spatial, or temporal) initiate several specialized digestive processes that prepare the body for a coming meal. Eating elevates glucose levels, causing the body to release insulin. A cue that a meal is imminent triggers an insulin release in advance, which dampens the food's effect on blood sugar. This learned response results in tolerance, which means that achieving a hyperglycemic effect in the future would require surprising the body by eating more than usual or eating foods that are unusually high in sugar.

Similarly, drug cues prepare the body for ingestion of the drug. If rats repeatedly receive morphine in the presence of a cue, the cue eventually triggers increased sensitivity to pain.[100] This partially mitigates the anesthetic effect of a subsequent morphine injection. This explains why drug users are more likely to overdose when they take a drug in an environment that does not contain cues associated with past use.[101]

Once a cue becomes associated with ingestion of a substance, the presence of the cue in the absence of the substance can produce unpleasant effects.[102] The cue triggers the adjustments that would restore homeostasis if the person subsequently consumed the substance. So failure to consume

98. For a discussion of classical conditioning, including Pavlov's dog experiment, see Todd R. Schachtman et al., *Effects of Conditioning in Advertising*, *in* ASSOCIATIVE LEARNING AND CONDITIONING THEORY 481, 481–82 (Todd R. Schachtman & Steve Reilly eds., 2011).

99. The discussion in the text of cues and craving draws from material in Jeff Strnad, *Conceptualizing the "Fat Tax": The Role of Food Taxes in Developed Economies*, 78 S. CAL. L. REV. 1221, 1248–50 (2005); David Laibson, *A Cue-Theory of Consumption*, 116 Q.J. ECON. 81, 84–86 (2001); and Loewenstein, *Addiction*, *supra* note 66, at 243–45.

100. Laibson, *supra* note 99, at 85.

101. *Id.*

102. Strnad, *supra* note 99, at 1249.

the substance has the opposite effect, causing a powerful craving for the substance, the consumption of which may be needed to restore homeostasis.

Loewenstein argues that cue-triggered cravings are the main impediment to conquering addiction.[103] While addicts often experience cravings associated with withdrawal automatically upon cessation of consumption, these symptoms generally last for only a short period of time and can sometimes be treated therapeutically, for example, with nicotine replacement therapy.[104] Cues, on the other hand, can unexpectedly trigger cravings even if an addict has abstained for a period of months or years. This is because virtually any environmental cue that becomes associated with drug use can trigger a craving. And deconditioning—that is, gradually reducing the cue's power to cause cravings—is a slow process.[105]

In addition, because cue-triggered cravings may occur unexpectedly, they are a potential source of self-control problems. Addicts who seem to have their addiction under control may encounter random cues that trigger craving and relapse. In fact, Loewenstein argues that, with respect to addictive drugs like nicotine, cue-triggered cravings can be so intense that they overwhelm the will and cause addicts to use even if they would prefer not to do so.[106] In that sense, the addicts' actions do not reflect their true

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103. Loewenstein, *Addiction*, *supra* note 66, at 243–45.

104. *See id.* at 244.

105. *Id.* at 245.

106. *Id.* at 259. B. Douglas Bernheim and Antonio Rangel propose a theory of addiction that is somewhat similar to the visceral factors perspective, except that it focuses on brain function. Bernheim & Rangel, *Nonstandard Decision-Makers*, *supra* note 50, at 45–57. *See generally* Bernheim & Rangel, *New Economic View*, *supra* note 26; B. Douglas Bernheim & Antonio Rangel, *Addiction and Cue-Triggered Decision Processes*, 94 AM. ECON. REV. 1558 (2004) [hereinafter Bernheim & Rangel, *Cue-Triggered Decision Processes*]. Bernheim and Rangel use evidence from neuroscience to argue that the mesolimbic dopamine system ("MDS") of the brain functions as a hedonic (pleasure/pain) forecasting mechanism. Bernheim & Rangel, *Cue-Triggered Decision Processes*, *supra*, at 1562–65. The MDS learns to associate particular environmental cues (such as the smell of freshly baked cookies) and choices (eating the cookies) with a post-choice experience (feeling full and satisfied). *Id.* at 1562. Under normal conditions, the MDS learns to appropriately forecast the amount of pleasure or pain a person will receive from a given choice. *Id.* at 1562–64. However, for addictive substances like nicotine, Bernheim and Rangel argue that the MDS sometimes malfunctions. Addictive substances interfere with the normal learning process by activating the MDS directly (independent of any pleasure experienced). *Id.* at 1564. Because of this, cues associated with past consumption cause the MDS to forecast that using a drug will result in much more pleasure than actually is the case. *Id.* In other words, the MDS creates a powerful impulse to use the drug by literally tricking the brain. Bernheim & Rangel, *Nonstandard Decision-Makers*, *supra* note 50, at 49. Note that Bernheim and Rangel do not argue that all smoking is irrational. They also do not deny that people are drawn to smoking because of its hedonic effects, and they assume that people can sometimes make rational choices about smoking. *Id.* But at other times, random cues can drive a person to smoke irrationally.

preferences. Moreover, while he expresses doubt about whether overeating can be characterized as an addiction, Loewenstein also suggests that visceral factors might cause people to eat irrationally.[107]

C. PROJECTION BIAS

Making rational decisions often requires predicting future preferences. Preferences may change over time due to factors like maturation, social influences, and changes in affective states, habits, and environment.[108] The rational actor model assumes that we accurately forecast changes in our preferences, but empirical evidence suggests that this is not always the case.[109] More specifically, we appear to suffer from projection bias, which is the tendency to project current preferences and any state that influences current preferences into the future.[110] We understand that our preferences shift in response to changing conditions, and we are generally adept at predicting the direction of the change. For example, we realize that eating will reduce our desire for food. However, we frequently underestimate the magnitude of the change, so we exaggerate the degree to which our future preferences will be similar to our current preferences.[111]

The cold-to-hot empathy gap is an important source of projection bias.[112] When we are in a cold state, we underestimate how our preferences will change when in a hot state (for example, when craving nicotine).[113]

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107. Loewenstein, *Addiction*, *supra* note 66, at 257–59; George Loewenstein, *Emotions in Economic Theory and Economic Behavior*, 90 AM. ECON. REV. 426, 430 (2000). For a detailed discussion of whether food can be addictive, see Strnad, *supra* note 99, at 1249–50.

108. George Loewenstein, Ted O'Donoghue & Matthew Rabin, *Projection Bias in Predicting Future Utility*, 118 Q.J. ECON. 1209, 1209–10 (2003) [hereinafter Loewenstein, O'Donoghue & Rabin, *Projection Bias*].

109. Michael Conlin, Ted O'Donoghue & Timothy J. Vogelsang, *Projection Bias in Catalog Orders*, 97 AM. ECON. REV. 1217, 1217 (2007).

110. Loewenstein, O'Donoghue & Rabin, *Projection Bias*, *supra* note 108, at 1210; George Loewenstein, *Projection Bias in Medical Decision Making*, 25 MED. DECISION MAKING 96, 97 (2005) [hereinafter Loewenstein, *Medical Decision Making I*].

111. Loewenstein, O'Donoghue & Rabin, *Projection Bias*, *supra* note 108, at 1210.

112. Loewenstein, *Medical Decision Making I*, *supra* note 110, at 97.

113. George Loewenstein, *Hot-Cold Empathy Gaps in Medical Decision Making*, 24 HEALTH PSYCHOL. S49, S49 (2005) [hereinafter Loewenstein, *Medical Decision Making II*]. Experience with various hot states may mitigate this effect to some extent, but not completely. The reason seems to be that we have a poor memory for hot states. When in a cold state, people find it difficult to imagine what it would be like to be in a hot state in the future. Loewenstein, *Addiction*, *supra* note 66, at 241–42. When people imagine a visual image, they activate many of the same brain systems involved in visual perception. In other words, people are, in a sense, "seeing" the scene in their minds. But when they recall hot states such as pain, they seem unable to re-experience the hot state. Rather, they are more likely to recall the circumstances that led to the experience rather than the feelings themselves. A second reason for the cold-to-hot empathy gap is that optimism bias may cause us to overestimate our

The cold-to-hot empathy gap may lead to excessive smoking and eating. First, people contemplating smoking for the first time may overestimate their ability to quit once they start, which could lead them to regret smoking in the first place.[114] This mistake occurs because they have never experienced the craving that results from addiction, so they cannot easily imagine how they will react to it. Moreover, when people smoke for the first time, they have no established smoking cues, so projection bias may cause them to ignore the likelihood that continued smoking will create cues that will trigger powerful cravings.[115] Second, healthy people may fail to appreciate on an affective level how miserable sickness can be.[116] So they may be too quick to engage in unhealthy behaviors such as smoking and overeating.[117]

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ability to resist the influence of hot states. *Id.* at 241–2. For a discussion of optimism bias, see *infra* Part IV.E.

114. Michael Sayette et al., *Exploring the Cold-to-Hot Empathy Gap in Smokers*, 19 PSYCHOL. SCI. 926, 930 (2008) [hereinafter Sayette et al., *Empathy Gap in Smokers*]; Loewenstein, *Medical Decision Making II*, *supra* note 113, at S52–53; Loewenstein, O'Donoghue & Rabin, *Projection Bias*, *supra* note 108, at 1232–33.

115. *See* Loewenstein, *Addiction*, *supra* note 66, at 246–47.

116. Loewenstein, *Medical Decision Making I*, *supra* note 110, at 101; Loewenstein, *Medical Decision Making II*, *supra* note 113, at S52–53.

117. Researchers have also identified a hot-to-cold empathy gap. When people are in a hot state, they do not fully appreciate how their preferences will change once they cool off. Loewenstein, *Medical Decision Making II*, *supra* note 113, at S49. Like the cold-to-hot empathy gap, the hot-to-cold empathy gap may lead to excessive smoking and eating. People may give excessive weight to momentary hot states. *See id.* at S52–53. For example, the nicotine-deprived smoker or hungry dieter may fail to fully appreciate that their craving will eventually pass and that they will no longer feel as if they must have a cigarette or eat a sugary snack. If a person incorrectly perceives that, unless satisfied, an intense craving will continue unabated, that person may give in to the craving when he or she would not do so absent this error in perception. Evidence supporting this hypothesis exists with respect to smoking. A study by Michael Sayette and his colleagues finds that smokers who are experiencing an intense craving predict that if they do not smoke within the next forty-five minutes, their urge to smoke will steadily increase. But smokers experiencing cravings who actually sit in a room for forty-five minutes without smoking do not report any actual increase in smoking urge. Sayette concludes that smokers experiencing cravings who predict that their smoking urge will increase steadily over time are "overpredicting" their urges. Michael Sayette et al., *Effects of Smoking Urge on Temporal Cognition*, 19 PSYCHOL. ADDICTIVE BEHAV. 88, 90–91 (2005). This mistake could cause smokers to believe that quitting will be more difficult than it actually is, which would reduce their willingness to abstain.

Similar evidence exists with respect to eating. Daniel Read and Barbara van Leeuwen asked people to choose a snack that they would consume at a future time. Some study participants were hungry at the time they made the choice, while other participants had recently eaten. The researchers told the participants that they would receive the snack that they chose at a time in the future when they would have recently eaten and would not be hungry. Nonetheless, people who were hungry when making the choice were more likely to select an unhealthy snack than people who were not hungry when making the choice. This suggests that the hungry participants projected their current hot state into the future. Daniel Read & Barbara van Leeuwen, *Predicting Hunger: The Effects of Appetite and Delay on Choice*, 76 ORG. BEHAV. & HUM. DECISION PROCESSES 189, 196–97 (1998). In addition, when the

D. HYPERBOLIC DISCOUNTING

Standard economic models usually assume that people place greater weight on the present than on the future and that each person discounts future costs and benefits using a discount factor.[118] For example, a person with a discount factor of 0.9 would be indifferent between receiving $100 in one year or $90 today.[119]

Standard models also assume that people discount exponentially. Exponential discounting means that a single discount factor applies to two equidistant periods no matter how close to the present those periods are.[120] Exponential discounting results in preferences that are consistent over time. An exponential discounter who considers $100 in two years to be equivalent to $90 in one year, would also consider $100 in one year to be equivalent to $90 today.

However, certain findings are inconsistent with exponential discounting. For example, a number of studies show that if people are offered a choice between $100 in two years and $90 in one year, many will choose the former, larger amount, demonstrating patience.[121] But if you

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researchers later revisited the participants to give them their snack, the researchers added a twist to the experiment. Instead of simply giving the participants the snack that they had originally chosen, the researchers again offered the participants a choice between a healthy and unhealthy snack. But this time, the participants were choosing the snack for immediate consumption. All of the participants had recently eaten. Interestingly, those participants who had chosen a healthy snack in the advance condition were more likely to also choose a healthy snack for immediate consumption. This indicates that people who promise to control themselves in the future are more likely to do so than those who do not. *Id.* at 197–201. Although not conclusive, these findings suggest that projection bias may lead to overeating. For example, when hungry, people may project their hunger into the future, causing them to conclude that sticking to a diet is hopeless. Having reached this conclusion, they may be less likely to plan to eat healthy. And when it comes time to eat, their lack of a plan to eat healthy may reduce their chances of actually doing so. In effect, their prediction becomes a self-fulfilling prophecy.

118. The discount rate (r), which may be more familiar to lawyers, is related to the discount factor (δ) as follows: $r = (1 - \delta) / \delta$. Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 913 n.23. For a discussion of the role of discount factors in standard economic models and models involving hyperbolic discounting, see *id.* at 913–14.

119. This example is based on the example found in Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 913. Discount factors may vary, reflecting the fact that some people are more patient than others. Economists generally treat the discount factor as a matter of individual preference and do not treat discounting as irrational. *Id.*; Joni Hersch & W. Kip Viscusi, *Smoking and Other Risky Behaviors*, 28 J. DRUG ISSUES 645, 648 (1998). Some economists, however, argue that discounting is non-normative, except to the extent that it reflects mortality risk. For a discussion of this view, see Beshears, *supra* note 65, at 1791.

120. *See* Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 913.

121. Shane Frederick, George Loewenstein & Ted O'Donoghue, *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LIT. 351, 360–61 (2002) (discussing these studies).

offer a choice between $100 in one year and $90 today, some of those same people will choose the latter, smaller amount, demonstrating impatience.

A possible explanation for these disparate results is that people engage in hyperbolic rather than exponential discounting. With hyperbolic discounting, the discount factor becomes smaller the closer the period in question is to the present.[122] In other words, people are patient when planning for the future, but impatient when making decisions about the present.

If people discount more heavily in the short-run than in the long-run, their preferences will be inconsistent at different points in time, making them prone to preference reversals and self-control problems. For example, at time t, a person might plan to quit smoking or to go on a diet at time $t + 1$. The person makes this decision because, in discounting the health consequences of smoking and obesity that will occur at time $t + 2$, the person uses a large (patient) discount factor. This means that health consequences will have significant weight. But when it comes time to give up cigarettes or to start the diet ($t + 1$), the person discounts the future using a smaller discount factor, places less weight on health consequences, and decides to continue smoking or to break the diet.[123]

Some paternalists interpret preference reversals of this type as evidence of a conflict between a person's multiple selves.[124] The planning self uses a large discount factor, assigns great weight to future utility, and plans to stop smoking or to go on a diet.[125] But the acting self, which controls behavior, uses a small discount factor, gives less weight to the future, and fails to follow through on the plan. In other words, the acting self is present-biased.

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122. *Id.* at 360.

123. GRUBER & KÖSZEGI, MODERN VIEW, *supra* note 35, at 10.

124. *Id.*; Gruber, *supra* note 30, at 122.

125. In discussing hyperbolic discounting, paternalists sometimes refer to a conflict between the current self and the future self. Gruber & Köszegi, *Is Addiction Rational?*, *supra* note 18, at 122. This terminology can be confusing because as time passes, the future self becomes the current self. To reduce confusion, I refer to the conflict as involving the planning self and the acting self. Differences in terminology aside, what matters is that a conflict occurs because when a person is planning for the future, the person places great weight on health consequences and plans to make healthy choices. But when deciding how to act today, the person places less weight on the future and smokes or eats unhealthy food. So the person's opinion about whether to pursue healthy choices depends on whether he or she is making future plans (the planning self) or deciding how to act in the present (the acting self).

Paternalists generally argue that welfare ought to be determined with respect to the wishes of the planning self; the wishes of the acting self should be ignored.[126] In other words, they claim that the planning self's discount factor is normatively appropriate. By using a smaller discount factor, the acting self "underweights" future costs and engages in unhealthy behavior despite the fact that the planning self would prefer to be healthy.[127] As a result, the acting self inflicts harm on the individual, creating an internality, or intra-personal externality.[128] And just as government intervention might be appropriate in the presence of inter-personal externalities, it might also be appropriate in the presence of internalities.[129]

E. OPTIMISM BIAS

Rational decisions about risky behavior require an understanding of the risks involved. If people do not understand these risks, the obvious solution is to simply provide them with the necessary information. But a number of studies suggest that excessive optimism may bias people's ability to process that information. In general, people often claim that their own abilities are above average and that the risk they face for various hazards is lower than the risk faced by the average person.[130] For example, most people claim that they drive better than the average person.[131] And far more people claim that they are at below-average risk for contracting pneumonia than at above-average risk.[132] Even if people accurately estimate the risk that smoking or overeating imposes on others, optimism bias might cause them to underestimate the risk to themselves.[133] In other words, people might smoke or overeat even though they are aware of the risks because they do not believe that these risks apply to them personally.

In particular, optimism bias might explain the tendency to regret past smoking and to underestimate addiction. If people smoke because they think they will not suffer health damage, they may regret the decision when

126. *See, e.g.*, GRUBER & KÖSZEGI, MODERN VIEW, *supra* note 35, at 10.

127. *Id.* at 12–13.

128. Gruber, *supra* note 30, at 124–25; Gruber & Köszegi, *Is Addiction Rational?*, *supra* note 18, at 1263.

129. GRUBER & KÖSZEGI, MODERN VIEW, *supra* note 35, at 12–13; Gruber & Köszegi, *Is Addiction Rational?*, *supra* note 18, at 1263.

130. Neil D. Weinstein, *Optimistic Biases about Personal Risks*, 246 SCI. 1232, 1232 (1989).

131. Viscusi, *Paternalism*, *supra* note 59, at 60.

132. Weinstein, *supra* note 130, at 1232.

133. *See, e.g.*, Hanson & Logue, *supra* note 18, at 1186–88 (making this argument with respect to smoking).

they realize they were wrong. Additionally, people who are excessively optimistic about their own abilities may wrongfully conclude that they are not susceptible to addiction.[134]

V. POTENTIAL BENEFITS OF PSYCHIC TAXES

Part IV described several theories that explain why some people may smoke or eat more than the optimal (utility-maximizing) amount. This Part explains the potential benefits of psychic taxes assuming that people do in fact smoke or eat irrationally. It also discusses whether graphic warnings are superior to textual warnings and describes the empirical evidence supporting the claim that graphic warnings will reduce smoking and unhealthy eating.

A. THE THEORY UNDERLYING PSYCHIC TAXES

If people smoke or eat irrationally, then government intervention to reduce smoking and curb eating could produce substantial benefits. In other words, if failures of rationality lead to welfare-reducing mistakes, then that creates a potentially compelling rationale for requiring graphic warnings and other psychic taxes. By increasing the non-pecuniary cost of cigarettes and unhealthy food, psychic taxes might make people better off in utility terms.

To illustrate, assume that hyperbolic discounting causes the acting self to irrationally ignore the future costs of unhealthy consumption. This leads to a self-control problem resulting in excessive consumption of cigarettes or food. By stimulating feelings of guilt and fear, a graphic warning might impose an immediate psychic cost upon the acting self. In effect, this psychic cost serves as a proxy for the future health costs that the acting self would otherwise ignore. In this way, a graphic warning might help a person overcome a self-control problem and carry out the wishes of his or her planning self. Similarly, psychic taxes might mitigate the problems caused by optimism bias and other failures of rationality.

However, the preceding analysis comes with an important caveat. If the goal is to maximize social welfare, then the government's task is not necessarily to minimize consumption of harmful goods. The fact that some people behave irrationally some of the time does not mean that all unhealthy consumption is irrational. It is possible, for example, that some

134. *See* Loewenstein, *Addiction*, *supra* note 66, at 242.

people might rationally trade off the costs of unhealthy eating (weight gain) in exchange for the benefits (eating tasty foods).

So rather than minimizing unhealthy consumption, the government should attempt to achieve the optimal level of consumption—that is, the amount of consumption that would take place if people were perfectly rational. In other words, government intervention should eliminate irrational consumption without interfering with rational consumption. Using hyperbolic discounting as an example, the government's role should be to eliminate any smoking or eating of which the planning self does not approve. But if the planning self wishes to smoke or to indulge in a dessert, then the government should not interfere.

If optimal consumption—not eliminating consumption—is the goal, then government intervention could go too far. For example, if psychic taxes deter rational consumption, then people might consume too few unhealthy goods. In other words, psychic taxes may make us healthier, but at the same time, reduce our utility. Psychic taxes could cause us to avoid consuming goods that we would otherwise rationally find beneficial in spite of the potential health costs.

B. GRAPHIC WARNINGS VERSUS TEXTUAL WARNINGS

Assuming that the government determines that it wants to impose a psychic tax using warning labels, then that begs the question: should the warnings be graphic or textual? The textual warnings that currently appear on cigarette packages likely have only a small psychic effect. Most smokers are probably too familiar with the existing warnings to pay much attention to them.[135] Similarly, consumers may not notice or may have trouble interpreting nutritional information presented in small print on the back of food packages.[136] Replacing or supplementing textual warnings with highly conspicuous images of cancerous lungs or drawings of obese persons would likely impose a larger psychic cost.

One reason that graphic warnings may impose large psychic costs is that they might trigger an emotional reaction to potential health risks. In coping with risks, the rational actor model assumes that people process

135. Required Warnings for Cigarette Packages and Advertisements, 75 Fed. Reg. 69,529–31 (proposed Nov. 12, 2010) (to be codified at 21 C.F.R. pt. 1141).

136. FOOD & DRUG ADMIN., CALORIES COUNT: REPORT OF THE WORKING GROUP ON OBESITY 17 (2004).

risks cognitively and that they focus exclusively on consequences.[137] In particular, people calculate the expected utility of each potential choice. Expected utility equals the utility of all possible outcomes weighted by each outcome's probability.[138] For example, the expected utility of smoking would include the utility loss due to lung cancer, taking into account the probability of contracting the disease. If real people behaved according to this model, then a graphic warning would offer no advantage over a warning that simply listed risks along with their probabilities.[139] But the evidence suggests that the way in which people actually respond to risk is not simply a function of their cognitive evaluation of likely consequences.

More specifically, George Loewenstein and his colleagues argue that, in some instances, the emotions elicited by a risky decision may exercise more influence over behavior than cognitive assessments of risk.[140] Loewenstein also argues that emotional reactions to risk may depend on factors that play little or no role in cognitive processing.[141] While cognitive risk assessments likely focus on expected utility, emotional reactions depend largely upon mental images of future outcomes.[142] So by making risks vivid and easy to imagine, graphic warnings may trigger an emotional response that textual warnings do not. As a result, graphic warnings may increase the likelihood that people will attempt to avoid certain risks.

Graphic warnings might also impose a large psychic cost through classical conditioning. Marketing experts have long relied on classical

137. For a discussion of the standard economic model of risky choices, see DAVID BESANKO & RONALD R. BRAEUTIGAM, MICROECONOMICS 556–58 (2d ed. 2005), and George Loewenstein et al., *Risk as Feelings*, 127 PSYCHOL. BULL. 267 (2001) [hereinafter Loewenstein et al., *Risk as Feelings*].

138. A rational actor might also discount the utility of future outcomes using his or her personal discount factor.

139. This conclusion might not apply if, as some scholars argue, people use an availability heuristic in estimating risks. According to these scholars, contrary to standard models, people do not estimate risks based on their actual statistical probabilities. Instead, people estimate risks based on how easily examples come to mind. *See, e.g.*, Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 J. LEGAL STUD. 199, 203–04 (2006). In that case, by making risks more salient, graphic warnings might exploit the availability heuristic and increase estimates for certain risks. This would make graphic warnings particularly effective at counteracting optimism bias. Assume, for instance, that optimism bias causes a smoker to underestimate the risk of getting lung cancer by 50 percent. By making the risk more salient, a graphic warning on a cigarette package might cause the smoker to double that estimate. In that case, the perception of the risk would match reality. Notice that the reason for taking advantage of the availability heuristic is to correct biased risk estimates, not necessarily to impose psychic costs.

140. Loewenstein et al., *Risk as Feelings*, *supra* note 137, at 274.

141. *Id.* at 271.

142. *Id.*

conditioning to associate their products with positive emotions.[143] Graphic warnings may have the opposite effect. In other words, they may condition people to experience negative emotions when presented with a particular product. For example, if a candy bar wrapper contains a red label or a drawing of an obese person, then, after repeated exposure, people might associate the candy bar with obesity and have a negative reaction to it.

Conditioning people to experience guilt from eating unhealthy food could be especially effective in modifying behavior. Guilt arises because of the conflicting desire for both short-term gratification and long-term preservation of health.[144] Additionally, food research shows that guilt plays an important role in determining how much people eat.[145] For example, labels that make food appear healthier, such as "low-fat" labels, reduce the amount of guilt that people feel when consuming the food and simultaneously increase the amount consumed.[146] As a result, by manipulating feelings of guilt, graphic warnings may channel consumption choices in the direction that the government deems appropriate.

C. EFFECTIVENESS OF GRAPHIC WARNINGS: EMPIRICAL EVIDENCE

Ultimately, whether graphic warnings reduce unhealthy consumption is an empirical question. Unfortunately, the existing empirical evidence is not conclusive.

With respect to smoking, people pay more attention to graphic warnings on cigarette packages than to textual warnings.[147] Graphic warnings may also increase perceptions of the health risks associated with smoking, and some smokers report that graphic warnings cause them to think more about quitting.[148] But even the FDA concedes that "there is large uncertainty about the size of the effect" that graphic warnings will have on the smoking rate.[149] The reason for this uncertainty is the lack of evidence that graphic warnings actually cause smokers to quit or

143. For a discussion of classical conditioning and advertising, see generally Schachtman et al., *supra* note 98.

144. Brian Wansink & Pierre Chandon, *Can "Low-Fat" Nutrition Labels Lead to Obesity?*, 43 J. MARKETING RES. 605, 607 (2006).

145. *Id.*

146. *Id.* at 609–10.

147. For a review of the literature, see Required Warnings for Cigarette Packages and Advertisements, 75 Fed. Reg. 69,529 (Nov. 12, 2010) (to be codified at 21 C.F.R. pt. 1141).

148. *Id.* at 69,532.

149. Required Warnings for Cigarette Packages and Advertisements, 76 Fed. Reg. 36,712 (June 22, 2011) (to be codified at 21 C.F.R. pt. 1141).

discourage nonsmokers from starting to smoke.[150] One reason for this lack of evidence is that countries that have adopted graphic cigarette warnings have often done so at or near the same time that they increased cigarette taxes or adopted restrictions on smoking in public.[151] The adoption of graphic warnings in a particular country may also coincide with an increase in antismoking sentiment in that country. This means that we cannot conclude that any reduction in the smoking rate following the implementation of graphic warnings is attributable to the warnings themselves.

Research about the effectiveness of graphic warnings on food is still in its early stages.[152] A number of studies suggest that graphic warnings (particularly traffic-light color-coding) assist people in identifying healthier foods.[153] There is also some evidence that graphic warnings influence food purchases.[154] For example, Anne Thorndike and her colleagues recently studied the effect that traffic-light color-coding has on food-purchasing decisions.[155] The study took place in the cafeteria of a large hospital. The researchers labeled foods and beverages sold in the cafeteria with green, yellow, and red labels.[156] Signage in the cafeteria explained "that green meant 'consume often,' yellow meant 'consume less often,' and red meant 'there is a better choice in green or yellow.'"[157] The researchers also made a dietician available to answer questions about the labeling and supplied pamphlets explaining the labeling. Relative to baseline sales, the study found that sales of all red items decreased 9.2 percent, and sales of red beverages decreased 16.5 percent.[158] Conversely, sales of all green items increased 4.5 percent, and sales of green beverages increased 9.6 percent.[159]

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150. *See* R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205, 1219 (D.C. Cir. 2012) ("FDA has not provided a shred of evidence . . . showing that the graphic warnings will 'directly advance' its interest in reducing the number of Americans who smoke.").

151. *See id.*

152. For a recent review of the empirical literature, see generally Kristy L. Hawley et al., *The Science on Front-of-Package Food Labels*, 22 PUB. HEALTH NUTRITION 1 (2012). *See also* INSTITUTE OF MEDICINE, FRONT-OF-PACKAGE NUTRITION RATINGS SYSTEMS AND SYMBOLS: PROMOTING HEALTHIER CHOICES 43–70 (Ellen A. Wartella et al. eds., 2012).

153. Hawley et al., *supra* note 152, at 4–5.

154. *Id.* at 5 (reviewing the literature, but noting that "[l]ittle research exists on the impact [that] labeling systems have on purchasing patterns").

155. *See generally* Thorndike, *supra* note 14.

156. *Id.* at 527–29.

157. *Id.* at 529.

158. *Id.* at 529–31.

159. *Id.*

The Thorndike study suggests that traffic-light color-coding might encourage healthier eating. But given the highly structured nature of the experiment, we cannot safely conclude that a government-mandated labeling scheme implemented on a national scale will produce similar results. Also, the Thorndike study does not demonstrate that traffic-light color-coding reduces overweight and obesity. As discussed in the next Part, even if a labeling scheme increases purchases of healthier foods, consumers may compensate in ways that undermine the expected health benefits, for example, by eating larger portions. As a result, the net effect may be that people lose little or no weight.

VI. REASONS FOR SKEPTICISM

As discussed in Part V, if people smoke or eat irrationally, psychic taxes may produce substantial benefits. Despite these potential benefits, there are a number of reasons to be skeptical. This Part explains why psychic taxes may be both unnecessary and harmful.

A. THE BURDEN ON AUTONOMY

Perhaps the most popular objection to paternalistic intervention is that it unjustifiably interferes with individual autonomy.[160] This Subpart explains why autonomy is important and how psychic taxes burden it.

1. Why Autonomy Is Important

For paternalists, autonomy may seem unimportant. After all, paternalists believe that people sometimes reduce their own utility by behaving irrationally.[161] Why should the government leave people free to harm themselves?

One reason not to burden autonomy is that even if some people are irrational some of the time, that does not mean that all people are irrational all of the time. As explained in Subpart E of this Part, people are heterogeneous with respect to rationality. And many people will often be in a better position than the government to make choices that maximize their own utility simply because they know more about their own preferences.[162] For example, you may be in a better position than the government to determine for yourself whether the enjoyment that you receive from eating

160. *See, e.g.*, Paternalism, STANFORD ENCYCLOPEDIA OF PHILOSOPHY, http://plato.stanford.edu/entries/paternalism (last revised Jan. 1, 2010).

161. Camerer et al., *supra* note 17, at 1212.

162. Rizzo & Whitman, *Knowledge Problem*, supra note 58, at 922.

a bowl of ice cream is worth the cost in terms of weight gain. So your consumption of ice cream may be rational, and the government will make you worse off if it interferes.

But even when people behave irrationally, it may be better to respect their autonomy and force them to live with their mistaken choices. First, people may value the freedom to make choices even if those choices are sometimes wrong.[163] In other words, the ability to choose may create utility independent of the consequences of a given choice.[164] Second, decision making is a skill that improves with experience. In the long run, people may be better off if the government allows them to make mistakes and learn from them.[165] Third, as discussed in Subpart C of this Part, willpower is a faculty that, over a long period, strengthens with use.[166] If the government tightly controls people's choices, it will reduce opportunities to exercise willpower. Over time, this may erode willpower and leave people more vulnerable to temptation, which may in turn make further government intervention necessary.[167]

Paternalists might respond that these rationales for respecting autonomy are limited.[168] When irrational choices have serious adverse consequences—as may be the case for smoking and eating—it might be better for the government to act to avoid those consequences. In that case, government intervention might be desirable even if it means restricting our freedom, preventing us from learning from our mistakes, and eroding our willpower. Nonetheless, given the benefits of autonomy, the government arguably should not burden it without compelling evidence that doing so will improve social welfare.

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163. Eyal Zamir, *The Efficiency of Paternalism*, 84 VA. L. REV. 229, 239–40 (1998) (discussing this possibility).

164. For a discussion of this claim, see Jeremy A. Blumenthal, *Emotional Paternalism*, 35 FLA. ST. U. L. REV. 1, 12–14 (2007) [hereinafter Blumenthal, *Emotional Paternalism*]. Blumenthal argues that choosing does not always create utility, that people sometimes prefer not to have to make choices, and that having too many choices can make decisions difficult. He suggests "that for various choices and for some people there may be some optimal number of choices." *See also* Botti & Iyengar, *supra* note 54, at 25–34 (reviewing the evidence that freedom to choose produces significant benefits, but also arguing that having more choices is sometimes detrimental).

165. *See generally* Jonathan Klick & Gregory Mitchell, *Government Regulation of Irrationality: Moral and Cognitive Hazards*, 90 MINN. L. REV. 1620 (2006).

166. *See infra* Part VI.C.

167. *Cf.* Lee Anne Fennell, *Willpower Taxes*, 99 GEO. L.J. 1371, 1392–93 (2011) ("If exerting willpower makes one better at it, then efforts to avoid temptations altogether may prove counterproductive.").

168. *See, e.g.*, Jeremy A. Blumenthal, *Expert Paternalism*, 64 FLA. L. REV. 721, 725–26 (2012).

2. Autonomy and Consumer Manipulation

To justify interference with autonomy, paternalists often point to instances where firms attempt to manipulate consumers, perhaps by taking advantage of cognitive biases or by provoking emotional responses.[169] Firms have an incentive to use sophisticated techniques to persuade consumers to engage in behavior that will increase profits, even at the expense of consumer welfare. For instance, firms may run advertisements that contain little information. The advertisements instead try to condition consumers to feel positively toward the product by associating it with pleasant images and other stimuli.[170] A famous example is the use of the Marlboro man to promote cigarette sales.[171] Similarly, fast food restaurants offer supersized portions in spite of evidence that people tend to eat more when eating out of large containers.[172]

While arguments based on consumer manipulation are not without merit, their appeal as a justification for paternalism is limited. One reason is that consumers may be aware of and may take steps to thwart any efforts to manipulate them.[173] A second reason is that, in some cases, firms may simply be giving consumers what they want.[174] For example, fast food restaurants may offer supersized portions because their customers demand them.[175] A third reason is that the type of advertising paternalists find

169. For a detailed discussion of consumer manipulation, see Jon D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 724–42 (1999). For a review of the literature on consumer manipulation related to food choices, see Pratt, *supra* note 45, at 103–06. *See also* Blumenthal, *Emotional Paternalism*, *supra* note 164, at 47–49; Loewenstein & O'Donoghue, *Easy Way*, *supra* note 4, at 202; E. Katherine Battle & Kelly D. Brownell, *Confronting a Rising Tide of Eating Disorders and Obesity: Treatment vs. Prevention and Policy*, 21 ADDICTIVE BEHAVS. 755, 761 (1996).

170. Hanson & Kysar, *supra* note 169, at 732–33.

171. *Id.*

172. *See supra* Part IV.A.

173. Gregory Mitchell has noted that as we age, we may "become more resistant to manipulation of our judgments and choices." Gregory Mitchell, *Why Law and Economics' Perfect Rationality Should Not Be Traded for Behavioral Law and Economics' Equal Incompetence*, 91 GEO. L.J. 67, 158 (2002) [hereinafter Mitchell, *Equal Incompetence*]. To support this conclusion, Mitchell cites research finding that older adults are less prone than college-age subjects to exhibit irregular preferences as a result of context effects. *Id.* at 158 n.273. Context effects occur when a subject chooses product A from products A and B, but chooses product B from products A, B, and C. *Id.*

174. WANSINK, MINDLESS EATING, *supra* note 77, at 196–99.

175. *Cf.* Joel Stein, *Big Chain Restaurants' New Small Portions*, TIME, May 10, 2007, *available at* http://www.time.com/time/magazine/article/0,9171,1619548,00.html?artId=1619548 ("When Ruby Tuesday tried to position itself as the healthy chain restaurant by cutting back on serving sizes and printing nutritional info on its menus in 2004, customers hated it so much, the small sizes were dropped within five months.").

objectionable might actually enhance consumers' enjoyment of the advertised product.[176] This hypothesis is supported by a study of preferences for Pepsi and Coke.[177] As part of the study, neuroscientists had participants taste Pepsi and Coke while having their brain activity monitored by a functional magnetic resonance imaging machine. In the anonymous condition, participants did not know which soda they were drinking. Under these circumstances, participants were divided equally in their preference for Pepsi and Coke, and the two brands activated the same area of the brain.[178] In the semi-anonymous condition, the researchers gave the participants a drink after informing them whether it was Pepsi or Coke.[179] The researchers then gave the participants a second drink but told them that the second drink could be either Pepsi or Coke.[180] In reality, the first drink and the second drink were the same (both were either Pepsi or Coke). In this case, participants exhibited a strong preference for the first drink when they knew that drink was Coke. In other words, participants chose the drink that they knew was Coke over the unlabeled second drink, even though the unlabeled drink was also Coke.[181] Interestingly, participants did not exhibit a similar bias in favor of the first drink when they knew that drink was Pepsi.[182] Moreover, when the participants knew that they were drinking Coke, activity occurred in areas of the brain associated with working memory and the use of emotion to modify behavior.[183] Participants who knew they were drinking Pepsi did not exhibit similar brain activity.[184]

One interpretation of these findings is that the advantage that Coke has over Pepsi is because of the ability of Coke's advertising to create associations that activate higher-order brain mechanisms.[185] More generally, rather than simply manipulating people, advertising may actually enhance the consumption experience and result in increased utility.

176. *See generally* Samuel M. McClure et al., *Neural Correlates of Behavioral Preference for Culturally Familiar Drinks*, 44 NEURON 379 (2004).

177. *Id.*

178. *Id.* at 381, 384–85.

179. *Id.* at 380, 382–83.

180. *Id.* at 380.

181. *Id.* at 385.

182. *Id.*

183. *Id.*

184. *Id.*

185. DAN ARIELY, PREDICTABLY IRRATIONAL 166–68 (rev. ed. 2009) (drawing this conclusion).

3. Do Psychic Taxes Burden Autonomy?

In an effort to convince those who value autonomy to embrace paternalistic policies, Cass Sunstein and Richard Thaler, two prominent paternalists, advocate what they call "libertarian paternalism," which involves the use of nudges to modify behavior.[186] Nudges are policies that help the irrational while imposing only small costs on the rational.[187] Nudges stand in contrast to heavy-handed policies such as bans and sin taxes. An example is changing the default rule for employer-provided retirement plans so that employers automatically enroll new employees.[188] The rationale for this arrangement is that it increases saving by overcoming the irrational tendency to procrastinate with respect to filling out the paperwork required to join the plan.[189] At the same time, the arrangement does not significantly burden those who rationally prefer not to save for retirement because these people can easily opt out.[190]

Paternalists might argue that psychic taxes are more akin to a gentle nudge rather than a forceful shove and that they do not impose a significant burden on the autonomy of rational persons. After all, unlike bans and sin taxes, graphic warnings do not create a legal or financial barrier to consumption. So rational consumers can access the goods they want despite any warning label that the government might require.

Moreover, in some cases, graphic warnings arguably facilitate rational decision making. For example, many consumers presumably want to eat healthy food at least as long as the food tastes good. So food manufacturers have an incentive to lead consumers to believe that certain foods are healthy, even if they in fact are not. Requiring manufacturers to provide consumers with textual and numerical information about the contents of food might mitigate this problem, but that information might also be too difficult for some consumers to process. In that case, a graphic warning might assist consumers who want to eat healthy food. Placing a red label on

186. RICHARD H. THALER & CASS SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS 4–6 (rev. ed., 2009).

187. *Id.* at 6.

188. *Id.* at 109–11.

189. *Id.*

190. In fact, automatic enrollment may burden rational employees. Many employers match the contributions made by employees to their retirement accounts. Presumably, matching funds are finite. So by increasing enrollment in retirement plans, automatic enrollment will result in the reallocation of a portion of these funds from those who would have enrolled in the absence of automatic enrollment to those who enroll only because of automatic enrollment. Gregory Mitchell, *Libertarian Paternalism is an Oxymoron*, 99 NW. U. L. REV. 1245, 1273 (2005).

a particular food product, for example, would allow consumers to determine with minimal effort that the government deems the food unhealthy. So the label would arguably empower consumers by providing them with information that would allow them to make informed choices consistent with their preferences.

Nonetheless, those who value autonomy have two reasons to be concerned about graphic warnings. First, by drawing attention to particular potential consequences of a choice, graphic warnings may induce bad decisions because of the focusing illusion. Focusing illusion describes our tendency to overestimate the importance of whatever our attention is directed towards.[191] When we focus on a particular aspect of a situation, we may ignore other aspects that are even more significant. For example, if a graphic warning reminds us that eating a particular food might lead to obesity, we may place too much emphasis on this point and ignore the fact that the food tastes good and perhaps should be enjoyed at least on occasion.[192]

Second, in addition to providing information, graphic warnings also impose a psychic cost. The cost imposed varies by the type of intervention. Traffic-light color-coding likely imposes a lower psychic cost than warnings that incorporate corpses or drawings of obese people. But even traffic-light color-coding may stimulate feelings of guilt and anxiety. These negative feelings might reduce utility. A person who consumes the product despite the warning will receive less pleasure than otherwise. Also, some people may decide not to consume the product despite the fact that absent the warning, the benefits of consumption would outweigh the costs, making consumption the rational choice. If that occurs, then the warning results in a loss of consumer surplus.[193] In that sense, graphic warnings do in fact burden autonomy.

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191. *See, e.g.*, Daniel Kahneman et al., *Would You Be Happier If You Were Richer? A Focusing Illusion*, 312 SCI. 1908, 1908 (2006).

192. *Cf.* On Amir & Orly Lobel, *Stumble, Predict, Nudge: How Behavioral Economics Informs Law and Policy*, 108 COLUM. L. REV. 2098, 2114–15 (2008) ("[P]roviding better and clearer information in an attempt to override biases may [result in an] overemphasis of decision dimensions that previously would not have been salient, but are now clearly visible and likely to attract undue attention.").

193. Consumer surplus is "the amount a buyer is willing to pay for a good minus the amount the buyer actually pays for it," and it measures the benefit to the consumer of undertaking a market transaction. MANKIW, *supra* note 17, at 139.

Moreover, unlike a sin tax, graphic warnings do not raise revenue.[194] If a sin tax fails to modify behavior, consumers incur a cost. They buy the taxed good and pay the tax. However, the cost to consumers is at least partially offset by the revenue raised. The government can use this revenue to provide benefits to other people. On the other hand, if a graphic warning fails to modify behavior, the psychic cost that consumers sustain does not produce a corresponding benefit for anyone else. Instead, it represents what an economist would refer to as a deadweight loss or a net reduction in welfare.[195]

Finally, those who smoke or overeat despite graphic warnings may suffer from a double-cost problem.[196] They experience the psychic cost that the warnings are designed to create. But because the warnings do not affect their behavior, they also suffer the health damage that the warnings are supposed to help them avoid.

B. LACK OF A CLEAR NORMATIVE STANDARD

As discussed in Parts IV and V, one of the primary rationales for paternalism, including psychic taxes, is that people suffer from self-control problems. People sometimes plan to quit smoking or to eat healthy foods but fail to follow through. This begs the question: are people really better off when they stick to their long-term plans, or should they sometimes deviate from those plans and engage in seemingly short-sighted behavior?

Paternalists generally accept that people would be better off if they followed through on their long-term plans. For example, as mentioned in Part IV, paternalistic proposals based on hyperbolic discounting assume that the planning self's preferences, which are based on its patient discount factor, have normative priority over the acting self's preferences, which are based on its impatient discount factor.[197] Similarly, proponents of the visceral factors perspective sometimes argue that we are acting against our true preferences when we make plans while in a cold state but then, while

194. *See* Glaeser, *supra* note 4, at 135 (making this observation with respect to psychic taxes generally).

195. *See* Loewenstein & O'Donoghue, *Easy Way*, *supra* note 4, at 202 (noting that, when government interventions stimulate guilt and fear but do not successfully modify behavior, those interventions "merely impose additional costs on people").

196. *Cf.* Strnad, *supra* note 99, at 1254–55 (discussing a similar problem in the context of food taxes); Fennell, *supra* note 167, at 1412 (noting this problem with respect to sin taxes).

197. GRUBER & KŐSZEGI, MODERN VIEW, *supra* note 35, at 10. For a detailed discussion of the normatively appropriate discount factor for hyperbolic discounters, see Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 924–28.

in a hot state, take actions that conflict with those plans.[198] If this view is correct, the government may be justified in adopting policies such as psychic taxes that facilitate implementation of our long-term plans.

But our long-term plans may not always be in our best interest.[199] Specifically, we may adopt plans that are too austere. One reason for this is projection bias.[200] For example, we may resolve to eat five hundred fewer calories tomorrow because, having already eaten today, we do not fully appreciate how difficult it will be to deprive ourselves in the future.

More specifically, the intensity of visceral factors such as hunger depends in part on the proximity of cues and other environmental stimuli.[201] In this context, proximity includes many dimensions—geographic, visual, temporal, and social. Food, for instance, is more likely to stimulate hunger if it is visible, immediately attainable, or being eaten by someone else.[202] This means that the intensity of visceral factors can change rapidly. If projection bias results in failure to anticipate these changes, we may plan to diet only to have those plans undermined by unexpected visceral factors.[203]

When this happens, we could interpret the outcome in multiple ways. On the one hand, we could conclude that visceral factors undermined our true preferences and caused us to act against our self-interest. On the other hand, we could conclude that we had better information about our hot state at the time we deviated from the diet—that is, we better understood the pain of going hungry when we experienced hunger.[204] Moreover, hunger itself may increase the pleasure derived from eating, which is something we may fail to fully appreciate unless we are actually hungry.[205] In that

198. *See, e.g.*, Loewenstein, *Addiction*, *supra* note 66, at 259.

199. For related discussions of this problem, see Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 924–31, and Daniel Read, *Which Side Are You On? The Ethics of Self-Command*, 27 J. ECON. PSYCHOL. 681, 685–86 (2006).

200. *See* Loewenstein, O'Donoghue & Rabin, *Projection Bias*, *supra* note 108, at 1233.

201. George Loewenstein & Ted O'Donoghue, Animal Spirits: Affective and Deliberative Processes in Economic Behavior 10–11 (May 2005) (unpublished manuscript) (on file with author) [hereinafter Loewenstein & O'Donoghue, Animal Spirits]; George Loewenstein & Ted O'Donoghue, The Heat of the Moment: Modeling Interactions Between Affect and Deliberation 10–13 (June 2007) (unpublished manuscript) (on file with author).

202. *See* Loewenstein & O'Donoghue, Animal Spirits, *supra* note 201, at 9–10.

203. Loewenstein, *Out of Control*, *supra* note 91, at 278–79, 286–89.

204. Read, *supra* note 199, at 685–86. *Cf.* Sayette et al., *Empathy Gap in Smokers*, *supra* note 114, at 931 (reviewing evidence that smokers who are not currently experiencing intense cravings are unrealistic about their chances of abstaining from cigarettes).

205. *See* Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 930–31.

case, abandoning the diet at the last minute could be the utility-maximizing choice.

A second and related reason that long-term plans may be too austere is that the opportunity costs associated with forward-looking goals may become more salient as the moment of choice approaches.[206] For example, we may not fully appreciate the opportunity cost of dieting until the waiter offers us a piece of chocolate cake. To support this hypothesis, Shane Frederick and his colleagues find that, contrary to standard economic theory, consumers often ignore opportunity costs unless those costs are made explicit.[207]

Similarly, the salience of various features of an event or action may change over time.[208] Specifically, when planning in advance, we focus on abstract, general, and de-contextualized features of events. We also focus on the reasons for taking a particular action.[209] For example, when pondering whether to start a diet next week, we may focus on how attractive we will be once we lose weight. But when it comes time to implement the plan, our focus is likely to shift from the abstract reasons for taking the action to the specific, concrete steps that the action requires—that is, the "how" rather than the "why."[210] Suddenly, we will become very aware that starting the diet today means eating salad for lunch instead of pizza. Under these circumstances, is deviating from the diet necessarily a bad choice? Or does it simply reflect a justifiable change in perspective?

Despite these considerations, a paternalist might argue that we must be better off when we follow through on our long-term plans. After all, we often experience regret when we fail to do so. But regret may not be a very reliable indicator of true preferences. Instead, regret may be due to projection bias. When in a cold state (for example, shortly after eating), people may not be in a good position to evaluate choices that they made

206. *Id.* at 928.

207. *See generally* Shane Frederick et al., *Opportunity Cost Neglect*, 36 J. CONSUMER RES. 553 (2009).

208. Yaacov Trope & Nira Liberman, *Temporal Construal*, 110 PSYCHOL. REV. 403, 405–06 (2003); George Loewenstein & David Schkade, *Wouldn't It Be Nice? Predicting Future Feelings*, *in* WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY 85, 94–98 (Daniel Kahneman et al. eds., 1999).

209. Trope & Liberman, *supra* note 208, at 405–10.

210. *Id.*

while in a hot state (when hungry).[211] Moreover, some research suggests that, as time passes, regret about indulgence fades.[212] As they get older, people instead express regret about their failure to seize the pleasures of life.[213] This change in perspective may be due to a change in the salience of relevant aspects of the decision, which may occur with the passage of time.[214]

Ultimately, when people's short-term and long-term preferences come into conflict, paternalism requires the government to give normative status to one set of preferences. While our intuition may suggest that the government should always side with long-term preferences, that conclusion may reflect prejudice more than reasoned argument. If so, then psychic taxes and other forms of paternalism become suspect. Paradoxically, by helping us achieve our long-term goals, paternalism may in fact make us worse off.[215]

C. THE POSSIBILITY OF SELF-REGULATION

Even if we are better off when we stick to our long-term plans, psychic taxes and other forms of paternalism may be unnecessary. Many of us are aware of our self-control problems, so we have developed various strategies to help us reach our long-term goals. These strategies reduce the need for government intervention.

One strategy involves commitment devices.[216] Commitment devices may impose a short-term cost on the acting self, which makes them particularly useful for hyperbolic discounters. For example, smokers sometimes announce to family and friends that they will not smoke again, making a relapse embarrassing. Commitment devices, such as not keeping

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211. *Cf.* Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 928 (arguing that feelings of guilt are an unreliable indicator of true preferences, because guilt is itself a hot state that fades with time).

212. Ran Kivetz & Anat Keinan, *Repenting Hyperopia: An Analysis of Self-Control Regrets*, 33 J. CONSUMER RES., 273, 274–82 (2006).

213. *Id.* at 282 (concluding that "consumers sometimes suffer from excessive farsightedness" and "repent hyperopia in the long run").

214. *See* Loewenstein & Schkade, *supra* note 208, at 97.

215. *See* Kivetz & Keinan, *supra* note 212, at 282 ("We conclude by noting that, although ex ante consumers perceive virtue as providing long-term benefits and vice as entailing delayed costs, myopia may be farsighted after all. In the long run, indulging can lead to less regret and more satisfaction.").

216. *See generally* Bryan, Karlan & Nelson, *supra* note 53. For a discussion of the use of commitment devices by smokers, see Gruber & Köszegi, *Is Addiction "Rational?"*, *supra* note 18, at 1278.

cigarettes or snacks in the home, may also help people avoid temptation, reducing the influence of visceral factors.

A second strategy is the use of personal rules, such as, "I will eat dessert only on weekends."[217] Personal rules can be effective because they link together a series of choices.[218] To illustrate, imagine that a person is composed of the current self and a series of future selves, including tomorrow's self. Tomorrow's self may be willing to follow a rule that requires resisting temptation but only if future selves will also follow the rule.[219] After all, why should tomorrow's self abstain from smoking or eating dessert if future selves will not? The current self also prefers that future selves follow the rule, but the current self would like to break the rule today. However, the current self knows that, in determining whether future selves are likely to follow the rule, tomorrow's self will use the past as a guide.[220] So if the current self violates the rule today, this violation will establish a dangerous precedent.[221] Today's breach will undermine the confidence that tomorrow's self has in the ability of future selves to exercise self-control, reducing the incentive tomorrow's self has to follow the rule. The desire to avoid a dangerous precedent creates a powerful motive for the current self to follow the rule today.

A third strategy involves the use of negative emotions: we can train ourselves to feel guilty when we give in to temptation.[222] Guilt creates an immediate cost for indulging in unhealthy activities, the long-term damage from which we might otherwise ignore.[223] Finally, a fourth strategy involves distraction techniques. Research suggests that people can delay gratification longer when they distract themselves from the source of temptation by engaging in or thinking about unrelated activities.[224]

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217. *See* Roland Bénabou & Jean Tirole, *Self-Knowledge and Self-Regulation: An Economic Approach*, *in* THE PSYCHOLOGY OF ECONOMIC DECISIONS: VOLUME ONE: RATIONALITY AND WELL-BEING 137, 151–59 (Isabelle Brocas & Juan Carrillo eds., 2002) [hereinafter Bénabou & Tirole, *Self-Regulation*]. *See generally* Roland Bénabou & Jean Tirole, *Willpower and Personal Rules*, 112 J. POL. ECON. 848 (2004) (providing a formal model of the use of personal rules).

218. *See* Bénabou & Tirole, *Self-Regulation*, *supra* note 217, at 151–59.

219. *See id.* at 154–55.

220. *Id.*

221. *Id.* at 155.

222. Loewenstein & O'Donoghue, *Easy Way*, *supra* note 4, at 183.

223. *Id.*

224. *See* Walter Mischel, Ozlem Ayduk & Rodolfo Mendoza-Denton, *Sustaining Delay of Gratification Over Time: A Hot/Cool Systems Perspective*, *in* TIME AND DECISION: ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON INTERTEMPORAL CHOICE 175, 183–87 (George Loewenstein et al. eds., 2003) (reviewing the literature on the role of distraction).

Although commitment devices, personal rules, negative emotions, distraction techniques, and similar strategies may facilitate self-control, they are not perfect. One problem is that projection bias and optimism bias may cause people to overestimate their ability to withstand temptation. Consequently, people may not take appropriate steps to avoid tempting situations.[225] For example, a smoker who is trying to quit may not realize that sitting in a smoky bar will trigger a powerful urge to light up.[226]

If self-control strategies fail, we may still resist temptation—even without government assistance—through the exercise of willpower. Willpower is a resource that allows deliberative processes to control behavior despite the influence of the visceral factors triggered by temptation.[227] Imagine a dieter who attends a lunch meeting and comes face-to-face with a large tray of cookies. Although the dieter will likely be tempted to eat a cookie, willpower may allow him or her to overcome the temptation.

Nonetheless, willpower is a limited resource. Some studies suggest that willpower is like a muscle.[228] In the short term, it weakens with use. Our dieter may initially put up a fight, but the longer he or she is in the same room as the cookie tray, the more difficult it becomes to resist temptation. Moreover, temptation is not the only factor that can undermine willpower. Stress can also lead to unexpected lapses in self-control.[229] Similarly, performing even simple mental tasks can adversely affect willpower.[230]

In sum, self-regulation mitigates self-control problems and reduces the need for psychic taxes and other governmental solutions to irrationality. However, self-regulation is not a panacea, nor does it completely eliminate the potential benefits of paternalism.

D. OFFSETTING FAILURES OF RATIONALITY

As we have seen, paternalists base their argument for government intervention on evidence that smoking and overeating are caused by

225. *See, e.g.*, Loewenstein, *Medical Decision Making II*, *supra* note 113, at S49.

226. Sayette et al., *Empathy Gap in Smokers*, *supra* note 114, at 931.

227. Loewenstein & O'Donoghue, Animal Spirits, *supra* note 201, at 2.

228. For a recent review of this literature, see generally Martin S. Hagger, Chantelle Wood & Chris Stiff, *Ego Depletion and the Strength Model of Self-Control: A Meta-Analysis*, 136 PSYCHOL. BULL. 495 (2010).

229. Loewenstein & O'Donoghue, Animal Spirits, *supra* note 201, at 11–13.

230. *Id.*

failures of rationality. But failures of rationality do not necessarily reduce utility. Instead, one failure of rationality may offset another.[231] This means that government intervention that corrects a given source of irrationality without correcting all others has ambiguous effects on welfare.

Consider, for example, the finding that people overestimate highly publicized risks.[232] Consistent with this finding, many people—including both smokers and nonsmokers—overestimate the risks of smoking.[233] This reduces smoking from the level that would otherwise prevail.[234] The bias that leads people to overestimate smoking's risks may partially, fully, or more than fully offset any excessive smoking resulting from other failures of rationality.[235] If so, that would reduce the potential scope for government intervention.

A related example involves the possibility that thin people may underestimate their ability to adapt to gaining weight. Substantial research suggests that people adapt to adverse events so that the events often have little or no effect on their reported happiness.[236] People exhibit remarkable adaptation even to serious disabilities such as paraplegia.[237] Nonetheless, people tend to underestimate the degree to which they will adapt.[238] People tend to predict that adverse events will affect them much more than actually seems to be the case, probably due to projection bias. If, by failing to fully appreciate the power of adaptation, thin people substantially overestimate the miseries of being overweight, then they may eat less (or exercise more) than they otherwise would. This could offset any irrational

231. Gregory Besharov, *Second-Best Considerations in Correcting Cognitive Biases*, 71 S. ECON. J. 12, 15–19 (2004).

232. BARUCH FISCHHOFF ET AL., ACCEPTABLE RISK 29 (1981).

233. For a review of the literature on risk perceptions and smoking, see Lucas, *supra* note 36, at 712–13.

234. VISCUSI, RISKY DECISION, *supra* note 25, at 99–100 (concluding that the smoking rate would be significantly higher if people did not overestimate the risk of lung cancer).

235. Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 953. *Cf.* W. KIP VISCUSI, SMOKE-FILLED ROOMS: A POSTMORTEM ON THE TOBACCO DEAL 61 (2002) (noting that, if smokers overestimate smoking's risks, that would offset any excessive smoking resulting from ignoring future health costs).

236. For reviews of the literature on hedonic adaptation, see George Loewenstein & Peter A. Ubel, *Hedonic Adaptation and the Role of Decision and Experience Utility in Public Policy*, 92 J. PUB. ECON. 1795, 1799–1801 (2008) and Shane Frederick & George Loewenstein, *Hedonic Adaptation*, *in* WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY 302, 311–13 (Daniel Kahneman et al. eds., 1999).

237. Loewenstein & Ubel, *supra* note 236, at 1799; Frederick & Loewenstein, *supra* note 236, at 311–13.

238. Loewenstein, O'Donoghue & Rabin, *Projection Bias*, *supra* note 108, at 1212–14.

tendency to eat excessively, reducing or perhaps even eliminating the need for psychic taxes on food.[239]

E. THE EXISTENCE OF HETEROGENEITY

As discussed in Part V, if the goal is to maximize social welfare, then the government should not necessarily use psychic taxes to minimize unhealthy consumption. Rather, it should use psychic taxes to achieve the optimal level of consumption. Given that goal, heterogeneity presents a significant challenge.

People are heterogeneous in ways that affect whether a psychic tax is appropriate. For example, some people come closer to the rational actor ideal than others.[240] In theory, the government should tailor psychic taxes to the individual. In other words, the government should use psychic taxes to avoid harm to those who consume cigarettes and food irrationally, but should not impose psychic taxes on those who consume rationally. The problem is that psychic taxes are often a one-size-fits-all solution. For example, a graphic warning may impose psychic costs on both rational and irrational consumers.

As a result, heterogeneity forces the government to balance the benefits to irrational persons against the costs imposed on rational persons.[241] For example, if the government requires graphic warnings on unhealthy food, the warnings may deter some people from irrational consumption. However, the warnings may also deter some people from consumption that would otherwise be rational and utility maximizing. In economic terms, by deterring rational consumption, the warnings may reduce consumer surplus, which would constitute a cost of the intervention. In addition, by provoking unnecessary guilt and anxiety, the warnings will also impose a cost on rational consumers even if those consumers do not

239. Although the literature on hedonic adaptation suggests that thin people might exaggerate the negative effects of weight gain on their own happiness, happiness may not be a good measure of overall well-being. Loewenstein and Ubel argue that happiness "fails to capture a wide range of dimensions of existence that people deeply and legitimately care about." Loewenstein & Ubel, *supra* note 236, at 1801. For example, people may care about the range of opportunities available to them. *Id.* at 1803. If that is the case, then obesity could reduce well-being, for example, by reducing mobility, even if it does not significantly affect reported happiness.

240. *See, e.g.*, Mitchell, *Equal Incompetence*, *supra* note 173, at 86 ("[A] growing body of empirical research demonstrat[es] that individuals vary widely, and predictably, in their propensities to act rationally.").

241. Rizzo & Whitman, *Knowledge Problem*, *supra* note 58, at 962 (discussing the problem of heterogeneity in the context of a sin tax on potato chips); O'Donoghue & Rabin, *supra* note 18, at 1835 (discussing the same topic).

modify their consumption patterns.[242] These costs to rational consumers could be significant.

Moreover, balancing the benefits to irrational persons against the costs to rational persons is not an easy task. To determine whether a psychic tax will produce a net benefit, the government needs to know the percentage of people who are behaving irrationally and how harmful their irrational behavior is. The fact that people are heterogeneous makes this information difficult to acquire.

1. Variables Characterized by Heterogeneity

People are heterogeneous with respect to variables relevant to the desirability of psychic taxes, including individual preferences; the health consequences of consuming potentially harmful products; the degree of irrationality; the capacity for self-regulation; the strength of will power; and the response to government intervention. This Subsection discusses each of these variables.

a. Preferences

People are heterogeneous with respect to their preferences. Some people may be more willing to accept the costs associated with smoking and unhealthy eating in exchange for the perceived benefits, perhaps because they enjoy cigarettes or food more than others do.[243] Some people may also value health less than others,[244] or generally discount the future at a higher rate.[245] And some people may be less risk-averse than others. For example, some evidence suggests that smokers are more likely to take risks than nonsmokers, even when the risks are not directly related to

242. As noted in Subpart A of this Part, graphic warnings will also make irrational consumers worse off if the warnings fail to modify behavior. These consumers will experience psychic costs without any offsetting health benefits.

243. Smoking for example may deliver a larger benefit to people who are especially stressed, anxious, or depressed, which could explain why some people smoke and others do not. *See* Cynthia Pomerleau, *Co-Factors for Smoking and Evolutionary Psychobiology*, 92 ADDICTION 397, 397–401 (1997).

244. For a review of evidence that smokers value health less than nonsmokers, see Lucas, *supra* note 36, at 703–05.

245. Researchers have investigated whether smokers have higher discount rates than nonsmokers. The evidence is mixed. *See, e.g.*, Glenn Harrison, Morten I. Lau & Elisabet Rutström, *Individual Discount Rates and Smoking: Evidence from a Field Experiment in Denmark*, 29 J. HEALTH ECON. 708, 717 (2010); Robert L. Scharff & W. Kip Viscusi, *Heterogeneous Rates of Time Preference and the Decision to Smoke*, 49 ECON. INQUIRY 959, 970–71 (2011); Ahmed Khwaja, Dan Silverman & Frank Sloan, *Time Preference, Time Discounting, and Smoking Decisions*, 26 J. HEALTH ECON. 927, 927 (2007); Harrell Chesson & W. Kip Viscusi, *The Heterogeneity of Time-Risk Tradeoffs*, 13 J. BEHAV. DECISION MAKING 251, 251 (2000).

smoking.[246] In other words, smokers may have a general propensity for risk taking not shared by nonsmokers. This preference for risk-taking, not irrationality, may explain why some people smoke and others do not.

If some people have preferences that cause them to conclude that smoking and unhealthy eating are worth the risks, then, arguably, the government should respect those preferences. For those people at least, psychic taxes would reduce their utility by interfering with their choices.

b. Health Consequences

As discussed in Part IV, paternalists often argue that people irrationally ignore (either partially or completely) the future health costs of their behavior. In theory, psychic taxes might correct this problem by imposing an immediate cost that people cannot disregard. The problem is that people are heterogeneous with respect to health costs. In fact, some people may suffer little or no health damage from smoking or overeating, making psychic taxes completely unnecessary.

With respect to smoking, health damage varies greatly from smoker to smoker. In fact, a large fraction of smokers quit by their mid-thirties, which means that they have virtually the same life expectancy as someone who has never smoked.[247] For these people, warnings depicting corpses and other frightening images serve no purpose other than to provoke unwarranted anxiety.

People are even more heterogeneous when it comes to the effects of food on their individual health. Overweight and obesity appear to harm some population groups more than others.[248] Similarly, particular foods may harm certain people but not others. For example, caffeine consumption may lead to osteoporosis. But the effect appears most pronounced in women with a certain vitamin D receptor genotype.[249] A second example relates to energy-dense foods. The energy density of a food reflects its energy content and is measured by dividing the calories in the food by its weight.[250] People tend to consume a constant volume of food regardless of energy density.[251] So energy-dense foods, such as potato chips and

246. For a review of the literature, see Lucas, *supra* note 36, at 703–05.
247. *See supra* notes 42–43.
248. Bhattacharya & Sood, *supra* note 45, at 141–43.
249. *See* Strnad, *supra* note 99, at 1300.
250. *Id.* at 1313.
251. Drewnowski & Specter, *supra* note 23, at 8.

doughnuts, may contribute to obesity.[252] Some people may nevertheless benefit from consuming these foods. In particular, energy-dense foods may benefit people who need to gain weight because they are recovering from an eating disorder or elderly people who have digestive problems that make it difficult to consume enough energy.[253]

To illustrate the problems posed by heterogeneity, consider again the traffic-light color-coding scheme discussed above. Heterogeneity creates numerous questions. For example, should beverages that contain caffeine receive a red label even though they likely contribute to osteoporosis for only a small portion of the population? If energy-dense foods receive a red label, will individuals who have trouble taking in enough energy drop these foods from their diets, resulting in malnutrition?

c. Degree of Irrationality, Capacity for Self-Regulation, and Willpower

Irrationality is not evenly distributed among the population.[254] Consider hyperbolic discounting as an example. Several studies suggest that hyperbolic discounting is not a universal phenomenon. For example, Jesús Fernández-Villaverde and Arijit Mukherji present evidence that hyperbolic discounting is much less prevalent than is sometimes claimed.[255] Additionally, in a study of smokers, Michel Grignon concludes that "there is a considerable amount of individual heterogeneity in the probability to state present biased time preferences."[256] For those people who are not hyperbolic discounters, no conflict exists between the discount factors used by their planning and acting selves. This eliminates a major rationale for paternalism, including psychic taxes.

People also appear to be heterogeneous with respect to the influence of food cues and the tendency to engage in mindless eating. In a recent study of the effects of package size on eating, small one-hundred-calorie packages substantially reduced consumption among obese people vis-à-vis

252. *Id.* at 8–9.

253. Strnad, *supra* note 99, at 1316.

254. For a detailed discussion of individual differences in rational behavior, see generally Mitchell, *Equal Incompetence*, *supra* note 173.

255. Jesús Fernández-Villaverde & Arijit Mukherji, *Can We Really Observe Hyperbolic Discounting?* 14 (Univ. of Pa., NBER & CEPR, Working Paper No. 02-0008, 2006), *available at* http://economics.sas.upenn.edu/~jesusfv/hyper2006.pdf.

256. Michel Grignon, *An Empirical Investigation of Heterogeneity in Time Preferences and Smoking Behaviors*, 38 J. SOCIO-ECON. 739, 745 (2009).

larger packages.[257] But package size had little effect on consumption among normal-weight people.[258] Another study finds that overweight people are more likely than normal-weight people to rely on external cues rather than on internal cues to determine when to stop eating.[259]

In addition, people differ in their capacity to engage in self-regulation. For example, compared to overweight people, normal-weight people experience higher levels of guilt when eating indulgent foods.[260] Perhaps this is because normal-weight people are more likely to use guilt to control their eating. In addition, unlike overweight people, normal-weight people exhibit behavior likely to reduce mindless eating. In one study, researchers observed diners eating at a Chinese buffet.[261] Compared to obese diners, normal-weight diners were more likely to browse the entire buffet (presumably to determine what foods to eat) rather than serving themselves immediately upon approaching the buffet.[262] Normal-weight diners used smaller plates, and were more likely to sit facing away from the buffet, reducing the salience of food.[263] These findings are consistent with the notion that normal-weight people have, consciously or unconsciously, developed habits that regulate their eating behavior and that obese people have not.

Similarly, people are heterogeneous with respect to willpower. As discussed above, willpower is like a muscle: in the short run, it becomes exhausted with use, but in the long run, people who have frequently exercised willpower in the past may be more likely to use it successfully in the future.[264] Additionally, some people may be more skilled at using distraction techniques and other strategies to reduce the cost of exercising willpower.[265]

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257. Brian Wansink, Collin R. Payne & Mitsuru Shimizu, *The 100-Calorie Semi-Solution: Sub-Packaging Most Reduces Intake Among the Heaviest*, 19 OBESITY 1098, 1099 (2011).

258. *Id.* at 1099.

259. Brian Wansink, Collin R. Payne & Pierre Chandon, *Internal and External Cues of Meal Cessation: The French Paradox Redux?*, 15 OBESITY 2920, 2921–22 (2007).

260. Wansink & Chandon, *supra* note 144, at 607–11.

261. Brian Wansink & Collin R. Payne, *Eating Behavior and Obesity at Chinese Buffets*, 16 OBESITY 1957 (2008).

262. *Id.* at 1958.

263. *Id.*

264. For reviews of the literature on this point, see Hagger, Wood & Stiff, *supra* note 228, at 501–18 and Fennell, *supra* note 167, at 1392–93.

265. Fennell, *supra* note 167, at 1393–94. Walter Mischel and his colleagues conducted experiments in which young children were shown treats such as snacks or toys. Walter Mischel, Yuichi Shoda & Monica L. Rodriguez, *Delay of Gratification in Children*, 244 SCI. 933, 934 (1989). The experimenter then told the children that, to obtain a treat, they would have to wait in a room until the

In sum, people are heterogeneous with respect to their degree of underlying irrationality, their capacity to self-regulate, and their ability to exercise willpower. This significantly weakens the case for psychic taxes. For example, if normal-weight people are not heavily influenced by food cues or if they have developed habits that keep their eating in check, graphic warnings on food may not help them. In fact, graphic warnings may be harmful. The warnings may discourage normal-weight people from occasionally indulging in snacks or other enjoyable foods, even though doing so would not damage their health.

d. Response to Government Intervention

People may also respond to government intervention in different ways. In particular, government intervention may have little effect upon those at whom it is targeted. At the same time, it may distort behavior among rational actors.

In support of this hypothesis, Jason Fletcher and his colleagues find that younger smokers who have low self-control and high discount rates are not very responsive to cigarette taxes.[266] Fletcher concludes that "[t]hose who have the least willpower may need the most help in quitting but are unresponsive to taxes."[267] If that is correct, then cigarette taxes may simply burden rational smokers without benefiting smokers who lack self-control.

Similarly, responses to psychic taxes may be heterogeneous. Research on the use of fear to modify behavior suggests that people respond in different ways to frightening messages about the risks they face. If people believe that they can effectively reduce a risk by engaging in the recommended response—for example, by quitting smoking or dieting—they will do so.[268] But if they believe that they are powerless to do

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experimenter returned. The children could ring a bell at any time, and the experimenter would return. But doing so meant that the child would receive a less appealing treat and forgo a more appealing treat (for example, one marshmallow instead of two). The experimenter then left the children in the room with the treat present and exposed. The children who delayed gratification the longest spontaneously used distraction techniques such as averting their eyes from the treat, singing, or attempting to go to sleep. Moreover, in a follow-up study conducted ten years later, the children who had successfully delayed gratification were more likely to be described by their parents as possessing self-control and able to resist temptation. *Id.* at 936.

266. Jason M. Fletcher, Partha Deb & Jody L. Sindelar, *Tobacco Use, Taxation and Self-Control in Adolescence* 11–12 (Nat'l Bureau of Econ. Research, Working Paper No. 15130, 2009), *available at* http://www.nber.org/papers/w15130.pdf.

267. *Id.* at 1.

268. Kim Witte & Mike Allen, *A Meta-Analysis of Fear Appeals: Implications for Effective Public Health Campaigns*, 27 HEALTH EDUC. & BEHAV. 591, 594 (2000).

anything, they may go into denial or otherwise react defensively so as to reduce their fear.[269] They may deny that the risk applies to them ("I'm not going to get cancer"), question the motive of the person delivering the message ("They're just trying to manipulate me"), or just ignore the message altogether ("This is just too scary to think about").[270] Others might even react defiantly to what they perceive as the government dictating their behavior. In fact, in countries that have adopted graphic warnings on cigarette packages, many smokers have avoided the warnings by concealing the packages inside cigarette cases.[271] Because of these psychological defense mechanisms, graphic warnings and other psychic taxes might ultimately have little effect upon the very people who need the most help, that is, those who have the most difficulty abstaining from cigarettes or maintaining a diet.

2. Is Heterogeneity a Valid Objection to Psychic Taxes?

Jeremy Blumenthal recently criticized the use of heterogeneity as an objection to paternalism. Blumenthal argues that the objection is overbroad because it applies to all laws and not just those motivated by paternalism.[272] To prove his point, he asks whether the government should eliminate the prohibition on murder, given that most people do not kill.[273]

Despite Blumenthal's critique, heterogeneity remains a significant obstacle to welfare-enhancing psychic taxes. Laws prohibiting murder do not affect individuals who would not commit murder even without the prohibition (except insofar as the prohibition on murder protects them from the actions of others). By contrast, a psychic tax on cigarettes or food may harm rational consumers by, for example, triggering unnecessary guilt. Even if the government does not care about autonomy per se and aims only to maximize social welfare, it must take this harm into account. It is possible that the benefit to irrational consumers will outweigh any harm to those who are rational. But, as discussed below, the government does not possess enough information to make that determination. Without this

269. *Id.* at 601.

270. *Id.* at 594.

271. *See, e.g.*, HEATHER WARDLE ET AL., PUBLIC HEALTH RESEARCH CONSORTIUM, EVALUATING THE IMPACT OF PICTURE HEALTH WARNINGS ON CIGARETTE PACKETS 35–36 (2010).

272. Blumenthal, *Expert Paternalism*, *supra* note 168, at 736–39.

273. *Id.* at 737.

information, psychic taxes are difficult to justify. At the very least, they should be viewed with substantial skepticism.[274]

F. THE POSSIBILITY OF GOVERNMENT FAILURE

Despite efforts at self-regulation, people may still make irrational choices that reduce their welfare. In that case, a benevolent, omniscient, and omnipotent social planner could intervene to make them better off. But real governments are not always benevolent and are never omniscient or omnipotent. The possibility of government failure poses a major obstacle to welfare-enhancing paternalism. Three potential sources of government failure are: (1) imperfect information, (2) unintended consequences, and (3) flaws in the political process.

1. Imperfect Information

Before intervening paternalistically, a benevolent government should first determine whether a particular policy will enhance social welfare. Unfortunately, imperfect information makes this task extremely difficult.[275] Obtaining the necessary information would be challenging even if people were homogeneous; heterogeneity makes the problem worse. This Subsection discusses some important variables about which the government needs information that is difficult to obtain.

a. Extent of Irrational Behavior

Significant government intrusion in self-regarding decisions, including the use of psychic taxes, is easier to justify if a large percentage of the population is smoking or eating irrationally. But whether this is in fact the case remains a highly controversial question.

A major problem is that the theoretical alternatives to the rational actor model are often unsupported by compelling evidence. One example is hyperbolic discounting. As discussed above, some scholars dispute the

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274. Ultimately, Blumenthal's objection seems to rest on the observation that even non-paternalistic laws intended to correct externalities are plagued by difficulties related to heterogeneity and imperfect information. *See id.* at 737–39. But rather than accepting this observation as a reason to embrace paternalism, an anti-paternalist could subvert Blumenthal's argument by claiming that all government regulation (including regulation that addresses externalities) is prima facie suspect. Many laws are overbroad and based on limited information, and they may impose costs that are difficult to quantify or that are unforeseeable at the time of adoption. Given this, the government should arguably limit regulation to those instances in which the benefits clearly exceed the known costs. In addition, the government should take steps to anticipate costs that are not obvious, such as the costs associated with heterogeneity.

275. For an in-depth discussion of paternalism and imperfect information, see generally Rizzo & Whitman, *Knowledge Problem*, *supra* note 58.

claim that hyperbolic discounting is a widespread phenomenon. Another example is optimism bias. Although paternalists often claim that smokers are overly optimistic about the risks that they personally face from smoking,[276] several studies suggest that most smokers either accurately perceive the risk to themselves or even overestimate that risk.[277] In fact, a recent study testing the optimism bias hypothesis finds that smokers are "quite accurate on average" at estimating their personal risk.[278] The study concludes that "[t]he lack of association between smoking and optimism in risk perceptions casts doubt on the idea that continued smoking can be attributed to a rosy view of future risks."[279]

Without persuasive evidence of widespread irrational behavior, the case for psychic taxes becomes more difficult. If a large percentage of people smoke or eat rationally, psychic taxes may unnecessarily burden a substantial number of people while benefiting very few.

At this point, a paternalist might note that new empirical evidence may someday shed light on the fraction of people who smoke and eat irrationally. Even if we accept that premise, it suggests that existing paternalistic proposals are premature and that policymakers should suspend consideration of them pending further research. After all, paternalistic policies infringe upon autonomy and generally entail significant hidden costs, so the burden should fall on paternalists to justify their proposals with persuasive evidence of irrationality. Moreover, as Gregory Mitchell argues, empirical evidence is unlikely to ever definitively resolve the question of how much behavior is irrational.[280] So paternalists who assume that a large portion of people act irrationally much of the time are likely basing this conclusion on their pre-existing values and beliefs about human nature rather than an objective analysis of the facts.[281]

b. Source of Irrationality

Effective government intervention requires more than simply labeling behavior as irrational. The government must also understand the source of

276. *See, e.g.*, Hanson & Logue, *supra* note 18, at 1186–88.

277. For a discussion of smoking and optimism bias, see *Lucas*, *supra* note 36, at 712–13, 736–38.

278. Ahmed Khwaja et al., *Are Mature Smokers Misinformed?*, 28 J. HEALTH ECON. 385, 396 (2009).

279. *Id.*

280. Mitchell, *Equal Incompetence*, *supra* note 173, 135–37.

281. *See id.* at 136–37.

the purported irrationality. Unfortunately, there is no consensus on whether and why people engage in irrational smoking and eating.

This lack of consensus is problematic because the policy implications of the theoretical alternatives to the rational actor model often conflict. For example, if hyperbolic discounting causes smoking and overeating, a psychic tax on cigarettes and food might be appropriate. The tax would impose an immediate psychic cost on the acting self, thereby offsetting its tendency to ignore future costs. But if smoking and overeating result instead from the presence of random environmental cues, psychic taxes might have undesirable effects. Assume, for example, that some smokers are unable to achieve long-term abstinence because they randomly encounter cues that trigger a virtually irresistible craving to smoke. In that case, psychic taxes may not prevent them from smoking. Instead, psychic taxes would only add to the cost of their addiction (over which they presumably have little or no control). Similarly, if overeating results from random cues such as large plates or packages, restricting portion size may be more effective than imposing psychic taxes.

c. Relationship between Food and Health

Scientific complexity and uncertainty make implementing psychic taxes on food particularly challenging. For example, consider traffic-light color-coding. For the government to implement the scheme, it first has to determine what label (green, yellow, or red) to assign to each food. But determining whether a food is healthy requires consideration of numerous variables that may not all point to the same conclusion. And because the health effects of food are complex, nutrition experts vary widely in their food rankings.[282] If nutrition experts cannot agree about which foods are healthy and which are not, what basis does the government have for adopting a mandatory labeling scheme?

To illustrate the difficulty of labeling a particular food as healthy or not, consider Jeff Strnad's discussion of the relationship between vegetable protein and osteoporosis.[283] The incidence of hip fracture, especially among older women, indicates the rate of osteoporosis in a country.[284] In countries with a lower incidence of hip fracture (for example, China), people consume more vegetable protein relative to animal protein than in

282. Timothy D. Lytton, *Signs of Change or Clash of Symbols? FDA Regulation of Nutrient Profile Labeling*, 20 HEALTH MATRIX 93, 138–39 (2010).

283. Strnad, *supra* note 99, at 1300–09.

284. *Id.* at 1300.

countries with a higher incidence of hip fracture (for example, the United States).[285] Strnad points out that this evidence suggests that the government should encourage vegetable protein consumption and discourage animal protein consumption.[286] One way to encourage vegetable protein consumption would be to adopt a traffic-light color-coding system and to assign a green label to soy-based synthetic meats, which substitute vegetable protein for animal protein.[287]

Nonetheless, some researchers hypothesize that vegetable protein does not in fact protect against osteoporosis.[288] Rather, fruits and vegetables contain other components that play a protective role.[289] Synthetic meats may lack these protective components.[290] In fact, the protein in synthetic meats might contribute to osteoporosis by causing the body to excrete calcium.[291] So if the government were to give synthetic meats a green label, rates of osteoporosis might actually increase.

Similar difficulties would arise if, in an effort to reduce obesity, traffic-light color-coding focuses on energy density. Some energy-dense foods, such as nuts and avocados, confer substantial health benefits.[292] This means that the government must distinguish between healthy energy-dense foods (which may deserve a green label) and unhealthy energy-dense foods (which may deserve a red label). As a result, the government will have to engage in a very difficult line-drawing process. Food manufacturers, for example, might attempt to avoid the red label on the "junk foods" that they produce simply by adding vitamins and good fats to those products.[293]

d. Appropriate Level of Psychic Tax

As discussed above, the government has control over the level of any psychic tax that it imposes. For example, the psychic costs resulting from an image of an obese person on a candy bar are likely larger than those resulting from a red label. And a prominently displayed red label probably takes a larger psychic toll than simply listing nutritional information on the back of the candy bar wrapper.

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285. *Id.* at 1302–04.
286. *Id.* at 1307.
287. *Id.*
288. *Id.* at 1304.
289. *Id.* at 1304–07.
290. *Id.* at 1307.
291. *Id.*
292. *Id.* at 1314.
293. *Cf. id.* at 1315 (discussing the possibility that food manufacturers might use this technique to avoid a sin tax on unhealthy food).

Unfortunately, the government lacks sufficient information to determine the optimal level of any psychic tax. To begin with, the government must have an accurate understanding of the health consequences of smoking and obesity. With respect to smoking, the health consequences are reasonably well established. But the health consequences of obesity are a different story. Some experts argue that the risks of obesity have been exaggerated and that the most significant effects are limited to those who are extremely overweight.[294]

Additionally, even if the government perfectly understood the health consequences of smoking and obesity, it would still need information about the level of irrationality. Government intervention is not justified simply because smoking and obesity are harmful. Intervention is warranted only to the extent that people irrationally ignore any harmful effects. To illustrate, assume that hyperbolic discounting causes the acting self to give less weight than the planning self to the future health consequences of smoking and eating unhealthy food. Assume also that the government adopts a psychic tax to address this problem. In theory, the optimal psychic tax is the one that causes the acting self to give the same weight as the planning self to the health consequences of smoking and eating. In that case, the psychic tax would produce exactly the right amount of smoking and eating—not too much and not too little. Determining the optimal psychic tax requires knowledge of the health costs that the acting self irrationally ignores. This in turn depends on the difference between the short-term discount rate used by the acting self and the long-term discount rate used by the planning self. If this difference is large, then the acting self is irrationally ignoring a large amount of health costs, which implies a large optimal psychic tax.

The problem is that economists have had trouble estimating discount rates. In a review of the literature, Shane Frederick and his colleagues find "tremendous variability in the estimates" from one study to the next.[295] The estimated annual discount rates "range from -6 percent to infinity."[296] Additionally, "there is no evidence of methodological progress; the range of estimates is not shrinking over time."[297] This means that the optimal psychic tax could range from very small to very large. And if the government imposes a psychic tax that substantially exceeds the optimal

294. Hector, *supra* note 45, at 105–08.
295. Frederick, Loewenstein & O'Donoghue, *supra* note 121, at 377.
296. *Id.*
297. *Id.*

level, it may deter a large amount of rational consumption. In other words, it may frighten people too much.

Moreover, even if the government knew the relevant discount rates, it would still need information about the effectiveness of self-regulation and the way in which various failures of rationality interact. As discussed above, commitment devices and similar strategies reduce the effects of hyperbolic discounting and other forms of irrationality. And multiple failures of rationality may offset one another by pushing behavior in different directions. The end result is that the optimal psychic tax may be significantly smaller than it would appear absent these mitigating factors.

Additionally, simply knowing the optimal level of the psychic tax is not sufficient. The government also needs to know the psychic costs resulting from a given intervention. Returning again to hyperbolic discounting, imagine that the acting self irrationally ignores some of the health costs from eating a candy bar. Specifically, the acting self ignores health costs amounting to five cents. So consumers will eat the optimal amount of candy bars if the government increases their price by five cents or by the psychic cost equivalent of five cents. That begs the question: what type of intervention will impose five cents worth of psychic costs? Is a red label sufficient? Or would it be more appropriate to place an image of an obese person on the front of the package? The answer is unclear because psychic costs are hard to quantify. The danger is that the government will impose psychic costs that are too large, which, again, would deter rational consumption.

2. Unintended Consequences

Graphic warnings may produce unintended consequences that offset any health benefits. These unintended consequences could include counterproductive responses among the target population, such as unhealthy compensating behavior and substitution of unhealthy tax-exempt goods. Graphic warnings may also discourage the development of healthier foods and stigmatize obesity.

a. Unhealthy Compensating Behavior

Even if psychic taxes effectively reduce consumption of the targeted goods, people may compensate in ways that undercut any resulting health benefits. For example, people who quit smoking in response to graphic warnings may compensate by eating more and gaining weight. Quitting smoking might increase a person's weight for a number of reasons. For example, quitting eliminates the metabolism-boosting and appetite-

suppressing effects of smoking and frees up income to be used for food.[298] Empirical research on the relationship between quitting smoking and weight gain has produced mixed results.[299] But a number of recent studies have concluded that, in addition to reducing smoking, cigarette taxes increase obesity, perhaps significantly.[300] Similarly, graphic warnings that encourage quitting may also cause obesity. If so, that would mute the health benefits to the extent of obesity's harmful effects.

Similarly, if psychic taxes on food cause people to substitute food that the government deems healthy for food that it deems unhealthy, then people might compensate in ways that substantially reduce any potential health benefits, such as eating more food or exercising less.[301] Consistent with this hypothesis, Brian Wansink and Pierre Chandon found that "low-fat" nutrition labels cause people to eat more, perhaps consuming even more calories overall than they would if they simply ate regular food.[302]

Why does this happen? Wansink and Chandon provide evidence that low-fat labels cause people to increase their estimate of the appropriate portion size and to experience less guilt from consuming food.[303] This effect was particularly pronounced among overweight people, who dramatically increased the number of calories consumed in response to

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298. Anindya Sen, Mahdiyeh Entezarkheir & Alan Wilson, *Obesity, Smoking, and Cigarette Taxes: Evidence from the Canadian Community Health Surveys*, 97 HEALTH POL'Y 180, 181 (2010); Charles L. Baum, *The Effects of Cigarette Taxes on BMI and Obesity*, 18 HEALTH ECON. 3, 4 (2009).

299. A number of studies find that cigarette taxes contribute to obesity. Baum, *supra* note 298, at 5; Sen, Entezarkheir & Wilson, *supra* note 298, at 186; Philip DeCicca, Are Obese Smokers an Unintended Consequence of Higher Cigarette Taxes? 19 (June 2008) (unpublished manuscript), *available at* http://socserv.mcmaster.ca/econ/empl/faculty/decicca/working/DeCicca_Obese%20Smokers_2008.pdf; Shin-Yi Chou, Michael Grossman & Henry Saffer, *An Economic Analysis of Adult Obesity: Results from the Behavioral Risk Factor Surveillance System*, 23 J. HEALTH ECON. 565, 585 (2004). But Jonathan Gruber and Michael Frakes find that "there is no evidence for a large weight effect from smoking cessation." Jonathan Gruber & Michael Frakes, *Does Falling Smoking Lead to Rising Obesity?*, 25 J. HEALTH ECON. 183, 196 (2006). Similarly, James Nonnemaker and his colleagues find that cigarette taxes cause only "modest" weight gain among former smokers. James Nonnemaker et al., *Have Efforts to Reduce Smoking Really Contributed to the Obesity Epidemic?*, 47 ECON. INQUIRY 366, 376 (2008).

300. Baum, *supra* note 298, at 5 (concluding that cigarette taxes "significantly increase . . . obesity and overweight"); Chou, Grossman & Saffer, *supra* note 299, at 585 (finding that increases in cigarette taxes have "contributed to the upward trend in obesity"); DeCicca, *supra* note 299, at 19, 22 (finding that cigarette taxes increase obesity among women and older men); Sen, Entezarkheir & Wilson, *supra* note 298, at 186 (using data from Canada and finding "a statistically significant correlation between higher cigarette taxes and a more obese population").

301. *See* Hawley et al., *supra* note 152, at 5 (noting this possibility).

302. Wansink & Chandon, *supra* note 144, at 609–13.

303. *Id.* at 610.

low-fat labels.[304] These findings suggest that labeling particular foods as healthy could backfire and lead people to consume more calories than they otherwise would.

b. Substitution of Unhealthy Tax-Exempt Goods

Traditional sin taxes often shift consumption from taxed goods to tax-exempt goods.[305] The same phenomenon may occur with respect to psychic taxes. If graphic warnings appear only on prepackaged food and not food prepared in restaurants, people may switch to consuming unhealthy food at restaurants because the psychic cost is lower. The government could avoid this problem by requiring graphic warnings on restaurant menus.[306] But given the variety of foods sold at restaurants and the myriad ways in which those foods are prepared, determining what type of warning to place on each menu item presents a serious administrative challenge.[307]

c. Discouraging the Development of Healthier Food

A potential benefit of graphic warnings on food is that they might encourage manufacturers to develop healthier foods in an effort to avoid an unwanted label.[308] Yet if the government wrongly classifies new products, a graphic warning system might in fact have the opposite effect. For example, imagine that a food manufacturer could develop a synthetic meat that tastes like actual meat but contains less saturated fat.[309] If the manufacturer suspects that, for labeling purposes, the government would put its new synthetic meat in the same category as nutritionally inferior meats, then that substantially reduces the manufacturer's incentive to develop the new product.

d. Stigmatizing Obesity

Obesity stigma is already prevalent in the United States. Studies show that people generally perceive overweight persons as "lazy, weak-willed,

304. *Id.* at 609–10.

305. *See, e.g.*, JONATHAN GRUBER, PUBLIC FINANCE 580–82 (2d ed. 2007).

306. The Obama administration's health care legislation contains a provision that requires certain restaurants to display calorie information on their menus. For a discussion of the menu-labeling requirement, see generally Michelle I. Banker, *I Saw the Sign: The New Federal Menu-Labeling Law and Lessons from Local Experience*, 65 FOOD & DRUG L.J. 901 (2010).

307. *Cf.* Strnad, *supra* note 99, at 1294, 1316 (discussing the administrative difficulty of imposing a sin tax on unhealthy food sold at restaurants).

308. More research is needed to confirm that graphic warnings in fact have this effect, but the existing evidence suggests that it is a possibility. *See* Hawley et al., *supra* note 152, at 7.

309. This example is based on an illustration used by Jeff Strnad to show how a sin tax on unhealthy foods might stifle technical change. *See* Strnad, *supra* note 99, at 1297–98.

unsuccessful, unintelligent, lack[ing] self-discipline, [and] hav[ing] poor willpower."[310] Increasing obesity stigma might seem like an effective strategy for motivating people to become or remain thin. But Rebecca Puhl, whose research focuses on obesity stigma, has concluded that stigmatization "is not a beneficial public health tool for reducing obesity."[311] Instead, stigmatization can have serious negative repercussions, including behavior that may lead obese people to gain even more weight.

The negative effects of obesity stigma are numerous. Stigmatization may increase the risk of depression, low self-esteem, and body dissatisfaction.[312] It also increases the likelihood of engaging in unhealthy eating behaviors, such as binge eating and eating as a coping mechanism.[313] Among children, those who are overweight are more likely to be teased, bullied, and socially isolated.[314] And weight-based teasing is linked to negative attitudes about sports and lower participation in physical activity.[315] Moreover, obese children who are teased and bullied are substantially more likely to have suicidal thoughts than their overweight peers who are not victimized.[316]

Unfortunately, psychic taxes on food might increase obesity stigma and the adverse consequences associated with it. Consider, for example, the idea of placing an image on food packages that would indicate the expected body type of a person who regularly consumes the food in question. Placing an image of a thin person on healthy foods and an obese person on junk foods could signal that the government views thin people as more valuable than obese people.

Moreover, a recent study suggests that simply viewing unflattering images of obese people may increase obesity stigma.[317] Researchers had participants read a news story on the prevalence of obesity.[318] The content of the story was neutral; it did not portray obesity in a positive or negative

310. Rebecca M. Puhl & Chelsea A. Heuer, *Obesity Stigma: Important Considerations for Public Health*, 100 AM. J. PUB. HEALTH 1019, 1019 (2010).

311. *Id.*

312. *Id.* at 1023; Rebecca M. Puhl, *Weight Stigmatization Toward Youth: A Significant Problem in Need of Societal Solutions*, 7 CHILDHOOD OBESITY 359, 360 (2011).

313. Puhl & Heuer, *supra* note 310, at 1022.

314. Puhl, *supra* note 312, at 359–60.

315. *Id.* at 360.

316. *Id.*

317. *See generally* Kimberly J. McClure, Rebecca M. Puhl & Chelsea A. Heuer, *Obesity in the News: Do Photographic Images of Obese Persons Influence Anti-Fat Attitudes?*, 16 J. HEALTH COMMC'N 359 (2011).

318. *Id.* at 362.

light. The story also contained one of four photographs of an obese person. Some participants viewed a photograph that portrayed the obese person in a stereotypical, unflattering way (eating junk food or photographed from behind).[319] Others viewed a photograph that portrayed the obese person in a non-stereotypical, flattering way (exercising or nicely dressed). After reading the story, participants who had viewed the unflattering photographs expressed more negative attitudes toward obese people than participants who viewed the flattering photographs.[320] This finding and others like it suggest that, in designing psychic taxes on food, the government should avoid portraying obese people in a negative light.

3. Flaws in the Political Process

Laws are not adopted by a benevolent and perfectly rational social planner who acts solely in the public interest, free from political constraints. Instead, laws are the outcome of a complicated political process that involves numerous participants who may be imperfectly rational and motivated, at least in part, by self-interest. As a result, flaws in the political process might transform a seemingly promising proposal into a harmful policy. Proposals for psychic taxes are not immune to this problem.

a. Slippery Slope Concerns

Academic paternalists often claim that they do not want to use the government to force their beliefs and values onto others.[321] Rather, they advocate intervention that will increase the welfare of other people, as judged by the internal standards of those other people. Some of these academics even acknowledge that paternalism poses a risk for abuse, so they argue that the government should intervene only to correct irrationality, while minimizing the burden upon rational behavior.[322]

Although this may seem like a reasonable position, it is unlikely that all or even most paternalists accept it. Many paternalists are likely motivated by goals other than maximizing social welfare. They may simply believe that other people would be better off if those people behaved in a way that the paternalists find appropriate. And some paternalists may promote a particular agenda to enhance their own professional or personal reputations.

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319. *Id.*
320. *Id.* at 366.
321. *See, e.g.*, Sunstein & Thaler, *supra* note 18, at 1162; Camerer et al., *supra* note 17, at 1218.
322. *See, e.g.*, Sunstein & Thaler, *supra* note 18, at 1200–01.

As a result, paternalistic intervention may create a slippery slope. Instead of engaging in a cautious paternalism that respects individual preferences, the government may become heavy-handed and adopt laws that force people into a lifestyle condoned by influential advocacy groups. The literature on slippery slopes suggests that the slide down the slope is more likely to occur when "the absence of a sharp line between different cases eases the process of moving from one to another."[323] Unfortunately, no sharp line exists for distinguishing paternalistic proposals that correct harmful irrationality from proposals that simply transform the values of powerful paternalists into government policy.

Psychic taxes present a particularly high risk for creating a slippery slope. Graphic warnings and other psychic taxes involve the use of sophisticated psychological techniques to persuade people to behave in a particular manner. Politicians and regulators may abuse these techniques. To illustrate, consider the relationship between requiring graphic warnings on cigarette packages and informed-consent abortion laws. At first glance, these two policies may seem completely unrelated. But proponents of both policies make similar arguments in support of them. Recall that smokers often express regret about smoking. Paternalists use this to argue that, when people take up smoking, they do not fully appreciate the risks, and the government can correct this problem using graphic warnings that make the risks of smoking more vivid. Similarly, anti-abortion advocates often highlight evidence that some women who have abortions subsequently regret the decision.[324] Anti-abortion advocates claim that women do not fully appreciate the emotional effects that an abortion will have on them. As a result, they argue that informed-consent abortion laws might correct this problem by requiring that physicians provide information to a woman considering an abortion.[325] The information that physicians must provide is

323. Mario Rizzo & D. Glen Whitman, *Little Brother Is Watching You: New Paternalism on the Slippery Slopes*, 51 ARIZ. L. REV. 685, 691 (2009) [hereinafter Rizzo & Whitman, *Little Brother*].

324. For example, the Silent No More Awareness Campaign is an anti-abortion group that has a website that posts testimonials of those who purportedly regret an abortion. According to the Campaign's website, "[s]o far, 2,610 women and 323 men have said they regret their abortion or lost fatherhood." *About Us*, SILENT NO MORE AWARENESS, http://www.silentnomoreawareness.org/about-us (last visited Jan. 25, 2013). For a review of the scholarly literature regarding the psychological effects of abortion, see Blumenthal, *Abortion*, *supra* note 20, at 10–11 (2008) (concluding that "despite clear scientific findings that such negative consequences are not as common as abortion opponents once claimed, neither is it entirely outside the scientific 'mainstream' to suggest that certain women are more at risk of such negative abortion sequelae").

325. James Eng, *Texas Begins Enforcing Strict Anti-Abortion Sonogram Law*, NBCNEWS.COM (Feb. 8, 2012), http://usnews.msnbc.msn.com/_news/2012/02/08/10355099-texas-begins-enforcing-strict-anti-abortion-sonogram-law?lite (quoting Elizabeth Graham, director of Texas Right to Life, as

often explicit.[326] In Texas, for example, the woman generally must have a sonogram and listen to a detailed description of the fetus.[327] Arguably, those who support this type of law hope that it will impose psychic costs that reduce the number of abortions.[328]

It seems likely that many of the same people who support graphic warnings on cigarette packages would also object to Texas's informed-consent abortion law. Yet it is very difficult to draw a principled distinction between the two policies. Both purportedly respond to evidence that people sometimes regret prior decisions. And both address this supposed problem using psychic taxes. At this point, proponents of graphic warnings on cigarettes might argue that the warnings promote public health, whereas informed-consent abortion laws carry out an ideological agenda. But anti-abortion advocates could respond that their goal is to protect the mental and emotional health of women who may ultimately regret having had an abortion.

In any event, this example is not intended to demonstrate that it is impossible to distinguish between graphic warnings on cigarettes and informed-consent abortion laws. Rather, it illustrates that no bright line exists between these two policies. And the absence of a bright line may facilitate the slide down the slippery slope. One way to resist this type of slippery slope is to follow bright-line rules.[329] In this case, an appropriate rule might be that government should regulate based only on harm to others, not on harm to oneself.

A related concern is whether graphic warnings constitute an illegitimate policy tool because they involve manipulation and perhaps even deception. Arguably, lawmakers should satisfy a publicity condition, according to which they will not engage in acts that they cannot defend in public in front of those who are subject to those acts.[330] This publicity

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stating that her group believes that Texas's informed-consent law will reduce abortions by 30 percent). For a review of informed-consent abortion laws, see Blumenthal, *Abortion*, *supra* note 20, at 6–9.

326. Blumenthal, *Abortion*, *supra* note 20, at 6–9.

327. TEX. HEALTH & SAFETY CODE ANN. § 171.012 (West 2011).

328. Commenting on Texas's new law, Rochelle Tafolla, a spokesperson for Planned Parenthood Gulf Coast, stated that women considering abortions "are quite emotionally upset by it." Eng, *supra* note 325. Tafolla notes that "[h]aving to hear the position described of fetal development is not something they are wanting to endure." *Id.* Jeremy Blumenthal argues convincingly that many informed-consent abortion laws contain all of the elements of a well-designed attempt to use fear to dissuade women from having abortions. Blumenthal, *Abortion*, *supra* note 20, at 20–22.

329. Rizzo & Whitman, *Little Brother*, *supra* note 323, at 738.

330. *See* JOHN RAWLS, A THEORY OF JUSTICE 115 (rev. ed. 1999); JOHN RAWLS, POLITICAL LIBERALISM 66–71 (1993); Jolls & Sunstein, *supra* note 139, at 231.

condition might appeal to people who value autonomy independent of other considerations. After all, the inability to publicly defend a law demonstrates a lack of respect for citizens' autonomy.[331] Further, because adherence to the publicity condition may have desirable effects, the principle might also appeal to consequentialists, who do not care about autonomy per se, but who do care about the consequences of lawmakers' actions.[332] By encouraging transparency in government, the publicity condition may facilitate deliberation and the collection of input from all interested parties, both of which could result in better laws.

Assuming that the publicity condition is a principle worth upholding, graphic warnings may be problematic. As discussed in Part V, graphic warnings take advantage of classical conditioning. Like dogs salivating to the sound of a ringing bell, repeated exposure to a product that contains an aversive image might condition us to automatically experience negative emotions when presented with that product. And our negative reaction to the product may bear little or no relationship to whether consuming it will actually damage our health. Instead, the reaction may simply be a conditioned response. For this reason, some might view the government's use of classical conditioning as manipulative.[333]

Similarly, some graphic warnings may be misleading.[334] Take for example the FDA's cigarette warning that depicts a corpse with staples in its chest. Although smoking can lead to lung cancer, not everyone who smokes contracts the disease. In fact, Kip Viscusi, who has written extensively about the risks of smoking, finds that the risk of lung cancer is between 6 and 13 percent.[335] Moreover, as discussed in Part III, many smokers quit early enough in life to avoid premature death. The FDA's graphic warnings do not communicate these nuances.[336] Why not simply

331. Jolls & Sunstein, *supra* note 139, at 231.

332. *See id.*

333. In response to this argument, proponents of graphic warnings might point out that private firms often exploit classical conditioning in advertisements. If society generally views this technique as acceptable when used by private firms, then why should it be off limits to the government? One reason is that people are free to ignore advertisements that they find offensive, but if the government requires graphic warnings, consumers cannot easily avoid them.

334. *See* R.J. Reynolds Tobacco Co. v. FDA (*R.J. Reynolds II*), 696 F.3d 1205, 1216 (D.C. Cir. 2012) ("[M]any of the images chosen by FDA could be misinterpreted by consumers.").

335. Viscusi & Hakes, *supra* note 22, at 47–48.

336. In discussing the constitutionality of the FDA's graphic images, Judge Leon of the D.C. District Court makes a similar point. R.J. Reynolds Tobacco Co. v. FDA (*R.J. Reynolds I*), 845 F. Supp. 2d 266, 273 (D.D.C. 2012). He states that "the graphic images are neither factual nor accurate." *Id.* Specifically, "the image of the body on an autopsy table suggests that smoking leads to autopsies; but

print the percentage of smokers who contract lung cancer on the cigarette package? Arguably, the answer is that graphic warnings are not designed to encourage informed deliberation about the risks of smoking. Instead, they are designed to use fear to persuade people to quit smoking, even if the images used to achieve this goal are misleading.[337]

Ultimately, if graphic warnings constitute a form of manipulation or deception, encouraging their use may lead us down a slippery slope. Policymakers may become comfortable adopting policies that gradually erode autonomy. Once precedents become firmly established, acts of manipulation and deception may become easier to justify as long as, in the judgment of policymakers, the ends justify the means.

b. Imperfectly Rational Policymakers and Experts

Policymakers and the experts upon whom they rely for advice are not immune to failures of rationality. At least four distinct failures of rationality may cause policymakers and experts to be biased in favor of paternalistic intervention. In other words, failures of rationality may lead policymakers and experts to conclude that paternalistic intervention, including psychic taxes, will produce benefits that in reality may never materialize.

i. Projection Bias

As discussed in Part IV, projection bias causes people to project their current preferences into the future. Projection bias can also occur interpersonally, causing people to project their own preferences onto others.[338] For example, in judging the popularity of coffee relative to tea,

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the Government provides no support to show that autopsies are a common consequence of smoking." *Id.*

337. *R.J. Reynolds II*, 2012 696 F.3d at 1216–17 (stating that the graphic cigarette warnings chosen by the FDA "cannot rationally be viewed as pure attempts to convey information to consumers," but instead "are unabashed attempts to evoke emotion (and perhaps embarrassment) and browbeat consumers into quitting"); Disc. Tobacco City & Lottery, Inc. v. United States, 674 F.3d 509, 528 (6th Cir. 2012) (Clay, J., dissenting in part) ("It appears, from the government's own evidence, that the color graphic warning labels are intended to create a visceral reaction in the consumer, in order to make a consumer less emotionally likely to use or purchase a tobacco product."); *R.J. Reynolds I*, 845 F. Supp. 2d at 272 (noting that "the graphic images [chosen by the FDA for use on cigarette packages] were neither designed to protect the consumer from confusion or deception, nor to increase consumer awareness of smoking risks; rather, they were crafted to evoke a strong emotional response calculated to provoke the viewer to quit or never start smoking").

338. Loewenstein, *Medical Decision Making I*, *supra* note 110, at 98.

coffee drinkers believe that coffee is more popular than do tea drinkers.[339] Similarly, policymakers and experts may project their preferences onto others. Policymakers and experts who eat a healthy diet and do not smoke may assume that others value health as much as they do. They may find it difficult to comprehend how anyone could rationally determine that the benefits of smoking or eating unhealthy food outweigh the health costs. As a result, policymakers and experts might conclude that anyone who smokes or who is overweight must be acting irrationally and that these irrational people would be better off if the government coerced them into healthier behavior using psychic taxes and similar policies.[340] But ultimately, this judgment may not reflect an accurate perception of others' true preferences. Rather, it may result from policymakers' and experts' projection of their own preferences onto everyone else.

Projection bias will be particularly problematic if the preferences of policymakers and experts differ systematically from the preferences of those affected by paternalistic policies, as is likely the case. Smoking and poor diet are much more prevalent among the poor and uneducated.[341] Since academics, politicians, and regulators are generally neither poor nor uneducated, they are much less likely to consume the cigarettes and unhealthy foods that would be subject to psychic taxes and other forms of regulation.

Moreover, policymakers may be biased in favor of imposing austere lifestyles upon others. Joris Lammers and his colleagues argue that power increases hypocrisy.[342] Hypocrites "are people who publicly uphold strict moral norms, expecting and demanding others to follow them, but who privately violate these espoused standards in their own behavior."[343] For example, a politician might speak publicly about the erosion of family values while privately having an extramarital affair.[344] In his experiments, Lammers finds evidence that those in positions of power are more

339. Lyle Brenner & Baler Bilgin, *Preference, Projection, and Packing: Support Theory Models of Judgments and Others' Preferences*, 115 ORG. BEHAV. & HUMAN DECISION PROCESSES 121, 122 (2011).

340. *Cf.* Loewenstein, *Medical Decision Making I*, *supra* note 110, at 98 ("[I]f you are not currently craving a drug, the reckless immoral behavior of someone who is craving a drug is likely to appear incomprehensible, and one would be likely to judge that individual more harshly than might be deserved.").

341. *See infra* Part VI.G.

342. Joris Lammers, Diederik A. Stapel & Adam D. Galinsky, *Power Increases Hypocrisy: Moralizing in Reasoning, Immorality in Behavior*, 21 PSYCHOL. SCI. 737, 742 (2010).

343. *Id.* at 737.

344. *Id.*

hypocritical. Specifically, the powerful are more likely to cheat while at the same time condemning cheating by others.[345] In addition, with respect to moral transgressions such as underreporting income on a tax return, the powerful hold others to a higher standard than they hold themselves.[346] Lammers finds that those who are not powerful do not exhibit hypocrisy.[347] He speculates that hypocrisy among the powerful stems from a sense of entitlement.[348] Those in power believe that they have the right to judge others because the powerful are responsible for maintaining moral norms.[349] Yet the powerful also feel entitled to deviate from the moral rules they expect others to follow.[350]

Hypocrisy among the powerful has significant implications for psychic taxes. By definition, policymakers are in positions of power. As a result, they may support policies that compel others to behave in a way that they themselves do not. For example, policymakers may support graphic warnings on cigarettes and unhealthy food because they believe others should not smoke and should adhere to a strict diet. But in private, these same policymakers may feel free to smoke or to eat without restraint.

ii. Motivated Reasoning

Motivated reasoning describes our tendency to rationalize conclusions that we in fact reached for other reasons.[351] This tendency is constrained by our ability to construct apparently reasonable justifications for our conclusions.[352] Nonetheless, reasoning is not independent of goals and motivation. For example, one study divided participants into those who favored capital punishment and those who did not.[353] The researchers then described to the participants two studies that used different methodologies and reached opposite conclusions as to whether capital punishment deters crime.[354] Participants were more critical of the study that disconfirmed

345. *Id.* at 738–39.
346. *Id.* at 739–41.
347. *Id.* at 742.
348. *Id.* at 738.
349. *Id.*
350. *Id.*
351. *See generally* Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480 (1990) (providing a detailed discussion of motivated reasoning).
352. *Id.* at 480.
353. Charles G. Lord, Lee Ross & Mark R. Lepper, *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 J. PERSONALITY & SOC. PSYCHOL. 2098, 2100 (1979).
354. *Id.*

their prior beliefs than of the study that confirmed their prior beliefs.[355] Interestingly, after exposure to these two conflicting studies, participants' views of capital punishment actually became more polarized.[356]

Similarly, many policymakers and experts have strong motivation to conclude that paternalistic intervention will be beneficial. For the academics who identify and study biases and other failures of rationality, their work becomes more important if it serves as the basis for government action.[357] For politicians, adopting paternalistic laws allows them to take credit for addressing perceived societal problems such as smoking and obesity. For regulators, paternalistic intervention allows them to increase their agency's power and to exert more control over market exchanges. In the end, all of these people may be able to enhance their own self-esteem and reputations by advocating policies that will ostensibly save people from their own "bad" choices.

Having a powerful motive to support paternalistic intervention may cause policymakers and experts to wrongly conclude that such intervention is desirable.[358] Policymakers and experts may focus on the potential benefits of intervention while ignoring the potential costs, particularly costs that are not obvious.[359] For example, those who favor placing images of obese people on food might discount the psychic costs that these labels impose by stigmatizing obesity.

Policymakers and experts do not have to be corrupt to fall victim to motivated reasoning. Imagine for example that academics in a particular field strongly support paternalistic intervention to improve health. Under these circumstances, academics in that field might be more likely to enhance their reputations if they publish articles that present paternalism in a favorable light. In that case, motivated reasoning may bias their views in

355. *Id.* at 2101–03.

356. *Id.* at 2102–04.

357. *Cf.* Mitchell, *Equal Incompetence*, *supra* note 173, at 72 ("Behavioral law and economics scholars simplify and overgeneralize findings on human cognition and rationality to make these findings seem simultaneously important and simple enough to be incorporated into legal policy.").

358. *See generally* Slavisa Tasic, *Are Regulators Rational?*, 17 J. DES ECONOMISTES ET DES ETUDES HUMAINES, art. 3 (2011).

359. *Cf.* Klick & Mitchell, *supra* note 165, at 1639 ("If the paternalist invests significant political capital to advance paternalistic policies, the pressure to find evidence confirming the need for paternalism is likely to be significant as well, making the likelihood of a self-fulfilling prophecy quite high."); Pratt, *supra* note 45, at 129 (noting that public health advocates ignore the potential loss of consumer surplus resulting from a soda tax and these advocates simply assume that people would be better off if they respond to a soda tax by drinking less soda and more water).

favor of paternalism. This could be the case even if they truly believe that they reached their opinions through objective reasoning.

Another example of the potential power of motivated reasoning stems from the ongoing debate over the consequences of obesity. Skeptics of the notion that obesity is an "epidemic" argue that some researchers exaggerate obesity's health effects to secure funding for their research and to promote their own political agenda.[360] If obesity researchers do in fact have a financial or political stake in the outcome of their research, their conclusions may be biased. This could be the case even if the researchers are not consciously corrupt and earnestly attempt to remain objective.

iii. Focusing Illusion

As discussed in Subpart A of this Part, focusing illusion describes our tendency to overestimate the importance of whatever our attention is directed toward and to underestimate the importance of those aspects of a situation on which we are not focused. Focusing illusion could bias the opinions of policymakers and experts.[361] For example, public health advocates devote much of their time to health issues, so when they evaluate paternalistic interventions, focusing illusion could cause them to give disproportionate weight to health concerns. Public health advocates may minimize the importance of competing factors, such as individual autonomy. They may also ignore the possibility that some people might rationally sacrifice good health to pursue other goals.[362]

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360. *See* Hector, *supra* note 45, at 109–10 (discussing the controversy surrounding researchers' view of obesity as an "epidemic").

361. *Cf.* Tasic, *supra* note 358, at 6 (arguing that focusing illusion may cause regulators to "be deluded that they are doing the right thing because they are unable to see the wider context").

362. In his defense of expert paternalism, Jeremy Blumenthal argues that, within their particular domains, experts often make better decisions than lay persons in part because experts have techniques for avoiding the effects of cognitive limitations and biases. Blumenthal, *Expert Paternalism*, *supra* note 168, at 749–55. He notes that this is true for various kinds of experts, including physicists, chess masters, and weather forecasters. *Id.* at 751–52. Certainly, experts in a technical field often have a substantial advantage over lay persons with respect to issues related to that field. But even in technical fields, a particular expert's opinion might be biased. For example, if a nutrition expert has publicly promoted a particular diet, motivated reasoning may bias her interpretation of evidence related to the effectiveness of that diet. In some instances, this problem might be overcome by relying on a group of experts instead of a single expert. But that approach assumes that all members of the group will not be biased—an assumption that may not always be valid. If many of the experts in a field are motivated to reach a particular conclusion or if many of them suffer from focusing illusion, then all or most of the experts within the field may suffer from similar biases. In fact, many paternalists are heavily invested in the notion that paternalism will improve people's lives, so it would not be surprising if they tend to interpret evidence in a way that confirms this conclusion.

iv. The Intentions Heuristic

The intentions heuristic is the tendency to judge a policy based on the intentions of its advocates rather than on the policy's actual consequences.[363] The idea is that good results flow from good intentions and bad results flow from bad intentions.[364] Given that paternalists generally advocate well-meaning policies, the intentions heuristic may cause policymakers and voters to pay little attention to the trade-offs involved with paternalistic policies or to unintended consequences.[365] When combined with projection bias, motivated reasoning, and focusing illusion, the intentions heuristic may bias policymakers in favor of paternalism, and this bias might facilitate the slide down the slippery slope toward increasingly intrusive government regulation.

c. Rent Seeking

Rent seeking describes "behavior in institutional settings where individual efforts to maximize value generate social waste rather than social surplus."[366] Consider, for example, an airline's effort to persuade the government to grant it a monopoly over certain routes.[367] If successful, the stakeholders in the airline will benefit, but only at the expense of consumers who will pay higher fares. When fares increase, consumers will fly less frequently, reducing consumer surplus.[368] Furthermore, to obtain and protect the monopoly, the airline will redirect spending toward lobbying efforts that do not create anything of social value. Government officials will then divert their attention to airline lobbyists and away from more productive matters.

As with monopolies, psychic taxes, particularly those imposed on food, may also encourage rent seeking. The food industry is no stranger to the rent-seeking process. Jeff Strnad explains that the industry has used its

363. Jeffrey Friedman, *Popper, Weber, and Hayek: The Epistemology and Politics of Ignorance*, 17 CRITICAL REV. i, xix–xxi (2005). *See also* Tasic, *supra* note 358, at 6.

364. Friedman, *supra* note 363, at xx.

365. Both Jeffrey Friedman and Slavisa Tasic argue that the intentions heuristic can cause people to ignore the unintended consequences of and the trade-offs required by particular policies. Tasic, *supra* note 358, at 6; Friedman, *supra* note 363, at xx.

366. James M. Buchanan, *Rent Seeking and Profit Seeking*, *in* TOWARD A THEORY OF THE RENT-SEEKING SOCIETY 3, 4 (James M. Buchanan, Robert D. Tollison & Gordon Tullock eds., 1980).

367. This illustration is based on an example found in DENNIS MUELLER, PUBLIC CHOICE III 334–35 (2003).

368. As noted above, consumer surplus is "the amount a buyer is willing to pay for a good minus the amount the buyer actually pays for it." MANKIW, *supra* note 17, at 139. As monopoly increases the price of flying, consumers will buy fewer plane tickets. This eliminates the surplus that consumers would have otherwise enjoyed from those tickets.

political influence to obtain agricultural subsidies that arguably have little economic justification.[369] Additionally, the industry has had substantial input into the FDA's nutritional guidelines, which some argue have contributed to the public's confusion about nutrition.[370]

To illustrate how rent seeking might work in the context of psychic taxes on food, consider again traffic-light color-coding.[371] As already discussed, even unbiased experts might find it difficult to determine which foods should contain a green label and which should contain a yellow or red label. Food manufacturers would likely seize upon this ambiguity. They may persuade lawmakers to give certain foods a green or yellow label even though at least some experts believe that those foods deserve a red label. In that case, consumers may be misled in a way that harms public health.

As alluded to above, one particular problem that could arise is food manufacturers attempting to persuade the government that simply adding certain nutrients to food is sufficient to avoid a red label.[372] This policy would likely cause the food supply to become saturated with nutrients such as calcium and vitamin A. This could be problematic because some nutrients have negative side effects when consumed in large quantities.[373]

Rent seeking could also hinder the development of healthier foods.[374] Recall the example of a manufacturer that develops a low-fat, synthetic meat. Although the new meat might be healthier than existing meats, the manufacturers of existing meats, not wanting the public to know this, might lobby the government to put the new meat in the same category as existing meats for labeling purposes. Anticipating this type of opposition, many manufacturers may reduce their investment in developing healthier foods. After all, why would a manufacturer develop a health food if it could not market the food as such due to pathologies in the political process?

A related issue involves the difficulty of changing the law in response to changes in food science. Because of ongoing research, scientific opinion about whether a particular food is healthy may change over time. As a result, experts may conclude that a food that the government initially

369. Strnad, *supra* note 99, at 1295–96.

370. *Id.* at 1296.

371. Many food manufacturers would oppose this scheme, but for argument's sake, I will assume that the government adopts it anyway.

372. *See* Strnad, *supra* note 99, at 1315–16 (discussing this problem in the context of a sin tax on food).

373. For example, consuming too much calcium and vitamin A may be dangerous. *Id.* at 1315.

374. *See id.* at 1297–98 (discussing this problem in the context of a sin tax on food).

labeled as green should now receive a yellow or red label. Yet manufacturers harmed by that change would likely expend significant resources in opposition to it, and the government might ultimately leave the label unchanged, thereby misleading consumers.

G. UNWANTED DISTRIBUTIVE EFFECTS

Like traditional sin taxes, psychic taxes on cigarettes and food may be regressive in the sense that the psychic costs they impose would fall disproportionately on the poor. The reason psychic taxes may be regressive is that the poor are more likely to smoke and to be obese. In 2010, the smoking rate for adults living below the federal poverty level was 28.4 percent, while it was only 9.1 percent for adults with a family income of $100,000 or more.[375] Similarly, obesity and poor dietary quality are more common among people with low incomes and education levels.[376] This may be because energy-dense foods, especially those with added sugars and fats, are generally less expensive per calorie.[377] Because of this, poor people may consume energy-dense foods to stretch their food budgets.[378]

An important caveat to the conclusion that psychic taxes will be regressive relates to the possibility that psychic taxes may have their desired effect. In other words, the poor may respond to psychic taxes by smoking less and eating healthier. If that happens, then the effect on utility is ambiguous. If low-income consumers were acting rationally prior to the adoption of psychic taxes, any change in behavior will decrease their utility: consumers will no longer purchase goods for which the benefits outweigh the pre-psychic tax costs based on the consumers' own rational calculations. This reduction in utility would make psychic taxes even more regressive than they would be if the government's efforts did not affect behavior. But if failures of rationality cause low-income consumers to smoke and to eat excessively, those who respond to a psychic tax by smoking and eating less will increase their utility. The psychic tax would simply encourage these people to do something they should have done

375. U.S. DEP'T OF HEALTH & HUMAN SERVS., *supra* note 21, at 88. Those who have a college degree are also significantly less likely to smoke than those who do not. *Id.*

376. Drewnowski & Specter, *supra* note 23, at 6–14.

377. *Id.* at 9.

378. *Id.* at 11–14.

already.[379] This welfare gain might partially, fully, or more than fully offset any corresponding psychic cost, making the psychic tax less regressive.[380]

Unfortunately, determining whether a particular psychic tax is regressive may be infeasible because it requires a comparison of the resulting welfare gains to any psychic costs. That, in turn, would require measuring the psychic costs, predicting how consumers will respond to the psychic tax, and determining the extent to which smoking and eating are irrational. Obtaining this information is difficult at best and probably impossible.

Nonetheless, it is still useful to recognize that psychic taxes may burden the poor disproportionately. If we expect a particular psychic tax to impose large psychic costs on the poor, then before recommending its adoption, we should be at least reasonably certain that those costs will be less than any expected welfare gains. Unfortunately, as discussed in Part V, we do not currently have persuasive evidence that graphic warnings on cigarette and food packages will reduce smoking and obesity. Given that these warnings may impose substantial psychic costs, we should exercise caution in recommending that the government require them.

H. THE EXISTENCE OF MARKET-BASED SOLUTIONS

In some cases, market-based solutions may reduce or eliminate the rationale for psychic taxes. And when available, market-based solutions are often preferable to psychic taxes. Unlike psychic taxes, market-based solutions do not burden autonomy and can better accommodate heterogeneity. Market-based solutions also avoid unwanted distributive effects and the costs associated with government failure.

Some private products are designed specifically to address failures of rationality. An example is the website StickK.com, which assists those who have self-control problems. The website allows you to enter into a

379. *Cf.* Jonathan Gruber & Botond Köszegi, *Tax Incidence When Individuals Are Time-Inconsistent: The Case of Cigarette Excise Taxes*, 88 J. PUB. ECON. 1959, 1980 (2004) (noting that "a price-induced decrease in consumption [of cigarettes] may be good for the agent, because it softens the overconsumption due to the desire for immediate gratification [that results from hyperbolic discounting]").

380. A sin tax on cigarettes might also reduce irrational smoking, which could produce welfare gains that would make the tax less regressive than it would otherwise appear. Whether these welfare gains actually occur and whether they do, in fact, make cigarette taxes substantially less regressive is a controversial question. *See* Lucas, *supra* note 36, at 738–42 (reviewing the relevant literature).

commitment contract.[381] First, you establish a goal, such as quitting smoking or losing weight, and commit to the goal by putting money at stake. Then you select a referee (for example, a family member) to verify whether you achieved the goal. If you fail, you forfeit the money. You can even designate an anti-charity, which is an organization that promotes values with which you disagree, as the recipient of any forfeited money. By imposing immediate costs on those who fail to achieve their long-term goals, commitment contracts can counteract any tendency to irrationally ignore the future consequences of behavior.

Other products attempt to curtail mindless eating. For example, some companies sell snacks in small, portion-size packages.[382] As discussed in Part IV, small packages help people eat less. Additionally, some restaurateurs have modified their restaurants in response to mindless-eating research.[383] For example, some restaurants have replaced short, wide drinking glasses with taller, thinner ones, while others have switched to smaller plates.[384] These simple adjustments reduce the number of calories that patrons consume while also reducing the restaurants' costs.

People who engage in irrational behavior may also be helped by certain products, even if those products are not designed specifically to address irrationality. For example, nicotine replacement therapy makes it easier to quit smoking, whether or not the decision to start smoking was rational.[385]

In addition, some supermarkets voluntarily post nutritional information on store shelves. This information can help all consumers, whether rational or not. Although the research is in its early stages, existing evidence suggests that shelf labeling may encourage healthier purchasing decisions.[386] Moreover, a voluntary labeling program has several advantages over a government-mandated labeling scheme. First, if labeling

381. *See About StickK.com*, STICKK.COM, http://www.stickk.com/about.php (last visited Jan. 25, 2013) (providing a description of the StickK.com business model, including a description of the commitment contract that users enter into).

382. Wansink, Payne & Shimizu, *supra* note 257, at 1098.

383. Wansink, Just & Payne, *Healthy Heuristics*, *supra* note 79, at 244–45.

384. *Id.*

385. For example, the estimated abstinence rate six months after quitting is between 25.4 and 33.2 percent for varenicline users (depending on dosage) and between 19 and 26.1 percent for nicotine gum users (depending on duration of use). This compares to a 13.8 percent abstinence rate for those receiving placebo treatment. Abstinence rates are even higher for certain combination therapies such as nicotine gum and the nicotine patch. U.S. DEP'T OF HEALTH & HUMAN SERVS., THE HEALTH BENEFITS OF SMOKING CESSATION (1990).

386. *See* Hawley et al., *supra* note 152, at 6–7.

is voluntary, consumers who object to the labels are free to shop at a store that does not use them. Second, voluntary labeling promotes competition with respect to developing criteria for determining the healthfulness of food, which is important because nutrition experts do not always agree on which foods are healthy. Voluntary labeling also encourages competition to develop the most effective labels for communicating nutritional information to consumers.[387]

The primary concern with voluntary shelf labeling is that, in the absence of government regulation, consumers might not find the labels credible because of suspicion about food industry influence. One way to address this problem would be for a panel of independent experts to develop the labeling criteria. In fact, such a labeling scheme already exists. The NuVal Nutritional Scoring System is based on an algorithm "developed by a multidisciplinary group of nutrition and public health scientists independent of food industry interests."[388] A food's NuVal score ranges from one to one hundred, with a higher score indicating a healthier food.[389] Participating supermarkets display NuVal scores on their store shelves.[390] Even critics of voluntary labeling schemes have acknowledged the scientific integrity of the NuVal ratings.[391]

Moreover, critics of voluntary labeling should not assume that the government would adopt labels without substantial input from the food industry. As discussed in Subpart F of this Part, the food industry may in fact exert excessive influence over any government-mandated labeling scheme. A major advantage of private labeling systems such as NuVal is that they are not subject to the potentially corruptive influences of the political process. Also, the supermarkets that use private labeling systems have an incentive to maintain the integrity of those systems to keep consumers from taking their business elsewhere.[392]

Despite the availability of market-based solutions, paternalists often argue that government intervention is still necessary.[393] They point out that

387. Lytton, *supra* note 282, at 135–36.

388. David L. Katz et al., *Performance Characteristics of NuVal and the Overall Nutritional Quality Index (ONQI)*, 91 AM. J. CLINICAL NUTRITION 1102S, 1102S (2010). For a list of the scientists involved in developing the algorithm used by NuVal, see *id.* at 1103S.

389. *Id.* at 1108S.

390. For further information about NuVal, including a list of participating supermarkets, see *Where to find NuVal*, NUVAL.COM, http://www.nuval.com/location (last visited Jan. 25, 2013).

391. Lytton, *supra* note 282, at 135–36.

392. *Id.*

393. *E.g.*, Gruber & Köszegi, *Is Addiction "Rational"*, *supra* note 18, at 1286.

market-based solutions are sometimes subject to unraveling by other private transactions.[394] For example, people who enter into a commitment contract with StickK.com could subsequently persuade their referees to verify that they had achieved their goals even though they had not. This might be embarrassing, but it would allow them to get their money back. On the other hand, psychic taxes and other forms of government intervention may not be as easy to circumvent. Additionally, unlike market-based solutions, government policies, including psychic taxes, are not voluntary. This means that government policies are more likely to benefit people who are not sophisticated enough to realize that their behavior is irrational.

While these criticisms are worth noting, it is also important to recognize the benefits of market-based solutions. Market-based solutions avoid many of the problems associated with government intervention. Moreover, the fact that some people might be naive about their irrationality does not necessarily provide a strong rationale for heavy-handed intervention. After all, paternalists generally cannot be certain that a particular individual is behaving irrationally if that individual herself claims otherwise. So in many cases, the best approach to dealing with naivety may be to educate people about the possibility that they are irrational and about how they can avoid the deleterious effects of irrationality.

VII. CONCLUSION

In theory, psychic taxes, including graphic warnings, might produce significant benefits. If failures of rationality cause people to make suboptimal choices, the government could use psychic taxes to improve people's lives. Unfortunately, real-world governments are not perfect, so the implementation of psychic taxes presents a number of potentially serious challenges. Due to imperfect information, heterogeneity, and the possibility of unintended consequences, it is difficult to predict whether psychic taxes will in fact prove beneficial. Moreover, in some cases, graphic warnings and other psychic taxes may be deceptive. Additionally, acceptance of psychic taxes as a legitimate policy tool may lead us down a slippery slope toward policies that are harmful and even abusive. Finally, since the government is likely to target goods that are consumed disproportionately by the poor, psychic taxes may be regressive.

394. *E.g.*, *id.* *See also* Fennell, *supra* note 167, at 1417.

Because of these concerns, this Article expresses skepticism about the use of psychic taxes. Self-regulation and market-based solutions will often eliminate the effects of irrationality, making psychic taxes unnecessary. Even when that is not the case, psychic taxes create the potential for considerable costs, many of which are difficult to identify in advance or to quantify. So the government should not employ psychic taxes without compelling evidence that the benefits will be substantial.[395] In particular, the lack of strong empirical support for graphic warnings on cigarettes and food suggests that these warnings are not worthwhile.

395. *Cf.* Klick & Mitchell, *supra* note 165, at 1661 ("Given the restrictions on liberty associated with paternalism and the attendant cognitive and moral hazards identified here, we believe that the paternalist should bear the burden of demonstrating that the benefits of a paternalistic intervention will likely outweigh the costs.")