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ESSAY

MORAL COMMITMENTS IN COST-BENEFIT ANALYSIS

*Eric A. Posner** and *Cass R. Sunstein†*

The regulatory state has become a cost-benefit state, in the sense that under prevailing executive orders, agencies must catalogue the costs and benefits of regulations before issuing them, and in general, must show that their benefits justify their costs. Agencies have well-established tools for valuing risks to health, safety, and the environment. Sometimes, however, regulations are designed to protect moral values, and agencies struggle to quantify those values; on important occasions, they ignore them. That is a mistake. People may care deeply about such values, and they suffer a welfare loss when moral values are compromised. If so, the best way to measure that welfare loss is through eliciting private willingness to pay. Of course, it is true that some moral commitments cannot be counted in cost-benefit analysis because the law rules them off-limits. It is also true that the principal reason to protect moral values is not to prevent welfare losses to those who care about those values. But from the welfarist standpoint, those losses matter, and they might turn out to be very large. Agencies should take them into account. If they fail to do so, they might well be acting arbitrarily and hence in violation of the Administrative Procedure Act. These claims raise fundamental issues in legal and political theory about welfarism and its limits, and they also bear on a wide variety of issues, including protection of foreigners, of victims of mass atrocities, of children, of rape victims, of disabled people, of future generations, and of animals.

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I. THE THESIS

Consider the following cases:

1. Congress has directed the Securities and Exchange Commission (“SEC”) to issue a regulation to ensure disclosure of “conflict minerals”—minerals used to finance mass atrocities.¹ The SEC is required to catalogue the costs and benefits of its regulation (to the extent feasible). It is aware that many consumers are interested in the relevant information. How, if at all, should the SEC monetize that interest?
2. The Dolphin Protection Consumer Information Act² provides labeling standards for tuna products. It includes standards by

¹ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,275–77 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240, 249b).

² 16 U.S.C. § 1385 (2012).

which companies may label their products “dolphin safe.”³ Many consumers care a great deal about the protection of dolphins and want to see those labels. How, if at all, should the Department of Agriculture incorporate that concern in issuing standards? Should it attempt to monetize it?

3. Many consumers are concerned about genetically modified (“GM”) food.⁴ While some of them are concerned about the effect of GM food on health and the environment, others believe that genetic modification of food is “just wrong.” Congress has required the Department of Agriculture to label GM food as such.⁵ How, if at all, should the Department take account of consumer sentiment in cataloging the rule’s benefits?

In some important contexts, governments regulate products because some or many people believe that their production is immoral, or at least morally problematic. The regulation might involve protection of children, of people in other nations, of victims of some kind of wrongdoing, of animals, or even of nature.⁶ In most cases, their production involves concrete harms, such as lives lost, which are what trigger the moral concern. The goal of regulation—whether it is a mandate, a ban, or a labeling requirement—is to reduce those harms.

In some cases, it is difficult or perhaps impossible to identify concrete harms, but people nonetheless favor regulation as a way of expressing and realizing their moral commitments (as in the context of GM food). Yet regulators are normally required to perform cost-benefit analysis whenever they issue a major regulation, and cost-benefit analysis requires the regulator to identify and monetize all harms and benefits.

³ Id. § 1385(d).

⁴ See Sydney E. Scott et al., Evidence for Absolute Moral Opposition to Genetically Modified Food in the United States, 11 *Persp. on Psychol. Sci.* 315, 316 (2016).

⁵ National Bioengineered Food Disclosure Standard, Pub. L. No. 114-216, §239, 130 Stat. 834 (2016) (codified at 7 U.S.C. § 1639b (Supp. 2017)).

⁶ See, e.g., Denis Swords, Case Note, *Ohio v. United States Department of the Interior: A Contingent Step Forward for Environmentalists*, 51 *La. L. Rev.* 1347 (1991) (discussing practical and theoretical conflicts in natural resource valuation in the context of Department of the Interior regulations and relevant case law). On the theoretical issues, see Robert E. Goodin, *Green Political Theory* 19–83 (1992).

Our principal question here is how regulators should take account of moral commitments in undertaking cost-benefit analysis.

Our simple answer, put too briefly, is that on welfarist grounds, moral commitments can matter, and that when people would suffer a welfare loss when their moral commitments are violated, regulators should ask: *how much are people willing to pay to honor those commitments?* We acknowledge that this answer is jarring because the question of what morality requires is usually not answered by asking how much people are willing to pay to promote their moral commitments. (The more natural way to proceed is to ask what morality actually requires.) We agree that, from a welfarist perspective or otherwise, the willingness-to-pay question is hardly the only one. Nonetheless, we urge that, from a welfarist perspective, it is both relevant and important to answer, at least when violations of moral commitments would produce welfare losses.⁷

Suppose, for example, that a consumer, John, cares greatly about an assortment of things, including his longevity, his health, his comfort, and the well-being of dolphins. Suppose that a substantial component of his welfare depends on the welfare of dolphins. If they suffer, he suffers. But how much does he suffer? Here as elsewhere, and whatever its limitations,⁸ his willingness to pay is the best available measure.

An alternative view is that, even though they matter, moral commitments should not be taken to be part of a cost-benefit analysis; they raise entirely independent issues and must be engaged seriously but separately.⁹ On that view, analysis of costs and benefits is important but

⁷ A clarification: when people are willing to pay something to prevent a violation of a moral commitment, it may not be in order to prevent the welfare loss that they would themselves feel if the moral commitment were violated. It may be to protect the moral commitment alone. After all, they may feel no welfare loss when the moral commitment is violated. Nonetheless, we suspect that normally people feel welfare losses when their moral commitments are violated, and hence that their willingness to pay is normally the best proxy for the welfare loss that they would experience.

⁸ For one discussion of those limitations, see Peter Dorman, *Markets and Mortality: Economics, Dangerous Work, and the Value of Human Life* 89–93 (1996).

⁹ See Donald H. Rosenthal & Robert H. Nelson, *Why Existence Value Should Not Be Used in Cost-Benefit Analysis*, 11 *J. Pol’y Analysis & Mgmt.* 116 (1992). Rosenthal and Nelson argue that cost-benefit analysis should not take into account “existence” (or “nonuse”) value, which is the willingness to pay for a state of the world that does not directly affect well-being. *Id.* at 117. The concept is similar to what we mean by moral effects. Their reason is that existence value is incoherent and very difficult to measure. For a rebuttal, see Raymond J. Kopp, *Why Existence Value Should Be Used in Cost-Benefit Analysis*, 11 *J.*

not exhaustive; it turns on a narrower set of factors, such as effects on income and health.¹⁰ It is true that moral commitments often signal values that are not adequately captured by private willingness to pay. If the goal is to prevent mass atrocities in a foreign country, Americans' willingness to pay to prevent mass atrocities hardly exhausts the welfare effects of preventing mass atrocities. But in response, we emphasize that people's welfare may well be affected and even profoundly affected by the realization or frustration of their moral commitments, as demonstrated by willingness to pay. If people lose welfare because of the suffering or death of others—refugees, people in other countries, their own children, rape victims, dolphins, members of future generations—their loss ought to be counted.

To be sure, the welfare loss might be hard to measure,¹¹ and in many cases, it might turn out to be relatively or even trivially small, not least because people's budget constraints might mean that they are unwilling to spend a great deal to vindicate any particular moral commitment. But in principle, there is no justification for refusing to include, in a cost-benefit analysis, people's willingness to pay to protect such commitments. If an agency ignores the resulting number, and thus treats people's moral concerns as valueless, there is a strong argument that it is acting arbitrarily and therefore in violation of the Administrative Procedure Act or other law.¹² The resulting regulation will be too weak.

The issue is hardly fanciful. For example, people have strong moral commitments that bear on policies involving refugees, immigrants, climate change, police brutality, and prison rape, and when officials go in one direction or another, many of them suffer serious welfare losses. A more mundane issue, directly raising our question, arose several years

Pol'y Analysis & Mgmt. 123 (1992). See also Tom Crowards, *Nonuse Values and the Environment: Economic and Ethical Motivations*, 6 *Envtl. Values* 143 (1997) (discussing the debate and proposing that regulators develop limits on the use of existence values). We agree with Kopp that the concept of existence value is not incoherent and that existence values are, in principle, measurable, and should be used in cost-benefit analysis. We hope to bring the debate among economists down to earth by evaluating the actual ways in which regulatory agencies approach these problems.

¹⁰ That is the focus of standard discussions. See, e.g., W. Kip Viscusi, *Rational Risk Policy: The 1996 Arne Ryde Memorial Lectures* 69–83 (1998).

¹¹ On some of the challenges and potential solutions in an especially difficult context, see Sean Hannon Williams, *Statistical Children*, 30 *Yale J. on Reg.* 63 (2013).

¹² See *Ohio v. U.S. Dep't of the Interior*, 880 F.2d 432, 478–80 (D.C. Cir. 1989).

ago when the Environmental Protection Agency (“EPA”) issued regulations designed largely to protect fish from being sucked into power plant systems and killed (“impingement and entrainment”).¹³

On standard assumptions, the direct benefits of such protection in terms of human welfare—perhaps in the form of ecological benefits and improved recreation—are relatively small.¹⁴ In part for this reason, the EPA’s regulations were highly flexible and far less stringent than they might have been.¹⁵ But it has been vigorously urged that apart from those standard benefits, people would be willing to pay something more to provide such protection because they care about protecting fish—and that once that figure is aggregated across the population and included in the benefits figure, aggressive regulation (far more aggressive than EPA was willing to promulgate) is amply justified.¹⁶ If people’s willingness to pay would reflect the welfare losses that they would suffer if the fish were not protected, then there is a real argument that it should count in the calculus.

The role of moral commitments has arisen in other contexts as well. Indeed, a court of appeals struck down a damage measure, from the Department of the Interior, that refused to consider people’s willingness to pay to protect the continued existence of pristine areas and the animals that live there.¹⁷ In the court’s view, it was unlawful for the agency to focus entirely on use value and to ignore private willingness to pay that would depend, in that case, on moral considerations.¹⁸ That conclusion has potentially broad implications, suggesting that in certain contexts, a refusal to use contingent valuation methods to account for

¹³ See 40 C.F.R. § 125.90–98; see also National Pollutant Discharge Elimination System—Final Regulations to Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities, 79 Fed. Reg. 48,300, 48,303 (Aug. 15, 2014) (codified at 40 C.F.R. pts. 122, 125) (describing the harm to aquatic life caused by existing facilities and the intended benefits of the regulations to fish).

¹⁴ The EPA so concluded in issuing the regulation at issue in *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 224–26 (2009).

¹⁵ See 40 C.F.R. § 125.90–98.

¹⁶ Frank Ackerman & Elizabeth A. Stanton, Comment Letter on Regulation of Cooling Water Intake Structures at Existing Facilities (Aug. 18, 2011), <https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OW-2008-0667-2568&attachmentNumber=1&contentType=pdf> [<https://perma.cc/VMW4-9JMB>].

¹⁷ *Ohio v. Dep’t of the Interior*, 880 F.2d at 462–64.

¹⁸ See *id.*

“existence value”¹⁹—reflecting the value of the continued existence of a wilderness beyond its utility for recreation and food—would be arbitrary and, therefore, unlawful.

We do not mean to take a stand on the controversy over the usefulness and reliability of contingent valuation methods here,²⁰ and our claim is emphatically not meant to suggest that willingness to pay captures all of the welfare benefits of regulations that are designed to protect third parties. The ultimate goal of the Dolphin Protection Consumer Information Act is to protect dolphins, not John. But insofar as John’s welfare is increased by the protection of dolphins, his willingness to pay is part of the cost-benefit analysis. Though valuation of third parties is not our principal topic here, and presents independent challenges, we shall have something to say about it in due course.

We have acknowledged that our suggestion is jarring, but in prominent cases, government regulators have essentially accepted it. In a regulation involving building access for people who use wheelchairs, regulators emphasized that, if the average (non-disabled) American was willing to pay a very small amount to increase such access, the regulation would have benefits in excess of costs.²¹ On the regulators’ view, that willingness to pay was relevant to the assessment of whether the regulation was justified. In a regulation designed to reduce the incidence of prison rape, regulators used a contingent valuation study to find that (unimprisoned) Americans would pay over \$300,000 to eliminate a case of prison rape, and added that in light of that number,

¹⁹ See John Quiggin, *Existence Value and the Contingent Valuation Method*, 37 *Austl. Econ. Papers* 312, 314–16 (1998). We are assuming that existence value captures the welfare losses to people who care about the continued existence of (say) an endangered species. It is possible that some people are willing to pay to protect a moral commitment (including commitment to existence value) even though they would not suffer a welfare loss if that commitment were violated. Imagine, for example, someone who lacks any emotional commitment to dolphins, or any affective investment in them, but who believes, on principle, that welfare losses should be minimized. Such a person may have a moral commitment to dolphins, and be willing to pay to protect them, but may also suffer no welfare loss if they suffer or die. In our view, that person’s willingness to pay for existence value ought not to count on welfare grounds.

²⁰ For skeptical views, see Jerry Hausman, *Contingent Valuation: From Dubious to Hopeless*, 26 *J. Econ. Persp.*, Fall 2012, at 43; Daniel Kahneman & Jack L. Knetsch, *Valuing Public Goods: The Purchase of Moral Satisfaction*, 22 *J. Envtl. Econ. & Mgmt.* 57 (1992).

²¹ See *infra* Section III.E.

the regulation likely had benefits in excess of costs.²² In a case involving protection of children from backover crashes, the Department of Transportation pointed to, without monetizing, parents' desire to provide that protection.²³ And in response to the court of appeals decision noted above, the Department of the Interior acknowledged the importance of considering existence value in assessing natural resource damages.²⁴

To be sure, these are unusual regulations, for which calculation of benefits was especially challenging, thus creating an incentive for creativity. But if our analysis is correct, regulators were on the right track in all four cases, at least insofar as they were concerned about the welfare losses that would occur if people's moral commitments were violated²⁵—and their approach has more general implications for valuation of regulatory benefits.

The question of how to address people's moral commitments in cost-benefit analysis is of great importance, and not only because so many regulations advance moral goals. The problem for agencies is that, when Congress commands them to advance such goals, it rarely provides guidance about the precise level of stringency, or more particularly, of the costs that should be imposed on the private sector in the course of achieving those goals. The SEC calculated that its conflict minerals regulation would cost the industry about \$5 billion, and in light of the statutory mandate, it deemed that amount a reasonable price to pay in order to enhance disclosure of conflict minerals use.²⁶ But what if a slightly more effective regulation, also in compliance with the underlying statute, would have cost \$50 billion or \$500 billion? What if

²² See *infra* Section III.D.

²³ Federal Motor Vehicle Safety Standards; Rear Visibility, 79 Fed. Reg. 19,178, 19,235–36 (Apr. 7, 2014) (codified at 49 C.F.R. pt. 571); see also *infra* Section III.C (discussing methods to monetize parents' willingness to pay to eliminate statistical risks faced by their children).

²⁴ Natural Resource Damages for Hazardous Substances, 73 Fed. Reg. 57,259, 57,261 (Oct. 2, 2008) (codified at 43 C.F.R. pt. 11). For a defense of the use of the existence value approach in federal preservation regulation and a general discussion, see David A. Dana, Existence Value and Federal Preservation Regulation, 28 Harv. Envtl. L. Rev. 343 (2004).

²⁵ In the case of parental concern or their children's welfare, of course, the welfare loss to parents outruns the violation of the moral commitment; it is the loss of the child that is primary.

²⁶ See Conflict Minerals, 77 Fed. Reg. 56,274, 56,333–36 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240, 249b).

a slightly less effective regulation, again in compliance with the underlying statute, would have cost \$1 billion or \$2 billion? Should the SEC have imposed huge costs on the private sector in order to improve disclosure by only a small amount?

Critics of cost-benefit analysis, who claim that moral gains are not monetizable and, therefore, that agencies should not use cost-benefit analysis at all,²⁷ have not given satisfactory answers to such questions. We argue that, if agencies monetize the welfare losses that come from violation of moral commitments, they will be in a better position to decide on the stringency of regulations in a nonarbitrary way. In some cases, monetization of moral benefits will justify stronger regulations.

Concrete though it is, our argument turns out to touch directly on some of the most abstract and fundamental issues in legal and political theory.²⁸ If cost-benefit analysis must take on board all moral commitments for which people are willing to pay—empathetic, exclusionary, or sadistic—it will take on board a great deal. Indeed, there might seem to be no logical stopping point. The universe of moral commitments is very wide, in the sense that people would be willing to pay to maintain or to alter numerous and diverse states of affairs, and they would suffer a welfare loss if many states of affairs were maintained or altered. People's moral commitments bear on business activity on Sunday, kissing in public, boxing, sexually explicit speech, political dissent, consumption of meat, and same-sex relationships. Must regulators consider all of those commitments?

The simplest answer is that some moral commitments, such as belief in racial segregation or suppression of sexually explicit speech, are inconsistent with the Constitution or with statutes authorizing regulatory action; it is legitimate for regulators to conclude that those commitments cannot be counted in the analysis, even if they are backed by willingness to pay. As a limitation on the reach of our argument, some people might also insist on ideas, associated with the liberal political tradition, that forbid interference with (what is seen as) purely self-regarding behavior

²⁷ See, e.g., Frank Ackerman & Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* 117–22 (2004).

²⁸ For relevant perspectives, see generally John Stuart Mill, *On Liberty*, in *The Basic Writings of John Stuart Mill* 1 (2002), and Amartya Sen, *The Impossibility of a Paretian Liberal*, 78 *J. Pol. Econ.* 152 (1970).

by reference to the moral concerns of outsiders.²⁹ For example, people might be willing to pay something to stop same-sex marriages, uses of contraceptives, sales of alcohol, and indoor tanning. Welfarists may or may not be willing to take account of third-party preferences of this kind,³⁰ but it is possible to embrace the thrust of our argument—in favor of considering welfare losses that come from violations of moral commitments—while also insisting on that restriction on its domain.

We note as well that some moral commitments operate at an exceedingly high level of generality, as when people suffer or rejoice as a result of the very fact of regulation. On strict welfarist principles, such commitments should be counted. But it seems safe to say that regulators ought to ignore them on the ground that the analysis becomes too unruly, and too untethered, if they are taken into account. In due course, we shall explore all of these arguments.

The remainder of this Essay is as follows. In Part II, we begin by reviewing the moral foundations of cost-benefit analysis. That form of analysis is best understood as a decision procedure for advancing welfare; it does not directly advance nonwelfarist goals. But we also show that, to the extent that society's failure to vindicate nonwelfarist moral commitments affects the well-being of the public, cost-benefit analysis can and should capture that effect, at least in principle. In Part III, we apply our method to a heterogeneous array of real-world areas of regulation that bear on important moral values: conflict minerals and mass atrocities; GMOs; mortality risks faced by children; prison rape; access for disabled people; and climate change. Part IV explores legal issues. A brief conclusion follows.

²⁹ See Joseph Raz, *The Morality of Freedom* 400–30 (1990). We acknowledge the complication that our argument introduces: if people suffer as a result of (say) same-sex marriages or doing business on Sunday, such marriages and such business activity are not purely self-regarding. The notion of self-regarding action, and category of “harm to others,” is ordinarily defined by ruling certain welfare losses (above all, the losses to those who suffer on moral grounds) irrelevant.

³⁰ See Sen, *supra* note 28, at 155–57.

II. THEORY

A. *Welfarism and Cost-Benefit Analysis*

Cost-benefit analysis is a decision procedure used by regulatory agencies to evaluate regulations.³¹ Congress often gives agencies discretion whether to promulgate regulations in order to promote statutory goals, and even when Congress eliminates such discretion, agencies often have discretion with respect to levels of stringency. To promote accountability and transparency, prevailing Executive Orders require agencies (other than independent agencies) to catalogue costs and benefits even when consideration of costs is forbidden by statute at the time of decision.³²

To provide two of countless examples of statutes under which cost-benefit analysis is undertaken, the EPA is authorized under different statutes to issue regulations that are “appropriate and necessary”³³ and that eliminate “unreasonable risk.”³⁴ It is possible to read these apparently open-ended standards, at least in the abstract, as giving the EPA considerable freedom to decide on the appropriate level of stringency with reference to costs and benefits.³⁵ Beginning in the Reagan administration, the White House has required the EPA and other executive agencies (1) to catalogue costs and benefits, (2) to demonstrate that regulatory benefits outweigh or justify regulatory costs, and (3) to maximize net benefits, in order to ensure that the regulations are justified.³⁶ President Reagan’s defining executive order makes cost-benefit analysis the rule of decision “to the extent permitted by law.”³⁷

³¹ See Matthew D. Adler & Eric A. Posner, *New Foundations of Cost-Benefit Analysis* 2 (2006); Cass R. Sunstein, *Valuing Life: Humanizing the Regulatory State* 2–3 (2014) [hereinafter Sunstein, *Valuing Life*]; Viscusi, *supra* note 10, at 102–05. On some of the theoretical complexities, see Matthew D. Adler, *Well-Being and Fair Distribution: Beyond Cost-Benefit Analysis* 88–113 (2012).

³² See Exec. Order No. 13,563, 3 C.F.R. 215 (2012), *reprinted in* 5 U.S.C. § 601 (2012).

³³ 42 U.S.C. § 7412(n)(1)(A) (2012).

³⁴ See, e.g., *id.* § 2077(d).

³⁵ For a conclusion to this effect in a related context, see *American Trucking Ass’n v. EPA*, 175 F.3d 1027, 1037–38 (D.C. Cir. 1999).

³⁶ See Exec. Order No. 12,291, 3 C.F.R. 127, 128–29 (1982).

³⁷ *Id.* at 128.

That idea has been accepted and renewed, with variations not relevant here, by every president through President Trump.³⁸

In important cases, federal courts have also held that, when taken together with the Administrative Procedure Act, prominent statutes, including those that set out both of the foregoing standards, require that regulations are justified by at least some form of cost-benefit analysis.³⁹ Indeed, eight of the nine current members of the Supreme Court have concluded that, in the face of statutory ambiguity, agencies must consider costs as well as benefits and thus engage in a kind of cost-benefit balancing.⁴⁰ If an agency fails to consider costs at all, or if the benefits cannot be seen to justify the costs, its decision might well be invalidated as arbitrary.⁴¹

What accounts for the bipartisan (though admittedly not universal⁴²) appeal of cost-benefit analysis? The simplest answer is that human

³⁸ See Exec. Order No. 12,866, 3 C.F.R. 638 (1994), *reprinted as amended* in 5 U.S.C. § 601; Exec. Order No. 13,563, 3 C.F.R. 215 (2012), *reprinted in* 5 U.S.C. § 601. As of this writing, President Trump has not modified these Executive Orders, and hence they remain in effect. His principal innovation is the “one in, two out rule,” which requires agencies to eliminate two regulations for every new one. See Exec. Order No. 13,771, 82 Fed. Reg. 9339, 9339 (Feb. 3, 2017). That requirement, which is supplemental to existing ones, raises issues not relevant here.

³⁹ See *Michigan v. EPA*, 135 S. Ct. 2699 (2015), and in particular: “The Agency must consider cost—including, most importantly, cost of compliance—before deciding whether regulation is appropriate and necessary. . . . [R]easonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions.” *Id.* at 2707, 2711.

⁴⁰ See *id.* at 2711, and these words from the dissent: “Cost is almost always a relevant—and usually, a highly important—factor in regulation. Unless Congress provides otherwise, an agency acts unreasonably in establishing ‘a standard-setting process that ignore[s] economic considerations.’” *Id.* at 2716–17 (Kagan, J., dissenting) (quoting *Indus. Union Dep’t v. Am. Petroleum Inst.*, 448 U.S. 607, 670 (1980) (Powell, J., concurring in part and concurring in judgment)). (We note that the textual reference to the views of eight of the nine current Justices merely reflects the fact that Justice Gorsuch was not on the Court during the year of the decision.)

⁴¹ See *id.* at 2707 (majority opinion) (“Read naturally in the present context, the phrase ‘appropriate and necessary’ requires at least some attention to cost. One would not say that it is even rational, never mind ‘appropriate,’ to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits.”). For general discussion, see Cass R. Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, 41 *Harv. Envtl. L. Rev.* 1 (2017) [hereinafter Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*].

⁴² See Ackerman & Heinzerling, *supra* note 27; Amy Sinden et al., *Cost-Benefit Analysis: New Foundations on Shifting Sand*, 3 *Reg. & Governance* 48 (2009) (reviewing Adler & Posner, *supra* note 31).

consequences matter, and cost-benefit analysis is a way of cataloguing them.⁴³ Put less simply, the idea is that as a presumption, congressional grants of regulatory authority should be taken as an effort to increase people's welfare or well-being.⁴⁴ (We use the terms interchangeably.) While different agencies are given different missions, which allow them to develop and exploit their expertise, they should be taken to share this abstract commitment to human welfare.⁴⁵

A regulation typically has both positive and negative effects on welfare. It might save costs and improve health, safety, or some other component of well-being, but also create welfare losses, perhaps to health, safety, or some other component of well-being as well.⁴⁶ For example, a regulation that increases fuel economy, and thus improves health by reducing air pollution, might produce less safe cars.⁴⁷ A regulation that protects the ozone layer, by forbidding use of ozone-depleting chemicals, might require a ban on the use of cheap and

⁴³ For a valuable discussion of this claim, see Howard Margolis, *Dealing with Risk: Why the Public and the Experts Disagree on Environmental Issues* 75–79 (1996).

⁴⁴ We are bracketing issues about the relationships among cost-benefit balancing and welfarism, and about the precise role of distributional considerations. For discussion, see Adler, *supra* note 31, at 32–37. It is possible to believe, for example, that the well-being of those at the bottom deserve priority, and also to insist that in some cases, the outcome of cost-benefit analysis does not track the outcome of welfarist analysis. These are important issues but beyond the scope of the present discussion, the goal of which is to sketch the argument for consideration of costs and benefits. One can accept that argument while also insisting on relevant qualifications, including an emphasis on the well-being of those at the bottom. On welfarist grounds, consideration of moral commitments is well justified, for reasons that we will sketch. Whether consideration of such commitments is desirable on distributional grounds depends on the content of those commitments.

⁴⁵ With this claim, we do not mean to disregard the suggestion that regulatory statutes are frequently enacted with the goal of helping well-organized private groups. For classic discussions, see George J. Stigler, *The Citizen and the State: Essays on Regulation* 114–44 (1975). Cost-benefit analysis can be seen as an effort to impose a welfarist check on this possibility, requiring congressional clarity. For a philosophical discussion of the meaning of welfare or well-being, see James Griffin, *Well-Being: Its Meaning, Measurement, and Moral Importance* (1986).

⁴⁶ See John D. Graham & Jonathan Baert Wiener, *Confronting Risk Tradeoffs*, in *Risk Versus Risk: Tradeoffs in Protecting Health and the Environment* 1 (John D. Graham & Jonathan Baert Wiener eds., 1997).

⁴⁷ This is a disputed question. For one view, see Mark R. Jacobsen, *Fuel Economy, Car Class Mix, and Safety*, 101 *Am. Econ. Rev. Papers & Proc.* 105 (2011).

effective asthma inhalers.⁴⁸ A regulation that requires factories to install scrubbers in smokestacks benefits people by reducing the level of pollution in the air, but also creates costs for the factory owners, who must pay for the installation of the scrubbers.⁴⁹ These costs may well be passed along to workers, in the form of lower wages; to consumers, in the form of higher prices; and to shareholders, in the form of lower returns. If so, all of these people lose money that they could otherwise use to buy things of importance to them. Since the ultimate goal of regulation is to advance well-being, these negative effects should be considered along with the positive effects.

Even without using cost-benefit analysis, regulators have long been aware that they must engage in some sort of balancing. For example, an environmental regulation of maximal stringency could require the shutdown of factories and cause massive unemployment, which no one wants, and which can cause adverse health effects. For the years before the Reagan executive order, many agencies seem to have engaged in a kind of intuitive balancing, in which they chose regulations that produced benefits but were not unduly disruptive to important social interests.⁵⁰ It was not always clear how they engaged in this balancing. A signal virtue of cost-benefit analysis is that intuitive guesswork is replaced with a more rigorous style of reasoning, one that provides for far greater transparency about crucial variables and that should reduce the scope for error, at least if it is working well.⁵¹

⁴⁸ Food & Drug Admin., *Users of Last CFC Inhalers Must Soon Switch* (May 28, 2013), <http://wayback.archive-it.org/7993/20170722060725/https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm353701.htm> [<https://perma.cc/N6VN-9AVB>].

⁴⁹ For a classic discussion, see Bruce A. Ackerman & William T. Hassler, *Clean Coal/Dirty Air: Or How the Clean Air Act Became a Multibillion-Dollar Bail-Out for High-Sulfur Coal Producers and What Should Be Done About It* (1981).

⁵⁰ We simplify. For details, see W. Kip Viscusi, *Fatal Tradeoffs: Public and Private Responsibilities for Risk* 255–56 (1992).

⁵¹ For a vivid argument to this effect, see Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right* (Rita Kimber & Robert Kimber trans., 1996) (exploring, in experimental settings, how most people fail to see the full range of consequences of policy choices). We acknowledge that there are alternatives to cost-benefit analysis. For example, some people favor the precautionary principle. See Daniel Steel, *Philosophy and the Precautionary Principle: Science, Evidence, and Environmental Policy* (2015).

B. The Occasionally Acute Challenge of Monetization

The key requirement of cost-benefit analysis is that the positive and negative effects of the regulation must be translated into the common metric of money (to the extent feasible). In the case of some benefits and some costs, the exercise is straightforward because no translation is necessary. When a factory is required to install pollution-control technology, the cost is simply the amount of money needed to pay for the machinery and for the labor to install it. Because this cost is ultimately borne by consumers, workers, and shareholders, it reduces human welfare.⁵²

But monetizing some impacts (whether costs or benefits) can be far more complex.⁵³ Consider a regulation that enhances water quality in a national park by reducing industrial runoffs. Beneficiaries will include people who save the costs of traveling to a more distant national park or using private recreational facilities, such as an indoor waterpark. These costs can be easily put in monetary terms. But both costs and benefits may be nonpecuniary. Regulations can reduce mortality risk, minimize unpleasant but not dangerous health conditions like headaches, and enhance the beauty of the outdoors.

Regulators may describe some of these benefits as nonquantifiable.⁵⁴ But they often attempt to convert them into monetary terms for use in cost-benefit analysis, and when they do so, they use a range of methods. Whatever the precise choice, they tend to begin by asking about people's willingness to pay.⁵⁵ In principle, they agree that the right question is how much people are willing to pay to eliminate (for example) a mortality risk of 1/100,000 or a morbidity risk of 1/10,000. Typically, they derive estimates from market behavior—for example, calculating the value of reduced mortality risk by deriving risk premiums from labor

⁵² Even in this simple example, some costs may not be easy to monetize—as, for example, if the regulation produces unemployment.

⁵³ See generally Cass R. Sunstein, *The Limits of Quantification*, 102 *Calif. L. Rev.* 1369 (2014) [hereinafter Sunstein, *Limits of Quantification*] (analyzing the challenges faced by agencies when undertaking cost-benefit analysis for some variables that cannot be quantified).

⁵⁴ See *id.* at 1395–96.

⁵⁵ See Office of Mgmt. & Budget, Circular A-4, *To the Heads of Executive Agencies and Establishments: Regulatory Analysis 18* (2003), https://www.whitehouse.gov/omb/circulars_a004_a-4 [<https://perma.cc/T4KG-KH7P>].

market choices.⁵⁶ More controversially, they sometimes use contingent valuation surveys, where people are simply asked to give monetary equivalents to nonpecuniary benefits.⁵⁷

With these various methods, the central idea is that, if people face risks of one or another kind, or if they might obtain gains, the correct approach is to ask: *how much is the relevant good actually worth to them?* That approach has a natural fit with welfarism and in particular with that strand of the liberal political tradition, associated with John Stuart Mill, that relies on people's own judgments about what serves their interests.⁵⁸ For example, risk reduction can be seen as a good like other goods, such as education, medical care, clothing, and food. For such goods, we often rely on markets, which allow people to buy those goods that they want. If what matters is people's welfare, and if they have a good sense of what will promote their welfare, it makes sense to rely on their willingness to pay, at least as a presumption.⁵⁹

The willingness-to-pay approach can also draw support from a competing strand of the same tradition, emphasizing autonomy rather than welfare.⁶⁰ By asking how much people are willing to pay, regulators are respecting people's right to trade off relevant goods as they see fit. To be sure, the willingness-to-pay criterion raises many questions and doubts,⁶¹ and we will have something to say about them here. For present purposes, the point is only that the use of that criterion is an intelligible way to ensure that regulators use people's own valuations of multiple goods, including improved health and safety.

⁵⁶ See Viscusi, *supra* note 50, at 34–41.

⁵⁷ See Richard T. Carson, *Contingent Valuation: A Practical Alternative when Prices Aren't Available*, *J. Econ. Persp.*, Fall 2012, at 27, 28.

⁵⁸ See Mill, *supra* note 28.

⁵⁹ For a vivid demonstration, see generally Dennis C. Cory & Lester D. Taylor, *On the Distributional Implications of Safe Drinking Water Standards*, 8 *J. Benefit-Cost Analysis* 49 (2017) (finding that for poor people, safe drinking water standards may produce costs in excess of benefits).

⁶⁰ See Ronald Dworkin, *Sovereign Virtue: The Theory and Practice of Equality* 449 (2000).

⁶¹ An obvious one is whether people's willingness to pay reflects sufficient information or is subject to behavioral biases. For discussion, see Cass R. Sunstein, *The Cost-Benefit Revolution* (forthcoming 2018) [hereinafter Sunstein, *Cost-Benefit Revolution*].

C. Three Limits of Cost-Benefit Analysis

Cost-benefit analysis has value only to the extent that it advances a normatively defensible goal. That goal, as we have explained, is human welfare. Cost-benefit analysis is not justified if it fails to advance welfare, and even if it does so, it might be criticized if it interferes with important nonwelfarist goals (assuming, as many people believe, that there are some). Consider three limits of cost-benefit balancing.

First, net benefits or net costs, as reflected in purely monetary measures based on willingness to pay, may greatly understate or overstate the actual effects of regulation on people's lives, because people's willingness-to-pay judgments may be a product of inadequate information or behavioral biases.⁶² People might be willing to pay little for goods that would much improve their lives; they might be willing to pay a lot for goods that would not much improve their lives. The mounting interest in more direct measurement of subjective well-being⁶³ has not yet produced an administrable way of capturing the actual effects of regulatory interventions.⁶⁴ But it has pointed to the possibility that cost-benefit analysis may not capture those effects accurately, or as accurately as other methods would.

Second, some consequences of regulations are difficult to translate into monetary equivalents. One reason may be an absence of adequate information about their actual effects, even before regulators begin to think about how to quantify them. Another reason is that the challenge of monetization may be hard to surmount even if regulators are able to obtain that information.⁶⁵ What, exactly, would be the effects of a new security measure (such as a laptop ban or enhanced screening procedures) designed to reduce the risks of terrorism at airports? If we know those effects, how can they be monetized? What, exactly, are the benefits of increased capital and liquidity requirements, designed to reduce the risk of a financial crisis? Can those effects be turned into

⁶² John Bronsteen et al., *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 *Duke L.J.* 1603, 1619–20 (2013).

⁶³ See, e.g., *id.* at 1619–20.

⁶⁴ W. Kip Viscusi, *The Benefits of Mortality Risk Reduction: Happiness Surveys vs. The Value of a Statistical Life*, 62 *Duke L.J.* 1735, 1738–39, 1745 (2013).

⁶⁵ See, e.g., John C. Coates IV, *Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications*, 124 *Yale L.J.* 882, 893–95 (2015).

monetary equivalents? How many lives will be saved by technology designed to reduce the risk of backover crashes? If regulators can obtain that information, how can they monetize those savings, if the plurality of the lives saved consists of children under the age of four, and if what is being prevented is death at the hands of their own parents?⁶⁶

A third challenge, and a source of intense debate, is the diminishing marginal utility of money. Because wealthy people value dollars less than poor people do, wealthy people are willing to pay more money for an outcome—say, clean air or the reduction of mortality risk—that affects the welfare of rich and poor people the same. To say the least, it seems objectionable to say that regulation should treat a mortality risk as if it were more important for rich people than for poor people. In principle, however, that may not be a serious objection to the use of the willingness-to-pay criterion. Poor people do not spend as much on safety devices as rich people do. That is not because the lives of the poor are worth less but because the poor have less money and prefer to spend it on other things, like school supplies for their children. This is how a market economy works, and in the absence of special circumstances (such as an absence of information or a behavioral bias), regulators do poor people no favors by forcing them to use their resources on something for which they are unwilling to pay.

It follows that, if agencies issue regulations that force poor people to pay more for safety than they are willing to pay, those regulations may well hurt rather than help poor people. People with little money should not be required to spend as much to eliminate a risk of 1/100,000 as people with a great deal of money. But it is true that when a regulatory good is shared, assessment of welfare effects can be quite complicated.⁶⁷ Regulators now use a single number to value mortality risks—about \$9

⁶⁶ For discussion, see Cass R. Sunstein, *The Most Knowledgeable Branch*, 164 U. Pa. L. Rev. 1607, 1640 (2016).

⁶⁷ If a rich person's willingness to pay is used to determine a public good like air quality, then the effect is to redistribute wealth from the poor (in the form of higher prices) to the rich (in the form of air quality that is higher than what poor people desire). If the poor person's willingness to pay is used, then the effect is to redistribute wealth from the rich (who die at a higher rate than otherwise) to the poor (who pay lower prices).

million per statistical life⁶⁸—and hence disparities between rich and poor are not a matter of current practice.⁶⁹

D. Willingness to Pay for Moral Reasons

Many regulations are animated by moral concerns that go far beyond their effects on those who choose the relevant products. For example, a regulation might be designed to protect people who do not live in the United States; consider an effort to reduce greenhouse gas emissions, motivated in part by a concern for people in other countries. Indeed, the principal purpose of some regulations is to protect something other than human beings. Return to the Dolphin Protection Consumer Information Act, which imposed labeling requirements to inform consumers if tuna used in tuna products was caught using drift nets and other methods that harm dolphins.⁷⁰ The statute evidently was passed in response to concerns that tuna harvesting caused excessive harm to dolphin well-being, not to human well-being.

To understand the category that concerns us here, compare Jane and Sam. Jane suffers from seafood intolerances, as a result of which she greatly benefits when food products include labels that disclose whether trace amounts of seafood are present in the product. Before the Food Allergen Labeling and Consumer Protection Act⁷¹ was enacted, she bought organic foods from specialty stores that cost about \$1,000 per year more than comparable food products sold in supermarkets. As a result of the law, Jane can now shop at supermarkets; she is at least \$1,000 better off per year and can use this money to buy goods and services that she could not afford in the past. As long as she uses this money for saving and consumption, the \$1,000 amount is a reasonable approximation of the impact of the law on her well-being; it might well be a lower bound.

⁶⁸ See, e.g., U.S. Dep't of Transp., Revised Departmental Guidance 2016: Treatment of the Value of Preventing Fatalities and Injuries in Preparing Economic Analyses 1, <https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%20of%20a%20Statistical%20Life%20Guidance.pdf> [<https://perma.cc/Z8ZD-VWNF>].

⁶⁹ We are simply sketching some of the complexities here. For detailed discussion, see Matthew D. Adler, *The Ethical Value of Risk Reduction: Utilitarianism, Prioritarianism and Cost-Benefit Analysis*, in *Ethics and Risk Management* 9 (Lina Svedin ed., 2015).

⁷⁰ See *supra* note 2 and accompanying text.

⁷¹ 21 U.S.C. § 343(w) (2012).

Sam does not suffer from food intolerances, but he cares deeply about the well-being of dolphins. He donates \$1,000 per year to a charity that lobbies for laws that protect dolphin populations from harm by drift nets used to catch tuna. When Congress enacts the Dolphin Protection Consumer Information Act, Sam is very happy. But he is not sure whether the law should affect his charitable giving. He still cares about dolphins, and he thinks that the \$1,000 might be used to lobby for a stricter law that bans drift nets or for some other law that will help dolphins. But he also needs to pay his mortgage.

The Allergen Labeling Act improves Jane's well-being in a straightforward way. But does the Dolphin Act improve Sam's well-being? A tempting position is that, while the law helps advance one of Sam's moral commitments, it does not affect his well-being. It does not improve his health or safety, give him goods or services to consume, or (directly) enhance his wealth (we will return to the issue of the charitable donation). Another way to make this point is to imagine a world in which people like Sam disappear. No one cares about dolphins anymore. Nonetheless, a respectable view in moral philosophy is that it remains wrong to kill dolphins unnecessarily with drift nets. A utilitarian will probably believe that the well-being of animals has independent

moral importance.⁷² That was Bentham's view, in fact,⁷³ and we share it. But some philosophers who do not embrace utilitarianism believe that an objective moral reality exists and does not depend on what people's moral beliefs are at any given moment.⁷⁴ They believe, for example, that slavery is morally wrong even if no one in society, not even the slaves themselves, believes that it is morally wrong.⁷⁵ On this view, the moral worth of dolphins does not depend on whether Sam exists, or whether many or few people agree with Sam.

⁷² See Peter Singer, *Animal Liberation* 5–7 (1975).

⁷³ Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* 282–83 (J.H. Burns & H.L.A. Hart eds., 1996).

⁷⁴ Alexander Miller, *Realism*, in *The Stanford Encyclopedia of Philosophy* (Edward N. Zalta et al. eds., Winter 2016 ed.), <https://plato.stanford.edu/archives/win2016/entries/realism/>.

⁷⁵ Cf. Jon Elster, *Sour Grapes: Studies in the Subversion of Rationality* 109–40 (1993) (discussing “adaptive preferences” and their challenge for utilitarianism).

This view seems to have a surprising implication. If, as we have argued, cost-benefit analysis is a welfarist decision procedure, then it might be thought that, insofar as regulators are engaging in that form of analysis, they will take into account Jane's self-regarding preferences and disregard Sam's moral beliefs. To understand this argument (which we shall shortly reject), consider the Benthamite view. If 100,000 dolphins exist, then their continued existence has moral value reflecting the well-being of those dolphins. If we take Sam's \$1,000 charitable donation as an approximation of his willingness to pay to keep the dolphins alive, this would imply that the moral value of the existence of the dolphins is \$1,000. If 1,000 people agree with Sam, their moral value equals \$1 million. And if the Sams disappeared, the moral value of dolphins in a cost-benefit analysis would fall to \$0. But as we have explained, the moral value of the dolphins is not a function of the number of people who care about dolphins. This means that the cost-benefit analysis should not treat Sam's willingness to pay as a reflection of their moral value.

On this view, a regulatory agency charged with implementing the Dolphin Act should conduct cost-benefit analyses, but insofar as it is doing so, it should ignore moral valuations, including those that are expressed in charitable donations. To be sure, moral arguments, captured in the commitment to the well-being of dolphins, matter and deserve independent consideration; under the relevant law, they might complement or override cost-benefit analysis. With respect to that form of analysis, however, Sam's moral views are irrelevant.

Our principal submission here is that this conclusion is not correct. The first and more minor point is that, when Sam donates \$1,000 to the dolphin charity, he has \$1,000 less to spend on his own well-being. If we want to be precise, we need to analyze carefully Sam's motivations. If the regulation causes Sam to spend the entire amount on himself, then the regulation does make him better off by \$1,000. If a regulation that helps dolphins causes Sam to reconsider his moral priorities and donate the money elsewhere, then it is harder to know whether and to what extent it improves Sam's well-being.

But there is a far more fundamental point, which bears directly on that question. Suppose that Sam's welfare is affected by what happens to dolphins. When he hears about them being caught in drift nets, he experiences a loss of welfare, probably captured in a pang of

unhappiness. This sense of empathy is a psychological reaction, in some ways akin to disgust, anger, and fear, and it is highly relevant to Sam's welfare. Certainly in principle, the cost-benefit analysis should take account of the positive psychological effect on people of protecting those about whom they care. People are willing to pay to improve their welfare, and affective states are an important component of welfare. (If, by contrast, Sam is willing to pay something to protect dolphins but does not suffer when dolphins are not harmed, our argument does not apply. An affect-free agent, incapable of suffering but seeking to increase social welfare, would be willing to pay to protect dolphins, but by hypothesis, would not lose welfare if dolphins are harmed.)

It follows that, if the entire dolphin population were eliminated, or if a significant number of dolphins were killed, then there would be two separate effects: a *moral effect* and a *welfare effect*. (To be sure, the moral effect is a kind of welfare effect, but it does not involve consumers or even human beings.⁷⁶) Both effects should count. If you are a moral realist, a moral wrong has taken place, and it is independent of the welfare effects on humans. The elimination of dolphins also harms human welfare by causing unhappiness or other welfare loss among people who care about dolphins. This harm can be measured, at least in principle, and is, of course, a function of the size of the human population that cares about dolphins.

Here, in short, is our central claim: *when regulators conduct cost-benefit analysis, they should include valuations that reflect the welfare loss that people experience if their moral commitments are not vindicated*. Willingness to pay is the best measure of that loss. The resulting figures will not capture everything that matters, but they are an important point of a full accounting.

⁷⁶ To be clear, the "welfare effect" is also a kind of moral effect since welfare (on most views) is morally important. Another way to make the distinction in the text is that what we call the "moral effect" refers to the morally relevant consequences of a regulation other than the effect of those consequences on the psychological or mental well-being of affected observers, including both negative effect and more abstract willingness to pay to vindicate a moral commitment. The psychological consequences are what we mean by the "welfare effect."

E. Limiting Principles

We intend our claim to be a concrete and relatively straightforward suggestion for how to conduct cost-benefit analysis. But we acknowledge that our argument bears on some of the most fundamental questions in legal and political theory, and taken for all that it is worth, it might seem unacceptably broad. To see the concern, suppose that

- some people think that pornography is morally unacceptable and are willing to pay something to ban it;
- some people object to affirmative action on moral grounds and are willing to pay something to ban it;
- some people favor increases in the minimum wage on moral grounds and are willing to pay something for such increases;
- some people think that same-sex marriage is morally unacceptable and are willing to pay something to ban it;
- some people think that hate speech (as they define it) is morally unacceptable and are willing to pay something to ban it;
- some people have strong moral objections to the use of contraceptives and are willing to pay to see them banned;
- the very idea of alcohol consumption is, to many people, morally problematic, and they would gladly pay to reduce it;
- certain religious practices seem morally offensive to people who would be willing to pay to stamp them out;
- some people object on moral grounds to opening stores on Sunday and would happily pay something for Sunday closing laws;
- some people greatly dislike the very idea of transgender people, on moral grounds, and would pay something to ensure that they use the bathroom available to people of their biological sex.

These examples could easily be proliferated.⁷⁷ Under a standard view of liberalism, the government is allowed to intervene where there is

⁷⁷It should be clear that in all of these cases, we are assuming that people would experience a welfare loss if their moral commitment is violated.

harm to others⁷⁸ and to correct a variety of market failures.⁷⁹ But liberal constraints on government would dissipate if officials could take account of preferences about other people's behavior in order to decide whether or how to regulate—for example, by banning otherwise purely private conduct (reading controversial literature, practicing certain religions, listening to certain music) on the ground that its very occurrence creates distress. Some of the cases we have given involve preferences about what is otherwise purely private conduct. Whether or not any particular form of liberalism is correct, it seems critical to identify limiting principles.

Indeed, some people might be tempted to suggest that, if identifying such principles proves difficult, there should be a general prohibition on including moral commitments in cost-benefit analysis at all. That conclusion might be defended on the ground that, while such a prohibition leads to a problem of underinclusiveness (in welfarist terms), it reduces unacceptable decisional complexity and avoids a problem of overinclusiveness (in welfarist or other terms). In theory, consideration of (some) moral commitments is indeed required on welfarist grounds. But in practice, the argument might go, consideration of (any) such commitments might impose costs in excess of benefits.

As an analogy, and in some ways an overlapping argument, consider Judge Guido Calabresi's claim that economic analysis of law should take into account people's moral opposition to trading certain goods (such as organs) on the market.⁸⁰ Calabresi is bracketing the question whether that moral opposition is justified. In an argument akin to our own, he is arguing that people suffer a welfare loss when some such trading occurs, and he thinks that on welfare grounds, economists have no good reason not to take that welfare loss into account.⁸¹

⁷⁸ See Mill, *supra* note 28, at 21–27; see also Raz, *supra* note 29, at 400–01, 412–20 (describing Mill's harm principle).

⁷⁹ See generally Stephen Breyer, *Regulation and Its Reform* 15–35 (1982).

⁸⁰ See Guido Calabresi, *The Future of Law and Economics: Essays in Reform and Recollection* 43–48, 145–47 (2016).

⁸¹ *Id.* at 145–46. This is not the place for a discussion of Calabresi's intriguing suggestion, but as he is aware, consideration of the welfare losses that come from moral opposition to trades raises complex and fundamental issues. See Sen, *supra* note 28. Our own focus is on the practice of regulatory agencies, and on more standard questions that they encounter, but Calabresi's argument raises the possibility that whenever the law does not block a trade or

We cannot rule that position off-limits, but for purposes of our recommendation here, limiting principles can be identified. Let us begin with legal constraints. The most obvious come from the Constitution. If, for example, people like the idea of racial segregation or think that sex discrimination is wonderful, their willingness to pay for regulations that promote racial segregation or sex discrimination cannot be counted. It is true that a strict welfarist, armed with a perfect method for calculating welfare effects, might want to consider all such effects,⁸² but it is safe to suggest that regulatory welfarism, implemented through cost-benefit analysis, may not take account of moral commitments that offend the Constitution.

So too, some moral commitments are inconsistent with statutory requirements. Some people might believe that civil rights laws are inconsistent with what morality requires because they intrude on freedom of association, or insist that minimum wage and maximum hour laws have the same defect. Committed libertarians would object to many regulations on this general ground; perhaps they suffer a welfare loss if their moral objections are not respected.⁸³ Should their moral opposition count in cost-benefit analysis, to the extent that it is backed by willingness to pay, reflective of a welfare loss? Here again, a strict welfarist would be open to the possibility that preferences of this kind must be counted in a cost-benefit analysis. But for purposes of actual practice, regulators can certainly refuse to take account of moral commitments that are inconsistent with existing sources of law.⁸⁴

does block a trade, cost-benefit analysis should consider whether people oppose what the law does on moral grounds and take any resulting welfare losses into account.

Put the evident practical and administrative issues to one side (acknowledging that those issues may be decisive). In principle, we are not at all sure that Calabresi's argument is correct, for his argument—suggesting that trades might be blocked because people oppose them on moral grounds and would suffer welfare losses from their occurrence—would threaten to undo freedom of contract in many settings. But we recognize that investigation of this issue, from a welfarist perspective, would require extended discussion.

⁸² We do not take a stand on that controversial question here.

⁸³ For a view in this general direction, see Richard A. Epstein, *Simple Rules for a Complex World* (1995).

⁸⁴ There is an important complexity here, which is that under prevailing executive orders, agencies must catalogue all costs and benefits, even if they are not, under the relevant source of law, pertinent to the agency's decision as to whether and how to proceed. See *supra* notes 32–38 and accompanying text. For example, agencies must catalogue costs even when the statute requires cost-blindness. See, e.g., Clean Air Act § 109(b), (d), 42 U.S.C. § 7409(b),

A different argument is that regulators should advance democratic values rather than welfare. If so, then the problem of limiting principles is resolved: democratic values provide those principles.⁸⁵ The moral preferences we have discussed are frequently embodied in statutes. On one view, regulators honor both those moral preferences and democratic values by using the statutes as their guides, even when statutes do not strictly compel a particular regulatory outcome. If statutes provide the relevant values, then we need not bother with consideration of willingness to pay to protect moral commitments.

Suppose, for example, that the Clean Air Act displays a moral commitment to environmental values that is stronger than the values that are inferred from market behavior and contingent valuations surveys that occur today. The difference could result from any number of factors: a change in public attitudes toward the environment over a half century; advantages that the democratic process gives to some people, and hence their moral opinions, over others; or the unreliability of inferring valuations from market data and surveys.⁸⁶ Whatever the reason, regulators should look at statutes, not at willingness to pay.

(d) (2012) (directing the Administrator to prescribe air quality standards that “allow[] an adequate margin of safety” and are “requisite to protect the public health”); see also *Am. Trucking Ass’ns v. EPA*, 175 F.3d 1027, 1040–41 (D.C. Cir. 1999) (finding that § 109 of the Clean Air Act prohibits the EPA from considering costs when setting and revising air quality standards). That requirement is controversial. Within the executive branch, high-level officials have sometimes argued that cost-benefit analysis should be limited to statutorily relevant factors. (Sunstein can report that this argument was made during the Obama administration.) The prevailing argument, which we embrace, is that public accountability is promoted if agencies catalogue, and reveal to the public (including the President and Congress), the full range of costs and benefits, even if they are not entitled to take some of them into account.

It might therefore be asked: shouldn’t agencies be required to catalogue costs or benefits associated with the realization or frustration of moral commitments, even if they are not statutorily relevant, and indeed even if the Constitution rules them out of bounds? We cannot rule out a “yes” answer, but in many cases, cataloguing the lawfully irrelevant costs and benefits, stemming from violations of moral commitments, would be both difficult and silly, which is a pretty bad combination.

⁸⁵ We are grateful to John Coates for pressing this objection.

⁸⁶ As we note in Section II.F below, the complexity of the moral environment, in which many seemingly incommensurable objects of moral concern compete for limited resources, might cause people to delegate to their political representatives the task of setting moral priorities for the use of public funds. Thus, it is possible that democratic outcomes might provide a more reliable indication of people’s moral views than their own behavior does.

The potential disparity between statutory enactments and willingness-to-pay measures raise questions that are beyond the scope of the current discussion. Fortunately, it is irrelevant to our recommendation. Recall that we are speaking of cases in which statutes do not dictate any particular result. If they do not, then it is pointless to speak of honoring democratic values, which are too abstract to settle the question of appropriate stringency. Except when statutes bar or mandate a particular regulatory outcome, they do not provide enough detail to allow a regulator to infer valuations for particular outcomes not covered by the statute, which is exactly why regulators exercise discretion.

Our focus is on cases where statutes do grant discretion, and in those cases, democratic values fail to specify how agency should exercise that discretion.⁸⁷ Admittedly, some statutes may require outcomes that cannot be justified on welfarist grounds, perhaps because of the power of self-interested private groups, perhaps because of deontological judgments, or perhaps because of Congress's failure to assemble the necessary information.

We have noted that a significant strand in liberal political theory suggests that the government may not interfere with people's freedom of action unless there is "harm to others."⁸⁸ Taken for all that it is worth, our argument is inconsistent with that view, for it suggests that if freedom of action offends people's moral sensibilities, it might be appropriately regulated, if those who are offended are willing to pay for the interference.

Importantly, the particular cases that concern us here are in no tension with the liberal position because harm to others is involved. Nonetheless, our argument could easily be taken to cut more broadly. For reasons that have produced an extensive debate in economics and political philosophy, a welfarist would indeed have some trouble with the liberal position—as, for example, when people are willing to pay to produce illiberal results (such as bans on racial intermarriage or offensive speech).⁸⁹ But for those who broadly embrace the liberal position, it would be possible to accept our argument while insisting on

⁸⁷ Recall that even if they do so, agencies are ordinarily required to catalogue all costs and benefits, even those that are statutorily irrelevant.

⁸⁸ See Mill, *supra* note 28, at 22; accord Raz, *supra* note 29, at 400–01.

⁸⁹ See Sen, *supra* note 28.

limiting its domain to cases in which harm to others is involved. We emphasize that the cases that we explore here do involve that harm and hence fit comfortably within liberal constraints.

There is an additional point. It is not fanciful to suppose that some people rejoice, and others feel dismay, at the very issuance of regulations, perhaps because of their attitudes toward regulation as such, perhaps because of the general area in which particular regulations fall. Should regulators survey the American people to see whether rejoicing or dismay would accompany the issuance of their regulations and try to elicit the corresponding willingness to pay?

Here again, a strict welfarist might be tempted to answer “yes.” But that answer seems daft. To say the least, it is hard to generate numbers that are reliable in this context. In any case, it would be most surprising if the welfare effects from abstract reactions of this kind turned out to have the same magnitude as the effects from the more concrete commitments that concern us here. (Do people really get a lot of welfare on days when the Federal Register is especially long, or especially short? Apart from the more material effects of specific regulations?) Moreover, it is possible that at this level of abstraction, valuations in different directions will cancel each other out. People who are philosophically opposed to economic regulation in general might be willing to pay a small amount to block any type of regulation, but then there are people who welcome government oversight, and they are likely to be willing to pay a small amount for further government involvement in economic life.

More broadly, some utilitarians have said that some preferences, including sadistic or malicious preferences, should not count in the utilitarian (or welfarist) calculus.⁹⁰ To be sure, it is reasonable to wonder whether any such conclusion is ultimately justified on utilitarian (or welfarist) grounds, or whether it requires some kind of nonutilitarian (or nonwelfarist) explanation. We do not need to answer that question in order to acknowledge that private willingness to pay for certain outcomes (involving, say, acute human suffering) ought not to be counted, even if those outcomes would please people.⁹¹

⁹⁰ See Richard B. Brandt, *A Theory of the Good and the Right* 208–23 (1998).

⁹¹ Consider Dworkin’s broader view, suggesting a general ban on the use of what he calls “external preferences”:

F. Two Implementation Questions

Subject to the foregoing limitations, what are the practical implications of our general conclusion for cost-benefit analysis?

1. *What Congress wants.* The first question is simple: if Congress asks agencies to protect dolphins because it believes that dolphins have independent moral value, shouldn't agencies obey Congress's instructions? Of course they should. And if Congress wants agencies to disregard cost-benefit analysis in protecting dolphins, then they should do that as well.⁹² As we shall see, sometimes Congress simply requires agencies to act, and the outcome of a cost-benefit analysis (whether it is unfavorable to action or leaves unanswered questions) cannot justify inaction.

At the same time, prevailing executive orders require an accounting of both costs and benefits, and ignoring a class of benefits will ensure that the accounting is inaccurate. It is also clear that in many cases of importance, Congress does not want agencies to disregard cost-benefit analysis, and agencies should not do so. The reason is rooted in the nature of regulation. Sometimes agencies are given discretion to regulate, and cost-benefit analysis helps inform them whether they ought to do so. As we have noted, the issue is often not whether to regulate, but how strictly to regulate. An analysis of costs and benefits is almost always relevant to that issue. If, for example, numerous dolphins would be protected by an expensive regulation, the argument for that regulation

Suppose many citizens, who themselves do not swim, prefer [that their city build a pool rather than a theater] because they approve of sports and admire athletes If the altruistic preferences are counted, so as to reinforce the personal preferences of swimmers, the result will be a form of double counting: each swimmer will have the benefit not only of his own preference, but also of the preference of someone else who takes pleasure in his success.

Ronald Dworkin, *Taking Rights Seriously* 235 (1978). This view raises many questions. For one thing, it is not clear that there is double-counting at all; independent preferences seem to be involved. We bracket those difficulties here and note simply that the class of preferences with which we are concerned do not raise the potential problem of double-counting and that they must be included on welfarist grounds. If, for example, American consumers are concerned with suffering in Rwanda, there is no double-counting when those concerns are registered.

⁹² See generally *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 465–71 (2001) (finding that statutory language requiring the EPA to set standards for certain pollutants at a level “requisite to protect the public health” with “an adequate margin of safety” prohibits cost considerations in determining those standards).

is stronger than if it would protect few dolphins. And if people's willingness to pay to protect dolphins is very high, the argument for that regulation receives additional fortification.

2. *A daunting task.* The second question concerns how agencies should use moral valuations in cost-benefit analysis. Should an agency really try to figure out private willingness to pay? We have said that in principle, the answer is yes. But we acknowledge that the task can be daunting. It is impossible to rule out the possibility that in some cases, reliable quantification is not possible, and the most that the agency can do is to point to the existence of a positive amount without specifying it.⁹³ One reason involves the potential unreliability of the only available tools.

Suppose, for example, that the question is how much Americans would pay to reduce some harm done to fish in the Atlantic Ocean. It is easy to imagine a contingent valuation study that would produce some number for the average American—say, \$5 annually, which would yield an annual benefit figure in excess of \$1 billion. The problem is that, for countless regulations that produce moral benefits, it would likely be easy to produce the same number, which might suggest that the average American would be willing to have a “moral budget” of say \$5,000 or more (if there are 1,000 or more such regulations), and that might seem to defy belief. People might be willing to pay a nontrivial amount to help solve one problem, but if they were given a full universe of problems, the amount that they would be willing to pay to help solve any particular one might get close to \$0. The problem, in short, is that contingent valuation studies often ask for willingness to pay about particular problems in isolation rather than requiring respondents to consider how payments to solve one problem would reduce funds available to solve numerous others. As a result, the method may produce unreliable

answers.⁹⁴ Perhaps appropriate studies can overcome this problem⁹⁵—but perhaps not.⁹⁶

⁹³ There is precedent here. In the context of backover crashes, the agency referred to parents' concerns for their children, and deemed them relevant, but did not monetize them. See *supra* note 23 and accompanying text.

⁹⁴ Hausman, *supra* note 20, at 47–49.

⁹⁵ Carson, *supra* note 57, at 30–31, 34–35.

For the kinds of preferences and values that concern us here, it might be tempting to ask instead about charitable contributions, which reflect actual behavior. Such contributions give real evidence about how much people are willing to pay on behalf of their moral commitments. It is noteworthy, and perhaps revealing, that people give very little relative to the universe of moral actions that the government may take. In the United States, charitable donations amount to about 2% of GDP every year.⁹⁷ That might seem like a large number, but for any particular object of charity, it suggests that the relevant value would be low. An implication is that, if agencies either relied on charitable donations in order to estimate valuations, or instead disregarded them, their ultimate choices would usually not be much affected.

Another way to think about this problem is to consider that the median household has an income of about \$56,000⁹⁸ and that the median donation to charity is about \$2,520.⁹⁹ If the donation plus taxes reflect the household's moral view of how much it owes to moral projects, then it might well object to further contributions to moral outcomes that take place through regulations that increase the cost of consumer goods. It might even reduce donations to offset the loss from higher prices.¹⁰⁰

We do not want to reach strong conclusions from these numbers and possibilities. It remains true that for various reasons, charitable contributions might understate people's willingness to pay. For example, people might not give much to organizations that seek to reduce use of

⁹⁶ Peter A. Diamond & Jerry A. Hausman, *Contingent Valuation: Is Some Number Better than No Number?*, 8 *J. Econ. Persp.*, Fall 1994, at 45, 46.

⁹⁷ Giving USA, *Highlights: An Overview of Giving in 2015*, at 2 (2016), <https://store.givingusa.org/a/downloads/-/f1dc25f71867a8bd/5f87ab26f8321422> [https://perma.cc/5GBQ-N58Z]; see also Nat'l Philanthropic Tr., *Charitable Giving Statistics*, <https://www.nptrust.org/philanthropic-resources/charitable-giving-statistics/> [https://perma.cc/4QGU-C4EG] (last visited Mar. 4, 2017) (describing charitable giving during 2016).

⁹⁸ As of 2015. See U.S. Bureau of the Census, *Real Median Household Income in the United States* (Aug. 23, 2017), <https://fred.stlouisfed.org/series/MEHOINUSA672N> [https://perma.cc/SH8Q-6SAR].

⁹⁹ See Nat'l Philanthropic Tr., *supra* note 97 (citing U.S. Tr. & Ind. Univ. Lilly Family Sch. of Philanthropy, *The 2016 U.S. Trust Study of High Net Worth Philanthropy: Charitable Practices and Preferences of Wealthy Households* 15 (Oct. 2016), http://www.ustrust.com/publish/content/application/pdf/GWMOL/USTp_ARMCGDN7_oct_2017.pdf [https://perma.cc/79BS-BCU3]).

¹⁰⁰ See James Andreoni, *Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence*, 97 *J. Pol. Econ.* 1447, 1449, 1457 (1989).

GM food, but they might nonetheless be willing to pay something for GM labels. The example suggests that willingness to pay, properly assessed, might greatly exceed charitable contributions. People might not trust that charitable contributions will actually go to their preferred causes; inertia matters, and may have a large deterrent effect on contributions; apart from inertia, making such contributions requires people to incur transactions costs; and in the case of public goods, people might be willing to contribute if and only if they are assured that significant numbers of other people are contributing as well.¹⁰¹

Our major goal is to acknowledge rather than to resolve the measurement problem and to insist on the basic principle: *people experience welfare losses from social outcomes that offend their moral commitments, even if those outcomes do not involve their own wealth or health*. Private willingness to pay is the best way to measure those losses. Eliciting the relevant values can be extremely challenging, but agencies have techniques for doing that, at least as general approximations. On welfarist grounds, and subject to the limitations we have identified, there is no justification for ignoring the losses that people experience from morally abhorrent outcomes.

III. APPLICATIONS

It should be clear that the range of potential applications is very wide. As noted, the EPA has been urged to consider people's willingness to pay to protect fish,¹⁰² and the Department of the Interior lost in court when it declined to include existence value as part of the measure of natural resource damages.¹⁰³ We explore here an intentionally heterogeneous assortment of problems, unified above all by one factor: all of them are intensely practical, in the sense that they involve questions that agencies have recently been asked to resolve, or that they will be asked to resolve in the near future.

¹⁰¹ Amartya Sen, *Environmental Evaluation and Social Choice: Contingent Valuation and the Market Analogy*, 46 *Japanese Econ. Rev.* 23, 29–30 (1995).

¹⁰² See *supra* notes 13–16 and accompanying text.

¹⁰³ See *supra* notes 17–18 and accompanying text.

A. Conflict Minerals

In the Dodd-Frank Act, Congress required the SEC to issue regulations requiring firms to disclose their use of “conflict minerals,” which are minerals mined in Congo and other countries where armed groups fund themselves by managing and extorting mining operations.¹⁰⁴ The SEC issued regulations, which were challenged in court by the National Association of Manufacturers (“NAM”). NAM argued that the regulations were arbitrary and capricious under the Administrative Procedure Act and unlawful under the Securities Exchange Act because the SEC did not conduct an adequate cost-benefit analysis. While the SEC calculated the cost of the regulations to industry, it did not estimate the benefits of the regulations, on the ground that it was not feasible to do so. The court rejected NAM’s argument that the agency’s analysis was legally insufficient.¹⁰⁵

The SEC concluded that the disclosure regime would impose a one-time cost of \$3–4 billion on industry and another \$207–609 million per year.¹⁰⁶ At the same time, the SEC explained that it was “unable to readily quantify” the benefits.¹⁰⁷ The principal reason did not involve translating the relevant benefits into monetary equivalents; it involved the difficulty of knowing what the benefits might be even before monetization was ventured. The SEC thought that it was impossible to know whether disclosure would reduce violence in Congo and, if so, by how much.

The chain of causation was long and complex. Consumers would need to read or learn about the disclosures; this information would need to cause them to reduce their purchases from firms that use conflict minerals; the reduction in demand would need to be sufficient to cause firms to switch to suppliers of nonconflict minerals; the loss in revenues to armed groups in Congo would need to cause them to lay down their arms and negotiate peacefully; and so on. The SEC concluded that any effort at quantification would be doomed to failure.¹⁰⁸ As a matter of

¹⁰⁴ See 15 U.S.C. § 78m(p) (2012).

¹⁰⁵ Nat’l Ass’n of Mfrs. v. SEC, 748 F.3d 359, 369–70 (D.C. Cir. 2014).

¹⁰⁶ Conflict Minerals, 77 Fed. Reg. 56,274, 56,334 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240, 249b).

¹⁰⁷ Id. at 56,350.

¹⁰⁸ Id.

law, it emphasized that Congress had mandated its action and thus, in effect, determined that the benefits were sufficient by enacting the law.¹⁰⁹

The court upheld the agency's decision.¹¹⁰ In the court's view, the regulation was not required to pass a cost-benefit analysis because Congress required the regulation whatever the outcome of such an analysis.¹¹¹ In any case, the agency did not act unlawfully in concluding that the moral value of the regulation could not be quantified and put in monetary terms. The court added:

Even if one could estimate how many lives are saved or rapes prevented as a direct result of the final rule, doing so would be pointless because the costs of the rule—measured in dollars—would create an apples-to-bricks comparison.¹¹²

The court was surely on solid ground when it held that the SEC did not act unlawfully in concluding that it could not estimate the benefits for people living in Congo. It is possible, on admittedly speculative assumptions, that the benefits were zero—that the disclosure regime would have no effect on fighting in Congo, or even a perverse effect by depriving honest mining operations of revenue, and thus very poor workers of their wages. It is also possible, also on admittedly speculative assumptions, that the benefits were very high. In the abstract, and even after careful exploration of the evidence, it would be difficult to be confident about the level of benefits.

But that does not resolve the question that concerns us here. Suppose that many Americans believe that American companies have a moral obligation not to use conflict minerals in their operations. Or suppose that many Americans believe that they have a moral obligation not to

¹⁰⁹ *Id.* at 56,335, 56,350 (“In requiring the Commission to promulgate this rule . . . Congress determined that its costs were necessary and appropriate in furthering the goals of helping end the conflict in the DRC and promoting peace and security in the DRC. To the extent the final rule implementing the statute imposes a burden on competition . . . we believe the burden is necessary and appropriate in furtherance of the purposes of [the statute].”).

¹¹⁰ See *Nat'l Ass'n of Mfrs.*, 748 F.3d at 369–70.

¹¹¹ See *id.* at 369 (finding that, because of the social purposes identified by Congress as the goal of the statute, “the Commission *had* to promulgate a disclosure rule”).

¹¹² *Id.*

use products that contain conflict minerals and, therefore, that American companies should disclose to them whether their products contain conflict minerals so that Americans can avoid using those products if they choose to. How should such moral considerations be valued?

Consistent with our analysis, the SEC might have made some effort to determine how much Americans are willing to pay in relation to these moral concerns. In the context of this regulation, which is a disclosure rule, the question is how much Americans benefit from learning that corporations use conflict minerals or do not use conflict minerals. The simplest question is: how much would Americans be willing to pay to receive that information? Survey information could provide a rough answer to this question. The firms themselves may have information as well. There are many ways to gain indirect insights. First, do Americans read or seek access to disclosures of this kind as a general matter? Second, if Americans learn that a company uses conflict minerals, do they stop using its products?

We suspect that firms' opposition to the regulation is based not so much on the compliance costs as the fear that they will lose sales if Americans learn about their use of conflict minerals. If so, the SEC could ask the firms for estimates, grounded in market data, on the likely effect of the regulation on sales.

It is possible, of course, that the monetized moral benefit of the regulation is small. Consider an American, named Linda, who pays \$420 for a cellphone because it was not manufactured with conflict minerals rather than \$400 for an otherwise identical cellphone that was manufactured with conflict minerals. We infer that this person is willing to pay at least \$20 to avoid using conflict minerals, but it is also the case that the person is made worse off to the tune of \$20 as a result of the price increase.¹¹³ Yet in the case given, the benefit is not zero; Linda is better off on net. She prefers the more expensive cellphone. Other people, like Linda, might believe themselves to be better off if, as a result of the regulation, products with conflict materials are used less often. In principle, surveys can be used to estimate the aggregate welfare benefits of the regulation.

¹¹³ For relevant discussion, see Hunt Allcott & Judd B. Kessler, *The Welfare Effects of Nudges: A Case Study of Energy Use Social Comparisons* (Nat'l Bureau of Econ. Research, Working Paper No. 21671, 2015), <http://ipl.econ.duke.edu/seminars/system/files/seminars/1709.pdf> [<https://perma.cc/S365-P99K>].

What if it turns out that the welfare benefits of regulation are low, \$0, or even negative (including, of course, the benefits to people in Congo)? Should the SEC refuse to regulate? In view of the statutory requirement, it is not possible to argue that Congress gave the SEC the choice not to regulate if net benefits are zero or less. Under the stated assumption, the better argument is that the SEC must regulate—but that in such circumstances it should issue the weakest regulation consistent with Congress's command. This could mean, for example, that the SEC should include a *de minimis* exception, as NAM argued;¹¹⁴ that it should limit the regulation to companies that manufacture with conflict minerals rather than encompass companies that contract with manufacturers that use conflict minerals in production; and so on. And if the welfare benefits turn out to be high on net, then a maximally aggressive regulation might turn out to be justified. If all this is correct, then the SEC should have done more to calculate benefits, to the extent feasible, and within the requirements of law, and should have chosen a level of regulatory stringency commensurate with the balance of those benefits over the costs.

B. GMOs

Many consumers are strongly in favor of mandatory labels for GM foods.¹¹⁵ In the United States, the public demand, accompanied by interest-group pressures, has led to a statutory requirement to that effect.¹¹⁶ The Department of Agriculture is required to issue implementing regulations in 2018,¹¹⁷ and an analysis of costs and benefits will have to accompany their issuance.¹¹⁸

Assessment of the benefits will be challenging among multiple dimensions. Many consumers think that GM food is unsafe or unhealthy,¹¹⁹ and they want labels for that reason, but the existing

¹¹⁴ See Opening Brief of Appellants at 27–30, *Nat'l Ass'n of Mfrs.*, 748 F.3d 359 (No. 13-5252); see also *Nat'l Ass'n of Mfrs.*, 748 F.3d at 365–66 (discussing and dismissing NAM's arguments regarding the necessity of a *de minimis* exception).

¹¹⁵ See Cass R. Sunstein, *Do People Like Nudges?*, 68 *Admin. L. Rev.* 177, 189 (2016).

¹¹⁶ 7 U.S.C. § 1639b (Supp. 2017).

¹¹⁷ *Id.*

¹¹⁸ See Exec. Order No. 13,563, 3 C.F.R. 215, 215 (2012).

¹¹⁹ See Scott et al., *supra* note 4, at 316.

evidence suggests that the health concerns are baseless.¹²⁰ It would not make much sense to count willingness-to-pay that is based on a mistake of fact. Many consumers think that GM food creates environmental risks, and they want labels for that reason.¹²¹ The evidence is less unequivocal here; the consensus appears to be that the risks are somewhere between zero and very small.¹²² For regulators, the appropriate approach is relatively straightforward. If people seek labels because of a mistaken belief that GM food creates a risk to health or the environment, their desires should be ignored; the appropriate remedy is information, not regulation. If they are concerned about a low probability of harm, the appropriate inquiry involves their willingness to pay.

For our purposes here, the central issue lies elsewhere. Suppose that some consumers seek GM labels not because they are fearful of adverse effects on health or the environment, but because they believe that genetic modification of food is morally abhorrent. If they are willing to pay for labels so that they can act on their moral convictions (by refusing to purchase GM foods), then the proper way to incorporate the moral commitment into a cost-benefit analysis is to determine the magnitude of this willingness to pay.

As in the case of conflict minerals, we also need to take into account how people act once they are informed. If a label causes a person to buy more expensive or otherwise less desirable food in order to avoid eating GM food, the consumer welfare loss must be subtracted from the willingness to pay for the label in order to determine the figure to be used in the cost-benefit analysis.¹²³ We suspect that, if health and environmental concerns are put to one side, people would not be willing to pay much to vindicate their moral commitments with respect to GM food. What, exactly, would those moral commitments look like? But perhaps that question has a decent answer.

¹²⁰ For a summary, see Cass R. Sunstein, *On Mandatory Labeling, with Special Reference to Genetically Modified Foods*, 165 U. Pa. L. Rev. 1043, 1072–74 (2017) [hereinafter Sunstein, *Mandatory Labeling*].

¹²¹ See *id.* at 1074–75.

¹²² See *id.* We are bracketing some scientific disputes here.

¹²³ See Allcott & Kessler, *supra* note 113, at 2–3.

The GM controversy raises another distinctive issue. Some people appear to think that the very idea of GM food is disgusting,¹²⁴ and while the evidence is not clear on this point, their disgust might have a strong moral component. They might think that it is intrinsically wrong to “tamper with nature.” Let us bracket the question whether it is easy to make sense of this idea.¹²⁵ Now the label produces both direct welfare gains (the avoidance of disgust) as well as gains from the ability to avoid violating a moral commitment. Both of these gains must be taken into account.

As before, there is a distinction between a moral conviction, unaccompanied by welfare effects, and an impact on subjective well-being. The latter is what matters. To the extent that people would suffer without GM labels, and are willing to pay for them to avert that suffering, their willingness to pay is the appropriate measure. It is also true that, if people would save money from labels because they could buy normal food rather than organic food, the cost savings can be used to approximate their willingness to pay. Eliciting these figures would be challenging, not least because of segregating the prevailing (and apparently groundless) fears about health and environmental risks, but in principle, it is the right thing to do, at least if moral concerns are playing a substantial role.¹²⁶

C. Mortality Risks Faced by Children

Some critics of cost-benefit analysis argue that it cannot account for loss of human life. They claim that risks to human life caused by human activity—including industry, transportation, and agriculture—trigger moral concerns that cannot possibly be monetized.¹²⁷

Notwithstanding the intuitive appeal of this claim, the government does take into account the *welfare* effects of loss of human life. It does

¹²⁴ See Sunstein, *Mandatory Labeling*, *supra* note 120, at 1077.

¹²⁵ See generally James P. Collman, *Naturally Dangerous: Surprising Facts About Food, Health, and the Environment* (2001) (emphasizing that people often object to artificial or unnatural products and prefer natural ones, even if the former are in some cases safer).

¹²⁶ For qualifications in this complex area, see generally Sunstein, *Mandatory Labeling*, *supra* note 120, at 1074–75 (suggesting that public opposition to GM food is based largely on unjustified fears of health and environmental risks).

¹²⁷ See, e.g., Ackerman & Heinzerling, *supra* note 27, at 8–9.

so not by monetizing “life,” but by asking about people’s willingness to pay to eliminate statistical mortality risks.¹²⁸ Within the federal government, the value of a statistical life is typically around \$9 million, which reflects evidence that people would be willing to pay about \$90 to eliminate a risk of 1/100,000.¹²⁹ On the basis of the discussion thus far, we emphatically agree that an approach of this kind is the right start. If the government is eliminating statistical risks, it should ask how much people care about doing so, and, currently, private willingness to pay is the best way to answer that question.¹³⁰

But if agencies are concerned about the welfare effects of mortality, that figure does not capture all of the picture. To give the clearest example—and one with evident relevance to regulatory policy—mothers and fathers would pay something to eliminate mortality risks faced by their children. Indeed, some evidence suggests that parents would be willing to spend a significant amount to eliminate such risks—perhaps an amount well in excess of the \$90 that most people would spend to eliminate purely personal risks of 1/100,000.¹³¹ Shouldn’t that amount be included in the analysis? When parents lose a child, they suffer a grievous welfare loss. There is no justification for refusing to take account of parents’ willingness to pay to eliminate statistical risks that their children face.

The standard tools are available to quantify that value.¹³² In principle, a figure can be derived from market behavior, including how much parents spend to buy safety devices that benefit their children.¹³³ To be sure, the revealed preference information is very noisy, and if that problem seems decisive, contingent valuation questions might be used instead. For example, people might be asked, “How much are you

¹²⁸ See Sunstein, *Valuing Life*, supra note 31, at 86.

¹²⁹ See U.S. Dep’t of Transp., supra note 68, at 1; see also Sunstein, *Valuing Life*, supra note 31, at 7, 85–94 (analyzing and challenging prevailing methods of determining the value of statistical lives).

¹³⁰ On concerns and objections about willingness to pay to value statistical lives, see Dorman, supra note 8, at 137–41, and Sunstein, *Cost-Benefit Revolution*, supra note 61.

¹³¹ See Williams, supra note 11, at 69–78. It is true, of course, that parental willingness to protect children is not rooted solely in moral concerns.

¹³² See id. at 102–03.

¹³³ See Eric A. Posner & Cass R. Sunstein, *Dollars and Death*, 72 U. Chi. L. Rev. 537, 574–78 (2005) (discussing studies of revealed preferences for child safety).

willing to pay to avoid having your child be subjected to a mortality risk of 1/100,000?”¹³⁴ This question, whose answer should incorporate anticipated grief, is the same as those that are now used in the context of regulatory policy.

We acknowledge that the relevant evidence here remains in its preliminary state; it may be too conjectural for government use. Even so, entirely disregarding the loss to parents is not defensible. We also acknowledge that with respect to mortality risks, the logic of our argument extends far beyond parents. Spouses and siblings, for example, would pay something to eliminate their loved ones’ mortality risks, and the same is true of friends and even strangers. With respect to practice, the case of children seems to be most pressing, but there is a general gap here in the calculation of benefits. At a minimum, the current figure of \$9 million should be taken as a lower bound insofar as it ignores the willingness to pay of those other than the victim.

D. Prison Rape

The Prison Rape Elimination Act, enacted in 2003, is designed to reduce the incidence of rape in prison.¹³⁵ It requires implementing regulations from the Department of Justice.¹³⁶ We have noted that any such regulations must, via executive order, be accompanied by cost-benefit analysis, and indeed the Department produced an extensive one.¹³⁷ We acknowledge that any such analysis will be, to many, extremely uncomfortable in this setting. Drawing on the Department’s experience, let us explore how our discussion bears on what it actually did.

Suppose that the cost of a particular rule, designed to reduce the risk of prison rape, is \$500 million. Suppose too that every year, there are 260,000 prison rapes in the United States. How should the Department of Justice analyze the benefits of its rule and of alternatives to it? It

¹³⁴ *Id.* at 569.

¹³⁵ 42 U.S.C. § 15602 (2012).

¹³⁶ *Id.* § 15607.

¹³⁷ National Standards to Prevent, Detect, and Respond to Prison Rape, 77 Fed. Reg. 37,106, 37,110–11 (June 20, 2012) (codified at 28 C.F.R. pt. 115). Disclosure: Professor Sunstein was Administrator of the Office of Information and Regulatory Affairs when this regulation was issued.

seems clear that alternatives, more and less stringent, would increase and decrease both costs and benefits, suggesting that the analysis would bear on the ultimate content of the chosen rule.

The assessment of benefits is evidently challenging. In principle, the Department should try to specify the number of prison rapes that its rule would prevent and also the monetary value of a case of prevented rape. If the Department expects to prevent 10,000 rapes, and if each avoided rape is valued at \$500,000, the benefits would be \$5 billion—easily enough to justify the regulation. Of course, the Department would need to have some basis for those projections. How should regulators assess the monetary value of reducing prison rape? On the basis of standard practice for statistical mortality risks, they should ask about valuation of statistical rape risks. To say the least, that is not the easiest question, and there is little good data on it. And indeed, the prison rape question is more particular: how much would prisoners pay to eliminate a 1/x risk of being raped in prison? Standard theory suggests that that is the right question, but quite apart from nonwelfarist considerations, we might doubt that the answer gives an adequate account of the adverse welfare effects of being raped.

Here is what the Department actually did. It used two methods to specify the cost of a case of avoided rape.¹³⁸ First, it relied on a contingent valuation study that asked citizens, in a particular region of the United States, how much they would be willing to pay to prevent a case of rape. That study elicited a value of about \$310,000 per adult victim, reflecting the willingness to pay of “society.”¹³⁹ Second, it examined compensation measures from the legal system, finding a value of about \$480,000, with a \$675,000 award for juveniles.¹⁴⁰ With these numbers, it generated a range of values for the prevention of prison rape. The Department did not specify the number of rapes that it expected to prevent, but it concluded that, if its rule prevented just 1,671 of the 209,400 annual cases of sexual abuse in prison, the benefits of the rule would exceed its costs.¹⁴¹

¹³⁸ Id. at 37,110–11, 37,191.

¹³⁹ See U.S. Dep’t of Justice, Regulatory Impact Assessment for Prison Rape Elimination Act Final Rule 40–42 (May 17, 2012), http://www.ojp.usdoj.gov/programs/pdfs/prea_ria.pdf.

¹⁴⁰ See id. at 42–54.

¹⁴¹ See National Standards to Prevent, Detect, and Respond to Prison Rape, 77 Fed. Reg. at 37,111.

The \$310,000, \$480,000, and \$675,000 figures raise many questions and doubts. Does the legal system have reliable grounds for monetizing rapes? Does it have reliable grounds for concluding the harm from a rape of a juvenile is greater than the harm from a rape of an adult? For our purposes, the most important part of the analysis is the attempt to elicit “society’s” willingness to pay to prevent a case of prison rape. For the reasons we have offered, a contingent valuation study might well produce unreliable numbers, and we have no reason to think that \$310,000 accurately reflects the relevant value. But however it is assessed, the value to prisoners themselves does not capture the full social value of preventing prison rape. Many people suffer a welfare loss when prisoners are raped, and they are willing to pay something to reduce prison rapes. The Department of Justice was entirely correct to notice that point.

The Department also was confronted with some uncomfortable questions directly related to our topic here. The contingent valuation study was based on questions posed to people who lived outside prisons and so reflected their judgment of the social value of avoiding a rape of a nonprisoner. The Department noted a potential objection, to the effect that people might think that a rape of a prisoner is less morally bad than a rape of someone who has not been convicted of a crime.¹⁴² In addition, it could be argued that people who answered the contingent valuation questions probably had in mind rapes of women, whereas in prison most rapes are of men.¹⁴³ If people think that the rape of a man is morally different from (not as bad as or worse than) a rape of a woman, then the study’s numbers are again wrong. The Justice Department refused to make adjustments, based largely on its view that willingness-to-pay values should not be reduced on the assumption that society attached a lower value to preventing harm to inmates.¹⁴⁴

We do not offer a judgment about the Department’s approach, which has evident appeal. But if contingent valuation studies are appropriate for determining the welfare effects of moral harms, it is not clear why

¹⁴² U.S. Dep’t of Justice, *supra* note 139, at 41.

¹⁴³ *Id.* at 42.

¹⁴⁴ *Id.*

regulators should not take account of at least some contextual factors.¹⁴⁵ Admittedly, any such effort to do so would raise complex legal and moral questions: it would almost certainly violate the Equal Protection Clause to value rapes differently depending on the sex of the victim, and lower valuation of rapes of people in prison would face constitutional challenges as well.

E. Access for Disabled People

The Americans with Disabilities Act¹⁴⁶ requires employers, owners of buildings open to the public, and others to provide “accommodations” for disabled people. The Department of Justice issues regulations under the Act.¹⁴⁷ One such regulation, known as “Water Closet Clearances,” requires that buildings provide access to people who use wheelchairs, including in bathrooms, where toilet stalls would need to be widened and out-swinging doors would be used.¹⁴⁸ The agency conducted a cost-benefit analysis that monetized the benefits. The Department of Justice calculated that the average user saves five-and-a-half minutes per use. Using the average minimum wage of a little less than \$10 per hour, and multiplying by the number of beneficiaries and the frequency with which they use the restroom, the Department agency estimated total benefits of \$900 million.¹⁴⁹

More interestingly, the Department noted that a major effect of the regulation would be to protect people’s “dignity.”¹⁵⁰ In many cases, wheelchair users would no longer need to undergo the embarrassment and potential humiliation of asking for assistance in using toilet stalls. Surely that is a benefit, but to say the least, it is not easy to monetize. Rather than doing so, the agency performed “breakeven analysis,”

¹⁴⁵ Perhaps there is a deontological reason, but that would take us out of the welfarist framework and require separate discussion.

¹⁴⁶ 42 U.S.C. §§ 12101–12213 (2012).

¹⁴⁷ *Id.* § 12134(a).

¹⁴⁸ Nondiscrimination on the Basis of Disability in State and Local Government Services, 75 Fed. Reg. 56,164, 56,169 (Sept. 15, 2010) (codified at 28 C.F.R. pt. 35). Disclosure: Professor Sunstein was Administrator of the Office of Information and Regulatory Affairs when this regulation was finalized.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.* at 56,171.

asking how much the regulation would need to be worth in order to produce net benefits.¹⁵¹

It did so in two different ways, calculating (1) how much people *who use wheelchairs* would need to be willing to pay¹⁵² and (2) how much people *generally* would need to be willing to pay. With respect to (2), the agency concluded that, even if the amount was very low (a matter of pennies), the benefits would justify the costs.¹⁵³ The latter is of course the question on which we are focusing here, and the Department made considerable progress through the use of breakeven analysis, which is far better than no analysis at all. But in principle, the agency would have done better to make some effort to estimate the relevant amount.

F. Climate Change: Foreigners and Future Generations

1. *Two acute dilemmas.* In most cases of environmental regulation, the agency (typically the EPA) uses cost-benefit analysis in a relatively straightforward way to determine the welfare impact of a proposed regulation. Consider, for example, a regulation to limit the emission of particulate matter over urban areas. The costs will be borne by affected industries and ultimately by consumers and workers as well. The principal benefits usually come from reduced mortality risk, as measured by the value of a statistical life, but the EPA takes into account other

¹⁵¹ For a summary, see Sunstein, *Limits of Quantification*, *supra* note 53, at 1387–90.

¹⁵² See Disability Rights Section of the Civil Rights Div., Dep't of Justice, *Final Regulatory Impact Analysis of the Final Revised Regulations Implementing Titles II and III of the ADA, Including Revised ADA Standards for Accessible Design 142–43* (2010), https://www.ada.gov/regs2010/RIA_2010regs/DOJ%20ADA%20Final%20RIA.pdf [<https://perma.cc/P36L-WU7C>].

¹⁵³ The report states:

The second threshold estimate, by contrast, calculates the average monetary value each American (on a per capita basis) would need to place annually (over a fifteen year period) on the 'existence' of improved accessibility for persons with disabilities (or the 'insurance' of improved accessibility for their own potential use in the future) in order for the [net present values] for each respective requirement to equal zero. Under this methodology, if Americans on average placed an 'existence' value and/or 'insurance' value of between 2 cents on the low end to 7 cents on the high end per requirement, then the [net present values] for each of these requirements would be zero. Note that this latter calculation assumes no added value of avoided humiliation, of increase[d] safety and increased independence.

Id. at 146.

effects as well, such as the impact of the regulation on morbidity, recreational opportunities, and even environmental aesthetics.¹⁵⁴

In the Obama Administration, many officials participated in a systematic effort to take into account the problems posed by climate change.¹⁵⁵ Scientists have established that carbon dioxide and other greenhouse gases contribute to a long-term atmospheric warming trend, which will cause various harms around the world, including coastal flooding. The White House convened an interagency working group that calculated a social cost of carbon (“SCC”)—the amount of harm per unit of carbon emitted into the atmosphere.¹⁵⁶ This number has been used by agencies that regulate power plant operations, vehicle emissions, and other activities that produce greenhouse gases.¹⁵⁷ During the Trump Administration, the working group has been disbanded, but apparently some number will have to be used to reflect the social cost of carbon.¹⁵⁸

For many reasons, calculation of the benefits of greenhouse gas reductions poses a difficult challenge to regulators; two of those reasons are highly unusual and of special relevance to our discussion here. First, greenhouse gas emissions from American sources will cause significant harm not only to Americans, but also to foreigners. How, if at all, should those harms be counted? Most normal types of air pollution affect people living near the source and do not have substantial effects outside

¹⁵⁴ For a recent illustration in the domain of particulate matter, see EPA, Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter, at ES-10, 6-74 (2012), <https://www3.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf> [<https://perma.cc/K5NL-SWWE>]. For additional examples, see Sunstein, *Valuing Life*, supra note 31, at 49, 58–59.

¹⁵⁵ See Michael Greenstone et al., *Estimating the Social Cost of Carbon for Use in U.S. Federal Rulemakings: A Summary and Interpretation 2* (Nat’l Bureau of Econ. Research, Working Paper No. 16913, 2011), <http://www.nber.org/papers/w16913.pdf> [<https://perma.cc/U4S6-CKKH>].

¹⁵⁶ U.S. Dep’t of Energy, *Final Rule Technical Support Document (TSD): Energy Efficiency Program for Commercial and Industrial Equipment: Small Electric Motors 15-14 to 15-18* (2010).

¹⁵⁷ Greenstone et al., supra note 155, at 2–3, 22–23.

¹⁵⁸ As discussed below, President Trump terminated the Technical Working Group that calculated the SCC and directed agencies to use standard guidance from the Office of Management and Budget in Circular A-4. See Exec. Order No. 13,783, 82 Fed. Reg. 16,093, 16,095–96 (Mar. 28, 2017); Office of Mgmt. & Budget, supra note 55. As of this writing, it is not clear what figure the Trump Administration will use for the SCC.

of the territorial boundaries of the United States.¹⁵⁹ Second, current greenhouse gas emissions harm people in the distant future, including future generations, whereas most other types of pollution cause harm to people alive today, while long-term effects are minimal.

During the Obama Administration, the government's SCC was unambiguously and unapologetically welfarist in two respects. First, it treated foreigners the same as it treats Americans. Second, and less controversially, it treated future generations the same as current generations, in the sense that it used a discount rate that was not intended to give less weight to their welfare than to that of current generations.¹⁶⁰ It appears that the Trump Administration will not give (any) weight to adverse welfare effects on foreigners, though this issue, and the relevant discount rate, remain to be specified.¹⁶¹

It is true, of course, that if Congress explicitly commands the agency to consider only the welfare of Americans or to consider the welfare of foreigners and Americans alike, then the agency must heed the command.¹⁶² If Congress does not, and if it grants discretion to the agency, the agency's conclusion will depend on its political, strategic, and moral judgments.¹⁶³ A possible view, apparently that of the Trump

¹⁵⁹ For an example of another regulation that affected foreigners, see *Medical Examination of Aliens—Removal of Human Immunodeficiency Virus (HIV) Infection From Definition of Communicable Disease of Public Health Significance*, 74 Fed. Reg. 56,547 (Nov. 2, 2009) (codified at 42 C.F.R. pt. 34). The agency mentioned the benefits to foreigners but did not monetize them. *Id.* at 56,556–57 (“Depending on the region of the world from which a person emigrates, admittance to the U.S. may afford greater opportunity, better health care, and education and training programs than those available in the immigrant’s home country. These HIV-infected individuals, compared to those who do not receive appropriate multi-drug antiretroviral therapy for HIV treatment, could survive an additional 13 years, with an average life expectancy of approximately 29 years (to age 49 years).” (citing *The Antiretroviral Therapy Cohort Collaboration, Life Expectancy of Individuals on Combination Antiretroviral Therapy in High-Income Countries: A Collaborative Analysis of 14 Cohort Studies*, 372 *Lancet* 293 (2008))). For a discussion of several regulations, see Arden Rowell & Lesley Wexler, *Valuing Foreign Lives*, 48 *Ga. L. Rev.* 499, 524–39 (2014).

¹⁶⁰ U.S. Dep’t of Energy, *supra* note 156, at §§ 15A.4.2, 15A.4.6.

¹⁶¹ See Exec. Order No. 13,783, 82 Fed. Reg. at 16,096.

¹⁶² Many environmental statutes were apparently intended to benefit Americans only. See Ronald Fein, Note, *Should the EPA Regulate Under TSCA and FIFRA to Protect Foreign Environments from Chemicals Used in the United States?*, 55 *Stan. L. Rev.* 2153, 2169–70 (2003).

¹⁶³ For a discussion, see Posner & Sunstein, *supra* note 133, at 581–84; see also Rowell & Wexler, *supra* note 159, at 524–39 (providing examples from various regulatory contexts).

Administration, is that agencies should focus only on Americans because any government owes its sole responsibility to its own citizens.¹⁶⁴ Another possible view, as noted above, is that moral claims are universal and that agencies should treat foreigners and Americans alike unless forbidden to do so by Congress.

On pure welfarist grounds, this view has considerable appeal. Yet another view is that agencies should consider the welfare of foreigners if and only if doing so would ultimately prove helpful to Americans—as it might if, for example, it produced a degree of reciprocity through greenhouse gas rules, from other nations, that ultimately benefit Americans.¹⁶⁵ The simplest version of this argument is that, unless the United States considers the welfare of foreigners, other nations will not consider the welfare of Americans, and so consideration of foreigners by the United States helps to solve an international prisoners' dilemma.

2. *Willingness to pay—for foreigners.* How should agencies address these two populations—the foreign population and the future population? In the abstract, the answer to the first question depends in the first instance on whether agencies should maximize the well-being of Americans only, or everyone around the world. Arguments have been made for a variety of approaches.¹⁶⁶

We do not take a stand on the largest issues here. Our particular argument, based on the analysis thus far, is much narrower: *whether or not agencies should focus solely on Americans, the cost-benefit analysis should include foreigners in a derivative fashion—to the extent that Americans care about foreigners, which can be monetized with willingness-to-pay methods.* Many Americans have strong personal

¹⁶⁴ This seems implicit in the guidance of Exec. Order No. 13,783, 82 Fed. Reg. 16,093, which specifically instructs the agencies to adhere to OMB Circular A-4 when monetizing the “domestic versus international impacts” of changes in greenhouse gas emissions resulting from regulations. *Id.* at 16,096. OMB Circular A-4 clearly states, “[Agency] analysis should focus on benefits and cost that accrue to citizens and residents of the United States.” Office of Mgmt. & Budget, *supra* note 55, at 15. Any international effects are to be considered and reported “separately.” *Id.* For a defense of this position, see Ted Gayer & W. Kip Viscusi, Determining the Proper Scope of Climate Change Policy Benefits in U.S. Regulatory Analyses: Domestic Versus Global Approaches, 10 *Rev. Envtl. Econ. & Pol’y* 245 (2016).

¹⁶⁵ Peter Howard & Jason Schwartz, Think Global: International Reciprocity as Justification for a Global Social Cost of Carbon, 42 *Colum. J. Envtl. L.* 203, 210 (2017).

¹⁶⁶ For a discussion of that literature, see Rowell & Wexler, *supra* note 159, at 504–22.

attachments to foreigners (who can include friends and relatives), and many also care a lot, or at least a little bit, about the well-being of foreigners who are strangers. Some kind of empirical analysis would be necessary to test whether the derivative value is large or small. What we are adding is that it must be taken into account.¹⁶⁷

3. *Willingness to pay—for future generations.* The appropriate treatment of future populations raises many challenges, often discussed under the rubric of appropriate discount rates.¹⁶⁸ The impact of most ordinary regulations will be mainly felt by people who are alive today. Thus, the welfare impact is direct, and can be easily and uncontroversially determined by applying the usual discount rate (under Office of Management and Budget (“OMB”) guidance, 3% or 7%¹⁶⁹) to future effects.

By contrast, greenhouse gas regulation will mainly affect people who are not alive today.¹⁷⁰ The effect on future populations is akin to the effect on foreign populations: the case for regulation may be based on moral considerations independent of direct welfare impacts on current generations of Americans. If agencies should be thoroughgoing welfarists and focus on everyone, the cost-benefit analysis should take account of impacts on future generations to the same extent as Americans.

We have considerable sympathy for this view, but we do not take a position on the large question of how to distribute resources equitably across generations.¹⁷¹ Our point is narrower: *whether or not agencies should focus solely on the current generation or should take account of future generations as well, the cost-benefit analysis should include future generations in a derivative fashion: to the extent that Americans*

¹⁶⁷ A somewhat paradoxical implication is that, if the statute requires the agency to take into account directly the well-being of foreigners, then the welfare analysis should take account of Americans in a derivative fashion (as well as in direct fashion), to the extent that foreigners care about Americans! On double-counting, see *supra* note 91.

¹⁶⁸ See William Nordhaus, *The Climate Casino: Risk, Uncertainty, and Economics for a Warming World* 186 (2013).

¹⁶⁹ See Office of Mgmt. & Budget, *supra* note 55, at 33–34.

¹⁷⁰ We do not mean to deny that climate change is having current effects; the point is that regulation of current emissions will principally benefit future generations.

¹⁷¹ See, e.g., Matthew D. Adler & Nicolas Treich, *Prioritarianism and Climate Change*, 62 *Envtl. & Resource Econ.* 279, 294–95 (2015).

wish to protect future generations, their desire should be counted, and it can be elicited with willingness-to-pay methods. Many Americans do care, at least a little, about the well-being of people in the distant future. Here, as elsewhere, an empirical analysis is needed to determine their willingness to pay for the well-being of future generations, so that this amount can be used in cost-benefit analysis of climate regulations.

IV. LAW

We have argued that, when agencies conduct cost-benefit analysis of regulations, they should use valuations that reflect how much people are willing to pay to see their moral beliefs vindicated or to reduce the level of psychological harm they feel if those beliefs are not vindicated. Now we ask how this principle interacts with law.

A. Executive Enforcement

Executive Order 13,563¹⁷² requires agencies to conduct cost-benefit analysis of major regulations. Section 1(c) also provides:

Where appropriate and permitted by law, each agency may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.¹⁷³

Under Executive Order 13,563, willingness to pay to protect moral values can be taken into account through two different routes. The first is cost-benefit analysis itself. For reasons we have given, willingness to pay to protect moral commitments should be considered under the standard framework. The second involves Section 1(c), which authorizes agencies to consider a range of moral values. To be sure, Section 1(c) emphasizes the difficulty of quantifying such values, but our suggestion here is that that difficulty can be overcome.

It is possible to go further. If our argument is correct, the Office of Information and Regulatory Affairs should, in appropriate cases, encourage or require agencies to consider and (to the extent feasible) to monetize the moral effects of regulation and to use the valuations in

¹⁷² Exec. Order No. 13,563, 3 C.F.R. 215, 215 (2012).

¹⁷³ *Id.* at 216.

cost-benefit analyses of regulations. Most formally, this could be accomplished through a revision of the guidance document that implements the cost-benefit mandate,¹⁷⁴ or more realistically through informal give-and-take.

B. Judicial Enforcement

Under the Administrative Procedure Act, courts are required to invalidate regulations that are “arbitrary [and] capricious.”¹⁷⁵ Courts must also strike down a regulation when it is inconsistent with the organic statute under which the agency issued the regulation. In some cases, courts have struck down regulations for failing a cost-benefit analysis, based on one or both sources of law.¹⁷⁶ As we have noted, the Supreme Court has also indicated that, even when the organic statute provides only broad guidance to the regulator (for example, requiring the agency to regulate when “appropriate or necessary”), the agency must consider costs, and that it may not regulate if the costs “significantly” exceed the benefits.¹⁷⁷

While the law is not settled, these cases appear to impose an obligation on agencies to conduct some kind of cost-benefit analysis of regulations except when a statute forbids it.¹⁷⁸ On one view, not yet endorsed by the Supreme Court, the requirement of nonarbitrariness means that agencies must monetize costs and benefits, and refrain from issuing a regulation if the costs exceed the benefits, unless they can provide a good reason for believing that the costs and benefits cannot be

¹⁷⁴ See Office of Mgmt. & Budget, *supra* note 55.

¹⁷⁵ 5 U.S.C. § 706(2)(A) (2012).

¹⁷⁶ *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1149–51 (D.C. Cir. 2011); *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201, 1213, 1217 (5th Cir. 1991); see generally Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 *Geo. Mason L. Rev.* 575 (2015) (analyzing judicial review of benefit-cost analysis across thirty-eight judicial decisions).

¹⁷⁷ *Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015).

¹⁷⁸ See Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, *supra* note 41, at 15; Jonathan Masur & Eric A. Posner, *Cost-Benefit Analysis and the Judicial Role* (U. Chi., Coase-Sandor Working Paper Series in Law & Econ. Paper No. 794, 2017), http://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=2456&context=law_and_economics. For a different view, see Jacob Gersen & Adrian Vermeule, *Thin Rationality Review*, 114 *Mich. L. Rev.* 1355, 1375–83 (2016).

monetized fully or at all.¹⁷⁹ If it is appropriately deferential, judicial review can prevent agencies from manipulating cost-benefit analyses to achieve political ends and ensure that agencies avoid common errors, particularly in the form of disregarding or underplaying important benefits or costs.

It is possible to believe that the “moral effects” of a regulation are just the type that cannot be monetized. As we have noted, some agencies appear to hold this view, as in the case of an important regulation from the Department of Transportation, designed among other things to protect children from the risk of backover crashes.¹⁸⁰ In that case, however, the agency at least recognized parents’ values and took them into account.¹⁸¹ A minimal submission, based on our argument here, is that it was legally required to do exactly that: a complete failure to consider those values would have been arbitrary. If we are correct that the moral effects of a regulation can and should be monetized, then the failure to monetize them could be sufficient grounds for a court to strike down a regulation, at least if doing so is feasible.

Support for this view can be found in *Ohio v. Department of the Interior*.¹⁸² Recall that in that case, a panel of the U.S. Court of Appeals for the D.C. Circuit struck down a regulation that calculated compensation for victims of spills and leaks of hazardous substances that damaged natural resources. The Department of the Interior had limited compensation to “use value,” that is, market damages, and excluded “existence value” except when use value could not be determined. Existence value refers to the value that people attach to protection of resources that they do not expect to use.¹⁸³ By excluding

¹⁷⁹ For an elaboration of this view, see Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, supra note 41, at 33–36. For a related view, see Masur & Posner, supra note 178, at 34–35.

¹⁸⁰ See supra note 23 and accompanying text. We have noted that, to the extent that parents are willing to pay to protect their children, it is not only because of a moral commitment.

¹⁸¹ See Federal Motor Vehicle Safety Standards; Rear Visibility 79 Fed. Reg. 19,178, 19,235–36 (Apr. 7, 2014) (codified at 49 C.F.R. pt. 571).

¹⁸² 880 F.2d 432 (D.C. Cir. 1989).

¹⁸³ Frank B. Cross, *Natural Resource Damage Valuation*, 42 Vand. L. Rev. 269, 285–86 (1989) (“[H]umans may obtain ‘vicarious value’ from natural resources. Even if I never intend to visit Yosemite National Park, I may still value its preservation. The knowledge that a given natural environment is protected is valuable to some Americans, and vicarious

existence value from the calculation of damages when a use value could also be determined, the Department of the Interior regulation would have undercompensated people on account of moral harms.

While the court's ruling was based in part on its interpretation of the underlying statute,¹⁸⁴ its conclusion that people may be injured by the destruction of existence value—a subcategory of what we have called moral effects—may be generalizable. An inadequately explained failure to consider existence value would be arbitrary as a matter of law, at least if the agency has discretion to do so.

CONCLUSION

In many respects, the regulatory state has become a cost-benefit state, in the sense that agencies must catalogue costs and benefits before proceeding, and in general, must show that the benefits justify the costs. After years of experience, agencies have well-established tools for valuing risks to health, safety, and the environment. Sometimes, however, regulations are designed to protect third parties or otherwise to promote moral values, and agencies have struggled to quantify their benefits; often they ignore them.

Our principal submission here has been that people often care about such values, and they suffer a welfare loss when they are compromised. If so, the best way to measure that loss is through eliciting private willingness to pay. To be sure, the principal reason to protect moral values is to do exactly that, and not to prevent the welfare loss to those who care about them. But that loss unquestionably matters, and in some cases, it might turn out to be very large. There is no justification for agencies to ignore it.

appreciation of nature, therefore, has a demonstrable economic value.”). This article was cited by the court in *Ohio v. Dep't of the Interior*, 880 F.2d at 464.

¹⁸⁴ *Ohio v. Dep't of the Interior*, 880 F.2d at 463–64.

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