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Abstract

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 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 them. 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 bear on a wide variety of issues, including protection of foreigners, of children, of rape victims, of future generations, and of animals.

I. The Thesis

Consider the following cases:

1. Congress has directed the Securities and Exchange Commission 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 labelling standards for tuna products. It includes standards by 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?

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¹ Conflict Minerals, 77 Fed.Reg. 56,274, 56,277–78 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240 and 249b).

² 16 U.S.C. § 1385 (2012).

³ *Id.*

3. Many consumers are concerned about genetically modified (GM) food.⁴ While some of them are concerned about 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 labelling 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 genetically modified 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. 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 they 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 it. Nonetheless, we urge that from a welfarist perspective, that is an important question. Suppose that a consumer, John, cares about an assortment of things, including his longevity, his health, his comfort, and dolphins. Suppose that a substantial component of his welfare is the welfare of dolphins. If they suffer, he suffers. But how much does he suffer? Here as elsewhere, and whatever its limitations,⁷ 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. On that view, analysis of costs and benefits is important but not exhaustive; it turns on a narrower set of factors, such as effects on income and health.⁸ We agree 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 emphasized that people’s welfare may well be affected and even profoundly affected by broader considerations, as demonstrated by willingness to pay. If people lose welfare because of the suffering or death of others – people in other countries, their

⁴ Sydney E. Scott et al., *Evidence for Absolute Moral Opposition to Genetically Modified Food in the United States*, 11 PERSPECTIVES ON PSYCHOL. SCI. 315, 316 (2016).

⁵ National Bioengineered Food Disclosure Standard, Pub. L. No. 114-216 (2016) (codified at 7 U.S.C. § 1621 *et seq.* (2016)).

⁶ See Denis Swords, *Ohio v. United States Department of the Interior: A Contingent Step Forward for Environmentalists*, 51 LA. L. REV. 1347 (1991).

⁷ For one discussion, see PETER DORMAN, *MARKETS AND MORTALITY* (1996).

⁸ That is the focus of standard discussions. See, e.g., W. KIP VISCUSI, *RATIONAL RISK POLICY* (1998).

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,⁹ 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.¹⁰ The resulting regulation will be too weak.

The issue is hardly fanciful. In recent years, the Environmental Protection Agency has issued regulations designed largely to protect fish from discharges from power plants.¹¹ 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 and far less than the costs.¹² 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 is amply justified.¹³ And indeed, a court of appeals struck down a damage measure, from the Department of Interior, that refused to consider people’s willingness to pay to protect the continued existence of pristine areas and the animals that live there.¹⁴ In the court’s view, it was unlawful for the agency to focus entirely on use value and to ignore private willingness to pay, which would depend, in that case, on moral considerations.¹⁵ That conclusion has potentially broad implications, suggesting that in certain contexts, a refusal to use contingent valuation methods to account for “existence value”¹⁶—reflecting the value of the continued existence of a wilderness beyond its utility for recreation and food—would be arbitrary and therefore unlawful.

⁹ On some of the challenges and potential solutions in an especially difficult context, see Sean Hannon Williams, *Statistical Children*, 30 *YALE J. REG.* 63 (2013).

¹⁰ See *Ohio v. United States Dep’t of the Interior*, 880 F.2d 432 (DC Cir 1989).

¹¹ Environmental Protection Agency, EPA Announces National Limits to Reduce Toxic Pollutants Discharged into Waterways by Steam Electric Power Plants (2015), available at <https://www.epa.gov/newsreleases/epa-announces-national-limits-reduce-toxic-pollutants-discharged-waterways-steam>; see also Steam Electric Power Generating Effluent Guidelines, 80 Fed. Reg. 67837 (Nov. 3, 2015) (codified at 40 C.F.R. pt. 423).

¹² The EPA so concluded in issuing the regulation at issue in *Entergy Corp v. Riverkeeper, Inc.*, 556 U.S. 208 (2009).

¹³ Frank Ackerman & Elizabeth A. Stanton, Comments on Regulation of Cooling Water Intake Structures at Existing Facilities (Aug. 8, 2011), available at http://frankackerman.com/publications/costbenefit/Regulation_Cooling_Water.pdf.

¹⁴ *Ohio*, 880 F.2d at 462–64.

¹⁵ See *id.*

¹⁶ See John Quiggin, *Existence Value and the Contingent Valuation Method*, 37 *AUSTRALIAN ECON. PAPERS* 312 (1998), available at <http://onlinelibrary.wiley.com/store/10.1111/1467-8454.00022/asset/1467-8454.00022.pdf;jsessionid=6DB7540528AFA472BD2A3092A51EB467.f03t01?v=1&t=izveuz4z&s=040df4d0836fba66ce81c1749cbddfbf157c5452>.

We do not mean to take a stand on the controversy over contingent valuation methods here,¹⁷ 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 (nondisabled) American was willing to pay a very small amount to increase such access, the regulation would have benefits in excess of costs.¹⁸ 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 enlisted a contingent valuation study suggesting that (unimprisoned) Americans would pay over \$300,000 to eliminate a case of prison rape, and added that in light of that number, the regulation likely had benefits in excess of costs.¹⁹ In a case involving protection of children from backover crashes, the Department of Transportation pointed to, without monetizing, parents' desire to provide that protection.²⁰ And in response to the court of appeals decision noted above, the Department of Interior acknowledged the importance of considering existence value in assessing natural resource damages.²¹

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 — and their approach has far more general implications for valuation of regulatory benefits.

¹⁷ For skeptical views, see Jerry Hausman, *Contingent Valuation: From Dubious to Hopeless*, 26 J. ECON. PERSP. 43 (2012); Daniel Kahneman & Jack Knetsch, *Valuing Public Goods*, 22 J. ENVTL. ECON. & MGMT. 57 (1992).

¹⁸ "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 NPVs 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 NPVs for each of these requirements would be zero. Note that this latter calculation assumes no added value of avoided humiliation, of increased safety and increased independence." DEP'T OF JUSTICE: DISABILITY RIGHTS SEC. OF THE CIV. RIGHTS DIVISION, FINAL REGULATORY IMPACT ANALYSIS OF THE FINAL REVISED REGULATIONS IMPLEMENTING TITLES II AND III OF THE ADA, INCLUDING REVISED ADA STANDARDS FOR ACCESSIBLE DESIGN 142–46 (2010), available at https://www.ada.gov/regs2010/RIA_2010regs/DOJ%20ADA%20Final%20RIA.pdf

¹⁹ UNITED STATES DEP'T OF JUSTICE, REGULATORY IMPACT ASSESSMENT FOR PRISON RAPE ELIMINATION ACT FINAL RULE (May 17, 2012), available at http://www.ojp.usdoj.gov/programs/pdfs/prea_ria.pdf.

²⁰ Federal Motor Vehicle Safety Standard, Rearview Mirrors; Federal Motor Vehicle Safety Standard, Low-Speed Vehicles Phase-In Reporting Requirements, 75 Fed. Reg. 76,186, 76,238 (Dec. 7, 2010) (to be codified at 49 C.F.R. pts. 571, 585).

²¹ Natural Resource Damages for Hazardous Substances, 73 Fed. Reg. 11,081, 11,083–84 (Feb. 29, 2008) (to be codified at 43 C.F.R. pt. 11). For a defense of approach and general discussion, see David A. Dana, *Existence Value and Federal Preservation Regulation*, 28 HARV. ENVT'L L. REV. 343 (2004).

The question of how to address people's moral commitments in cost-benefit analysis is of great importance, and not only because 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 level of 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 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.²² But what if a slightly more effective regulation would have cost \$50 billion or \$500 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,²³ have not given a satisfactory answer to this question. We argue that if agencies monetize the moral benefits of regulations, they will be in a better position to decide on the stringency of regulations in a non-arbitrary way. In some cases, monetization of moral benefits will justify stronger regulations.

We emphasize that our argument, concrete though it is, touches directly on some of the most abstract and fundamental issues in legal and political theory²⁴ -- and that it is important to identify limiting principles. 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. 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 purely self-regarding behavior by reference to the moral concerns of outsiders.²⁵ For example, people might be willing to pay something to stop same-sex marriages, use 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,²⁶ but it is possible to embrace the thrust of our argument while also insisting on such a limitation on its domain. 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 non-welfarist goals. But we also show that to the extent that society's failure to vindicate non-welfarist moral commitments also 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; GMOs; mortality risk faced

²² See Conflict Minerals, 77 Fed.Reg. 56,274, 56,277–78 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240 and 249b).

²³ See, e.g., LISA HEINZERLING & FRANK ACKERMAN, PRICELESS (1996).

²⁴ For relevant perspectives, see JOHN STUART MILL, ON LIBERTY (1859); Amartya Sen, *The Impossibility of a Paretian Liberal*, 78 J. POL. ECON. 152 (1970).

²⁵ See JOSEPH RAZ, THE MORALITY OF FREEDOM (1985).

²⁶ See Sen, *supra* note.

by children; prison rape; access for disabled people; and climate change. Part IV explores legal issues. Part V is a brief conclusion.

II. Theory

A. Welfarism and Cost-Benefit Analysis

Cost-benefit analysis is a decision-procedure used by regulatory agencies to evaluate regulations.²⁷ 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 provide two of countless examples, the EPA is authorized to issue regulations that are “appropriate and necessary”²⁸ or that eliminate “unreasonable risk.”²⁹ It is possible to read these apparently open-ended standards, at least in the abstract, as giving the EPA the freedom to choose regulations that are almost as strict or weak as it prefers.³⁰ Beginning in the Reagan administration, the White House has required the EPA and other executive agencies to catalogue costs and benefits, and to demonstrate that regulatory benefits outweigh regulatory costs, in order to ensure that the regulations are justified.³¹ Reagan’s defining executive order makes cost-benefit analysis the rule of decision “to the extent permitted by law.”³² That idea has been accepted and renewed, with variations not relevant here, by every president through Trump.³³

In important cases, federal courts have also held that prominent statutes, including those that set out both of the two foregoing standards, require that regulations are justified by a form of cost-benefit analysis.³⁴ Indeed, all nine 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 at least some kind of cost-benefit balancing.³⁵ If an agency fails to consider costs, or if the benefits cannot be seen to justify the costs, its decision might well be invalidated as arbitrary.³⁶

²⁷ See MATTHEW ADLER & ERIC A. POSNER, *NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS* (2006); VISCUSI, *supra* note; CASS R. SUNSTEIN, *VALUING LIFE* (2014). On some of the theoretical complexities, see MATTHEW ADLER, *WELL-BEING AND FAIR DISTRIBUTION* (2011).

²⁸ 42 U.S.C. § 7412(n)(1)(A) (2012).

²⁹ 42 U.S.C. § 7409(b) (2012).

³⁰For a conclusion to this effect in a related context, see *American Trucking Ass’n, v. EPA*, 175 F.3d 1027 (DC Cir. 1999).

³¹ See Exec. Order No. 12,291, 3 C.F.R. § 127 (1982).

³² *Id.*

³³ See Exec. Order No. 12,866, 3 C.F.R. § 638 (1994), *reprinted as amended in* 5 U.S.C. § 601 (2012); Exec. Order No. 13,563, 3 C.F.R. § 215 (2012).

³⁴ 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. Reasonable regulation ordinarily requires paying attention to the advantages and the disadvantages of agency decisions.” *Id.* at 2711.

³⁵ See *Michigan v. EPA*, 135 S. Ct. 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 2714 (Kagan, J., dissenting).

³⁶ *Id.* at 2711 (majority opinion).

What accounts for the bipartisan (though admittedly not universal³⁷) appeal of cost-benefit analysis? The simplest answer is that human consequences matter, and cost-benefit analysis is a way of cataloguing them.³⁸ 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. (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.³⁹

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.⁴⁰ For example, a regulation that increases fuel economy, and thus improves health by reducing air pollution, may produce less safe cars.⁴¹ A regulation that protects the ozone layer, by forbidding use of ozone-depleting chemicals, may require a ban on the use of cheap and effective asthma inhalers.⁴² 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.⁴³ These costs are, in turn, likely to 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. All of these people lose income 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.⁴⁴ 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,

³⁷ See HEINZERLING & ACKERMAN, *supra* note; David M. Driesen, Douglas A. Kysar & Amy Sinden, *Cost-Benefit Analysis: New Foundations on Shifting Sand*, 3 REG. & GOVERNANCE 48 (2009).

³⁸ For a valuable discussion of this claim, see HOWARD MARGOLIS, *DEALING WITH RISK* (1996).

³⁹ 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* (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* (1986).

⁴⁰ See JOHN D. GRAHAM & JONATHAN WIENER, *RISK VS. RISK* (1997).

⁴¹ Mark R. Jacobsen, *Fuel Economy, Car Class Mix, and Safety*, 101 AMER. ECON. REV.: PAPERS & PROCS. 105, 105–109 (2010).

⁴² *Users of Last CFC Inhalers Must Soon Switch*, FOOD AND DRUG ADMINISTRATION, <https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm353701.htm> (last visited Mar. 4, 2017).

⁴³ For a classic discussion, see BRUCE ACKERMAN AND WILLIAM HASSLER, *CLEAN COAL/DIRTY AIR* (1981).

⁴⁴ We simplify. For details, see W. KIP VISCUSI, *FATAL TRADEOFFS* (1992).

one that, whatever its flaws, provides for far greater transparency about crucial variables and that should reduce the scope for error, at least if it is working well.⁴⁵

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 scrubbers, 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.⁴⁶

But monetizing some impacts (whether costs or benefits) can be far more complex.⁴⁷ 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 easily be 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 sometimes describe such benefits as nonquantifiable.⁴⁸ 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.⁴⁹ 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 market choices.⁵⁰ More controversially, they sometimes use contingent valuation surveys, where people are simply asked to give monetary equivalents to nonpecuniary benefits.⁵¹

Whatever the precise approach, 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.⁵² But the willingness to pay

⁴⁵ For a vivid argument to this effect, see DIETRICH DORNER, *THE LOGIC OF FAILURE* (1996). We acknowledge that there are alternative to cost-benefit analysis. For example, some people favor the precautionary principle. See DANIEL STEEL, *PHILOSOPHY AND THE PRECAUTIONARY PRINCIPLE* (2014).

⁴⁶ Even in this simple example, some costs may not be easy to monetize – as, for example, if the regulation produces unemployment.

⁴⁷ See generally Cass R. Sunstein, *The Limits of Quantification*, 102 CAL. L. REV. 1369 (2014).

⁴⁸ See *id.* at 1395.

⁴⁹ See OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, TO THE HEADS OF EXECUTIVE AGENCIES AND ESTABLISHMENTS: REGULATORY ANALYSIS (2003).

⁵⁰ VISCUSI, *supra* note.

⁵¹ Richard Carson, *Contingent Valuation: A Practical Alternative When Prices Aren't Available*, 26 J. ECON. PERSP. 27 (2012).

⁵² See JOHN STUART MILL, *ON LIBERTY* (1859).

approach can also draw support from a competing strand of the same tradition, emphasizing autonomy rather than welfare.⁵³ 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,⁵⁴ 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.

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 non-welfarist 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.⁵⁵ 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-being⁵⁶ has not yet produced an administrable way of capturing the actual effects of regulatory interventions.⁵⁷ But it has pointed to the possibility that cost-benefit analysis may not capture those effects as accurately as other methods would.

Second, some factors are especially difficult to translate into monetary equivalents, partly because of an absence of relevant information on the part of regulators, and partly because the challenge of monetization may be hard to surmount even if regulators are able to obtain that information.⁵⁸ What, exactly, are the effects of a new security measure 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 monetary equivalents? Even if we know how many lives will be saved by technology designed to reduce the risk of backover crashes, how can regulators monetize those savings, if the plurality of the lives saved consist of children under the age of four, and if what is being prevented is death at the hands of their own parents?⁵⁹

⁵³ See RONALD DWORKIN, *SOVEREIGN VIRTUE: THE THEORY AND PRACTICE OF EQUALITY* 449 (2000).

⁵⁴ An obvious one is whether people's willingness to pay reflects sufficient information or is subject to behavioral biases.

⁵⁵ John Bronsteen et al., *Well-Being Analysis vs. Cost-Benefit Analysis*, 62 *DUKE L.J.* 1603, 1620 (2013).

⁵⁶ See, e.g., *id.*

⁵⁷ W. Kip Viscusi, *The Benefits of Mortality Risk Reduction: Happiness Surveys vs. the Value of a Statistical Life*, 62 *DUKE L.J.* 1735 (2013).

⁵⁸ See, e.g., John Coates, *Cost-Benefit Analysis of Financial Regulation*, 124 *YALE L.J.* 882, 894 (2015).

⁵⁹ For discussion, see Cass R. Sunstein, *The Most Knowledgeable Branch*, 164 *U. PA. L. REV.* 1607 (2016).

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 the life of a wealthy person is worth more than the life of a poor person. 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 reduce mortality risk by more than poor people are willing to pay, the regulations 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.⁶⁰ Regulators now use a single number to value mortality risks—about \$9 million per statistical life⁶¹—and hence disparities between rich and poor are not a matter of current practice.

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. 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 labelling requirements to inform consumers if tuna used in tuna products was caught using drift nets and other methods that harm dolphins.⁶² The statute evidently was passed in response to concerns that tuna harvesting caused excessive harm to dolphins, 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 Act⁶³ was passed, she bought organic foods from specialty stores that cost about \$1,000 per year more than comparable food products sold in

⁶⁰ If a rich person's WTP 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 WTP 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).

⁶¹ 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 (2016), available at <https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%20of%20a%20Statistical%20Life%20Guidance.pdf>.

⁶² See *supra* note __ and accompanying text.

⁶³ 21 U.S.C. § 343 (2012).

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.

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 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.⁶⁴ That was Bentham's view, in fact,⁶⁵ and we share it. But even philosophers who do not embrace utilitarianism often believe that an objective moral reality exists and does not depend on what people's moral beliefs at any given moment.⁶⁶ They believe, for example, that slavery is morally wrong even if no one in society, not even the slaves themselves, believe it is morally wrong.⁶⁷ On this view, the moral worth of dolphins does not depend on whether Sam exists, or whether many or few people agree with Sam.

This view seems to have a surprising implication. If, as we have argued, cost-benefit analysis is a welfarist decision-procedure, then there is an argument 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

⁶⁴ See PETER SINGER, *ANIMAL LIBERATION* (1975).

⁶⁵ JEREMY BENTHAM, *AN INTRODUCTION TO THE PRINCIPLES OF MORALS AND LEGISLATION* (1789).

⁶⁶ Alexander Miller, *Realism*, *THE STANFORD ENCYCLOPEDIA OF PHIL.*, <https://plato.stanford.edu/archives/win2016/entries/realism/> (last visited Mar. 4, 2016).

⁶⁷ Cf. JON ELSTER, *SOUR GRAPES* (1983) (discussing "adaptive preferences" and their challenge for utilitarianism).

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 subjective 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.

It follows that if the entire dolphin population were eliminated, or if a significant numbers 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.) 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 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.* Those valuations will not capture everything that matters, but they are an important point of a full accounting.

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 turns out to bear 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 people think that pornography is morally unacceptable and are willing to pay something to ban it; some people have strong moral objections to the use of contraceptives, and they would pay to see them banned; that the very idea of alcohol consumption is, to many people, morally problematic, and they would gladly pay to reduce it; that certain religious practices seem morally offensive to people who would be willing to pay to stamp them out; that many people object to opening stores on Sunday and would happily pay something for Sunday closing laws; that some people greatly dislike the very idea of transgender people, and would pay something to ensure that they use the bathroom available to people of their biological sex. Under a standard view of liberalism, the government is not permitted to take account of these “other-regarding” preferences when it regulates.

The examples could easily be proliferated. In these circumstances, it seems important 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).

We think that 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, 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 violate 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.⁶⁸ Here again, a strict welfarist would be open to the possibility that preferences of this kind must be counted in a cost-benefit analysis, at least if they are backed by willingness to pay. But for purposes of actual practice, regulators can certainly refuse to take account of moral commitments that are inconsistent with existing sources of law.

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.”⁶⁹ 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 regulable, at least if those who are offended are willing to pay for the interference. To be sure, the cases that concern us here are in no tension with the liberal position, because harm to others is involved, but our argument

⁶⁸ For a view in this general direction, see RICHARD A. EPSTEIN, *SIMPLE RULES FOR A COMPLEX WORLD* (1995).

⁶⁹ See Mill, *supra* note; Raz, *supra* note.

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.⁷⁰ But for those who broadly embrace that position, it would be possible to accept our argument while limiting its domain to cases in which harm to others is involved. Indeed, 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. Moreover, we suspect that at this level of abstraction, valuations in different directions will cancel each other out. People who are philosophically opposed to government 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, such as sadistic or malicious preferences, should not be included in the utilitarian (or welfarist) calculus.⁷¹ 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.⁷²

E. Two Implementation Questions

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

⁷⁰ See Amartya Sen, *supra* note.

⁷¹ See RICHARD BRANDT, A THEORY OF THE GOOD AND THE RIGHT (1998).

⁷² Consider Dworkin’s broader view, suggesting a general ban on the use of what he calls “external preferences”: “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.” See DWORKIN, *supra* note, at 282. 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.

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' 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.⁷³ As we shall see, sometimes Congress 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. As we have noted, the issue is often not whether to regulate, but how strictly to regulate. An analysis of costs and benefits is usually relevant to that issue. If, for example, numerous dolphins would be protected by an expensive regulation, the argument for that regulation 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- or empathy-related 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.⁷⁴ 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 \$5000 or more, 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.⁷⁵ Perhaps appropriate studies can overcome this problem⁷⁶ – but perhaps not.⁷⁷

⁷³ See *Whitman v. American Trucking Ass'n.*, 531 US 457 (2001).

⁷⁴ 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 __ and accompanying text.

⁷⁵ Hausman, *supra* note __, at 47–49.

⁷⁶ Carson, *supra* note __, at 30–31, 34–35.

⁷⁷ Peter Diamond & Jerry Hausman, *Contingent Valuation: Is Some Number Better Than No Number?* 8 J. Econ. Persp. 45, 46 (1994).

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.⁷⁸ 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 of a median household income of about \$56,000,⁷⁹ the average household donates about \$2,974 to charity per year.⁸⁰ 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.⁸¹

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 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; 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.⁸²

Our major goal is to notice 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

⁷⁸ *Charitable Giving Statistics*, NAT'L PHILANTHROPIC TRUST, <https://www.nptrust.org/philanthropic-resources/charitable-giving-statistics/> (last visited Mar. 4, 2017).

⁷⁹ As of 2015. See U.S. BUREAU OF THE CENSUS, REAL MEDIAN HOUSEHOLD INCOME IN THE U.S., available at <https://fred.stlouisfed.org/series/MEHOINUSA672N>.

⁸⁰ See *Charitable Giving Statistics*, *supra* note ____.

⁸¹ See James Andreoni, *Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence*, 97 J. of Pol. Econ. 1447, 1449 (1989).

⁸² Amartya Sen, *Environmental Evaluation and Social Choice: Contingent Valuation and the Market Analogy*, 45 JAPANESE ECON. REV. 23 (1995).

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,⁸³ and the Department of Interior lost in court when it declined to include existence value as part of the measure of natural resource damages.⁸⁴ 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.

A. Conflict Minerals

In the Dodd-Frank Act, Congress required the Securities and Exchange Commission (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.⁸⁵ The SEC issued regulations, which were challenged in court by the National Association of Manufacturers (NAM). Among other things, NAM argued that the regulations were arbitrary and capricious under the Administrative Procedure 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.⁸⁶

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.⁸⁷ At the same time, the SEC explained that it was "unable to readily quantify" the benefits.⁸⁸ 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 non-conflict 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.⁸⁹ As a matter of law, it emphasized that Congress had mandated its action and thus, in effect, determined that the benefits were sufficient by enacting the law.⁹⁰

The court upheld the agency's decision as nonarbitrary.⁹¹ In the court's view, the regulation was not required to pass a cost-benefit analysis, because Congress required it

⁸³ See supra notes ___ and accompanying text.

⁸⁴ See supra notes ___ and accompanying text.

⁸⁵ See 15 U.S.C. §§ 78m(p) (2012).

⁸⁶ *National Ass'n of Mfrs. v. SEC*, 748 F.3d 359, 369–70 (D.C. Cir. 2014).

⁸⁷ *Conflict Minerals*, 77 Fed.Reg. 56,274, 56,334 (Sept. 12, 2012) (codified at 17 C.F.R. pts. 240 and 249b).

⁸⁸ *Id.* at 56,350.

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *National Ass'n of Mfrs.*, 748 F.3d at 370.

whatever the outcome of such an analysis. In any case, the agency did not act arbitrarily 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.⁹²

The court was surely on solid ground when it held that the SEC did not act arbitrarily 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 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, will 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 without 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

⁹² *Id.* at 369.

the tune of \$20 as a result of the price increase.⁹³ 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.

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 difficult 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' command. This could mean, for example, that the SEC should include a de minimis exception, as NAM argued; 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. 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, should have chosen a level of regulatory strictness commensurate with the balance of those benefits over the costs.

B. GMOs

Many consumers are strongly in favor of mandatory labels for GM foods.⁹⁴ In the United States, the public demand, accompanied by interest-group pressures, has led to a statutory requirement to that effect.⁹⁵ The USDA is required to issue implementing regulations in 2018,⁹⁶ and an analysis of costs and benefits will have to accompany their issuance.⁹⁷

Assessment of the benefits will be challenging among multiple dimensions. Many consumers think that GM food is unhealthy,⁹⁸ and they want labels for that reason, but the existing evidence suggests that the health concerns are baseless.⁹⁹ 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.¹⁰⁰ The evidence is less unequivocal here; the consensus appears to be that the risks are somewhere between zero and very small.¹⁰¹ 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

⁹³ For relevant discussion, see Hunt Allcott & Judd Kessler, *The Welfare Effects of Nudges* (Nat'l Bureau of Econ. Research, Working Paper No. 21671, 2015), available at <http://www.nber.org/papers/w21671>.

⁹⁴ See Cass R. Sunstein, *Do People Like Nudges?*, 68 Admin. L. Rev. 177, 189 (2016).

⁹⁵ National Bioengineered Food Disclosure Standard, Pub. L. No. 114-216 (2016) (codified at 7 U.S.C. § 1621 et seq. (2016)).

⁹⁶ *Id.*

⁹⁷ See Exec. Order No. 13,563, 3 C.F.R. § 215 (2012).

⁹⁸ 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).

⁹⁹ For a summary, see Cass R. Sunstein, *On Mandatory Labeling*, 165 U. PA. L. REV. (forthcoming 2017).

¹⁰⁰ See *id.*

¹⁰¹ See *id.* We are bracketing some scientific disputes here.

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.¹⁰²

The GM controversy raises another distinctive issue. Some people appear to think that the very idea of GM food is disgusting,¹⁰³ 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.¹⁰⁴ 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 fears about health and environmental risks, but in principle, it is the right thing to do.

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.¹⁰⁵

Notwithstanding the intuitive appeal of this claim, the government does take into account the *welfare* effects of loss of human life. It does so not by monetizing “life,” but by asking about people’s willingness to pay to eliminate statistical mortality risks.¹⁰⁶ Within the federal

¹⁰² See ALLCOTT & HASSLER, *supra* note __, at 2.

¹⁰³ See Sunstein, *supra* note.

¹⁰⁴ JAMES P. COLLMAN, *NATURALLY DANGEROUS* (2001).

¹⁰⁵ See, e.g., ACKERMAN & HEINZERLING, *supra* note __, at 8.

¹⁰⁶ See SUNSTEIN, *Valuing Life*, *supra* note __.

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 1/100,000.¹⁰⁷ 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.

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 1/100,000.¹⁰⁸ 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. And yet government regulators typically ignore that question.

The standard tools are available to answer it.¹⁰⁹ In principle, a figure can be derived from market behavior, including how much parents spend to buy safety devices that benefit their children.¹¹⁰ 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 willing to pay to avoid having your child be subjected to a mortality risk of 1/100,000?"¹¹¹ 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 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. 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,¹¹² enacted in 2003, is designed to reduce the incidence of rape in prison. It requires implementing regulations from the Department of Justice.¹¹³ We have noted that any such regulations must, via executive order, be accompanied by cost-benefit

¹⁰⁷ See *supra* note.

¹⁰⁸ See Williams, *supra* note ___, at 69 – 78.

¹⁰⁹ See *id.* at 102–03.

¹¹⁰ See Eric A. Posner & Cass R. Sunstein, *Dollar and Death*, 72 U. CHI. L. REV. 537, 577–78 (2005) (discussing studies of revealed preferences for child safety).

¹¹¹ *Id.*

¹¹² 42 U.S.C. §§ 15601–15609,

¹¹³ *Id.*

analysis, and indeed the Department produced an extensive one.¹¹⁴ 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 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 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.¹¹⁵ It used two methods to specify the cost of a case of avoided rape. 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 victim, reflecting the willingness to pay of “society.” Second, it examined compensation measures from the legal system, finding a value of about \$480,000, with a \$670,000 award for juveniles. 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 260,000 annual prison rapes, the benefits of the rule would exceed its costs.

The \$310,000, \$480,000, and \$670,000 figures raise many questions and doubts. Does the legal system have reliable grounds for monetizing rapes, such that 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. The Department of Justice was entirely correct to notice that point.

¹¹⁴ National Standards to Prevent, Detect, and Respond to Prison Rape, 77 Fed. Reg. 37,106 (June 20, 2012) (codified at 28 C.F.R. pt. 115).

¹¹⁵ *Id.* at 37,111.

E. Access for Disabled People

The Americans with Disabilities Act 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. 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.¹¹⁶ The agency conducted a cost-benefit analysis that monetized the benefits. The Department of Justice calculated that the average user saves 5 and ½ 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 agency estimated total benefits of \$900 million.¹¹⁷

More interestingly, it noted that a major effect of the regulation would be to protect people’s “dignity.” 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 that least, it is not easy to monetize. Rather than doing so, the agency performed “breakeven analysis,” asking how much the regulation would need to be worth in order to produce net benefits.¹¹⁸

It did so in two different ways, calculating (1) how much people who use wheelchairs would need to be willing to pay 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.¹¹⁹ 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. If so, it might have determined that the figure was higher (or lower), justifying a more stringent (or less stringent) regulation.

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

¹¹⁶ Nondiscrimination on the Basis of Disability in State and Local Government Services, 75 Fed. Reg. 56,164 (Sept. 15, 2010) (codified at 28 CFR pt. 35).

¹¹⁷ *Id.* at 56,169.

¹¹⁸ For a summary, see Cass R. Sunstein, *The Limits of Quantification*, 102 CALIF. L. REV. 1369, 1387-90 (2014).

¹¹⁹ “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 NPVs 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 NPVs for each of these requirements would be zero. Note that this latter calculation assumes no added value of avoided humiliation, of increased safety and increased independence.” See *IMPACT ANALYSIS OF ADA IMPLEMENTATION*, *supra note*, at 142–43.

by consumers and workers as well. The principal benefits usually come from reduced mortality risk, as measured by the VSL, but EPA takes into account other effects as well, such as the impact of the regulation on morbidity, recreational opportunities, and even environmental aesthetics.¹²⁰

Starting in the Obama administration, the EPA and other agencies began a systematic effort to take into account the problems posed by climate change.¹²¹ 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 inter-agency working group that calculated a social cost of carbon (SCC), the amount of harm per unit of carbon emitted into the atmosphere.¹²² This number has been used by agencies that regulate power plant operations, vehicle emissions, and other activities that produce greenhouse gases.¹²³

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 of the territorial boundaries of the United States.¹²⁴ 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. The government's current social cost of carbon is unambiguously and unapologetically welfarist in two respects. First, it treats foreigners the same as it treats Americans. Second, and less controversially, it treats future generations the same as it treats current generations.

¹²⁰ See Sunstein, Valuing Life, *supra* note, for examples. See EPA, Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter (2012), <https://www3.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf> for a recent illustration in the domain of particulate matter.

¹²¹ See Michael Greenstone, Elizabeth Kopits, & Ann Wolverton, *Estimating the Social Cost of Carbon for Use in U.S. Federal Rulemakings: A Summary and Interpretation* (Nat'l Bureau of Econ. Research, Working Paper No. 16913, 2011) <http://www.nber.org/papers/w16913>.

¹²² Energy Conservation Program: Energy Conservation Standards for Small Electric Motors, 75 Fed. Reg. 10874-01 app. 15A at 40-41 (Dep't of Energy Mar. 9, 2010) (Interagency Working Group on Social Cost of Carbon, Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866).

¹²³ Michael Greenstone, Elizabeth Kopits, & Ann Wolverton, *Estimating the Social Cost of Carbon for Use in U.S. Federal Rulemakings: A Summary and Interpretation* (Nat'l Bureau of Econ. Research, Working Paper No. 16913, 2011) <http://www.nber.org/papers/w16913>.

¹²⁴ For an example of another type of 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 56,557 (“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).”). And for a discussion of several regulations, see Arden Rowell & Lesley Wexler, *Valuing Foreign Lives*, 48 GA. L. REV. 499, 524–39 (2014).

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.¹²⁵ 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.¹²⁶ A possible view is that agencies should focus only on Americans because any government owes its sole responsibility to its own citizens.¹²⁷ Another possible view, as noted above, is that moral claims are universal, and that agencies should treat foreigners and Americans alike unless forbidden to 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 rules, from other nations, that ultimately benefit Americans.¹²⁸

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.¹²⁹ 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 elicited with willingness-to-pay methods.* Many Americans have strong personal attachments to foreigners (who can include friends and relatives), and many also care 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.

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.¹³⁰ 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 OMB guidance, 3 percent or 7 percent¹³¹) to future effects.

¹²⁵ Most 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).

¹²⁶ For a discussion, see Posner & Sunstein, *supra* note ___, at 581–84; see also Rowell & Wexler, *supra* note ___, at 524–39.

¹²⁷ 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. ENV'TL ECON. & POL'Y 245 (2016).

¹²⁸ Peter H. Howard and Jason A. Schwartz, *Think Global: International Reciprocity as a Justification for a Global Social Cost of Carbon*, (NYU Inst. for Policy Integrity Working Paper No. 2016/3, 2016), available at http://policyintegrity.org/files/publications/Global_SCC_Reciprocity_v2.pdf.

¹²⁹ For a discussion of that literature, see Rowell & Wexler, *supra* note ___, at 504–22.

¹³⁰ See WILLIAM NORDHAUS, *THE CLIMATE CASINO* (2013).

¹³¹ See OFFICE OF MGMT. & BUDGET, CIRCULAR A-4, TO THE HEADS OF EXECUTIVE AGENCIES AND ESTABLISHMENTS: REGULATORY ANALYSIS (2003).

By contrast, greenhouse gas regulation will mainly affect people who are not alive today.¹³² 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.¹³³ 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 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 13,563¹³⁴ 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.¹³⁵

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, that willingness to pay should be considered under the standard framework. The second involves section 1(c), which authorizes agencies 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.

¹³² 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.

¹³³ See, e.g., Matthew D. Adler & Nicolas Treich, *Prioritarianism and Climate Change*, 62 ENV'L & RESOURCE ECON. 279 (2015).

¹³⁴ Exec. Order No. 13,563, 3 C.F.R. § 215 (2012).

¹³⁵ *Id.*, at § 1(c).

It is possible to go further. If our argument is correct, the Office of Information and Regulatory Affairs should either encourage or require agencies to consider and (to the extent feasible) to monetize the moral effects of regulation and to use the valuations in cost-benefit analyses of regulations. Most formally, this could be accomplished through a revision of the guidance document that implements the cost-benefit mandate,¹³⁶ or more likely through informal give-and-take.

B. Judicial Enforcement

Under the Administrative Procedure Act, courts are required to invalidate regulations that are “arbitrary and capricious.”¹³⁷ 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.¹³⁸ 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.¹³⁹

While the law is not yet 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 them to.¹⁴⁰ On one view, 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 monetized fully or at all.¹⁴¹ 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.¹⁴² In that case, however, the agency at least recognized parents’ values and took them into account.¹⁴³ However, 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.

¹³⁶ See OMB CIRCULAR A-4, *supra* note __.

¹³⁷ 5 U.S.C. § 706 (2012).

¹³⁸ *Corrosion Proof Fittings v. EPA*, 947 F.2d 1201 (5th Cir. 1991); *Business Roundtable v. SEC*, 647 F.3d 1144 (D.C. Cir. 2015); see generally Caroline Cecot & W. Kip Viscusi, *Judicial Review of Agency Benefit-Cost Analysis*, 22 GEO. MASON L. REV. 575 (2015).

¹³⁹ *Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015).

¹⁴⁰ See Cass R. Sunstein, *Cost-Benefit Analysis and Arbitrariness Review*, HARV. ENVTL. L. REV. (forthcoming 2017); Jonathan Masur & Eric A. Posner, *Cost-Benefit Analysis & the Judicial Role* (U. of Chi., Public Law Working Paper No. 614, 2017). For a different view, see Jacob Gersen & Adrian Vermeule, *Thin Rationality Review*, 114 Mich. L. Rev. 1355, 1375–83 (2016).

¹⁴¹ This view is elaborated in Sunstein, *supra* note __, and Masur and Posner, *supra* note __.

¹⁴² See *supra* note __ and accompanying text.

¹⁴³ See *supra* note __ and accompanying text.

Support for this view can be found in *Ohio v. Department of the Interior*.¹⁴⁴ Recall that in that case, a panel of 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 DOI 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.¹⁴⁵ By excluding existence value from the calculation of damages when a use value could also be determined, the DOI 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,¹⁴⁶ its conclusion that people may be injured by the destruction of existence value—a subcategory of what we have called moral effects—is broadly applicable.

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 some kind of welfare loss when they are compromised. If so, the best way to measure that loss is through eliciting private willingness to pay. Of course, it is true that 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.

¹⁴⁴ 880 F.2d 432 (D.C. Cir. 1989).

¹⁴⁵ Frank 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 appreciation of nature, therefore, has a demonstrable economic value.”). This article was relied on by the court in *Ohio*, 880 F.2d at 464.

¹⁴⁶ *Id.* at 463-64.