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THE EXPRESSIVENESS OF REGULATORY TRADE-OFFS

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Trade-offs between a sacred value—like human life—against a secular one—like money—are considered taboo. People are supposed to be offended by such trade-offs and to punish those who contemplate them. Yet the last decades in the United States have witnessed the rise of the cost-benefit state. Most major rules promulgated today undergo a regulatory impact analysis, and agencies monetize risks as grave as those to human life and values as abstract as human dignity. Prominent academics and lawmakers advocate the weighing of costs and benefits as an element of rational regulation. The cost-benefit revolution is a technocratic coup, however, if citizens view regulatory trade-offs as a symbolic denial of the values they hold dear.

This Article details three experiments that evaluate responses to a cost-benefit justification for regulatory policy. Across a range of conditions, the experiments revealed no evidence of diffuse hostility toward a consequentialist approach to saving lives. The final experiment found, however, that informing participants that they were expected to vindicate the sanctity of life resulted in them doing so. This result demonstrates the malleability of norms and expectations surrounding regulatory trade-offs.

Taken together, the experiments suggest that people normally do not perceive regulatory trade-offs as symbolic affronts that call for an expressive defense of the value of life. While these results do not conclusively establish the normative desirability of the cost-benefit paradigm, they do suggest the absence of any broad opposition to consequentialism in public

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life. These findings have implications for the democratic legitimacy of the administrative state and its institutional design. They also bear on the relationship between tort and regulation as mechanisms for risk control. Insofar as tort judgments are expressive and regulatory decisions are not, regulation that preempts the common law of torts might help temper the tangible costs of symbolism.

TABLE OF CONTENTS

I. INTRODUCTION

The last decades have witnessed the birth of a cost-benefit state in the United States. A series of executive orders have entrenched cost-benefit analysis in regulatory practice. And courts have interpreted statutes to permit—or even require—agencies to engage in consequentialist reasoning.[1] The result is that federal policymaking is increasingly justified in cost-benefit terms.[2] Two examples are illustrative. On June 22, 2011, the Food and Drug Administration (FDA) published a final rule designating the color graphics that must accompany health warnings on all cigarette packages.[3] In exercising the authority delegated to it under the Family Smoking Prevention and Tobacco Control Act, the agency weighed, among other things, the costs of altering existing package labels against the benefits of reduced rates of cancer.[4] To compare these very different things, the FDA assigned three monetary valuations to a life-year: $106,308, $216,615, and $318,923.[5] Though it ultimately found the benefits of the graphic warnings to exceed their costs,[6] the agency's logic implicitly acknowledges that the financial burden on cigarette manufacturers—were it large enough—could have trumped the health interests of cancer victims. Similarly, the Department of Justice, in implementing the Prison Rape Elimination Act, estimated "the monetizable benefit to an adult of avoiding the highest category of prison sexual misconduct (nonconsensual sexual acts involving injury or force, or no injury or

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[1] For the purposes of exposition, this Article sometimes equates textbook cost-benefit analysis and consequentialism. Consequentialism, however, does not necessarily entail the reducibility of all goods to a single dimension of evaluation. *See generally* Amartya Sen, *Plural Utility*, 81 PROC. ARISTOTELIAN SOC'Y 193 (1980).

[2] *See, e.g.*, CASS R. SUNSTEIN, THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION (2002).

[3] Required Warnings for Cigarette Packages and Advertisements, 76 Fed. Reg. 36,628 (June 22, 2011) (to be codified at 21 C.F.R. pt. 1141).

[4] *Id.* at 36,708. The U.S. Court of Appeals for the District of Columbia eventually vacated this rule on free speech grounds. A divided panel held that because the agency lacked evidence regarding the effect of the graphic warnings on smoking rates, it had failed to establish that the regulation "directly advanced" a substantial government interest. *See* R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205, 1222 (D.C. Cir. 2012), *overruled in part by* Am. Meat Inst. v. USDA, 760 F.3d 18 (D.C. Cir. 2014) (en banc).

[5] Required Warnings for Cigarette Packages and Advertisements, 76 Fed. Reg. at 36,722.

[6] *Id.* at 36,741.

force but high incidence)" to be between $310,000 and $480,000.[7] That value is higher for juvenile victims: $675,000.[8] These figures were used to set national standards, including training prison staff to prevent sexual abuse and restricting the placement of youthful inmates in adult facilities.[9] The agency's arithmetic favored these precautions.[10] But the underlying premise of its evaluative mode is that rape could become too pricey to avert.

Defenders of cost-benefit analysis extol it as a pillar—if not the foundation—of rational governance.[11] They also claim a popular mandate for cost-benefit analysis. According to a scholar of the administrative state, "cost-benefit analysis is a well-established technique that tends to add positive legitimacy to the decisions of policymakers."[12] This is because "economics is accepted within academic and political circles as well as the general population as a legitimate tool of policy analysis."[13] President Obama made the same point when he embraced a cost-benefit paradigm for federal regulation.[14] "That's what the American people want," he said, "and that's what they deserve."[15]

Social scientific theory and evidence, however, calls these assertions into question. Cost-benefit analysis treats all goods[16] as fungible by reducing them to prices. Yet the trading of something

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[7] National Standards to Prevent, Detect, and Respond to Prison Rape, 77 Fed. Reg. 37,106, 37,111 (June 20, 2012) (to be codified at 28 C.F.R. pt. 115).

[8] *Id.*

[9] *Id.* at 37,108.

[10] *Id.* at 37,188–95.

[11] *See, e.g.*, RICHARD L. REVESZ & MICHAEL A. LIVERMORE, RETAKING RATIONALITY: HOW COST-BENEFIT ANALYSIS CAN BETTER PROTECT THE ENVIRONMENT AND OUR HEALTH 12 (2008) ("For certain kinds of governmental programs, the use of cost-benefit analysis is a requirement of basic rationality."); John D. Graham, *Saving Lives Through Administrative Law and Economics*, 157 U. PA. L. REV. 395, 400–01 (2008) ("Reformers argued that a science-based approach to lifesaving would establish regulatory priorities based on relative risk, promote wise investments in lifesaving, minimize the unintended risks and undue burdens of regulation, and deploy market-oriented policy instruments that may stimulate innovation while minimizing costs.").

[12] Michael A. Livermore, *Can Cost-Benefit Analysis of Environmental Policy Go Global?*, 19 N.Y.U. ENV'T L.J. 146, 164 (2011).

[13] *Id.*

[14] CASS R. SUNSTEIN, THE COST-BENEFIT REVOLUTION 19 (2018).

[15] *Id.*

[16] This Article generally uses the term "good" in its broadest sense to refer to valued or valuable things.

sacred—like life or the environment—for something secular—like money—has been described as taboo.[17] Such transactions evoke outrage and disgust, and a person who engages in them is branded as amoral or depraved. Some things, it is held, are priceless and should not be exchanged or commodified.[18] Hence, surveys conducted to price non-market goods "have frequently experienced protest rates of 50 percent or more."[19] When asked to state the minimum amount they would accept for pollution or the maximum amount they would pay for conservation, many members of the public "refuse to play the game."[20] This is because "most [U.S.] citizens believe that to treat the value of some environmental goods as reducible to a cash equivalent is itself to express an inappropriate attitude toward the environment."[21]

This normative belief also explains the massive verdicts handed down against tortfeasors who take the cost-benefit standard as their lodestar. Consider, for example, the notorious case of the Ford Pinto.[22] The jury awarded a staggering $125 million in punitive damages against Ford after learning that the car manufacturer pitted customer lives against the financial cost of moving the Pinto's

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[17] *See* Jonathan Baron & Mark Spranca, *Protected Values*, 70 ORG. BEHAV. & HUM. DECISION PROCESSES 1, 1 (1997); Philip E. Tetlock, Orie V. Kristel, S. Beth Elson, Melanie C. Green & Jennifer S. Lerner, *The Psychology of the Unthinkable: Taboo Trade-Offs, Forbidden Base Rates, and Heretical Counterfactuals*, 78 J. PERSONALITY & SOC. PSYCHOL. 853, 853 (2000).

[18] *See, e.g.*, FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING 207 (2004); Robert H. Frank, *Why Is Cost-Benefit Analysis So Controversial*, 29 J. LEGAL STUD. 913, 913 (2000) ("The cost-benefit principle says we should install a guardrail on a dangerous stretch of mountain road if the dollar cost of doing so is less than the implicit dollar value of the injuries, deaths, and property damage thus prevented. Many critics respond that placing a dollar value on human life and suffering is morally illegitimate.").

[19] ROBERT CAMERON MITCHELL & RICHARD T. CARSON, USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD 34 (1989).

[20] *Id.* at 166; *see also* Matthew Adler, *Welfare Polls: A Synthesis*, 81 N.Y.U. L. REV. 1875, 1907 (2006) ("Moral prohibitions on degrading the environment may be seen as absolute, or at least never overridable by benefit to the respondent. This explains infinite [willingness-to-accepts]. A perceived moral prohibition on degradation might translate into an objection to the very enterprise of contingent valuation and thus 'protest votes': refusals to answer, or zero [willingness-to-pays], or (once again) infinite [willingness-to-accepts].").

[21] ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS 209 (1993).

[22] Grimshaw v. Ford Motor Co., 174 Cal. Rptr. 3d 348 (Cal. Ct. App. 1981).

vulnerable gas tank.[23] Though the common law of torts does not demand the elimination of all risk, Ford was punished because its approach "manifested a 'callous indifference' to the sanctity of human life."[24] Psychological studies exploring analogous themes have fostered the impression that "[a]version to [cost-benefit analysis]" is "widespread."[25]

The rise of the cost-benefit state is therefore problematic. Does the cost-benefit revolution represent the conceit of a technocratic elite imposing its own vision of the good on the rest of society? Or is it indicative of a larger evolution in people's moral attitudes about consequentialism in public life? To the extent that agencies are formulating policies and making rules based on an analysis that many citizens reject, they—and their decisions—suffer from a legitimacy deficit, a state of affairs that might undermine trust in the administrative state.[26]

This Article explores whether regulatory trade-offs between fatal risks and financial costs generally are understood as a symbolic affront to the sanctity of human life. It answers this question through three survey experiments, which ultimately suggest that people do not perceive a cost-benefit test for regulatory decisionmaking as expressing disregard for the good being sacrificed, even in cases involving danger to life and limb.

To set the background for the empirical studies, Part II reviews the theory of taboo trade-offs and juxtaposes the aversion to risk-money trade-offs against the rise of the cost-benefit state. It thereby motivates research into popular understandings of the

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[23] *Id.* at 358.

[24] Christopher H. Schroeder, *Rights Against Risks*, 86 COLUM. L. REV. 495, 506 (1986).

[25] Eyal Zamir, *Tastes, Values, and* The Future of Law and Economics, 16 JERUSALEM REV. LEGAL STUD. 101, 117 (2017); *see also* Herman B. Leonard & Richard J. Zeckhauser, *Cost-Benefit Analysis Applied to Risks: Its Philosophy and Legitimacy* ("Cost-benefit analysis, particularly as applied to public decisions involving risks to life and health, has not been notably popular."), *in* VALUES AT RISK 31, 31 (Douglas MacLean ed., 1986).

[26] *See* Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 59 (1995) ("Among the features that determine lay attitudes toward risk are people's judgments about the 'acceptability of [the] social processes for making decisions about risk.'" (quoting Daniel J. Fiorino, *Technical and Democratic Values in Risk Analysis*, 9 RISK ANALYSIS 293, 295 (1989))); EYAL ZAMIR & DORON TEICHMAN, BEHAVIORAL LAW AND ECONOMICS 101 (2018) ("[S]ince compatibility of legal norms with prevailing moral judgments is important for principled and instrumental reasons, policymakers should take these findings into account.").

cost-benefit paradigm in administrative law. Part III—the core of this Article—elaborates upon the relationship between social meaning and social norms. Because people regularly negotiate between fatal risks and costly precautions, such trade-offs are taboo in virtue of the values, attitudes, or beliefs they symbolize, not the outcomes they produce. The norms and understandings inherent in a particular relational sphere prescribe the kinds of comparisons that must be avoided or rejected, and when. Adherence to these norms and understandings exhibits respect for the things at stake. Their violation, on the other hand, demonstrates a lack of insight into—even contempt for—goods that are truly important, perhaps even sacred. The contingency of social meaning implies that the expressiveness of a trade-off cannot be determined in the abstract or in a vacuum. The symbolic freight of regulatory trade-offs is therefore investigated through three experimental studies featuring two different policy scenarios. The first and second experiments find no evidence that a cost-benefit rationale for deregulating the trucking industry evoked broad hostility to the policy or condemnation of its source. The third experiment, a variation on an earlier study designed around an environmental clean-up program, illustrates the malleability of the norms and understandings surrounding regulatory trade-offs. Part IV then discusses the bearing of these empirical findings on debates about the positive legitimacy of the cost-benefit state, the desirability of transparency into agency deliberative processes, and the substitutability of regulation and tort law as mechanisms for controlling risk. Part V concludes.

II. A TALE OF TWO PHENOMENA

A. TABOO TRADE-OFFS

Why are some trade-offs unthinkable?[27] To trade one good for another is to treat them as being commensurable.[28] Though limits on our time and resources compel us to promote some interests and values at the expense of others, we are taught and expected to deny the comparability—much less the equivalence—of the sacred and the profane. A refusal to countenance such comparisons demonstrates a proper appreciation of these goods[29] and often is a prerequisite for participating in various practices and relationships that enrich our lives and give them pleasure and purpose.[30] Someone who offers a friend money to miss her birthday party misunderstands the very notion of friendship: she does not "get it."[31]

The friend who tries to buy her way out of a birthday party exemplifies a more general proposition: the relational sphere in which a good is embedded determines how the good should be allocated or exchanged. In a seminal exposition of this idea, Alan Page Fiske posited four schemas that underlie all social interactions: (1) the communal sharing model, (2) the equality matching model, (3) the authority ranking model, and (4) the market pricing model.[32] These schemas govern the distribution and

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[27] *See* TIMUR KURAN, PRIVATE TRUTHS, PUBLIC LIES: THE SOCIAL CONSEQUENCES OF PREFERENCE FALSIFICATION 176 (1995) ("An unthinkable belief is a thought that one cannot admit having, or even characterize as worth entertaining, without raising doubts about one's civility, morality, loyalty, practicality, or sanity.").

[28] A trade-off does not necessarily involve a comparison. A person who stops to retrieve her dropped wallet while crossing a road exposes herself to the danger of an accident. One might say that she trades risk for money. But it is more tenuous to suggest that she has compared the two. This Article defines trade-offs as comparisons. To trade-off between two goods is to weigh or balance them; unreflective choices or reflexive behavior do not constitute trade-offs.

[29] *See* MICHAEL WALZER, SPHERES OF JUSTICE 8–10 (1983) (discussing the social value of goods and how those values determine how goods are distributed).

[30] JOSEPH RAZ, THE MORALITY OF FREEDOM 351 (1986) (arguing "that belief in incommensurability is itself a qualification for having certain relations").

[31] *See* Bruce G. Carruthers, *The Meanings of Money: A Sociological Perspective*, 11 THEORETICAL INQUIRIES L. 51, 60–61 (2010) (giving more examples).

[32] ALAN PAGE FISKE, STRUCTURES OF SOCIAL LIFE: THE FOUR ELEMENTARY FORMS OF HUMAN RELATIONS (1991); Alan Page Fiske, *The Four Elementary Forms of Sociality: Framework for a Unified Theory of Social Relations*, 99 PSYCHOL. REV. 689 (1992); *see also*

transfer of goods between individuals in a given relationship. Thus, the *communal sharing* model distinguishes between those who are members of a community and those who are not.[33] Members of the community have claims against one another that do not apply to outsiders, and resources are shared on the basis of need and not, say, desert.[34] The *equality matching* model, on the other hand, is defined by in-kind reciprocity.[35] Relations under this model are not purely about exchange, though parity in the benefits given and received is usually expected. In the third model, *authority ranking*, privileges and responsibilities are determined according to an individual's rank in a defined hierarchy.[36] Finally, the *market pricing* model captures the relative anonymity and impersonality of modern economic transactions where goods are treated as alienable and fungible.[37] Background norms designate the schema applicable to a particular situation or organization; families tend to adhere to the communal sharing model, friends to the equality matching model, and the military to the authority ranking model.[38]

Invoking the wrong schema is not only gauche; it causes distress and gives offense. Religious organizations, for example, are expected to eschew the market pricing model. People accordingly are disturbed to learn that Catholic churches in the United States are sending prayer requests to congregations in rural India, which fulfill those requests in return for a portion of the donations.[39] Their discomfiture is soothed only by the communal sharing justification that "[f]rom the perspective of the Catholic Church everyone is part of God's community. It does not matter to God who says the Mass.

Robert J. MacCoun, *The Costs and Benefits of Letting Juries Punish Corporations: Comment on Viscusi*, 52 STAN. L. REV. 1821, 1825–26 (2000) ("The most psychologically sophisticated analysis is the 'taboo trade-offs' theory of Alan Page Fiske and Phil Tetlock, which integrates Fiske's theory of relational models with Tetlock's work on the psychology of value tradeoffs.").

[33] Fiske, *supra* note 32, at 694–96.

[34] *Id.*

[35] *Id.*

[36] *Id.*

[37] *Id.*

[38] *See* A. Peter McGraw & Philip E. Tetlock, *Taboo Trade-Offs, Relational Framing, and the Acceptability of Exchanges*, 15 J. CONSUMER PSYCHOL. 2, 3 (2005).

[39] A. Peter McGraw, Janet A. Schwartz & Philip E. Tetlock, *From the Commercial to the Communal: Reframing Taboo Trade-offs in Religious and Pharmaceutical Marketing*, 39 J. CONSUMER RES. 157, 161 (2012).

Priests, and their congregations for that matter, are undifferentiated in God's eyes." [40] Similarly, people balk at a roommate's offer to pay them for taking out the garbage.[41] Such a deal is appropriate to servants or employees, not roommates. A proposal to foot the offeree's share of the utilities bill, however, is more palatable because it conforms to the equality matching, not market pricing, model.

People are threatened and angered by trade-offs that comprehend "the value of something governed by the socially meaningful relations and operations of one relational model in the terms of a disparate relational model."[42] Such trade-offs are *taboo*.[43] Decisionmakers who so much as contemplate a taboo trade-off are judged harshly.[44] An administrator who hesitates to authorize an expensive liver transplant for a dying five-year-old because the funds could be used to procure better equipment and doctors for the hospital is subject to moral censure, even if he ultimately affirms the sacred good—life—over the secular good—dollars. [45] This is because the very thought that life might have a price is sacrilegious. [46] "[T]o compare is to destroy." [47] Likewise, juries punish defendants who meticulously compute the returns on life-saving precautions even though the duty of reasonable care under tort law seems to require such a calculus. [48] In theory,

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[40] *Id.*

[41] McGraw & Tetlock, *supra* note 38, at 10 (reporting that participants in a study demonstrated confusion when this kind of offer was made).

[42] Alan Page Fiske & Philip E. Tetlock, *Taboo Trade-offs: Reactions to Transactions That Transgress the Spheres of Justice*, 18 POL. PSYCHOL. 255, 256–57 (1997).

[43] *Id.*

[44] *See* Tetlock et al., *supra* note 17, at 858–59 (demonstrating through an experiment that taboo trade-offs elicited moral outrage).

[45] *Id.*

[46] Fiske & Tetlock, *supra* note 42, at 256 (referring to taboo trade-offs as "explicit mental comparison[s] or social transaction[s] that violate[] deeply-held normative institutions about the integrity, even sanctity, of certain forms of relationship[s]").

[47] *Id.*

[48] *See* DAN B. DOBBS, PAUL T. HAYDEN & ELLEN M. BUBLICK, THE LAW OF TORTS §§ 160–61 (2d ed. 2011); RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. e (AM. LAW INST. 2009) (noting that the "primary factors for ascertaining negligence . . . can be said to suggest a 'risk-benefit test' . . . where the 'risk' is the overall level of the foreseeable risk created by the actor's conduct and the 'benefit' is the advantages that the actor or others gain if the actor refrains from taking precautions").

"[c]onduct is negligent if its disadvantages outweigh its advantages, while conduct is not negligent if its advantages outweigh its disadvantages."[49] Disadvantages are assessed in light of "the magnitude of risk that the conduct occasions," while "[t]he 'advantages' of the conduct relate to the burden of risk prevention that is avoided when the actor declines to incorporate some precaution."[50] But in practice, defendants who openly perform a balancing test do so at their own peril.[51]

Consider, for example, *Grimshaw v. Ford Motor Co.*[52] The plaintiffs sued Ford Motor Co. for the death and serious injury of two people travelling in an automobile that had stalled on a freeway.[53] The automobile, a Ford Pinto, erupted in flames after being rear-ended. The disaster was later blamed on the placement of the fuel tank above the rear axle of the vehicle, the exposure of bolt heads capable of puncturing a dislodged fuel tank, and the lack of adequate protective structures.[54] A former engineer for Ford who supervised its crash-testing program stated that the company had estimated the cost of rectifying these deficiencies at $9 per automobile but ultimately decided to forgo any modification.[55] The jury awarded punitive damages of $125 million against Ford, and the California Court of Appeal affirmed. It characterized the former engineer's testimony as evidence that "Ford could have corrected the hazardous design defects at minimal cost but decided to defer correction of the shortcomings by engaging in a cost-benefit analysis balancing human lives and limbs against corporate profits" and pronounced "Ford's institutional mentality" as "one of callous indifference to public safety."[56]

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[49] RESTATEMENT (THIRD) OF TORTS: LIAB. FOR PHYSICAL AND EMOTIONAL HARM § 3 cmt. e (AM. LAW INST. 2009).

[50] *Id.*

[51] *See* Frank Partnoy, *Corporations and Human Life*, 40 SEATTLE U. L. REV. 399, 404 (2017) (proposing shield laws to "encourage corporate actors who are currently unwilling to consider risks to human life explicitly (because of concerns about regulation and tort liability) to develop a framework for considering those risks").

[52] 174 Cal. Rptr. 348 (Cal. Ct. App. 1981).

[53] *Id.* at 359.

[54] *Id.*

[55] *Id.* at 361; Gary T. Schwartz, *The Myth of the Ford Pinto Case*, 43 RUTGERS L. REV. 1013, 1034–35 (1991).

[56] *Grimshaw*, 174 Cal. Rptr. at 384.

The Ford Pinto case has since passed into lore. It is cited as a flagrant example of corporate immorality and a cautionary tale for those who might otherwise be tempted to place profits over people.[57] As two legal scholars tell it, "Ford had displayed contempt for Grimshaw's value" by "treat[ing] Grimshaw as possessing merely a price, not a dignity."[58] But this narrative fails to explain Ford's culpability given that the legal standard of reasonable care explicitly requires a comparison between "human lives and limbs"[59] and things of lesser import.[60] Scalding hot coffee, for example, is capable of inflicting burns. Yet "[t]o determine whether a coffee maker is defective because it holds the beverage at 179°, we must understand the benefits of hot coffee in relation to its costs."[61] At high temperatures, aromatic compounds evaporate from the surface of coffee, enhancing the sensory experience of the beverage.[62] Negligence law thus tolerates the occasional injury because consumers enjoy their coffee hot.[63] Likewise, the legally acceptable height for a cricket ground fence depends on the probability and severity of the harm inflicted by a runaway ball on passersby.[64] Such an inquiry balances health and safety against sport and

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[57] *See, e.g.*, Kenneth W. Simons, *Tort Negligence, Cost-Benefit Analysis, and Tradeoffs: A Closer Look at the Controversy*, 41 LOY. L.A. L. REV. 1171, 1180 (2008) ("The lesson that many people take from the Pinto case itself is that the very act of engaging in cost-benefit analysis displays morally reprehensive callousness.").

[58] Marc Galanter & David Luban, *Poetic Justice: Punitive Damages and Legal Pluralism*, 42 AM. U. L. REV. 1393, 1436 (1993).

[59] *Grimshaw*, 174 Cal. Rptr. at 384.

[60] *See, e.g.*, Guido Calabresi, *The Complexity of Torts—The Case of Punitive Damages* (noting that both Hand's rule for negligence and the Cardozo analysis in *Adams v. Bullock* seem to "presume just such a cost/benefit test"), *in* EXPLORING TORT LAW 333, 341 (M. Stuart Madden ed., 2005).

[61] McMahon v. Bunn-O-Matic Corp., 150 F.3d 651, 658 (7th Cir. 1998). McMahon involved a design defect claim, which "in Indiana is a negligence claim, subject to the understanding that negligence means failure to take precautions that are less expensive than the net costs of accidents." *Id.* at 657.

[62] *Id.* at 658–59.

[63] *Id.* at 659 ("[W]ithout evidence that a holding temperature of 180° F is of little worth to consumers, plaintiffs cannot show that the choice of a high temperature makes the coffee defective.").

[64] *See* Bolton v. Stone [1951] AC 850 (HL) 867 (appeal taken from Eng.).

leisure, thereby acknowledging that the former does not always trump the latter.[65]

Therein lies a profound tension. On the one hand, our upbringing and socialization teaches us to exalt the primacy of the sacred over the secular. The creep of market pricing into protected spheres of social and cultural life is denounced; to reduce everything to dollars is to blaspheme. "[A]nyone who tries to [price] human life is certain to unleash a flood of angry vilification from the self-appointed custodians of everyone else's morality."[66] On the other hand, no value is truly infinite, to be pursued at the expense of all others. Elimination of every potential risk to life is infeasible. And even if it were possible, a thoroughly uncompromising stance on health and safety threatens to impoverish our existence by asphyxiating entire domains of human activity. The result is, perhaps, "a 'two cultures' problem": "[a] culture has developed around public policy analysts that sees the risk-benefit criterion as obviously acceptable; but the culture of public opinion itself tends to regard that criterion as distressing."[67]

To forestall public outrage, decisionmakers have been advised to mask taboo trade-offs by recasting their decisions as a struggle between two competing sacred values: a tragic trade-off.[68] This could be achieved by "budgetary legerdemain"—that is, by talking not of money, but of the things money can buy.[69] Instead of emphasizing the great expense required to save an endangered species from extinction, officials might float the possibility of reducing greenhouse gas emissions by sponsoring the installation of

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[65] *See id.* (absolving a cricket club of tort liability for the injury suffered by a passerby because of the improbability of balls being hit out of the grounds).

[66] H.W. LEWIS, TECHNOLOGICAL RISK 91 (1990).

[67] Schwartz, *supra* note 55, at 1041 (footnote omitted); *see also* SUNSTEIN, *supra* note 14, at 27–28.

[68] Paul J.H. Schoemaker & Philip E. Tetlock*, Taboo Scenarios: How to Think About the Unthinkable*, 54 CAL. MGMT. REV. 5, 12–14 (2012); *see also* ZAMIR & TEICHMAN, *supra* note 26, at 97–98 ("Consequently, the public disclosure surrounding protected values tends to resort to rhetorical obfuscation.").

[69] Schoemaker & Tetlock, *supra* note 68, at 14; *see also* Maarten P. Zaal, Bart W. Terwel, Emma ter Mors & Dancker D.L. Daamen, *Monetary Compensation Can Increase Public Support for the Siting of Hazardous Facilities*, 37 J. ENV'T PSYCHOL. 21, 28 (2014) ("Money has secular rather than sacred value. Accordingly, offering monetary compensation in exchange for accepting a hazardous facility that threatens the safety of local residents is likely seen as proposing a trade between a sacred value and a secular value.").

state-of-the-art filters in power stations. Decisionmakers ensnared by a taboo trade-off have also been counseled to obfuscate.[70] Vague and superficial rationales are usually enough to placate the average person.[71] Should anyone turn inquisitive, an "indignant" denial refuting the offending comparison is in order.[72] "Stealth[]" and "plausible deniability" are necessary evils that facilitate prudent solutions to the problem of scarce resources.[73]

B. THE RISE AND RISE OF THE COST-BENEFIT STATE

Despite these admonitions, recent history has witnessed the rise of a cost-benefit state.[74] All three branches of the United States government appear to have converged upon the same basic tenet: that rigorous attention to a rule's costs and benefits makes for better regulation. Cass Sunstein lauds this development as a "revolution" that "weakened the hold of interest groups, popular opinion, anecdotes, and intuitions" and "gave new authority to experts, above all in science, statistics, and economics."[75] At the heart of this revolution, he claims, is a constitutional amendment-like principle: "*No action may be taken unless the benefits justify the costs.*"[76]

By most accounts, the seeds of the cost-benefit revolution were sown in 1981 when President Ronald Reagan signed Executive

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[70] *See* Schoemaker & Tetlock, *supra* note 68, at 22 (suggesting the "Machiavellian" solution of obfuscating trade-offs "by embracing a vague public-decision posture"); ZAMIR & TEICHMAN, *supra* note 26, at 97–98.

[71] Philip E. Tetlock, *Coping with Trade-Offs: Psychological Constraints and Political Implications*, *in* ELEMENTS OF REASON: COGNITION, CHOICE, AND THE BOUNDS OF RATIONALITY 239, 256 (Arthur Lupia et al. eds., 2000).

[72] Schoemaker & Tetlock, *supra* note 68, at 22.

[73] *See id.* ("Political survivial requires that executives approach taboo scenarios stealthily, with plausible deniability scripts ready at hand. Obfuscation may not be a crucial tool for executives who want to perform their fiduciary duty but do not want to be engulfed in a political firestorm.").

[74] *See* Stuart Shapiro, *The Evolution of Cost-Benefit Analysis in US Regulatory Decisionmaking* (discussing the state of cost-beenfit analysis in the United States following over thirty years of evolution), *in* HANDBOOK ON THE POLITICS OF REGULATION 385 (David Levi-Faur ed., 2011).

[75] SUNSTEIN, *supra* note 14, at 3.

[76] *Id.*

Order 12,291.[77] Though the Army Corps of Engineers had used cost-benefit analysis to evaluate flood control projects as early as the 1930s, Executive Order 12,291 applied generally to executive agencies and represented a signal change in the regulatory philosophy of the federal bureaucracy. Henceforth, "[r]egulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society" and "regulatory objectives shall be chosen to maximize the net benefits to society."[78] To implement this optimific logic, the executive order directed executive agencies to prepare a regulatory impact analysis for every major rule they intended to promulgate.[79] The regulatory impact analysis must set out all potential benefits and costs of the proposed rule, including those considered to be unquantifiable in monetary terms.[80] It also must give reasons for rejecting cheaper means of attaining the same ends.[81] Regulatory impact analyses were to be submitted to the Director of the Office of Management and Budget (OMB), a constituent agency of the Executive Office of the President of the United States.[82]

The assimilation of welfare economics into policymaking was swiftly criticized as an instrument for deregulation.[83] Indeed, it was advertised as such by Vice President George H.W. Bush, who claimed to be heeding popular calls for less regulation and more economic growth. Executive Order 12,291, the Vice President explained, "provide[d] a mechanism for [the administration] to monitor regulatory activity and to coordinate [its] program of regulatory relief."[84] But ethical doubts about cost-benefit analysis

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[77] *But see* Jim Tozzi, *OIRA's Formative Years: The Historical Record of Centralized Regulatory Review Preceding OIRA's Founding*, 63 ADMIN. L. REV. 37, 39 (2011) ("Although OIRA was created under President Carter and began operations under President Reagan, its beginnings should rightfully be traced back to President Johnson's Administration.").

[78] Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (1981).

[79] *Id.* at 13,194.

[80] *Id.*

[81] *Id.*

[82] *Id.* at 13,194–95.

[83] *See* Martin Tolchin & Susan J. Tolchin, *The Rush to Deregulate*, N.Y. TIMES, Aug. 21, 1983, § 6, at 34 ("At the heart of the President's deregulation effort was Executive Order 12291, issued Feb. 17, 1981.").

[84] Clyde H. Farnsworth, *Reagan Signs Order to Curb Regulations*, N.Y. TIMES, Feb. 18, 1981, at D13.

swirled.[85] Steven Kelman argued in a contemporaneous essay that cost-benefit analysis debases the values it quantifies, likening it to "the thermometer that, when placed in a liquid to be measured, itself changes the liquid's temperature."[86] And even in 1981—before the public's enthusiasm for pruning burdensome regulations waned—forty-five percent of respondents polled by two media outlets agreed that "[p]rotecting the environment is so important that requirements and standards cannot be too high, and continuing environmental improvements must be made regardless of costs." [87]

The change in party control of the White House following President Bill Clinton's election in 1992 brought hopes that President Reagan's welfare economic approach to regulation might be curtailed. President Clinton did, in fact, repeal Executive Order 12,291. But he issued in its stead Executive Order 12,866, which preserved many of the principles and procedures established by President Reagan.[88] President Clinton's order was sensitive to the difficulty of quantifying all costs and benefits and identified "distributive impacts" and "equity" among the factors to be considered by agencies.[89] But the United States government's basic "[r]egulatory [p]hilosophy" remained unchanged:

> Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people. *In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives*, including the alternative of not regulating . . . . [I]n choosing among alternative regulatory approaches*, agencies should select those approaches that maximize net benefits* . . . ,

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[85] Philip Shabecoff, *Reagan Order on Cost-Benefit Analysis Stirs Economic and Political Debate*, N.Y. TIMES, Nov. 7, 1981, § 2, at 28.

[86] Steven Kelman, *Cost-Benefit Analysis: An Ethical Critique*, 5 REG. 33, 38 (1981).

[87] MICHAEL MAYERFELD BELL, AN INVITATION TO ENVIRONMENTAL SOCIOLOGY 183 (2012).

[88] Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993).

[89] *Id.*

> unless a statute requires another regulatory approach.[90]

Executive Order 12,866 "thus rejected the view that an assessment of costs and benefits is an unhelpful or unduly sectarian conception of the basis of regulation."[91] With few exceptions, the executive order also maintained the system of centralized review instituted by President Reagan. An executive agency contemplating regulation that might "[h]ave an annual effect on the economy of $100 million or more" had to provide the Office of Information and Regulatory Affairs (OIRA) in OMB a cost-benefit justification for its action, quantification being mandated "to the extent feasible."[92] The agency's analysis was to be made publicly available after promulgation of the regulation.

President George W. Bush retained Executive Order 12,866 but amended it in two subsequent executive orders[93] that were later rescinded by President Obama.[94] President Obama reaffirmed Executive Order 12,866 in Executive Order 13,563, adding "human dignity" and "fairness" to the list of things that agencies may consider. In an editorial for the *Wall Street Journal*, he assured the American public:

> Where necessary, we won't shy away from addressing obvious gaps: new safety rules for infant formula; procedures to stop preventable infections in hospitals; efforts to target chronic violators of workplace safety laws. But we are also making it our mission to root out

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[90] *Id.* (emphasis added).

[91] Pildes & Sunstein, *supra* note 26, at 6.

[92] *Id.* This requirement also applied to regulations exerting a "material" and "adverse[]" influence on "the environment, public health or safety, or [s]tate, local, or tribal governments or communities." Exec. Order No. 12,866, 58 Fed. Reg. at 51,735.

[93] *See* Exec. Order No. 13,258, 67 Fed. Reg. 9,385 (Feb. 26, 2002) (eliminating the role of the Vice President in managing the regulatory process); Exec. Order No. 13,422, 72 Fed. Reg. 2,763 (Jan. 23, 2007) (mandating OIRA review of "significant" guidance documents).

[94] Exec. Order No. 13,497, 74 Fed. Reg. 6,113 (Jan. 30, 2009).

> regulations that conflict, that are not worth the cost, or that are just plain dumb.[95]

As Sunstein—who served as OIRA Administrator from 2009 to 2012—put it, Executive Order 13,563 "cemented the cost-benefit revolution" and "has something like the status of a constitution."[96]

Despite his professed distaste for many of President Obama's policies, President Donald Trump did not disturb Executive Orders 12,866 and 13,563.[97] Though President Trump instructed executive agencies to eliminate two regulations for every new regulation they sought to introduce in Fiscal Year 2017 and capped the "total incremental cost" of new and eliminated regulations at zero, he did not officially abandon the cost-benefit criterion.[98] Some assailed the regulatory framework introduced by President Trump for zeroing in on the costs of regulation while disregarding its benefits.[99] Others suggested that constraining executive agencies in this way could, in

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[95] Barack Obama, Opinion, *Toward a 21st-Century Regulatory System*, WALL ST. J. (Jan. 18, 2011), https://www.wsj.com/articles/SB10001424052748703396604576088272112103698.

[96] SUNSTEIN, *supra* note 14, at 20.

[97] *See* Exec. Order No. 13,771, 82 Fed. Reg. 9,339 (Jan. 30, 2017) (establishing new regulatory measures that preserve the regime established under Executive Order 12,866); Roncevert Almond, Marina O'Brien & Andy Orr, *Regulatory Reform in the Trump Era—The First 100 Days*, 35 YALE J. ON REG. BULL. 29, 32 (2017).

[98] Susan Dudley, Richard Belzer, Glenn Blomquist, Timothy Brennan, Christopher Carrigan, Joseph Cordes, Louis A. Cox, Arthur Fraas, John Graham, George Gray, James Hammitt, Kerry Krutilla, Peter Linquiti, Randall Lutter, Brian Mannix, Stuart Shapiro, Anne Smith, W. Kip Viscusi & Richard Zerbe, *Consumer's Guide to Regulatory Impact Analysis: Ten Tips for Being an Informed Policymaker*, 8 J. BENEFIT-COST ANALYSIS 187, 190 (2017); *see also* Almond et al., *supra* note 97, at 31.

[99] *See* Holly L. Weaver, Comment, *One for the Price of Two: The Hidden Costs of Regulatory Reform Under Executive Order 13,711*, 70 ADMIN. L. REV. 491, 499 (2018) ("The implementing guidance offers little information regarding how benefits are to be accounted for under the two-for-one Executive Order . . . ."); Richard L. Revesz, *The Trump Administration's Attacks on Regulatory Benefits*, 14 REV. ENV'T ECON. & POL'Y 324, 325 (2020) ("[T]he Trump administration's regulatory agenda focuses on the costs of regulation but ignores its benefits."); Daniel A. Farber, *Regulatory Review in Anti-Regulatory Times*, 94 CHI.-KENT L. REV. 383, 431 (2019) ("Despite some triumphalist statements about the ascendancy of cost-benefit analysis, its status at present seems a bit shaky." (footnote omitted)).

theory, encourage them to revisit existing rules and discard or improve those which are no longer cost-benefit optimal.[100]

In any case, President Trump's Executive Order 13,771 was revoked by President Joseph Biden on January 20, 2021.[101] In a memorandum entitled "Modernizing Regulatory Review," President Biden committed to "the basic principles set forth in [Executive Order 12,866] and in Executive Order 13563."[102] "When carried out properly," the memorandum continued, "[the regulatory review] process can help to advance regulatory policies that improve the lives of the American people."[103] To echo Michael Livermore and Richard Revesz, "cost-benefit analysis is here to stay."[104]

Though the Executive Branch is primarily responsible for the birth of the cost-benefit state, the courts have assisted by gradually reading ambiguous legislation to permit, rather than forbid, agencies to regulate on the basis of cost. In 2001, the U.S. Supreme Court established in *Whitman v. American Trucking Associations*[105] that a statutory instruction to the Environmental Protection Agency (EPA) to set national ambient air-quality standards (NAAQS) "requisite to protect the public health" while leaving "an adequate margin of safety" did not leave room for cost-benefit analysis.[106] Writing for the majority, Justice Scalia declared it "fairly clear" that the Clean Air Act (CAA) prohibited the agency from "consider[ing] costs in setting the standards" and "refused to find implicit in ambiguous sections of the CAA an authorization to consider costs that has elsewhere, and so often, been expressly

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[100] Keith B. Belton, Kerry Krutilla & John D. Graham, *Regulatory Reform in the Trump Era*, 77 PUB. ADMIN. REV. 643, 644 (2017); John D. Graham, *A Future for Federal Regulatory Budgeting?*, 11 J. BENEFIT-COST ANALYSIS 55, 56 (2020).

[101] Revocation of Certain Executive Orders Concerning Federal Regulation, 86 Fed. Reg. 7,049 (Jan. 25, 2021).

[102] Modernizing Regulatory Review, 86 Fed. Reg. 7,223 (Jan. 26, 2021).

[103] *Id.* The Director of the OMB was given the responsibility of, among other things, "propos[ing] procedures that take into account the distributional consequences of regulations . . . to ensure that regulatory initiatives appropriately benefit and do not inappropriately burden disadvantaged, vulnerable, or marginalized communities." *Id.*

[104] Michael A. Livermore & Richard L. Revesz, *Retaking Rationality Two Years Later*, 48 HOUS. L. REV. 1, 13 (2011); *see also* PAUL ROSE & CHRISTOPHER J. WALKER, THE IMPORTANCE OF COST-BENEFIT ANALYSIS IN FINANCIAL REGULATION 5 (U.S. Chamber of Commerce ed., 2013).

[105] 531 U.S. 457 (2001).

[106] *Id.* at 457.

granted."[107] But eight years later, the Court ruled in *Entergy Corp. v. Riverkeeper, Inc.*[108] that the "best technology available" standard of the Clean Water Act did not bar the EPA from deliberating "[a] technology's costs and of the relationship between those costs and the environmental benefits produced."[109] Rather than interpret legislative ambiguity to foreclose cost-benefit analysis, the *Entergy* Court imputed to Congress the intent to commit the issue of regulatory costs to the sound discretion of the agency. As contemporary scholarship noted, "*Entergy* mark[ed] an important shift in the Court's orientation toward cost-benefit balancing in [environmental, health, and safety] regulation."[110]

This understanding was confirmed in a pair of cases decided in 2014 and 2015. In *EPA v. EME Homer City Generation, L.P.*,[111] the U.S. Supreme Court concluded that the CAA authorized, through its silence, a cost-sensitive allocation of emissions reductions among states that "contribute[d] significantly" to another state's nonattainment of NAAQS.[112] The law "d[id] not dictate a method for apportionment" among polluting states and the absence of such a formula "effectively delegate[d] authority to EPA to select from among reasonable options."[113] The Court accordingly upheld the EPA's use of cost thresholds to determine the obligation of states exporting one percent or more of a NAAQS to a downwind state. Most recently, the Court held in *Michigan v. EPA*[114] that the EPA was not only permitted, but *obliged* to pay heed to costs in regulating power plants under a provision that allowed such action only where "appropriate and necessary."[115] Justice Scalia who, ironically, authored the majority opinion in *Whitman* held for the Court that "the phrase 'appropriate and necessary' requires at least some attention to cost."[116] As he explained, "[o]ne would not say that

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[107] *Id.* at 465.

[108] 556 U.S. 208 (2009).

[109] *Id.* at 217.

[110] Jonathan Cannon, *The Sounds of Silence: Cost-Benefit Canons in* Entergy Corp. v. Riverkeeper, Inc., 34 HARV. ENV'T L. REV. 425, 454 (2010).

[111] 572 U.S. 489 (2014).

[112] *Id.* at 513.

[113] *Id.* at 492.

[114] 576 U.S. 743 (2015).

[115] *Id.* at 759–60.

[116] *Id.* at 752.

it is even rational, never mind 'appropriate,' to impose billions of dollars in economic costs in return for a few dollars in health or environmental benefits."[117] Even the four dissenters in *Michigan* agreed that "[c]ost is almost always a relevant—and usually, a highly important—factor in regulation."[118] By their lights, unless Congress indicates otherwise, "an agency must take costs into account in some manner before imposing significant regulatory burdens."[119] The upshot, some have suggested, is that "[cost-benefit analysis] is becoming a generic, judicially imposed requirement for regulation."[120]

Congress, too, is poised to make cost-benefit analysis the law of the administrative state. True, Congress introduced the cost-benefit standard into legislation as early as the 1930s.[121] The Flood Control Act of 1936, for example, provided for federal contribution to flood-control projects "if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected."[122] Similarly, in amending the Safe Drinking Water Act in 1996, Congress mandated a thorough examination of the "quantifiable and nonquantifiable" benefits and costs of setting a particular maximum contaminant level for potable water.[123]

Recent legislative initiatives, however, are different in kind from these early examples. The Regulatory Accountability Act of 2017 seeks to codify the cost-benefit paradigm by embedding it in the Administrative Procedure Act. [124] The Act covers all federal regulatory activity, regardless of subject matter. The House version of the Act requires agencies engaged in rulemaking to publish

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[117] *Id.*

[118] *Id.* at 769 (Kagan, J., dissenting).

[119] *Id.*

[120] Jonathan S. Masur & Eric A. Posner, *Cost-Benefit Analysis and the Judicial Role*, 85 U. CHI. L. REV. 935, 977 (2018).

[121] *See, e.g.*, PETER H. SCHUCK, WHY GOVERNMENT FAILS SO OFTEN: AND HOW IT CAN DO BETTER 45–46 (2014).

[122] Flood Control Act of 1936 § 1, 33 U.S.C. § 701a (2018); *see also* Am. Textile Mfrs. Inst. v. Donovan, 452 U.S. 490, 510 (1981) (giving the Act as an example of when Congress clearly intended that the agency engage in cost benefit analysis).

[123] Safe Drinking Water Act Amendments of 1996, 42 U.S.C. § 300g-1 (2018).

[124] *See, e.g.*, Christopher J. Walker, *Modernizing the Administrative Procedure Act*, 69 ADMIN. L. REV. 629, 632 (2017).

cost-benefit analyses both at the time the rule is proposed and when it is finalized.[125] It also instructs the OIRA Administrator to "establish guidelines for the assessment, including quantitative and qualitative assessment, of the costs and benefits of proposed and final rules" and provides that "[t]he rigor of cost-benefit analysis required by such guidelines shall be commensurate, in the Administrator's determination, with the economic impact of the rule."[126] In January 2017, the House of Representatives passed this regulatory reform bill by a 238–183 vote.[127]

The Senate version of the Act[128] was ordered reported by the Committee on Homeland Security and Governmental Affairs a year later in February 2018.[129] The Senate's Regulatory Accountability Act differs from the House's in several details. It imposes on agencies a duty to provide a cost-benefit justification, but only for rules that are likely to have an annual effect on the economy that equals or exceeds $100 million.[130] According to Senator Portman a sponsor of the senate bill, the Regulatory Accountability Act satisfies the "need [for] a smarter regulatory process that promotes job creation, innovation, and economic growth, while also continuing to protect public health and safety and the environment."[131]

In short, the arc of the regulatory state appears to be bending towards cost-benefit analysis. But explicitly ascribing a price to public health and safety—and the environment—is a fraught enterprise.[132] "[T]he very societal attitudes that make *pricing* such

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[125] Regulatory Accountability Act of 2017, H.R. 5, 115th Cong. § 103 (2017).

[126] *Id.*

[127] 163 CONG. REC. H371 (daily ed. Jan. 11, 2017).

[128] Regulatory Accountability Act of 2017, S. 951, 115th Cong. § 3 (2017).

[129] S. Rep. No. 115-208, at 10 (2018).

[130] *Id.* at 17.

[131] Press Release, Senator Rob Portman, Portman, Heitkamp Introduce the Bipartisan Senate Regulatory Accountability Act (Apr. 26, 2017), https://www.portman.senate.gov/newsroom/press-releases/portman-heitkamp-introduce-bipartisan-senate-regulatory-accountability-act.

[132] GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES 39 (1978) ("Allocation through responsible political processes does not avoid the market defect of directly valuing things; lives, for example, we prefer to think of as beyond price. . . . If the political process refuses to provide a group such as the aged with hemodialysis, the clear assertion has been made that some lives are not worth saving. To the extent that our lives and institutions depend on the notion that life is beyond price, such a refusal to save lives is horribly costly.").

goods costly also make their too-obvious trade-off by regulation and command *painful*."[133] Psychologists therefore warn that, "[i]n many cases, to discuss [a taboo] trade-off candidly is to commit political suicide."[134] "Politicians who are caught affixing dollar values to entities governed by [community sharing], [authority ranking,] or [equal matching] rules should expect brief careers."[135] And transparency can hurt policymaking bodies that engage in cost-benefit reasoning by provoking dissent and undermining their legitimacy.[136]

An experiment conducted in 2000 revealed that it is possible to transform "previously popular politicians and acceptable policies into . . . objects of scorn by revealing that the politicians performed taboo mental calculations in reaching their conclusions."[137] Participants—a sample of 155 college students—were told that the fictitious Danner Commission had investigated a government toxic waste clean-up program that was saving an estimated 200 lives at a cost of $200 million.[138] Due to the commission's efforts, the program was reformed and able to save the same number of lives at a reduced cost of $100 million.[139] The government could, however, maintain its funding for the program at the original level of $200 million and thereby save an estimated 400 lives.[140] The Danner Commission advocated "redirecting the saving of $100 million to other uses, including reducing the deficit, increased funding for programs to stimulate economic growth, and lowering taxes."[141] In one experimental condition, respondents read that the Commission

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[133] GUIDO CALABRESI, THE FUTURE OF LAW AND ECONOMICS 31 (2016).

[134] Alan Page Fiske & Philip E. Tetlock, *Taboo Trade-Offs: Constitutive Prerequisites for Political and Social Life*, *in* POLITICAL PSYCHOLOGY: CULTURAL AND CROSSCULTURAL FOUNDATIONS 47, 62 (Stanley A. Reshon & John Duckitt eds., 2000).

[135] *Id.* at 63.

[136] CALABRESI & BOBBITT, *supra* note 132, at 39; *see also* Jenny de Fine Licht, *Policy Area as a Potential Moderator of Transparency Effects: An Experiment*, 74 PUB. ADMIN. REV. 361, 367 (2014) (concluding that "in policy areas typically handling trade-offs that potentially violate the taboo of trading human well-being against money, transparency can have negative rather than positive effects for public legitimacy beliefs").

[137] Tetlock, *supra* note 71, at 252, 256.

[138] *Id.* at 254.

[139] *Id.* at 254–55.

[140] *Id.* at 255.

[141] *Id.*

had "declare[d] that 'morally it is the right thing to do.'"[142] Seventy-two percent of respondents concurred in the Danner Commission's recommendation. In the other condition, the Commission declared "that the cost of saving the additional 200 lives is about $500,000 per life—a cost that it still considers too high and one that cannot be justified given other needs and priorities."[143] Support for the Commission's recommendation plummeted to approximately thirty-five percent.[144] Cost-benefit analysis proved fatal to the Commission's recommendation, a proposal that garnered a sizeable majority when couched in vague, moralistic terms.

III. THE EXPRESSIVENESS OF REGULATORY TRADE-OFFS

A. SOCIAL NORMS AND SOCIAL MEANING

Do Americans approve of the cost-benefit state? Or did the cost-benefit revolution succeed only by stealth? Will the prevalent and open use of quantitative cost-benefit reasoning further democratic governance by giving voice to the deliberated preferences of citizens?[145] Or will it instead undermine trust and confidence in the institutions of government?

A 2016 survey found that, when asked whether "[t]he government should assign a dollar value to each human life—perhaps $9 million—and weigh the costs of regulation against the benefits of regulation," 68 of 204 respondents "strongly disagree[d]," 52 "somewhat disagree[d]," 42 were neutral, 37 somewhat agreed, and only 4 strongly agreed.[146] Still, "[t]rade-offs must occur whenever we feel good citizenship requires a declaratory commitment to sacred values, but society lacks the requisite

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[142] *Id.* at 254.

[143] *Id.* at 255.

[144] *Id.*

[145] *See* SUNSTEIN, *supra* note 2, at 9–10 (noting improvements produced by cost-benefit balancing); *see also* Michael Abramowicz, *Toward a Jurisprudence of Cost-Benefit Analysis*, 100 MICH. L. REV. 1708, 1718 (2002) (stating that "[w]hether cost-benefit analysis accords with democratic values depends on how those values are defined"); Edward H. Stiglitz, *Cost-Benefit Analysis and Public Sector Trust*, 24 SUP. CT. ECON. REV. 169, 178 (2017) (questioning "whether cost-benefit analysis holds any potential to produce a more trusted public sector").

[146] SUNSTEIN, *supra* note 14, at 27.

resources—we cannot literally 'leave no child behind' or 'guarantee top-quality healthcare to all.'"[147]

How is the apparent hostility to cost-benefit analysis to be understood, given the fact that "[p]eople, including parents, trade risk for dollars all the time?"[148] A promising answer is that the objection is not to trade-offs per se but to their expressive content. This appears to be the stance, for instance, of Richard Pildes and Elizabeth Anderson, who concede—as they must—"that few, if any, values are rationally protected from *all* trade-offs."[149] But the lexical priority of some values over others is not established through such a "rigid and uncompromising stance."[150] Rather,

> hierarchical distinctions are maintained through more subtle social and legal practices that express the higher worth of some values by protecting them against *certain kinds* of trade-offs against lower values. When higher values are at stake, *particular kinds* of comparisons with lower values are considered inappropriate, immoral, or unjust—comparisons that would *express* a degradation or depreciation of the higher values.[151]

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[147] Philip E. Tetlock, Barbara A. Mellers & J. Peter Scoblic, *Sacred Versus Pseudo-Sacred Values: How People Cope with Taboo Trade-Offs*, 107 AM. ECON. REV. 96, 97 (2017).

[148] CASS R. SUNSTEIN, RISK AND REASON: SAFETY, LAW, AND THE ENVIRONMENT 127 (2002); *see also* Tetlock et al., *supra* note 147, at 97–98 ("Most of us are arguably better classified as . . . neither fanatical defenders of deontic principles nor devoid of sentimental attachments to these principles. We just realize, at some level of awareness, that even the most precious things can become too expensive to defend.").

[149] Richard H. Pildes & Elizabeth S. Anderson, *Slinging Arrows at Democracy: Social Choice Theory, Value Pluralism, and Democratic Politics*, 90 COLUM. L. REV. 2121, 2150 (1990).

[150] *Id.*

[151] *Id.*; *see also* SHELLY KAGAN, NORMATIVE ETHICS 221 (1998) (explaining distinctions between satisficing and maximizing); Jane B. Baron & Jeffrey L. Dunoff, *Against Market Rationality: Moral Critiques of Economic Analysis in Legal Theory*, 17 CARDOZO L. REV. 431, 433 (1995) (suggesting that "choices among alternative approaches to law and policymaking—especially the choice between cost-benefit and other approaches—are significant apart from the results they produce" because they "reflect *how* we think about various social 'goods'"). To be absolutely clear, saying that the comparison of higher values to lower ones is expressive is not to claim that moral statements do not have truth values and are instead expressions of one's feelings or attitudes. *Cf.* Matthew D. Adler, *Expressive Theories of Law: A Skeptical*

Pildes and Anderson do not, however, offer a theory of the kinds of trade-offs that "express a degradation or depreciation of the higher values" and are hence forbidden.[152]

Now, one might hold that derogatory trade-offs are precisely those that fail to give the higher values their due. This position is adumbrated by Charles Fried, who insists that it is "confused, wrong, or morally repugnant," and "is odd, to say the least, to symbolize our concern for human life by actually doing less than we might to save life" or "by spending more on human life than in fact it is worth."[153] It is unclear which one of the quoted epithets most accurately captures the argument being made. Fried might plausibly be taken as adopting a "correspondence" view—a view that it is conceptually impossible to symbolize concern for human life by taking decisions that save fewer or more lives than warranted.[154] If this view is correct, the expressive theory advanced by Pildes and Anderson is otiose. If a trade-off denigrates human life only when it strikes the wrong balance between competing goods, then all that is needed for practical reasoning is a theory of value. Absent such a theory, the expressive theory is mute; given such a theory, the expressive theory is superfluous.

The correspondence view, however, is wrong. An action may *stand for* a value, attitude, or belief, even though it does not produce or promote it.[155] Social norms and understandings determine the expressiveness of actions and their significance.[156] Shaking hands,

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Overview, 148 U. PA. L. REV. 1363, 1384 (2000) (excluding non-cognitivism from the range of positions held by legal expressivists).

[152] Pildes & Anderson, *supra* note 149, at 2150 (emphasis omitted); *see also* Richard Craswell, *Incommensurability, Welfare Economics, and the Law*, 146 U. PA. L. REV. 1419, 1461 (1998).

[153] Charles Fried, *The Value of Life*, 82 HARV. L. REV. 1415, 1425 (1969).

[154] *Cf.* Jason Brennan & Peter Martin Jaworski, *Markets Without Symbolic Limits*, 125 ETHICS 1053, 1053 (2015) (arguing that because the semiotic meaning of monetary transactions is conventional, there is a moral reason to avoid codes whose adoptions result in systematically bad outcomes).

[155] *See* Lewis A. Kornhauser, *No Best Answer?*, 146 U. PA. L. REV. 1599, 1628 (1998). Indeed, Robert Nozick contends that an indicator of an action being performed for its symbolic meaning "is [its] persistence . . . in the face of strong evidence that it does not actually have the presumed causal consequence." ROBERT NOZICK, THE NATURE OF RATIONALITY 27 (1993).

[156] *See* Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2022 (1996) ("The social meanings of actions are very much a function of existing social norms."); *see also* Brennan & Jaworksi, *supra* note 154, at 1053 (discussing the meaning of markets

for instance, conveys goodwill despite the risk of spreading infectious diseases.[157] The social meaning of a handshake rests on the background rules and knowledge that surround—even constitute—the practice, not epidemiological facts.[158] Similarly, whether a trade-off "express[es] a degradation or depreciation of the higher values"[159] and is therefore perceived by individuals as a "test[] [of] their fealty to [those] values" depends on social norms and understandings and not—or at least not entirely—on welfare consequences.[160] Symbolic behavior might be required in some situations but not others. Thus,

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and money). There is some philosophical difference about whether a social norm has to be followed to exist. *See, e.g.*, Nicholas Southwood & Lina Eriksson, *Norms and Conventions*, 14 PHIL. EXPLORATIONS 195, 202–05 (2011) (explaining why social norms are not conventions). This Article takes a social norm to be "a prescribed guide for conduct or action which is generally complied with by the members of a society." EDNA ULLMANN-MARGALIT, THE EMERGENCE OF NORMS 12 (1977); *see also* CRISTINA BICCHERI, NORMS IN THE WILD: HOW TO DIAGNOSE, MEASURE, AND CHANGE SOCIAL NORMS 35, 41 (2017); GEOFFREY BRENNAN & PHILIP PETTIT, THE ECONOMY OF ESTEEM: AN ESSAY ON CIVIL AND POLITICAL SOCIETY 268 (2004); Robert Cooter, *Expressive Law and Economics*, 27 J. LEGAL STUD. 585, 587 (1998) (requiring "a social norm to affect what people do, not just what they say").

[157] *See* H. W. Will & Helen M. Mathews, *Transfer of Infection by Handshakes*, 17 PUB. HEALTH J. 347, 351 (1926) (asserting that "[h]and-shaking seems even more important in the transference of disease than the use of a common towel").

[158] *See* Elizabeth S. Anderson & Richard H. Pildes, *Expressive Theories of Law: A General Restatement*, 148 U. PA. L. REV. 1503, 1525 (2000) ("Expressive meanings are socially constructed. These meanings are a result of the ways in which actions fit with (or fail to fit with) other meaningful norms and practices in the community."); *see also* ANDREI MARMOR, SOCIAL CONVENTIONS: FROM LANGUAGE TO LAW 151 (2009) (holding that "symbolism is conferred on [an] action by the social convention that requires it," and that "the conventions [also] determine the particular circumstances in which such conduct is called for," thereby "alleviating the need to deliberate in each and every case about how exactly one should behave").

[159] Pildes & Anderson, *supra* note 149, at 2150 (emphasis omitted).

[160] Philip E. Tetlock & Gregory Mitchell, *Situated Social Identities Constrain Morally Defensible Choices: Commentary on Bennis, Medin, & Bartels*, 5 PERSP. ON PSYCHOL. SCI. 206, 207 (2010). Anderson and Pildes later clarify that their theory requires people to adequately express the right attitudes towards others, "the standard of adequacy [being] public, set by objective criteria for determining the meanings of action." Anderson & Pildes, *supra* note 158, at 1512. The public meanings of action, in turn, are "not [necessarily] determined by shared understandings of what the action means." *Id.* at 1524. Rather, such meanings only "have to be *recognizable* by [a community that] . . . exercise[s] enough interpretive self-scrutiny." *Id.* at 1525. So "a white man who checks into a hotel and drops his car keys into the hands of the first black man he sees near the door" insults the latter, even if the insult was not intended. *Id.* at 1524. To my mind, this example demonstrates that the assumptions underlying a

> [m]any people . . . will leave their spouses for a month to do a job they do not like in order to earn some money. And yet they will not agree to leave the spouse for the same month for an offer of money, even a significantly larger sum of money. They will feel indignant that someone supposes that they are willing to trade the company of their spouse for money from a stranger.[161]

The normative order that gives the offer of money its social meaning also requires that the offer be swiftly and emphatically rebuffed.[162] The proposed transaction disparages the intimacy of marriage. "Parting with one's spouse for a job . . . does not have this symbolic significance and therefore is not perceived as equally objectionable."[163] To equate the two cases is to fundamentally misunderstand them.[164]

This last example shows that it is not absurd or incoherent to protest a trade-off in one setting while condoning it in another.[165] The social meaning of a trade-off does not exist in a vacuum.[166] Granted, some comparisons are so beyond the pale that they almost necessarily express apathy or disregard for important goods. Hesitating to rescue a drowning person for fear of ruining one's clothes manifests a shocking indifference to the value of human life,

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particular action may render that action expressive, even though no communication occurs because the actor did not intend to send a message and the observer did not receive one. But "interpretive self-scrutiny" does not always explain evolutions in social meaning. *Id.* at 1525. Tips, for instance, were regarded as an insult in the early twentieth century United States but have become almost mandatory today. *See* VIVIANA A. ZELIZER, THE SOCIAL MEANING OF MONEY 95–99 (1994). So even if actions can be expressive without being communicative, they are so partly in virtue of background norms—norms that are themselves contingent. I do not take Anderson and Pildes to argue otherwise.

[161] RAZ, *supra* note 30, at 348–49.

[162] *Id.* at 349.

[163] *Id.*

[164] *Id.*

[165] S*ee* JONATHAN WOLFF, ETHICS AND PUBLIC POLICY: A PHILOSOPHICAL INQUIRY 182–84 (2011) (surmising that the taboo against the commodification of some goods is not "rooted in the nature of [the] goods [themselves]," but in "other social factors").

[166] *See* Lawrence Lessig, *Social Meaning and Social Norms*, 144 U. PA. L. REV. 2181, 2188 (1996) ("One cannot use meaning talk to speak in ways that purport to be general laws of humanity. Meaning prescriptions, and descriptions, are more local, more contingent. Meanings are often contestable and sometimes hard to know.").

regardless of time or circumstance. But very few trade-offs are like that. If a comparison has symbolic freight, it is in virtue of the norms and understandings governing its contextual setting.

B. GENERAL METHODOLOGY

Do Americans perceive regulatory trade-offs between death and dollars as denigratory of human life? This Article adopts an experimental approach to answer this question. The first two experiments were administered in the form of a news story that people might encounter in their daily lives, as opposed to stylized hypotheticals. The story describes a proposal to suspend one element of the hours for service (HOS) rules for truck drivers.[167] Subjects learn that truck drivers who have hit the limit of seventy hours a week may not resume driving unless they meet two requirements.[168] First, they must rest for thirty-four consecutive hours—the continuous rest requirement. Second, those thirty-four hours must include at least two 1:00 AM to 5:00 AM periods—the morning rest requirement.[169] Respondents are then informed of a proposal to suspend the morning rest requirement while retaining the continuous rest requirement.

After introducing the HOS rules and policy issue, the story continues by presenting two dominant perspectives: one emphasizing traffic safety and one invoking the right of autonomous agents to order their own affairs. This passage of the story reads:

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[167] This policy issue has been selected because it comes under the purview of an administrative agency that has almost no public visibility or ideological valence, thus calling on respondents to draw on their latent stereotypes of a federal administrative agency. *See* Joshua D. Clinton & David E. Lewis, *Expert Opinion, Agency Characteristics, and Agency Preferences*, 16 POL. ANALYSIS 3, 18–19 (2008) (estimating an ideology score of 0.07 for the Department of Transportation as compared to a score of -2.01 for the Commission on Civil Rights and a score of 2.40 for the Department of the Navy).

[168] This scenario is adapted from an actual regulation that requires truck drivers who have driven more than sixty hours in a week (if the employer operates commercial motor vehicles every day of the week) or seventy hours in eight days (if the employer operates commercial motor vehicles every day of the week) to rest for thirty-four consecutive hours before driving again. *See* 49 C.F.R. § 395.3 (2019).

[169] *Id.*

> According to scientists, undisturbed rest during those early morning hours is critical for alertness, and many have already come out to condemn the idea. "This action is reckless. It spells danger not only for truck drivers, but also motorists who share our nation's roads with them," said Jill Clarke, 65, who is chair of Citizens for Safer Highways. . . . The truck drivers themselves, however, have differing opinions. Bill Kallam, 62, of Richmond, Virginia[,] supports the early morning rest requirement because it ensures that drivers are well-rested. But Alex Sims, 58, of Springfield, Illinois, said the rule should be repealed entirely. "The law should not be able to dictate your sleeping and working hours," Sims said during a truck-stop interview along Interstate 81 after dropping off a load of yeast at a livestock-feed plant. "Only a driver knows when he's tired. And if you're tired, take a nap."[170]

Subjects in both experiments were exposed to both arguments regardless of their assignment to a control or treatment group. These arguments are integral to the experimental design; they lend verisimilitude to the experiment and articulate reasons for and against the proposal. The safety-based argument reminds all subjects that human life is at stake. And the autonomy-based argument furnishes a non-consequentialist ground for deregulation—one that might be imputed to the policy source in the absence of any reported justification, thus dispelling the impression of a trade-off.

Subjects for all experiments in this Article were recruited through Amazon's Mechanical Turk, an online platform where registered users complete posted tasks for a fee. Workers on Amazon Mechanical Turk are referred to colloquially as "Turkers." To ensure the integrity and reliability of the sample, only Turkers based in the United States who had completed more than fifty

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[170] Instructions from Benjamin Minhao Chen to Experiment Participants 2 (on file with author).

previous tasks and maintained an approval rate above ninety-five percent were eligible for the surveys.[171]

Participants recruited on Amazon Mechanical Turk do not constitute a random draw of the adult residents of the United States. But such samples tend to be more representative of the general population than other convenience samples.[172] Turkers also are not appreciably different from members of the population in unmeasurable ways.[173] Moreover, Turkers appear to be more

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[171] *See* Ilyana Kuziemko, Michael I. Norton, Emmanuel Saez & Stefanie Stantcheva, *How Elastic Are Preferences for Redistribution? Evidence from Randomized Survey Experiments*, 105 AM. ECON. REV. 1478, 1484 (2015) (taking similar precautions); *see also* Eyal Peer, Joachim Vosgerau & Alessandro Acquisti, *Reputation as a Sufficient Condition for Data Quality on Amazon Mechanical Turk*, 46 BEHAV. RES. METHODS 1023, 1026 (2014) (finding that Turkers who have approval ratings above ninety-five percent provided higher quality data than those who do not).

[172] *See generally* Michael Buhrmester, Tracy Kwang & Samuel D. Gosling, *Amazon's Mechanical Turk: A New Source of Inexpensive, Yet High-Quality, Data?*, 6 PERSP. ON PSYCHOL. SCI. 3 (2011); Adam J. Berinsky, Gregory A. Huber & Gabriel S. Lenz, *Evaluating Online Labor Markets for Experimental Research: Amazon.com's Mechanical Turk*, 20 POL. ANALYSIS 351 (2012); Krista Casler, Lydia Bickel & Elizabeth Hackett, *Separate but Equal? A Comparison of Participants and Data Gathered via Amazon's MTurk, Social Media, and Face-to-Face Behavioral Testing*, 29 COMPUTERS HUM. BEHAV. 2156 (2013); Marc Dupuis, Barbara Endicott-Popovsky & Robert Crossler, *An Analysis of the Use of Amazon's Mechanical Turk for Survey Research in the Cloud*, *in* ICCSM2013-PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON CLOUD SECURITY MANAGEMENT 10 (Barbara Endicott-Popovsky ed., 2013); Jeremy Kees, Christopher Berry, Scot Burton & Kim Sheehan, *An Analysis of Data Quality: Professional Panels, Student Subject Pools, and Amazon's Mechanical Turk*, 46 J. ADVERT. 141 (2017); Christoph Bartneck, Andreas Duenser, Elena Moltchanova & Karolina Zawieska, *Comparing the Similarity of Responses Received from Studies in Amazon's Mechanical Turk to Studies Conducted Online and with Direct Recruitment*, 10 PLOS ONE 1 (2015).

[173] *See* Kevin E. Levay, Jeremy Freese & James N. Druckman, *The Demographic and Political Composition of Mechanical Turk Samples*, SAGE OPEN 1, 1 (2016); Morgan N. McCredie & Leslie C. Morey, *Who Are the Turkers? A Characterization of MTurk Workers Using the Personality Assessment Inventory*, 26 ASSESSMENT 759, 764 (2019); *see also* Scott Clifford, Ryan M. Jewell & Philip D. Waggoner, *Are Samples Drawn from Mechanical Turk Valid for Research on Political Ideology?*, RES. & POL. 1, 7 (2015) (concluding that "the same values and personality traits that motivate ideological differences in the mass public also divide liberals and conservatives on MTurk"). *But see* Yanna Krupnikov & Adam Seth Levine, *Cross-Sample Comparisons and External Validity*, 1 J. EXPERIMENTAL SOC. SCI. 59, 76 (2014) (finding "an unusually high degree of savviness among MTurk participants relative to others").

attentive than college students,[174] and data collected from them through the internet appears to be no less reliable than that obtained through other traditional survey modes.[175] Most importantly, results obtained on Turkers have been shown to be similar to those established in population-based settings.[176]

C. THE FIRST EXPERIMENT: SPEAKER IDENTITY

1. Design and Sample. The first experiment explores whether justifying a deregulatory measure based on the monetary cost of saving a statistical life influences support for that measure. It also seeks to evaluate the impact of a cost-benefit approach to regulation

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[174] David J. Hauser & Norbert Schwarz, *Attentive Turkers: MTurk Participants Perform Better on Online Attention Checks Than Do Subject Pool Participants*, 48 BEHAV. RES. METHODS 400, 400 (2016); Kees et al., *supra* note 172, at 147. *But see* Joseph K. Goodman, Cynthia E. Cryder & Amar Cheema, *Data Collection in a Flat World: The Strengths and Weaknesses of Mechanical Turk Samples*, 26 J. BEHAV. DECISION MAKING 213, 213 (2013) (finding that "MTurk participants are less likely to pay attention to experimental materials, reducing statistical power").

[175] Buhrmester et al., *supra* note 172, at 1; Daniel J. Simons & Christopher F. Chabris, *Common (Mis)Beliefs About Memory: A Replication and Comparison of Telephone and Mechanical Turk Survey Methods*, 7 PLOS ONE 1, 2 (2012); Casler et al., *supra* note 172, at 2157; Stephen Ansolabehere & Brian F. Schaffner, *Does Survey Mode Still Matter? Findings from a 2010 Multi-Mode Comparison*, 22 POL. ANALYSIS 285, 297 (2014); *see also* Scott Clifford & Jennifer Jerit, *Is There a Cost to Convenience? An Experimental Comparison of Data Quality in Laboratory and Online Studies*, 1 J. EXPERIMENTAL POL. SCI. 120, 123–24 (2014); Krin Irvine, David A. Hoffman & Tess Wilkinson-Ryan, *Law and Psychology Grows Up, Goes Online, and Replicates*, 15 J. EMPIRICAL LEGAL STUD. 320, 321 (2018).

[176] Gabriele Paolacci, Jesse Chandler & Panagiotis G. Ipeirotis., *Running Experiments on Amazon Mechanical Turk*, 5 JUDGMENT & DECISION MAKING 411, 414 (2010); Goodman et al., *supra* note 174, at 214; Berinsky et al., *supra* note 172, at 353; Jill D. Weinberg, Jeremy Freese & David McElhattan, *Comparing Data Characteristics and Results of an Online Factorial Survey Between a Population-Based and a Crowdsource-Recruited Sample*, 1 SOC. SCI. 292, 300 (2014); Kevin J. Mullinix, Thomas J. Leeper, James N. Druckman & Jeremy Freese, *The Generalizability of Survey Experiments*, 2 J. EXPERIMENTAL POL. SCI. 109, 123 (2015); Kees et al., *supra* note 172, at 152; Irvine et al., *supra* note 175, at 341; *see also* Jonathan de Quidt, Johannes Haushofer & Christopher Roth, *Measuring and Bounding Experimenter Demand*, 108 AM. ECON. REV. 3266, 3294–95 (2018) (replicating experiments previously conducted on a MTurk sample on subjects drawn from a representative online panel and finding "little evidence of systematic differences between participant pools"). *But see* Krupnikov & Levine, *supra* note 173, at 77 (warning of the divergence between Amazon MTurk and other samples where the experimental design required more "buy-in" from subjects).

on lay impressions of the decisionmaker's expertise and trustworthiness: people may approve of a decision but criticize the decisionmaker.[177]

The experiment simultaneously varied the source of the proposal *and* that source's justification for the proposal. The suspension of the morning rest rule randomly was attributed to one of three sources: (1) Congress, (2) the Federal Motor Carrier Safety Administration (FMCSA), or (3) a fictitious industry group, the National Federation of Truck Companies (NFTC). The source of the proposal appears in the headline and is mentioned in the first and last paragraph of the story. Additionally, the story ended in one of two possible ways. In one scenario, respondents were told that the "paper has reached out to [members of the House Committee/ the FMCSA/ the NFTC] for comment." In contrast, the other scenario presented a cost-benefit argument for deregulation:

> In response to an inquiry from this paper, [a member of the House Committee / a spokesperson for the FMCSA / a spokesperson for NFTC] explained that policymaking involves difficult trade-offs between traffic safety and increased transportation costs, costs that would eventually be passed on to American consumers. An independent study conducted by researchers at Amherst University had found the early morning rest requirement to be highly disruptive, adding approximately two hundred million dollars to costs and lost wages each year while only saving an estimated eight lives annually. It is a tough call to make, the [congressman/ spokesperson/ spokesperson] said, but the [committee/ agency/ federation] is confident that the proposal strikes the right balance between the legitimate interests of competing stakeholders.[178]

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[177] Eric Luis Uhlmann, Luke (Lei) Zhu & David Tannenbaum, *When It Takes a Bad Person to Do the Right Thing*, 126 COGNITION 326, 326 (2013).

[178] To standardize the credibility of the cost-benefit analysis across conditions, the numbers are attributed to an academic study conducted by the fictitious Amherst University.

The cost-benefit stimulus laid bare the trade-off between lives, on the one hand, and profits and income, on the other hand. But it also acknowledged the hard choices faced by policymakers forced to arbitrate between competing goods and values.

After reading the story, participants were asked about the extent to which they support or oppose the proposal. They were also asked for their opinion about the source. Specifically, they were asked about the source's (1) accuracy, or whether the source "can be trusted to get the facts right"; (2) openness, or whether the source "can be trusted to tell us the facts"; (3) opportunism, or whether the source "is likely to take advantage of circumstances to advance its own interest"; and (4) thoroughness, or whether the source "is likely to consider all factors in making a decision." Demographic information was also collected at the end of the survey.

As some respondents did not enter their completion codes into Amazon Mechanical Turk, a total of 1,009 surveys—rather than the 1,000 originally intended—were completed and recorded for the first experiment.[179] Respondents' ages ranged from nineteen to eighty-six, with 521 being male and 488 being female. In terms of their positions on the political spectrum, 105 identified themselves as "extremely liberal," 251 as "liberal," 120 as "slightly liberal," 203 as "moderate," 123 as "slightly conservative," 135 as "conservative," and 46 as "extremely conservative." Participants in this survey are therefore younger[180] and more liberal[181] than the American population as a whole. Males are also marginally overrepresented in this sample relative to national statistics.[182]

2. Results. Subjects were asked—after having read the news story—for their degree of support or opposition to suspend the morning rest requirement. Their responses were coded on a scale of one to seven, where one corresponds to "strongly oppose"; two corresponds to "moderately oppose"; three corresponds to "slightly oppose"; four corresponds to "neither support nor oppose"; five corresponds to "slightly support"; six corresponds to "moderately

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[179] The sample size is larger than planned because the respondents who did not submit their completion codes were not counted towards the quota.

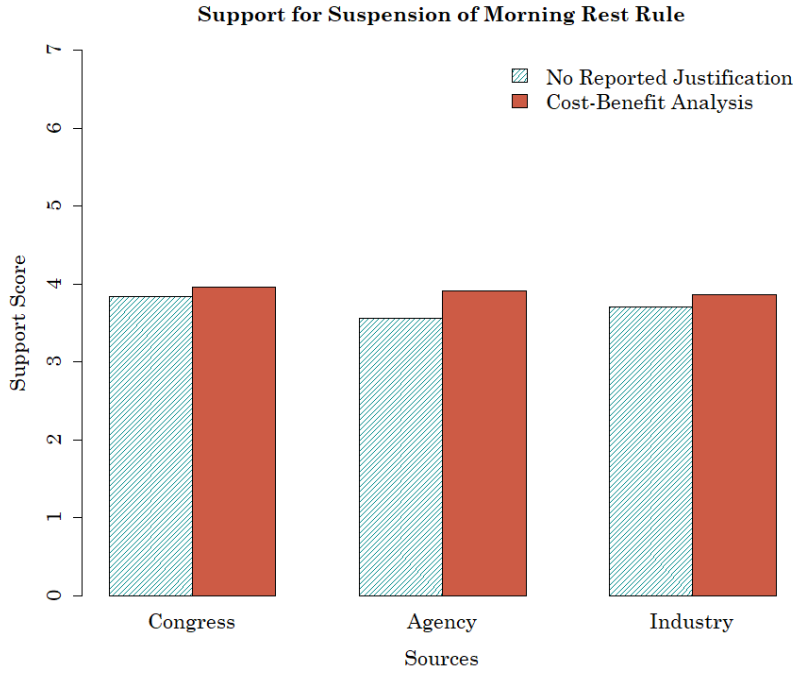
[180] *The ANES Guide to Public Opinion and Electoral Behavior*, AM. NAT'L ELECTION STUD. tbl.1A.1, https://electionstudies.org/resources/anes-guide/top-tables/?id=1.

[181] *Id.* tbl.3.1, https://electionstudies.org/resources/anes-guide/top-tables/?id=29.

[182] *Id.* tbl.1A.2, https://electionstudies.org/resources/anes-guide/top-tables/?id=2.

support"; and seven corresponds to "strongly support." The average score in each group is depicted in Figure 1 below.

Figure 1. Average Degree of Support for the Suspension of the Morning Rest Rule in the First Experiment



At first glance, invoking a cost-benefit justification for suspending the early morning rest rule did not turn people against the idea, regardless of the identity of the speaker. More formally, the sample average treatment effect (SATE) is the expected difference in outcomes between a unit in the sample if it were treated and that same unit if it were not.[183] The SATE is estimated by taking the difference between the mean of the observed control outcomes and the mean of the observed treated outcomes. To know

[183] *See* Susan Athey & Guido W. Imbens, *The Econometrics of Randomized Experiments*, *in* 1 HANDBOOK OF ECONOMIC FIELD EXPERIMENTS 73, 89 (Abhijit Vinayak Banerjee & Esther Duflo eds., 2017); Donald P. Green & Dane R. Thorley, *Field Experimentation and the Study of Law and Policy*, 10 ANN. REV. L. & SOC. SCI. 53, 57–58 (2014). *See generally* Jerzy Splawa-Neyman, *On the Application of Probability Theory to Agricultural Experiments*, 5 STAT. SCI. 465 (1990).

how much store to put by any particular estimate of the SATE, it is useful to compute a standard error.[184] The smaller the standard error, the more precise the SATE estimate is.

Treatment in this experiment consists of the source's reliance on a cost-benefit rationale. Taken across all three sources, the SATE is an increase in support of 0.213 on the seven-point scale, with a standard error of 0.125. Though this increase might be the product of random variation ($p = 0.088$, two-sided t-test), it counters the prediction of a taboo trade-off. Far from rendering the deregulatory proposal repugnant, the cost-benefit justification seems, if anything, to have made it more palatable.

The SATE is, of course, an average. It elides differences in how individuals respond to treatment. A person's receptivity to risk-money trade-offs might depend, for example, on that person's ideological disposition. The conventional view, repeated throughout legal scholarship, is that conservatives espouse cost-benefit analysis while liberals are suspicious of it.[185] If true, cost-benefit reasoning

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[184] The Neyman estimator gives a conservative estimate of the standard error of the SATE. *See generally* Splawa-Neyman, *supra* note 183; *see also* Athey & Imbens, *supra* note 183, at 89–90. Sharp bounds for the standard error have since been derived but the estimator is not widely used. *See* Peter M. Aronow, Donald P. Green & Donald K. K. Lee, *Sharp Bounds on the Variance in Randomized Experiments*, 42 ANNALS STAT. 850, 850 (2014). Standard errors of SATEs are computed based on the Neyman estimator unless otherwise stated.

[185] *See* Eric A. Posner, *Controlling Agencies with Cost-Benefit Analysis: A Positive Political Theory Perspective*, 68 U. CHI. L. REV. 1137, 1199 (2001) ("These last comments reverse the conventional wisdom about the politics of cost-benefit analysis. If cost-benefit analysis works the way it is supposed to, liberals should favor cost-benefit analysis and conservatives should oppose it."); *see also* Jonathan B. Baker, *"Continuous" Regulatory Reform at the Federal Trade Commission*, 49 ADMIN. L. REV. 859, 861 n.9 (1997) ("To be sure, conservatives have embraced cost-benefit analysis more than liberals. Some liberal critics view cost-benefit analysis as a tool by which industry subverts critical environmental, health and safety regulations."); Gregory C. Keating, Note, *Is Cost-Benefit Analysis the Only Game in Town?*, 91 S. CAL. L. REV. 195, 258–59 (2018) (discussing how "cost-benefit analysis is starkly at odds with out ordinary moral institutions"); Jennifer Nou, Note, *Regulating the Rulemakers: A Proposal for Deliberative Cost-Benefit Analysis*, 26 YALE L. & POL'Y REV. 601, 644 (2008) ("Traditionally, free-market conservatives are styled as the champions of cost-benefit analysis in their attempt, say liberals, to foster deregulation in favor of big-business. At the same time, liberals—comfortably ensconced at EPA, say conservatives—simply allow their indeterminate beliefs about equity and fairness to dictate their decisions."); Mark Eliot Shere, *Building Trust: Conservatives and the Environment*, 20 HARV. J.L. & PUB. POL'Y 829, 837 (1997) ("[C]onservatives have typically been content to talk about the environment almost exclusively in terms of monetary cost. Through 'cost-benefit' analysis and its offshoots,

should persuade conservatives, not liberals. To test the validity of this hypothesis, I performed an ordinary least squares regression of respondents' support for suspending the early morning rest requirement on treatment, ideology, and their interaction with one another.[186] Ideology is self-reported and scored on a seven-point scale—one being "extremely liberal" and seven being "extremely conservative." The higher a respondent's ideology score, the more conservative she is. The results of this ordinary least squares regression are presented in Table 1 below.

conservatives seem determined to put a price on health and safety."); Cass R. Sunstein, *Congress, Constitutional Moments, and the Cost-Benefit State*, 48 STAN. L. REV. 247, 301 (1996) ("[C]onservatives might call for more balancing of costs and benefits, more procedures, and fewer deadlines for administrators; liberals would then argue against cost-benefit analysis and for health-based or technology-based standards, fewer procedures, citizen suits for regulatory beneficiaries, and stricter deadlines . . . .").

[186] *See* Winston Lin, *Agnostic Notes on Regression Adjustments to Experimental Data: Reexamining Freedman's Critique*, 7 ANNALS APPLIED STAT. 295, 296 (2013).

Table 1. Ordinary least squares regression of respondents' support for deregulation on treatment, ideology, and treatment-ideology interaction.[187]

	Support for Deregulation
Constant	3.705***
	(0.090)
CBA	0.204
	(0.123)
Ideology	0.155**
	(0.052)
CBA: Ideology	0.021
	(0.074)
Observations	1009
R^2	0.024
Adjusted R^2	0.021
Note:	$^{*}p < 0.05$ $^{**}p < 0.01$ $^{***}p < 0.001$

As it turns out, the data does not support the prevailing wisdom; respondents' susceptibility to the cost-benefit argument did not appear to be a function of ideology.[188] Regardless of how the case was presented, liberals tended to resist the proposed deregulation more than conservatives.[189] Liberals do not, however, appear to be more hostile to the cost-benefit paradigm than conservatives.

In sum, there is no evidence that people are more likely to oppose a policy justified in cost-benefit terms, despite the unequivocal

[187] HC-2 robust standard errors are given in parentheses for all regression tables.

[188] This can be seen from estimate for the coefficient on the treatment-ideology interaction term. An estimate of 0.021 and a standard error of 0.074 implies that the null hypothesis of there being no relationship cannot be rejected.

[189] This can be seen from the estimate for the coefficient on the ideology term: 0.155 with a standard error of 0.052.

comparison made between money and lives. If anything, cost-benefit reasoning appeared to bolster support for the deregulatory measure.

People's impressions of a source were also undisturbed by a consequentialist approach to regulation. Recall that respondents were asked about the accuracy, openness, opportunism, and thoroughness of the proponent of the suspension of the early morning rest requirement. Their responses were coded from one to seven, where one corresponds to "strongly disagree"; two corresponds to "disagree"; three corresponds to "somewhat disagree"; four corresponds to "neither agree nor disagree"; five corresponds to "somewhat agree"; six corresponds to "agree"; and seven corresponds to "strongly agree." On the whole, cost-benefit analysis did not alter respondents' perception of the source's accuracy: whether the source can be trusted to "get the facts right" ($p = 0.985$, two-sided t-test).[190]

Neither did it shake respondents' perception of the source's openness—whether the source will "tell [them] the facts it has" ($p = 0.6303$, two-sided t-test)—or thoroughness—whether the source "consider[s] all relevant factors in making a decision" ($p = 0.9104$, two-sided t-test). Perceptions of the source as opportunistic were likewise unchanged ($p = 0.9344$, two-sided t-test). Finally, separating the conservatives in the sample from the liberals did not produce qualitatively different results.[191] These results are depicted in Figure 2, Figure 3, and Table 2 below.

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[190] With the caveat throughout that the absence of evidence against the null hypothesis does not prove it true. *See, e.g.*, RAMON E. HENKEL, TESTS OF SIGNIFICANCE 35 (1976) ("[W]e cannot prove a hypothesis to be true. From a logical point of view, the only alternatives open in a test of significance are that we can either reject a null hypothesis, or we can fail to reject the null hypothesis.").

[191] These results are consistent with a prior finding that an agency's publication of its own cost-benefit analysis had little, if any, influence on public trust in government. *See* Stiglitz, *supra* note 145, at 185.

Figure 2. Average Degree of Agreement with the Statement that the Source Can Be Trusted to Get the Facts Right in the First Experiment.

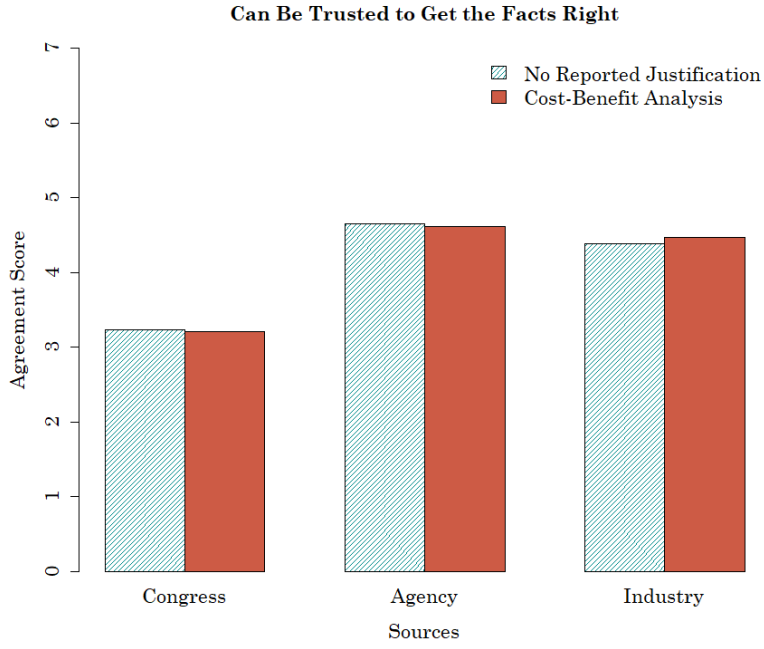

Figure 3. Average Degree of Agreement with the Statement that the Source Is Likely to Take Advantage of Circumstances to Advance Its Own Interest in the First Experiment.

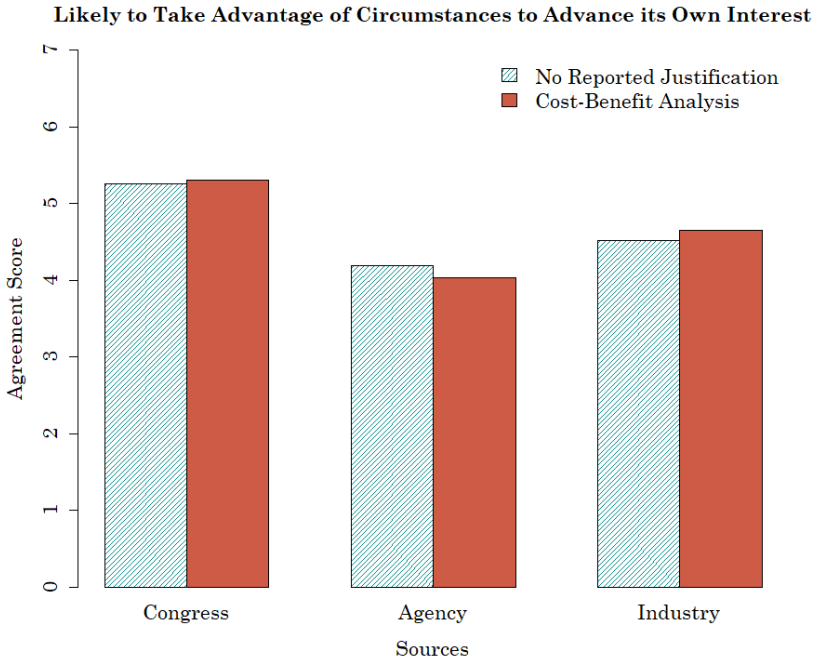

Table 2. Ordinary Least Squares Regression of Respondents' Perception of the Source Based on Treatment, Ideology, and Treatment-Ideology Interaction.

	Accuracy	Openness	Opportunism	Thoroughness
Constant	4.092***	3.986***	4.654***	4.187***
	(0.063)	(0.071)	(0.066)	(0.068)
CBA	0.000	0.046	0.008	-0.012
	(0.090)	(0.099)	(0.095)	(0.095)
Ideology	0.000	0.003	-0.001	0.002
	(0.036)	(0.041)	(0.039)	(0.040)
CBA: Ideology	0.068	0.050	-0.024	0.032
	(0.054)	(0.058)	(0.056)	(0.056)
Observations	1009	1009	1009	1009
R^2	0.003	0.002	0.000	0.001
Adjusted R^2	0.000	-0.001	-0.003	-0.002
Note:	$^{*}p < 0.05$	$^{**}p < 0.01$	$^{***}p < 0.001$	

The results of the first experiment are intriguing. Participants were not outraged by a cost-benefit calculus that pitted lives against costs and lost wages. The appeal to cost-benefit analysis, if anything, made respondents more favorably disposed towards the deregulatory measure being proposed.

D. THE SECOND EXPERIMENT: QUANTIFICATION OF THE COST-BENEFIT ARGUMENT

The first experiment did not find widespread aversion towards cost-benefit reasoning in policymaking.[192] One explanation might be the extremely high costs of the early morning rest requirement as

[192] *Cf.* Zamir, *supra* note 25, at 117 (concluding from a review of empirical studies that "there appears to be a wide-spread aversion to CBA").

described in the treatment condition.[193] By repudiating the early morning rest requirement, the source placed an upper bound of $25 million on the value of a statistical life. This ceiling is greater than most academic and governmental estimates. Moreover, the cost-benefit analysis performed by a third-party may not have sufficiently implicated the source. Though the source acknowledged the "difficult trade-offs between traffic safety and increased transportation costs," it did not expressly reject the early morning rest requirement *on account of* its modest benefits.

The second experiment was designed to address these concerns. To test whether the high upper bound on the value of a statistical life might have dampened objections to the risk-life trade-off in the first experiment, the second experiment features two additional treatment conditions: one that sets the value of a statistical life at no more than $1.25 million, and one that describes the stakes but does not quantify them. The treatment conditions additionally commit the source more deeply to a consequentialist rationale: deregulation is advisable "because very few lives are expected to be saved by the early morning rest requirement."

1. Design and Sample. The second experiment, like the first, was based on the HOS rules for truck drivers. As before, survey respondents began by reading a news story describing the proposed suspension of the early morning rest requirement. This time, however, the proposal is attributed solely to the FMCSA. The story highlights the same two frames for thinking about the issue: public safety and freedom of choice. But it now concludes in one of four possible ways. In the control condition, respondents learned that the "paper has reached out to the FMCSA for comment." In the unquantified cost-benefit balancing condition ("unquantified condition"), respondents were informed that

> [i]n response to an inquiry from this paper, a spokesperson for the FMCSA explained that policymaking involves difficult trade-offs between traffic safety and increased transportation costs, costs that would eventually be passed on to American

[193] *But see* SUNSTEIN, *supra* note 148, at 127 (noting that it is not the low value being placed on a human life that provokes outrage, but the explicit trade-off between risk and cost).

> consumers. Because very few lives are expected to be saved by the early morning rest requirement, the agency is confident that the proposal strikes the right balance between the legitimate interests of competing stakeholders.

In the low-value-of-a-statistical-life condition (low condition), respondents were told that

> [i]n response to an inquiry from this paper, a spokesperson for the FMCSA explained that policymaking involves difficult trade-offs between traffic safety and increased transportation costs, costs that would eventually be passed on to American consumers. An independent study conducted by researchers at Amherst University had found the early morning rest requirement to be highly disruptive, adding approximately $10 million dollars to operating costs and lost wages each year while only saving an estimated eight lives annually. Because very few lives are expected to be saved by the early morning rest requirement, the agency is confident that the proposal strikes the right balance between the legitimate interests of competing stakeholders.

The agency's proposed course of action indicates that it values a statistical life at no more than $1.25 million. The low condition thus implies an upper bound of $1.25 million on the value of a statistical life. The high-value-of-a-statistical-life condition (high condition) is identical to the low condition, except the cost of the early morning rest requirement was valued at $200 million. The high condition therefore implies the much greater upper bound of $25 million on the value of a statistical life.

After reading the story, respondents were probed about the extent to which they support or oppose the proposal and their impressions of the FMCSA—specifically, whether they have a "favorable or unfavorable view" of the agency. Demographic information was also collected at the end of the survey.

As some respondents did not enter their completion codes into Amazon Mechanical Turk, a total of 2,006 surveys—rather than the

2,000 originally intended—were completed and recorded. Respondents ranged from nineteen to eighty-five years of age, with 1,128 being male and 878 being female. In terms of the political spectrum, 267 identified themselves as "extremely liberal," 544 as "liberal," 293 as "slightly liberal," 384 as "moderate," 250 as "slightly conservative," 196 as "conservative," and 72 as "extremely conservative." Like the participants in the first survey, participants were younger[194] and more liberal[195] than the national population, and males were overrepresented.[196]

2. Results. The degree of support for or opposition to the suspension of the morning rest requirement under each of the four conditions is illustrated in Figure 4 below. Looking at these distributions, it appears that cost-benefit arguments bolstered support for suspending the early morning rest requirement. More rigorously, the SATE of relying on un-quantified cost-benefit reasoning is an increase in support of 0.198 on the seven-point scale with a standard error of 0.117. The possibility that this increase is due to chance alone, however, cannot be confidently excluded ($p = 0.092$, two-sided t-test). The SATE of relying on a quantified cost-benefit analysis that implies an upper bound of $1.25 million on the value of a statistical life is 0.325, with a standard error of 0.119. This effect is statistically significant—that is, it is extremely unlikely to be observed in the absence of any true difference between treatment and control ($p = 0.006$, two-sided t-test). Finally, the SATE of relying on quantified cost-benefit analysis that implies an upper bound of $25 million on the value of a statistical life is 0.301, with a standard error of 0.115. This effect, too, is statistically significant ($p = 0.009$, two-sided t-test).

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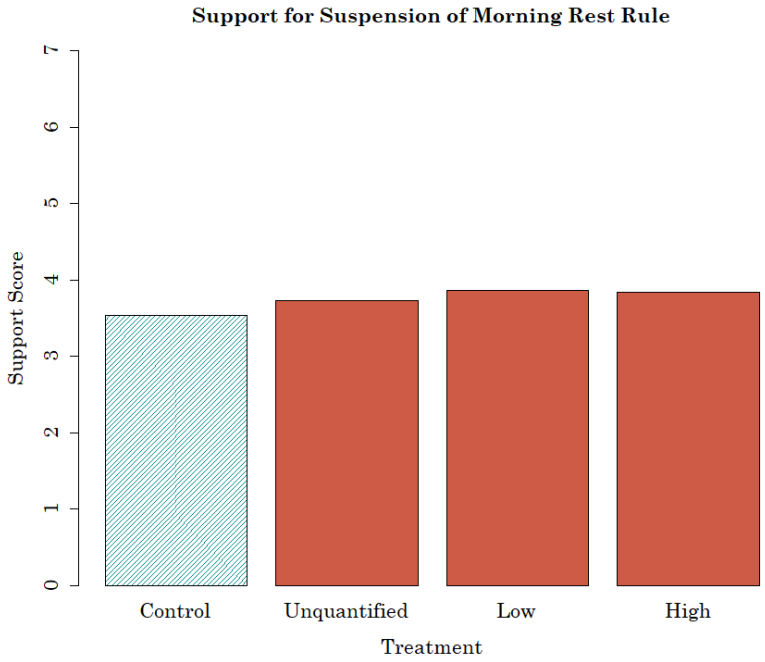
[194] *The ANES Guide to Public Opinion and Electoral Behavior*, *supra* note 180, tbl.1A.1.

[195] *Id.* tbl.3.1, https://electionstudies.org/resources/anes-guide/top-tables/?id=29.

[196] *Id*. tbl.1A.2, https://electionstudies.org/resources/anes-guide/top-tables/?id=2.

Figure 4. Average Degree of Support for the Suspension of the Morning Rest Rule in the Second Experiment.



In sum, by numerically comparing the lives saved by the early morning rest requirement to the financial toll it exacts in operating costs and lost wages, the agency convinced respondents that the early morning rest requirement ought to be suspended. This finding holds whether the implied upper bound on the value of a statistical life is $1.25 million or $25 million.

Additionally, the SATE of invoking qualitative cost-benefit balancing or quantified cost-benefit analysis does not vary much by ideology. Table 3 displays the output of an ordinary least squares regression of support for suspending the early morning rest rule on treatment, ideology, and the interaction of treatment and ideology. The estimated coefficients on all interaction terms are positive, suggesting that conservative respondents are more easily swayed by a cost-benefit argument. These values, however, are very small and likely fortuitous.

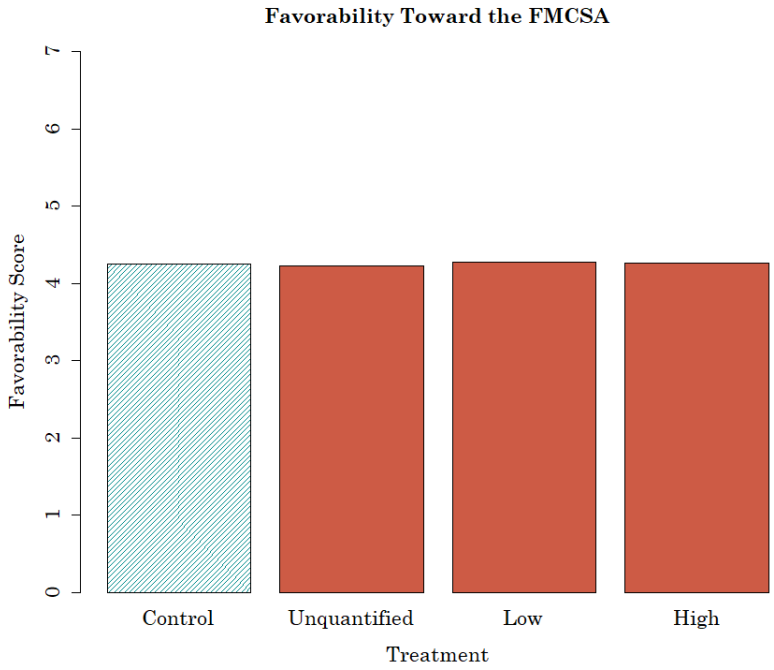
Table 3. Ordinary Least Squares Regression of Respondents' Support for Deregulation Based on Treatment, Ideology, and Treatment-Ideology Interaction.

	Support for Deregulation
Constant	3.537***
	(0.083)
Unquantified	0.204
	(0.117)
Low	0.335**
	(0.119)
High	0.298**
	(0.115)
Ideology	0.001
	(0.052)
Unquantified: Ideology	0.096
	(0.074)
Low: Ideology	0.117
	(0.073)
High: Ideology	0.077
	(0.071)
Observations	2006
R^2	0.011
Adjusted R^2	0.007
Note:	*$^{*}p < 0.05$ $^{**}p < 0.01$ $^{***}p < 0.001$*

Finally, cost-benefit arguments did not have a discernible influence on people's impressions of the FMCSA. Recall respondents

were asked whether they had a favorable or unfavorable view of the agency. A favorability score was obtained by coding respondents' answers from one to seven, where one corresponds to "extremely unfavorable"; two corresponds to "moderately unfavorable"; three corresponds to "slightly unfavorable"; four corresponds to "neutral"; five corresponds to "slightly favorable"; six corresponds to "moderately favorable"; and seven corresponds to "extremely favorable." Figure 5 summarizes the mean score for each group.

Figure 5. Average Degree of Favorability Toward the FMCSA in the Second Experiment.



The FMCSA's unquantified balancing of costs and benefits diminished its standing by 0.023 on a seven-point scale, with a standard error of 0.071. This decline, however, might be due to random variation ($p = 0.741$, two-sided t-test). In contrast, a resort to hard numbers improved the agency's standing, though the observed differences could also be plausibly due to chance ($p = 0.710$,

two-sided *t*-test; $p = 0.900$, two-sided *t*-test). The SATEs of the low and high conditions on respondents' perceptions of the FMCSA are similarly small and inconclusive.[197] There are no signs of consequentialism tarring the agency's public image.

Overall, there is little indication that the cost-benefit arguments turned people against the policy or tainted their impressions of the policymaker. In fact, reliance on quantified cost-benefit analysis engendered greater agreement with the agency's recommendation.

3. Discussion. There remain two issues to be addressed. The first relates to the proper interpretation of the results and the second to their generalizability to the population.

The Because Heuristic and Manipulation Checks. An interesting feature of the data is the absence of any observable difference in outcomes across the low and high conditions. This apparent uniformity deserves comment and further investigation because it raises the possibility that the survey responses were rendered mindlessly—that is, without evaluation of the news story's contents.[198] A famous study illustrated, for instance, that people waiting to use a copy machine acceded more readily to a stranger's request to skip the queue when a vacuous reason accompanied the request, compared to no reason at all.[199] When the request involved a small number of copies, both genuine and placebic reasons generated the same level of compliance: ninety-four percent and ninety-three percent, respectively.[200] This phenomenon is sometimes dubbed the "because heuristic."[201] Put simply, "people tend to process small requests mindlessly."[202] Here, the subjects in the treatment conditions might have favored deregulation simply because the agency offered a justification for its proposal, whereas the control condition remained silent on the agency's rationale for relaxing the early morning rest requirement. The observed

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[197] The SATE for the low condition is 0.027 with a standard error of 0.074. The corresponding statistics for the high condition are 0.009 and 0.071, respectively.

[198] *See generally* Ellen J. Langer, Arthur Blank & Benzion Chanowitz, *The Mindlessness of Ostensibly Thoughtful Action: The Role of "Placebic" Information in Interpersonal Interaction*, 36 J. PERSONALITY & SOC. PSYCHOL. 635 (1978).

[199] *Id.* at 636–38.

[200] *Id.* at 637 tbl.1.

[201] *See, e.g.*, FRANK KARDES, MARIA L. CRONLEY & THOMAS W. CLINE, CONSUMER BEHAVIOR 360 (2d ed. 2014).

[202] *Id.*

treatment effects might, therefore, be attributable to the "because heuristic."

A reply is that if the justifications offered by the agency were processed, then the results corroborate the absence of any taboo against cost-benefit reasoning in the tested scenario because the respondents understood, but did not repudiate, the cost-benefit argument being proffered. The second experiment included a manipulation check to assess the empirical validity of the premise—i.e., that the justifications offered by the agency were actually processed. Participants were asked post-response whether they recalled the agency's stated reason for relaxing the early morning rest requirement, and 92.4% of respondents in the control group answered correctly—no explanation had been given for the policy change. In contrast, only 24.9% of respondents assigned to the unquantified condition remembered the cost-benefit reasoning proffered by the agency. The passage rate for the low and high conditions registered at 71.0% and 70.7%, respectively. These last two percentages are reassuring.[203] They confirm that a large majority of respondents who were apprised of the costs and benefits of deregulation in numerical terms received and retained that information. Yet the agency's willingness to trade death for dollars did not elicit disapprobation.

The question remains why subjects approved equally of a trade-off between eight lives and $10 million and a trade-off between eight lives and $200 million. Though the studies presented here do not speak directly to this aspect of human decisionmaking, insensitivity to numbers is characteristic of reason-based—as opposed to preference-based—choice, especially in situations implicating personal values and self-identity.[204] The second

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[203] Dropping respondents who do not pass a manipulation check may result in biased estimates of the treatment effect. *See, e.g.*, Peter M. Aronow, Jonathon Baron & Lauren Pinson, *A Note on Dropping Experimental Subjects Who Fail a Manipulation Check*, 27 POL. ANALYSIS 572, 576–77 (2019); Jacob M. Montgomery, Brendan Nyhan & Michelle Torres, *How Conditioning on Posttreatment Variables Can Ruin Your Experiment and What to Do about It*, 62 AM. J. POL. SCI. 760, 776 (2018). Thus, the results presented here did not drop such respondents.

[204] *See* Eldar Shafir, Itamar Simonson & Amos Tversky, *Reason-based Choice*, 49 COGNITION 11, 33 (1993); Oleg Urminsky & Ran Kivetz, *Scope Insensitivity and the "Mere Token" Effect*, 48 J. MARKETING RES. 282, 284 (2011).

experiment thus suggests Americans accommodate consequentialist reasons for abandoning life-saving regulation.

External Validity and Heterogeneous Treatment Effects. Finally, are results obtained on Turkers descriptive of the U.S. citizenry as a whole? Short of procuring an expensive population sample, the robustness of such an inference might be assessed by searching for heterogeneity in the treatment effect. Suppose that the treatment effect varies by, say, the age and sex of the individual being treated. The SATE then might diverge from the population average treatment effect (PATE) to the extent that the sample is disproportionately young or male vis-à-vis the population. [205] Conversely, the unrepresentativeness of the sample is less of a problem if the treatment effect were homogenous, because the SATE would be a good estimate for the PATE.[206]

Machine learning techniques help explore heterogeneous treatment effects in the second experiment. Specifically, the average treatment effect for respondents sharing particular attributes—termed the conditional average treatment effect (CATE)—may be empirically derived using a meta-learner and a base-learner.[207] First, estimate the statistical relationship between control and treatment outcomes and personal attributes.[208] The base-learner chosen for this task—the Bayesian additive regression trees model—is very flexible in that it captures non-linear

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[205] *See* Alexander Coppock, Thomas J. Leeper & Kevin J. Mullinix, *Generalizability of Heterogeneous Treatment Effect Estimates Across Samples*, 115 PROC. NAT'L ACAD. SCI. 12441, 12441 (2018) (noting that "[t]he extent to which survey experiments conducted with non-representative convenience samples are generalizable to target populations depends critically on the degree of treatment effect heterogeneity"); Kosuke Imai, Gary King & Elizabeth A. Stuart, *Misunderstandings Between Experimentalists and Observationalists About Causal Inference*, 171 J. ROYAL STAT. SOC. SERIES A 481, 491 (2008); Luke W. Miratrix, Jasjeet S. Sekhon & Bin Yu, *Adjusting Treatment Effect Estimates by Post-Stratification in Randomized Experiments*, 75 J. ROYAL STAT. SOC. SERIES B 369, 389 (2013).

[206] Coppock et al., *supra* note 205, at 12445; Alexander Coppock, *Generalizing from Survey Experiments Conducted on Mechanical Turk: A Replication Approach*, POL. SCI. RES. & METHODS 613, 616 (2019).

[207] Sören R. Künzel, Jasjeet S. Sekhon, Peter J. Bickel & Bin Yu, *Metalearners for Estimating Heterogeneous Treatment Effects Using Machine Learning*, 116 PROC. NAT'L ACAD. SCI. 4156, 4164 (2019).

[208] *Id.* at 4157.

structures in the data.[209] The output returned by the base-learner is used to make counterfactual predictions of outcomes.[210] Consider, for example, a respondent sorted to the control condition. Her recorded outcome is the outcome under the control. Her potential outcome under treatment is unobserved. But it can be predicted from the outcomes of comparable respondents in the treatment group. Similarly, consider a respondent assigned to the treatment condition. Her potential outcome under the control is unobserved but can be predicted from the outcomes of comparable respondents in the control group.

From these counterfactual predictions, a treatment effect is imputed for each respondent.[211] For respondents in the control group, the imputed treatment effect is simply the difference between the predicted outcome under treatment and the measured outcome. For respondents in the treatment group, it is the difference between the measured outcome and the predicted outcome under the control. The base-learner is then deployed a second time to describe these imputed treatment effects as a function of personal attributes.[212] This step is done separately for respondents in the control group and respondents in the treatment group. The estimator for a CATE is a calibrated average of the corresponding estimators for treated respondents and those assigned to control.[213] This entire procedure constitutes a meta-learner—the X-learner.

The attributes fed into the algorithm here were age (continuous variable), gender (indicator variable), level of education (indicator variables), ideology (continuous variable), and party affiliation (continuous variable). The learners were trained and tested on data from the second experiment. The distribution of the estimated CATE for every experimental condition and outcome is displayed in

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[209] Hugh A. Chipman, Edward I. George & Robert E. McCulloch, *BART: Bayesian Additive Regression Trees*, 4 ANNALS APPLIED STAT. 266, 269 (2010) ("[A] sum-of-trees model gains increased representational flexibility . . . endow[ing] BART with excellent predictive capabilities."); Donald P. Green & Holger L Kern, *Modeling Heterogenous Treatment Effects in Survey Experiments with Bayesian Additive Regression Trees*, 76 PUB. OPINION Q. 491, 508 (2012) ("These features make BART an appealing tool for survey experimenters who want to model treatment effect heterogeneity in a flexible and robust manner.").

[210] Künzel et al., *supra* note 207, at 4160.

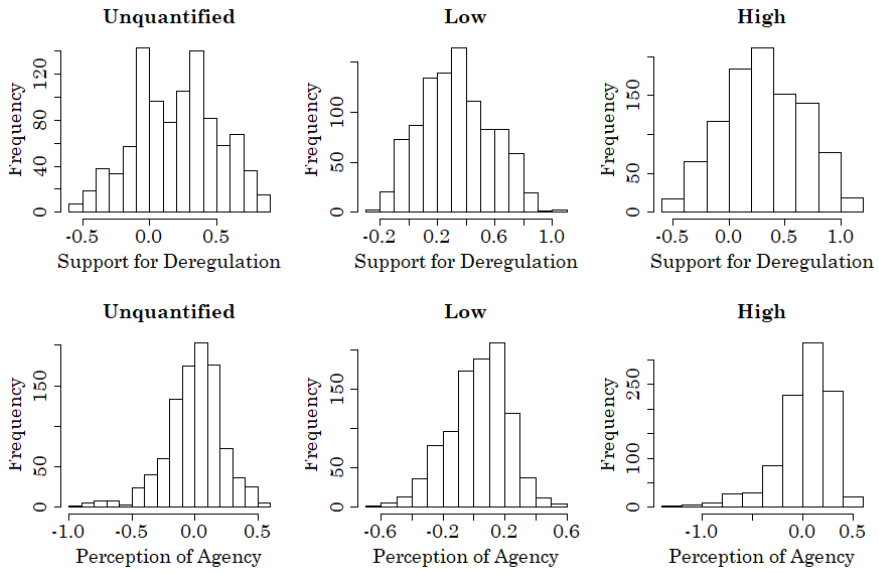
[211] *Id.* at 4158.

[212] *Id.*

[213] *Id.*

Figure 6. As can be seen, the estimates reveal a fair amount of potential heterogeneity in individual responses to treatment. The CATE of an unquantified cost-benefit argument on support for deregulation of the trucking industry, for example, ranges from a decrease of 0.531 to an increase of 0.848 on a seven-point scale, depending on the characteristics of the recipient. The histograms suggest that some people do react negatively to the balancing of deaths against dollars, and predictably so.

Figure 6. Distribution of CATEs for Each Outcome-Treatment Combination in the Second Experiment.



To evaluate the impact of heterogeneous treatment effects on the generalizability of the survey experiment, I generated predicted treatment effects for the American population using American National Election Studies' 2016 sample.[214] For every individual captured by the ANES survey, the machine returns a predicted treatment effect that is conditioned on that person's reported attributes. The average of these predicted treatment effects,

[214] AM. NAT'L ELECTION STUDIES, UNIV. OF MICH. & STANFORD UNIV., 2016 TIME SERIES STUDY (2016), https://doi.org/10.3886/ICPSR36824.v2.

weighted appropriately, produces an estimate of the PATE.[215] Recall that the SATEs of the FMCSA's cost-benefit justification in support for the suspension of the early morning rest requirement are 0.198 for the unquantified condition, 0.325 for the low condition, and 0.301 for the high condition. Estimates of the PATEs were slightly higher: 0.316, 0.376, and 0.395, respectively. Taking perception of the FMCSA as the relevant outcome variable, the PATEs are -0.190 for the unquantified condition, 0.056 for the low condition, and 0.066 for the high condition, compared to SATEs of -0.023, 0.027, and 0.063, respectively. Other than the unquantified condition, the PATEs—like the SATEs—are small and positive.

Overall, these results give some confidence that the qualitative conclusions of the second experiment for the low and high conditions are likely to carry over to the general population.[216]

E. THE THIRD EXPERIMENT: MANIPULATING NORMS

Previous studies have demonstrated that decisionmakers who entertained taboo trade-offs were punished for their moral transgressions. The Danner Commission experiment conducted in 2000, for example, found that "explicit spelling out of the trade-off [between human lives and the economy] . . . tarnished the image of a previously well-regarded reformist commission, rendering suspect its entire policy agenda."[217] And Cass Sunstein's 2016 poll revealed sizeable opposition to regulating based on the value of a statistical

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[215] V160101 from the ANES dataset is used to weigh individual observations. *See* MATTHEW DEBELL, HOW TO ANALYZE ANES SURVEY DATA (May 2010), https://www.electionstudies.org/wp-content/uploads/2018/05/HowToAnalyzeANESData.pdf.

[216] There may, however, still be unobserved differences between Turkers and other members of the population that are not accounted for in the analysis. Turkers, for instance, may be more socially detached than less frequent users of the internet. *See* McCredie & Morey, *supra* note 173, at 764. There is some anecdotal evidence, however, that Turkers are not oblivious to the value of human life and how it is to be vindicated. Turkers participating in my ultimately successful replication of W. Kip Viscusi's Ford Pinto experiment sent emails expressing their anger and disgust at the automobile manufacturer. One Turker insisted that she "had to comment! Regardless of this company having one of the best safety ratings, the fact that they were aware of the defect and chose to do nothing makes them a terrible company in my opinion." E-mail from a Turker, to Benjamin M. Chen (Jan. 6, 2019, 8:43 AM) (on file with author).

[217] Tetlock, *supra* note 71, at 256.

life.[218] The experiments related here, in contrast, failed to detect any such disapproval of cost-benefit analysis. And a related study by Edward Stiglitz—fielded through Amazon Mechanical Turk—also did not uncover any evidence of cost-benefit analysis diminishing trust in the government.[219]

The presence or absence of a price tag on life, among other things, could explain the divergent results. Emphasizing the dollar value being placed on life may be too obtrusive if the purpose of the experiment is to evaluate public acceptance of risk-money trade-offs in regulation. An experiment that tries to provoke a denunciation of taboo trade-offs might register one because participants believe that they are expected to articulate such views. This possibility is heightened where the study is conducted by a faculty member on students in a laboratory.[220] Online experiments, in contrast, are less susceptible to social desirability bias[221] and may mitigate demand effects by reducing or eliminating the opportunity for subjects to observe the experimenter or their peers.[222] When studying taboo trade-offs, one must be alert to demand effects and social desirability biases.

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[218] SUNSTEIN, *supra* note 14, at 27.

[219] Stiglitz, *supra* note 145, at 183–86.

[220] *See* Daniel John Zizzo, *Experimenter Demand Effects in Economic Experiments*, 13 EXPERIMENTAL ECON. 75, 77 (2010) (counselling against "the physical presence of the experimenter (where noticeable) or the use of a sample of one's own students in experiments"); *see also* Ivar Krumpal, *Determinants of Social Desirability Bias in Sensitive Surveys: A Literature Review*, 47 QUALITY & QUANTITY 2025, 2041 (2013) (stating that researchers "have made some progress in reducing measurement errors due to deliberate misreporting on sensitive topics, principally by increasing the anonymity of the question-and-answer process"); Duane P. Schultz, *The Human Subject in Psychological Research*, 72 PSYCHOL. BULL. 214, 221 (1969) (comparing the relationship between the experimenter and the subject to other "one-sided relationships [such as] those of parent and child, physician and patient, or drill sergeant and trainee"). *But see* Berinsky et al., *supra* note 172, at 366 (speculating that Turkers have a greater "concern for pleasing the researcher").

[221] *See generally* Allyson L. Holbrook & Jon A. Krosnick, *Social Desirability Bias in Voter Turnout Reports: Tests Using the Item Count Technique*, 74 PUB. OPINION Q. 37 (2010); Frauke Kreuter, Stanley Presser & Roger Tourangeau, *Social Desirability Bias in CATI, IVR, and Web Surveys: The Effects of Mode and Question Sensitivity*, 72 PUB. OPINION Q. 847 (2008).

[222] Zizzo, *supra* note 220, at 77; *see also* Lars J. Lefgren, David P. Sims & Olga B. Stoddard, *Effort, Luck and Voting for Redistribution*, 143 J. PUB. ECON. 89, 91 (2016) (discussing the pros and cons of using an online subject pool).

Demand effects occur when subjects endeavor to please the researcher.[223] An experiment is a form of social interaction, and participants navigate it based on their preconceived notions about the research enterprise and the more immediate cues they pick up from their surroundings.[224] Specifically, subjects "recogni[ze] that [they are] not merely responding to a set of stimuli but [are] doing so in order to produce 'good' data, that is, data characteristic of a 'good' subject."[225] They may therefore modify their behavior or answers to fulfill this role and satisfy the experimenter.[226] Consider, for instance, participants in an experiment who were invited to shred valuable coupons that were otherwise theirs to keep. One-third of them did so, despite the absence of any material incentive for destroying those coupons.[227] And students who believed an investigator to be from "The Institute of Social Research" were more likely to give situational reasons for a murder than those who believed the investigator to be from "The Institute of Personality Research," who explained the murder in dispositional terms instead.[228]

Demand effects are a fundamental threat to the relevance and utility of controlled experiments for the social sciences. Experiments do not validly and reliably provide insight into attitudes and

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[223] *See, e.g.*, de Quidt et al., *supra* note 176, at 3267 (noting that "motives could include altruism, a desire to conform, a misguided attempt to contribute to science, or an expectation of reciprocity from the experimenter").

[224] Martin T. Orne, *Demand Characteristics and the Concept of Quasi-Controls*, *in* ARTIFACTS IN BEHAVIORAL RESEARCH 110, 110–11 (Robert Rosenthal & Ralph L. Rosnow eds., 2009); George Loewenstein, *Experimental Economics from the Vantage-Point of Behavioral Economics*, 109 ECON. J. 25, 30 (1999); Zizzo, *supra* note 220, at 75.

[225] Orne, *supra* note 224, at 111.

[226] *See generally* Fredrik Carlsson, Mitesh Kataria & Elina Lampi, *Demand Effects in Stated Preference Surveys*, 90 J. ENV'T ECON. & MGMT. 294 (2018).

[227] *See* Piers Fleming & Daniel John Zizzo, *A Simple Stress Test of Experimenter Demand Effects*, 78 THEORY & DECISION 219, 224 (2015) (finding that "altruism towards the experimenter is unable to explain the key finding of destruction of coupons"); *see also* Nicholas Bardsley, *Dictator Game Giving: Altruism or Artefact?*, 11 EXPERIMENTAL ECON. 122, 131 (2008) (demonstrating that the generosity observed in dictator games disappears once first-movers are given the opportunity to take, rather than just give, money and arguing that previous findings are explained by experiment demand, not altruism).

[228] Ara Norenzayan & Norbert Schwarz, *Telling What They Want to Know: Participants Tailor Causal Attributions to Researchers' Interests*, 29 EUR. J. SOC. PSYCHOL. 1011, 1015–16 (1999).

behavior in the wild if their outcomes are artifacts of the experimental setting. Researchers therefore go to some lengths to obscure the true nature of their inquiry from subjects.[229] They conjure cover stories for their studies,[230] employ between-subject designs to prevent comparisons across different experimental conditions,[231] and resort to various subterfuges to make the experimental treatment less obvious.[232]

Social desirability bias may also infect experimental findings. Participants embellish their record of conformity to social norms and expectations, especially if they perceive themselves to be under evaluation.[233] To illustrate, research on the impact of advertising on voter turnout reported that "among young people who reported voting in [the 2002 midterm] election, only 32% actually did"—a phenomenon explained by the "pressure [on people] to say they voted in elections, even when they did not."[234] Social desirability

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[229] *See* Austin Lee Nichols & Jon K. Maner, *The Good Subject Effect: Investigating Participant Demand Characteristics,* 135 J. GEN. PSYCHOL. 151, 157 (2008) (finding that "participants exhibited a moderately sized bias toward confirming the seeming hypothesis of the study").

[230] *See, e.g.*, John G. Bullock, *Elite Influence on Public Opinion in an Informed Electorate*, 105 AM. POL. SCI. REV. 496, 499 (2011) (telling participants in an experiment comparing the relative influence of party cues and policy information that the study examined "reactions to 'news media in different states'").

[231] *See, e.g.*, Dorothee Mischkowski, Rebecca Stone & Alexander Stremitzer, *Promises, Expectations, and Social Cooperation*, 62 J.L. & ECON. 687, 695 n.15 (2019) (employing a between-subject design because it might otherwise become "apparent to subjects that [the experimenters] were studying the effects of promising and expectations, and subjects may distort their answers to conform to their beliefs about [the experimenters'] hypotheses, or, more minimally, to create a false impression of consistency").

[232] *See, e.g.*, Anthony Fowler & Michele Margolis, *The Political Consequences of Uninformed Voters*, 34 ELECTORAL STUD. 100, 103 (2014) (noting that "embedd[ing]" political information in letters to the editor rather than "providing [it] outright" may "minimize experimental demand effects").

[233] *See* Orne, *supra* note 224, at 111 (noting that "[i]f the experimental task is such that the subject sees himself as being evaluated he will tend to behave in such a way as to make himself look good"); Roger Tourangeau & Ting Yan, *Sensitive Questions in Surveys*, 133 PSYCHOL. BULL. 859, 860–62 (2007)*; see also* Yonas Alem, Håkan Eggert, Martin G. Kocher & Remidius D. Ruhinduka, *Why (Field) Experiments on Unethical Behavior Are Important: Comparing States and Revealed Behavior*, 156 J. ECON. BEHAV. & ORG. 71, 71 (2018) (finding that in a "natural setting, people may actually behave inconsistently with the way in which they otherwise 'brand' themselves").

[234] Lynn Vavreck, *The Exaggerated Effects of Advertising on Turnout: The Dangers of Self-Reports*, 2 Q.J. POL. SCI. 325, 333 (2007).

bias is greater in situations that are morally or ethically salient.[235] It therefore is especially likely to surface in the present context; people who reason on the basis of "harm and welfare consequences" are not seen to be taking a moral stand.[236] Worse, people who are willing to sacrifice a life to save others are perceived as being less empathic and as having inferior moral character than those who refuse to do so.[237] They are disfavored as social partners and seen as less moral and trustworthy.[238] Critically, individuals are aware of how others judge them and they therefore tailor their views to the occasion.[239] An experiment that emphasizes the symbolic meaning of a trade-off invites—and therefore receives—socially expected responses.[240]

1. Design and Sample. To examine the latency of demand effects and social desirability biases in the study of taboo trade-offs, I replicated a version of the Danner Commission experiment on 1513 Turkers.[241] All subjects were apprised of the choice between keeping the funding for a government clean-up program at $200 million or redirecting $100 million toward fiscal priorities and incurring a loss of approximately ten lives. Like in the original experiment, some learned that the Danner Commission had "conclude[d] that morally, reducing the program's funding is the right thing to do," while

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[235] *See generally* Janne Chung & Gary S. Monroe, *Exploring Social Desirability Bias*, 44 J. BUS. ETHICS 291 (2003); Donna M. Randall & Maria F. Fernandes, *The Social Desirability Response Bias in Ethics Research*, 10 J. BUS. ETHICS 805 (1991).

[236] Tamar A. Kreps & Benoît Monin, *Core Values Versus Common Sense: Consequentialist Views Appear Less Rooted in Morality*, 40 PERSONALITY & SOC. PSYCHOL. BULL. 1529, 1540 (2014).

[237] *See generally* Uhlmann et al., *supra* note 177.

[238] ERIC A. POSNER, LAW AND SOCIAL NORMS 192–98 (2000) (arguing that people make claims of incommensurability in order to signal their loyalty and trustworthiness); Jim A. C. Everett, David A. Pizarro & M. J. Crockett, *Inference of Trustworthiness from Intuitive Moral Judgments*, 145 J. EXPERIMENTAL PSYCHOL. 772, 772 (2016).

[239] *See generally* Sarah C. Rom & Paul Conway, *The Strategic Moral Self: Self-Presentation Shapes Moral Dilemma Judgments*, 74 J. EXPERIMENTAL SOC. PSYCHOL. 24 (2018).

[240] *See* Zhi Xing Xu & Hing Keung Ma, *How Can a Deontological Decision Lead to Moral Behavior? The Moderating Role of Moral Identity*, 137 J. BUS. ETHICS 537, 544 (2016) (taking precautions against social desirability bias in an experiment studying the relationship between moral identify, moral decision, and moral behavior).

[241] As in the first two experiments, Turkers had to be from the United States and were required to have an approval rating above ninety-five percent earned over at least fifty completed tasks.

others were informed that the Commission had "conclude[d] that the cost of saving the additional 10 lives is about $10 million per life—a cost it considers too high and one that cannot be justified given other needs and priorities." Subjects were then asked whether they favored keeping or redirecting funding and for their perception of the Commission, both measured on a seven-point scale.

The replication experiment also featured a twist. Prior to taking the survey, participants were randomly sorted to one of three possible introductions. The conventional introduction asked subjects to "read the following scenario carefully" and to answer the questions that follow. The other introductions, in contrast, spelled out an experimental hypothesis. The "pragmatic" introduction disclosed that "[t]his research studies pragmatic decision-making. *The expectation is that people will not punish a decisionmaker who quantifies the value of a human life because they recognize the necessity of making reasonable and consistent trade-offs when resources are scarce.*" The "principled" introduction announced that "[t]his research studies ethical decision-making. *The expectation is that people will punish a decisionmaker who quantifies the value of a human life because life is sacred and beyond price.*" The purpose of these manipulations is to deliberately induce demand effects and social desirability biases in *both* directions so as to evaluate their severity.[242]

2. Results. The outcome of the replication experiment is presented in Figure 7 and Figure 8.

[242] For explanations and details, see de Quidt et al., *supra* note 176, at 3271–76. *See generally* Jonathan Mummolo & Erik Peterson, *Demand Effects in Survey Experiments: An Empirical Assessment*, 113 AM. POL. SCI. REV. 517 (2019) (adopting a similar approach and finding limited evidence of experimenter demand effects).

Figure 7. Average Degree of Support for Redirecting Funding Toward Fiscal Priorities in the Third Experiment.

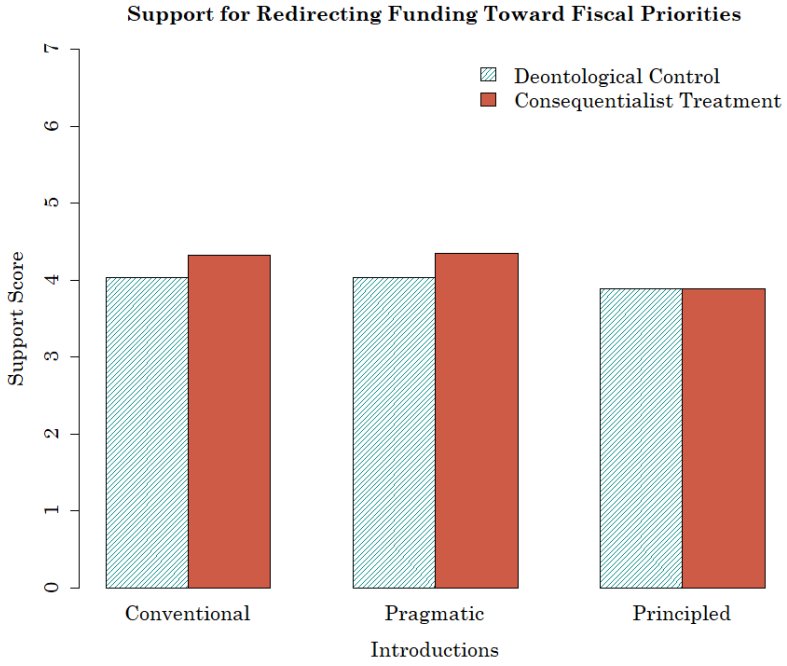
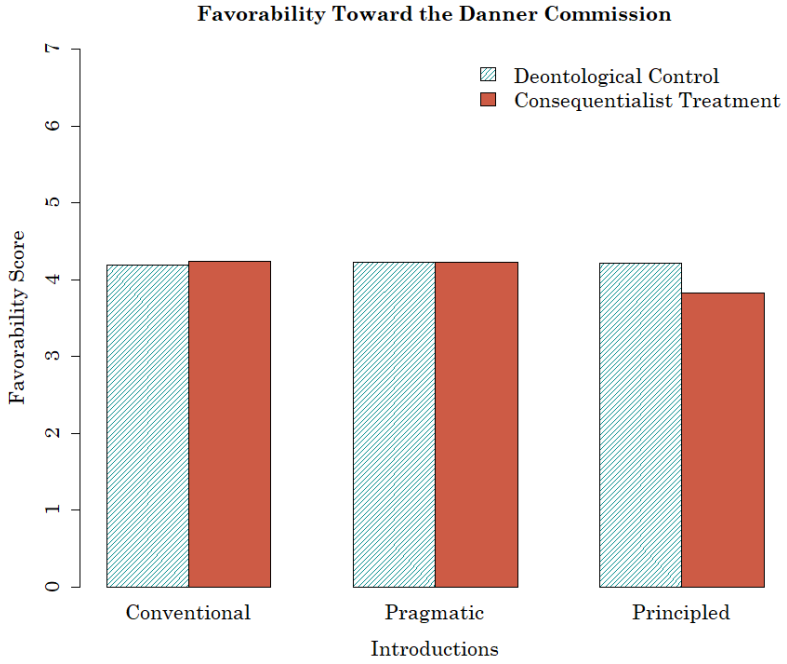


Figure 8. Average Degree of Favorability Toward the Danner Commission in the Third Experiment.



First, the Commission's embrace of a risk-money trade-off did not stir negative reactions under the conventional introduction. The cost-benefit rationale bolstered support for the redeployment of funds, though the SATE—0.284[243]—does not pass the ordinary threshold for statistical significance ($p = 0.155$, two-sided t-test). The cost-benefit rationale also appeared to improve the agency's standing, though the SATE—0.056[244]—is miniscule and likely attributable to random variation ($p = 0.652$, two-sided t-test). These results suggest that the dramatic findings of the original experiment have not held up over time.[245]

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[243] The standard error is 0.199.

[244] The standard error is 0.123.

[245] Psychologists have documented a generational shift in moral beliefs. Millennials are more utilitarian than their elders, especially baby boomers. They are less prone to believing that some exchanges are wrong in and of themselves and more open to sacrificing a life to save others. *See* Ivar R. Hannikainen, Edouard Machery & Fiery A. Cushman, *Is Utilitarian*

An analysis of the other introductions reveals the susceptibility of the experimental scenario to demand effects and social desirability biases. The pragmatic and conventional introductions produced similar results. The invocation of a consequentialist rather than deontological justification failed to incite animosity towards the Commission's recommendation. Rather, it boosted average support for reallocating environmental clean-up funds towards "reducing the deficit, increasing funding for programs to stimulate economic growth and lowering taxes" by 0.323,[246] though this increase falls short of statistical significance ($p = 0.105$, two-sided t-test). The Commission's reputation also escaped unscathed (SATE = -0.003;[247] $p = 0.979$, two-sided t-test).

The principled introduction, in contrast, returned estimates that varied substantially from those generated under the conventional and pragmatic ones. Support for the commission's position did not rise. (SATE = -0.001;[248] $p = 0.995$, two-sided t-test). More notably, perceptions of the commission worsened by 0.389,[249] a statistically significant decline ($p = 0.001$, two-sided t-test).[250]

Sacrifice Becoming More Morally Permissible?, 170 COGNITION 95, 100 (2018); *see also* Simon McNair, Yasmina Okan, Constantinos Hadjichristidis & Wändi Bruine de Bruin, *Age Differences in Moral Judgment: Older Adults Are More Deontological Than Younger Adults*, 32 J. BEHAV. DECISION MAKING 47, 56 (2019).

[246] The standard error is 0.199.

[247] The standard error is 0.116.

[248] The standard error is 0.204.

[249] The standard error is 0.121.

[250] As Andrew Gelman and Hal Stern remind us, "[t]he difference between 'significant' and 'not significant' is not itself statistically significant." Andrew Gelman & Hal Stern, *The Difference Between "Significant" and "Not Significant" Is not Itself Statistically Significant*, 60 AM. STATISTICIAN 328, 328 (2006). In this context, the admonition means that the fact that the difference under one condition of the experiment achieved statistical significance while the difference under another condition did not should not be taken as strong evidence of a genuine difference in differences between the two conditions. It is possible, however, to test whether the difference in differences is statistically significant. Applying the central limit theorem, the difference between two differences in sample means converges in law to the normal distribution. *See, e.g.*, ROBERT D. MASON, DOUGLAS A. LIND, & WILLIAM G. MARCHAL, STATISTICS: AN INTRODUCTION 297 (1991) (stating that the difference between two normal distributions follows a normal distribution); LARRY WASSERMAN, ALL OF STATISTICS: A CONCISE COURSE IN STATISTICAL INFERENCE 77 (2003) (explaining the central limit theorem). Computing the t-statistic for these differences in differences, I find that the consequentialist treatment had a disparate influence on favorability scores under the principled introduction

3. Discussion. To summarize, the original qualitative findings of the Danner Commission experiment are recovered in only one instance: pricing life diminished the standing of the offending government body only if subjects were first told that the researcher anticipated a vindication of the sanctity of life.[251] The asymmetry between the pragmatic and principled introductions is unsurprising. Compromise does not signal virtue; taking a stand does.[252] Informing subjects that they are expected to understand the reality of constraints is unlikely to elicit greater solicitude for cost-benefit reasoning.[253] But telling them that they are expected to disavow the wrongheaded notion that life can be priced, on the other hand, transforms the experiment into a test of their insight and humanity. And subjects respond accordingly. The outcome of the replication experiment thus illuminates the malleability of these social norms and expectations.

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as compared to the conventional ($p = 0.010$, two-sided t-test) and pragmatic ($p = 0.022$, two-sided t-test) introductions.

[251] Is this just another case of framing? The answer depends on how framing is understood. As Michael Cacciatore, Dietram Scheufele, and Shanto Iyengar complain, there is "a lack of consistency around how the concept is defined or how these definitions connect with the explanatory models underlying the theory." Michael A. Cacciatore, Dietram A. Scheufele & Shanto Iyengar, *The End of Framing as We Know It . . . and the Future of Media Effects*, 19 MASS COMM. & SOC. 7, 8 (2016). A conception of framing that "encompasses virtually all types of persuasive effects," however, "has little to no actual explanatory power." *Id.* at 9. There have therefore been proposals to restrict framing to "variations in *how* a given piece of information is presented to audiences, rather than differences in *what* is being communicated." *Id.* at 10; *see also* Elizabeth F. Emens, *Changing Name Changing: Framing Rules and the Future of Marital Names*, 74 U. CHI. L. REV. 761 (2007) (distinguishing between phrasing, context, and information); Thomas J. Leeper & Rune Slothuus, Can Citizens Be Framed? How Persuasive Information More than Emphasis Framing Changes Political Opinions (June 2018) (unpublished manuscript) (on file with the Georgia Law Review) ("A notable feature of most, if not all, framing studies is that they confound testing the impact of the *framing* of an issue with the impact of *persuasive information*."). Under the informational-equivalence definition, the outcome of the third experiment is not an instance of framing because the introductions convey substantively different versions of the experimental hypothesis. Rather than engage in a tussle over nomenclature, this Article advances a social meaning explanation for the empirical results presented.

[252] Kreps & Monin, *supra* note 236, at 1532 ("[I]ndividuals judged to moralize an issue could appear less willing to compromise and more committed to their views.").

[253] *Cf.* Björn Frank, *Good News for Experimenters: Subjects Do Not Care About Your Welfare*, 61 ECON. LETTERS 171 (1998) (demonstrating that experimental subjects do not take the experimenter's welfare into account when making decisions).

The discussion so far has treated demand effects and social desirability biases as experimental contaminations of people's underlying values, attitudes, or beliefs. But many of the dispositions and motivations influencing study participants are not unique to the research setting. The same forces may shape public discourse about regulation. If detractors of a particular risk-money trade-off or, indeed, the cost-benefit paradigm succeed in fixing its social meaning, they are likely to provoke greater hostility to it.

IV. DESIGNING THE REGULATORY STATE

Taken together, the data suggest that people *normally* do not perceive regulatory trade-offs as symbolic affronts that call for an expressive defense of the value of life. This general claim needs further research given the highly contextual nature of social norms and understandings[254] and the unavoidably limited nature of the experiments presented here. But the evidence here sustains the legitimacy of the cost-benefit administrative state, where legitimacy is understood descriptively or positively rather than normatively or morally.[255] This evidence also counsels greater transparency into agency deliberation by assuaging fears that exposing the consequentialist foundation of agency decisionmaking might undermine popular trust and confidence in regulatory institutions.

Looking further afield, the expressiveness of trade-offs is an important dimension in analyzing the relationship between tort law and regulation as mechanisms for allocating and reducing the costs of fatal risks. An influential account of tort law, for example, explains its advantage over regulation in terms of "moral costs."[256] This theory is built on an empirical foundation: that managing

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[254] *See, e.g.*, Robert E. Scott, *The Limits of Behavioral Theories of Law and Social Norms*, 86 VA. L. REV. 1603, 1638 (2000).

[255] *See, e.g.*, Richard H. Fallon, Jr., *Legitimacy and the Constitution*, 118 HARV. L. REV. 1787, 1794–95 (2005) (distinguishing between legal, sociological, and moral legitimacy); Tom R. Tyler, *Psychological Perspectives on Legitimacy and Legitimation*, 57 ANN. REV. PSYCHOL. 375, 377 (2006) (explaining that "[c]entral to the idea of [descriptive] legitimacy is the belief that some decision made or rule created by [an] authorit[y] is valid in the sense that it is entitled to be obeyed by virtue of who made the decision or how it was made"); *id.* at 385 (noting that "recent evidence suggests that societal allocations are legitimated through the procedures that produce them").

[256] CALABRESI, *supra* note 133.

taboo trade-offs through torts rather than regulation is less taxing on the collective psyche. Insofar as the experimental results described here undermine that premise, they vitiate a substantial justification for tort law. More broadly, the symbolism of tort judgments as opposed to regulatory decisions suggests that tort law and regulation are less functionally equivalent than previously thought. It is to these implications that I now turn.

A. THE LEGITIMACY OF THE COST-BENEFIT ADMINISTRATIVE STATE

Many regulatory decisions come down to "a relatively simple choice: dollars or risks?" [257] Confronted by this question, many abjure cost-benefit analysis.[258] Repudiating cost-benefit analysis is seen as "the appropriate way to put priorities exactly where they belong—on the protection of life and health."[259] Some things, they insist, are beyond price.[260] And it is paternalistic for policymakers to substitute their theories of rationality for the web of values shared by citizens.[261] As then-Senator Joseph Biden asserted at Justice Stephen Breyer's confirmation hearings, "it's incredibly presumptuous and elitist for political scientists to conclude that the American people's cultural values in fact are not ones that lend themselves to a cost-benefit analysis and presume that they would change their cultural values if in fact they were aware of the cost-benefit analysis."[262] This criticism stings because defenders of the cost-benefit paradigm sometimes claim for it hypothetical

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[257] SUNSTEIN, *supra* note 148, at 126.

[258] *See, e.g.*, DANIEL A. FARBER, ECO-PRAGMATISM 117 (1999) ("At the heart of much of the opposition to cost-benefit analysis is a sense that economics may undermine valuable social norms and impoverish social discourse.").

[259] *Id.*

[260] *See generally* ACKERMAN & HEINZERLING, *supra* note 18; *see also* ANDERSON, *supra* note 21, at 195 ("I object to the use of cost-benefit analysis in choices involving human lives and environmental quality because these goods are not properly regarded as commodities.").

[261] *See* Abramowicz, *supra* note 145, at 1719 (arguing "that the more we are willing to allow agency officials' judgments of social welfare to count in cost-benefit analysis, the less of a claim cost-benefit analysis has to improving democracy").

[262] Joan Biskupic, *Senators Question Breyer's Economics*, WASH. POST (July 15, 1994), https://www.washingtonpost.com/archive/politics/1994/07/15/senators-question-breyers-economics/6aa0eca9-d910-4d0c-bb3d-2b447c67f481/.

assent: people would ratify cost-benefit analysis if they were fully informed and given adequate time to ruminate on the matter.[263] The democratic pedigree of the cost-benefit state is dubious, however, if those whom it governs reject its consequentialist premise.

The survey experiments reported here demonstrate that a cost-benefit approach to regulation is not necessarily perceived as violative of the sanctity of life. Subjects were more supportive of a deregulatory measure that threatened the safety of highway users after being told by an administrative agency that the existing rule was saving too few lives. Rather than punish the agency for daring to compare life and money, those presented with the cost-benefit argument were, if anything, swayed by it and more inclined to suspend the early morning rest requirement. This finding implies—contrary to the tenor of the existing literature—that Americans are willing to tolerate, even embrace, cost-benefit analysis in the public domain. The contrast between two *New York Times* articles—one written in 1966 and the other in 2011—is telling. The 1966 article urged the federal government to develop "a crashproof car" and condemned "the concept of balancing cost versus benefits" as fallacious.[264] "How," it asked, "[might one] arrive at a true balance when human lives are at issue?"[265] The 2011 piece, in contrast, was more equivocal.[266] That piece described the federal bureaucracy's multiple answers to "the value of a human life" and canvassed perspectives from both critics and champions of the prevailing regime. [267] One of those critics, Robert Weissman, the then-President of Public Citizen, pushed for "higher values for injury and for fatalities."[268] But neither he nor the correspondent asserted the pricelessness of human life.

How has this come to be? According to social scientists, policymakers who are forced to give up a sacred good must do one of two things "to avoid incurring the righteous wrath of the masses":

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[263] SUNSTEIN, *supra* note 14, at 24.

[264] *New Attitudes on Auto Safety*, N.Y. TIMES, May 1, 1966, at 21.

[265] *Id.*

[266] Binyamin Appelbaum, *As U.S. Agencies Put More Value on a Life, Businesses Fret*, N.Y. TIMES (Feb. 16, 2011), https://www.nytimes.com/2011/02/17/business/economy/17regulation.html.

[267] *Id.*

[268] *Id.*

(1) "persuade citizens to abandon the illusion that anything can be infinitely important . . . [, or (2)] transform taboo trade-offs into tragic ones."[269] The latter course is, of course, deceptive if the money saved is never used for the purposes advertised. The experiments here did not attempt to present the trade-offs at issue as anything other than a straightforward comparison between death and dollars. Neither do most agencies. One might suppose, then, that Americans have finally been disabused of the notion that life is beyond price. This explanation is plausible. It is no less true, however, that individuals have always traded risk for money in their daily lives—for instance, by selecting cheaper products over safer ones. So it is an exaggeration to say that people have come to the realization that no good—not even life—can be absolutely valuable.[270] Rather, it may be that they no longer see all life-saving regulation as expressive in nature, if they ever did so.[271]

A policy issue may, of course, become salient in the public discourse and come to stand for a proposition larger and more abstract than itself. One example is the EPA's entertainment of the idea that risks to the elderly be given less priority than risks to the younger population.[272] As part of its 2003 assessment of the benefits from the Clear Skies initiative, the agency conducted a sensitivity analysis that valued a statistical life at $6.1 million for a person under 65 years old and $3.8 million for a person over 65 years old.[273] This difference was dubbed the "senior death discount" and was eventually abandoned by the EPA in the face of trenchant and unrelenting criticism.[274] As analyzed by Marion Fourcade, "[t]he

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[269] Tetlock et al., *supra* note 147, at 98.

[270] *Cf.* CASS R. SUNSTEIN, FREE MARKETS AND SOCIAL JUSTICE 265 (1997) (separating "[a] claim of incommensurability" from "a claim of infinite value").

[271] *Cf. id*. (speculating that people believe their judgments of incommensurability "should be expressed through regulatory proscriptions").

[272] *See* W. Kip Viscusi, *The Devaluation of Life*, 3 REG. & GOVERNANCE 103, 110–11 (2009).

[273] *Id.*

[274] John J. Fialka, *EPA to Stop 'Death Discount' to Value New Regulations*, WALL ST. J., May 8, 2003, at D3; Katharine Q. Seelye & John Tierney, *E.P.A. Drops Age-Based Cost Studies*, N.Y. TIMES (May 8, 2003), https://www.nytimes.com/2003/05/08/us/epa-drops-age-based-cost-studies.html; Cindy Skrzycki, *Under Fire, EPA Drops the 'Senior Death Discount*,*'* WASH. POST (May 13, 2003), https://www.washingtonpost.com/archive/business/2003/05/13/under-fire-epa-drops-the-senior-death-discount/e14279ed-9109-40e5-998b-fd3a1620799c; *What's a Granny Worth?*, WASH. TIMES (July 6, 2003), https://www.washingtontimes.com/news/2003/jul/6/20030706-104810-2250r.

symbolic order has its own logic," and "[the differential treatment of] older Americans . . . conflict[ed] with the very powerful culture of formal and procedural equality, and its translation in antidiscrimination laws."[275] Nothing here should be taken to deny the potential for regulatory decisions to turn into sites for the vindication of shared values. Indeed, the outcome of the replication experiment hints at the ability of epistemic or hierarchical authorities to define the social meaning of risk-money trade-offs and thereby shape public attitudes toward those who undertake such comparisons. Rather, this Article suggests that the run-of-the-mill regulatory trade-off is not symbolically inflected.

If policymaking is always expressively laden, the cost-benefit state's blithe indifference to the social meaning of its decisions should rightly provoke outrage.[276] Americans, however, seem amenable to a mode of public decisionmaking that compares the benefits of regulation to its costs even where the former involves risks to life or limb and the latter only money. Cost-benefit analysis does not appear to be a deeply illegitimate procedure, quietly imposed by the technocracy on a resistant citizenry.

B. TRANSPARENCY AND ITS DISCONTENTS

The expressiveness of regulatory trade-offs also bears on the desirability of transparency. Openness in public affairs usually is presented as an unalloyed good that enhances accountability and fosters democracy. By exposing corruption and incompetence in government to scrutiny, transparency ensures that those in power exercise their authority responsibly and in the service of those whom they claim to represent. And by making official data and records available to all, transparency enhances civic discourse and empowers citizens to scrutinize the decisions being taken in their name.[277] Transparency thus guards against misrule and gives citizens the information they need to be autonomous, self-governing

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[275] Marion Fourcade, Comment, *The Political Valuation of Life*, 3 REG. & GOVERNANCE 291, 295 (2009).

[276] Pildes & Sunstein, *supra* note 26, at 70.

[277] *See, e.g.*, Joseph E. Stiglitz, *On Liberty, the Right to Know, and Public Discourse: The Role of Transparency in Public Life*, *in* GLOBALIZING RIGHTS: THE OXFORD AMNESTY LECTURES 1999, at 115, 125–29 (Matthew J. Gibney ed., 2003).

members of the polity. Some have therefore ranked it as a basic,[278] or human, [279] right.

But the public's right to know is not absolute. Transparency may be restricted to improve the quality of public decisionmaking: closed-door deliberations encourage officials to speak freely, thereby fostering full and frank consideration of all policy alternatives.[280] According to one strand of thought, inputs—views exchanged as part of the output-generating process—should be shielded from disclosure to a greater extent than outputs—the products of data acquisition, scientific analysis, or group deliberation.[281] Inputs are entitled to more secrecy than outputs because of the attenuated benefits from learning about the fractious reasoning underlying a decision. Cost-benefit analysis straddles input and output. But Sunstein argues that it ought to be classified as an output and hence disclosed, because it "is an important safeguard against ill-considered regulations." [282] By spelling out the expected consequences of regulatory action, publication of regulatory impact analyses "enlists sunlight as disinfectant."[283] The EPA appears to have taken a similar perspective on this issue. An advanced notice

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[278] *Id.* at 115.

[279] Patrick Birkinshaw, *Transparency as a Human Right*, *in* TRANSPARENCY: THE KEY TO BETTER GOVERNANCE 47 (Christopher Hood & David Heald eds., 2006).

[280] As a legal matter, the Freedom of Information Act exempts from disclosure "inter-agency or intra-agency memorand[a] or letters which would not be available by law to a party other than an agency in litigation with the agency." 5 U.S.C. § 552(b)(5) (2018). "Manifestly, the ultimate purpose of this long-recognized privilege is to prevent injury to the quality of agency decisions." NLRB v. Sears, Roebuck & Co., 421 U.S. 132, 151 (1975); *see also* United States v. Farley, 11 F.3d 1385, 1389 (7th Cir. 1993) (explaining that "[s]ince frank discussion of legal and policy matters is essential to the decisionmaking process of a governmental agency, communications made prior to and as a part of an agency determination are protected from disclosure"); United States v. Nixon, 418 U.S. 683, 705 (1974) (stating that "the importance of . . . confidentiality [between high government officials and their advisors] is too plain to require further discussion" because "[h]uman experience teaches that those who expect public dissemination of their remarks may well temper candor with a concern for appearances and for their own interests to the detriment of the decisionmaking process").

[281] *See* Cass R. Sunstein, *Output Transparency vs. Input Transparency* ("But the argument for input transparency is much different from the argument for output transparency, and it often stands on weaker ground."), *in* TROUBLING TRANSPARENCY: THE HISTORY AND FUTURE OF FREEDOM OF INFORMATION 189 (David E. Pozen & Michael Schudson eds., 2018).

[282] *Id.* at 194.

[283] *Id.*

of proposed rulemaking issued in June 2018 sought comments on how the agency might improve the transparency of its balancing of costs and benefits.[284]

Consider, in this regard, a recent call for simpler and timelier cost-benefit analysis.[285] Most citizens are, at present, unlikely to encounter a regulatory impact analysis; these documents—prepared by federal agencies before and after the promulgation of a final rule—are obscure to the general public. Regulatory impact analyses are usually available in print and online but are not easily located by those who do not know where to look. They also tend to be long, dense, and intimidating for the uninitiated.[286] Christopher Carrigan and Stuart Shapiro therefore propose that agencies publish crisp, abbreviated evaluations of a range of regulatory possibilities at an early stage of their rulemaking.[287] These summary evaluations promise to "empower potential critics to more effectively participate in the regulatory process, prompting agencies to obtain public input on realistic policy alternatives."[288] Back-of-the-envelope cost-benefit analysis does not, therefore, represent a fundamental change to the prevailing logic and structure of the administrative state. Its hope is to improve regulation by inviting stakeholders to contribute their knowledge and perspectives to the consequentialist enterprise.

But raising societal awareness of the trade-offs that have hitherto been submerged incurs, in Guido Calabresi and Philip Bobbitt's terms, the "costs of costing"—that is, "the external costs—moralisms and the affront to values, for example—of market determinations that say or imply that the value of a life or of some precious activity integral to life is reducible to a money figure."[289]

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[284] Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process, 83 Fed. Reg. 27,524 (proposed June 13, 2018) (to be codified at 40 C.F.R. ch. I).

[285] *See generally* Christopher Carrigan & Stuart Shapiro, *What's Wrong with the Back of the Envelope? A Call for Simple (and Timely) Benefit-Cost Analysis*, 11 REG. & GOVERNANCE 203 (2017).

[286] *See id.* at 205 (noting that a regulatory impact analysis issued between 2009 and 2012 is, on average, 128,289 words long).

[287] *See id.* at 205–07 (proposing that agencies be required to conduct a back-of-the-envelope analysis).

[288] *Id.* at 207.

[289] CALABRESI & BOBBITT, *supra* note 132, at 32.

By exposing the consequentialist foundation of public decisionmaking to all, transparency threatens to erode trust in the institutions of government.[290] "Subterfuges" help mitigate the costs of costing, but they buy quiescence at the price of "candor and honesty" in public affairs.[291] This is no easy compromise, for

> honesty and openness are structural values [that] define a society at least as much as "the sanctity of life" and "all men are created equal." They are no more absolute than the other values. But a society consistently forgoes them only at great peril, for without them[,] who is to say when or how any values are affirmed[?][292]

The abstract principle that life is inviolable and has immeasurable value may be axiomatic for a society, but its vindication at every turn is potentially ruinous.[293] If conventional accounts of our moral attitudes and beliefs are correct, openness may stymie the judicious allocation of scarce resources. Cost-benefit analysis has to flourish in the dark.[294] But the data presented here implies that this dilemma is no longer as sharp as it might have been, at least in the United States.[295] Assuming one takes a consequentialist, rather than deontological, approach to transparency,[296] the experiments reported here augur in favor of greater public oversight and engagement in the regulatory process.

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[290] For instance, an experiment in Sweden concluded that transparency into the decisionmaking process incited greater animosity towards a municipal committee's refusal to fund safety road dividers, likely because the committee had implicitly balanced the lives of commuters against other fiscal priorities. *See* de Fine Licht, supra note 136, at 367.

[291] CALABRESI & BOBBITT, *supra* note 132, at 78–79.

[292] *Id.* at 50.

[293] *See* Claire A. Hill, *Cheap Sentiment*, 81 L. & CONTEMP. PROBS. 67, 68 (2018) (describing "cheap sentiment" as a "social pathology" that "can be an impediment to sound policymaking in many different spheres").

[294] *See* Robert R.M. Verchick, *The Case Against Cost-Benefit Analysis*, 32 ECOLOGY L.Q. 349, 355 (2005) (book review).

[295] *Cf.* de Fine Licht, *supra* note 136.

[296] *See* David Heald, *Transparency as an Instrumental Value* (elucidating the "limits to beneficial transparency"), *in* TRANSPARENCY: THE KEY TO BETTER GOVERNANCE, *supra* note 279, at 59, 60–61; SUNSTEIN, *supra* note 281, at 189 (defending a welfarist approach to

C. LIABILITY VERSUS REGULATION

Finally, thinking about the expressiveness of trade-offs raises interesting questions about the competing and coordinate rationalities of tort law and regulation. The law and economics perspective interprets tort law as a set of rules for allocating the costs of accidents so as to maximize wealth.[297] This take on tort law is at once descriptive and normative.[298] The descriptive contention is that judges have consciously or otherwise shaped the law towards social efficiency.[299] Put differently, the socially efficient resolution of any given dispute is a good predictor of case outcomes, the language and tenor of judicial opinions notwithstanding. The normative contention, on the other hand, urges the abolition or reform of doctrines and rules that are not wealth-maximizing.[300] Judges, lawyer-economists argue, should turn their backs on these

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transparency by asserting the importance and usefulness of asking "concrete questions about the human consequences of competing approaches").

[297] *See, e.g.*, GUIDO CALABRESI, THE COST OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS (1970); WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW (1987); STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW (1987). I suppress here the trenchant debate over the ethical foundations of wealth maximization. *See, e.g.*, Ronald M. Dworkin, *Is Wealth a Value?*, 9 J. LEGAL STUD. 191, 191–92 (1980); Richard A. Posner, *The Ethical and Political Basis of the Efficiency Norm in Common Law Adjudication*, 8 HOFSTRA L. REV. 487, 491 (1980); Richard A. Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUD. 103, 119–20 (1979). The question of whether wealth is maximized as an intrinsic or instrumental value is beyond the scope of this Article. *See* LOUIS KAPLOW & STEVEN SHAVELL, FAIRNESS VERSUS WELFARE 35–37 (2002). For the purposes of exposition, I treat wealth maximization and social efficiency as synonymous. *Cf.* Jules L. Coleman, *Efficiency, Utility, and Wealth Maximization*, 8 HOFSTRA L. REV. 509, 521 (1980) (distinguishing "tests for ordering or ranking states of affairs" from "the characteristic[s] in virtue of which the states of affairs are to be ranked" and pointing out that efficiency belongs to the former and wealth the latter).

[298] *See* Robert Cooter, The Two Enterprises of Law and Economics: An Introduction to its History and Philosophy 42–43 (Aug. 26, 2015) (unpublished manuscript) (on file with the Georgia Law Review); *cf.* Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 29 (1972).

[299] *See* WILLIAM M. LANDES & RICHARD A. POSNER, THE ECONOMIC STRUCTURE OF TORT LAW 1 (1987); George L. Priest, *The Common Law Process and the Selection of Efficient Rules*, 6 J. LEGAL STUD. 65, 75 (1977); Paul H. Rubin, *Why Is the Common Law Efficient?*, 6 J. LEGAL STUD. 51, 51 (1977).

[300] *See, e.g.*, Richard A. Posner, *Wealth Maximization and Tort Law: A Philosophical Inquiry*, *in* THE PHILOSOPHICAL FOUNDATIONS OF TORT LAW 99, 100–01 (David G. Owen ed., 1995).

vestiges of the common law and re-articulate a tort jurisprudence that assigns losses to the least-cost avoider and encourages optimal precaution. Both the descriptive and the normative dimensions of law and economics see tort law and regulation as animated by the same end: efficiency. This perspective is now mainstream and "deeply entrenched."[301]

In an influential contribution to the field, Judge Guido Calabresi elaborated the advantage of tort liability over regulatory standards by adverting to "moral costs."[302] To develop this theory, he first introduces a category of goods (merit goods) whose allocation by the market (commodification) or distribution by the government (commandification) is experienced as a form of "*mental suffering*."[303] The "pain" caused by commodification or commandification of merit goods constitutes a moral cost.[304] According to Judge Calabresi, regulation incurs high moral costs because it makes the trade-off between money and merit goods "too-obvious."[305] Tort law mitigates these costs by pricing merit goods under the guise of compensation or restitution.[306] This feature, Judge Calabresi maintains, accounts for the existence of the tort system despite its expense and cumbersomeness.[307]

The plausibility of this explanation depends, however, on an empirical fact: whether people are distressed by the flagrant consequentialism of health, safety, and environmental regulation. The absence of deep and diffuse aversion to cost-benefit reasoning in the experiment's regulatory settings challenges the idea that it is

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[301] John C. P. Goldberg & Benjamin C. Zipursky, *Torts as Wrongs*, 88 TEX. L. REV. 917, 918 (2010); *see also* Scott Hershovitz, *Harry Potter and the Trouble with Tort Theory*, 63 STAN. L. REV. 67, 110 (2010) ("In the wake of *The Costs of Accidents*, it has become fashionable to think of tort law as a substitute for regulation, or even as a kind of regulatory regime.").

[302] CALABRESI, *supra* note 133, at 34; *see also, e.g.*, Ehud Guttel, *The Law and Economics of Merit Goods: Discussion of* The Future of Law and Economics, 16 JERUSALEM REV. OF LEGAL STUD. 142, 147 (2017) (acknowledging that "this characterization of the tort system is convincing and captures a central feature of the tort system"); Ariel Porat, The Future of Law and Economics *and the Calabresian External Moral Costs*, 16 JERUSALEM REV. OF LEGAL STUD. 153, 166 (2017) (agreeing that "tort law is a good place to deal with merit goods, and it has an advantage over other mechanisms in preventing external moral costs").

[303] CALABRESI, *supra* note 133, at 26–27, 31.

[304] *Id.* at 27.

[305] *Id.* at 31.

[306] *Id.* at 35–36.

[307] *Id.* at 36, 40.

less agonizing to manage fatal risks through tort law rather than through regulation. If the balance struck by agencies between financial burdens and human lives does not give rise to popular angst, there is nothing to be gained from cloaking such trade-offs in the righteous language of torts.

More fundamentally, the fact that the same comparison might be anodyne in one context and odious in another allows us to conceive of tort law and regulation as serving distinct—though related—functions. Both address the involuntary risks posed by some on others. But the possibility that regulatory decisions are not expressive in the same way as tort judgments opens the door to a stylized understanding of regulation as tending to our well-being, and torts, to our values. [308]

An important strand in the law—one that predates the "profound revolution"[309] wrought by economic analysis—understands tort law to be compensatory, not regulatory, in nature.[310] The injury inflicted by one person on another, unless excused or justified, represents a wrong that the law seeks to correct.[311] Some risks are mutually imposed and do not give rise to liability because they are a concomitant of social life. [312] Other risks, however, are

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[308] *See* THOMAS A. LAMBERT, HOW TO REGULATE: A GUIDE FOR POLICYMAKERS 6 (2017) (defining regulation as "threat-backed governmental directives aimed at correcting private ordering defects that diminish total social welfare"). I do not mean to claim, however, that regulation is necessarily defined by a commitment to social welfare to the exclusion of relational justice. *See generally* Hanoch Dagan & Roy Kreitner, *The Other Half of Regulatory Theory*, 52 CONN. L. REV. 605 (2020).

[309] *See generally* John J. Donohue, *The Law and Economics of Tort Law: The Profound Revolution*, 102 HARV. L. REV. 1047 (1989).

[310] *See* Richard A. Epstein, *Defenses and Subsequent Pleas in a System of Strict Liability*, 3 J. LEGAL STUD. 165, 165 (1974) (describing corrective justice as "the implicit assumption upon which the common law approach to the law of torts has rested throughout most of its long history").

[311] *See id.*; *see also* JULES COLEMAN, RISKS AND WRONGS 365–85 (1992); Richard A. Epstein, *A Theory of Strict Liability*, 2 J. LEGAL STUD. 151 (1973).

[312] George P. Fletcher, *Fairness and Utility in Tort Theory*, 85 HARV. L. REV. 537, 543 (1972); *see also* Bamford v. Turnley, 122 Eng. Rep. 27, 33 (1862) ("It is as much for the advantage of one owner as of another; for the very nuisance the one complains of, as the result of the ordinary use of his neighbour's land, he himself will create in the ordinary use of his own, and the reciprocal nuisances are . . . of such a rule may be indicated by calling it . . . a rule of give and take, live and let live . . . ."). *But see* Richard A. Epstein, *The Temporal Dimension in Tort Law*, 53 U. CHI. L. REV. 1175, 1180 (1986) (justifying Baron Bramwell's "live and let live" doctrine in economic terms).

unreasonable, and a victim may legitimately expect compensation for the harms caused by exposure to such risks. Damages are recovered by the victim from the tortfeasor because the former has a right not to be endangered by the latter's activities.[313] These two conceptions of tort law might be reconcilable. For instance, one might characterize tort law as a form of regulation while still allowing the principles of corrective justice to cabin its reach.[314] Or one might hold tort law to be fundamentally compensatory in nature while acknowledging its secondary function of deterrence.[315]

It is unnecessary to arbitrate between these legal theories for the time being. As a practical matter, the reasonableness of a defendant's conduct usually is evaluated by jurors, who apply their lay understandings of justice and responsibility to the case.[316] These understandings may deviate from the prescription of law and economics in distinct and important ways. Optimal deterrence, for example, might require punitive damages to be inversely related to a tortious injury's probability of detection.[317] A tortfeasor who is successfully sued only sometimes has little incentive to adopt the socially efficient level of precaution; she would bear the full cost of precaution but only a fraction of the cost of accidents. A tortfeasor whose negligence is always penalized, in contrast, should not be made to pay more than the amount needed to make the victim whole, because punitive damages would induce the tortfeasor to take excessive precaution—precaution whose marginal benefit is surpassed by its marginal cost.

But jurors seem to reject this simple formula for computing punitive damages, even after being instructed to apply it.[318] Despite

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[313] *See generally* ERNEST J. WEINRIB, THE IDEA OF PRIVATE LAW (1995).

[314] Gary T. Schwartz, *Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice*, 75 TEX. L. REV. 1801, 1824–25 (1997).

[315] *Id.* at 1825–26.

[316] *See, e.g.*, DOBBS ET AL., *supra* note 48, § 163 ("Because part of the jury's role is to make normative decisions or value judgments, courts do not ordinarily grant summary judgment on negligence issues, even if the facts are undisputed. In other words, the jury must still weigh the risks and utilities associated with the facts it has determined to exist.").

[317] A. Mitchell Polinsky & Steven Shavell, *Punitive Damages: An Economic Analysis*, 111 HARV. L. REV. 869, 887–96 (1998).

[318] *See generally* Cass R. Sunstein, David Schkade & Daniel Kahneman, *Do People Want Optimal Deterrence?*, 29 J. LEGAL STUD. 237 (2000); W. Kip Viscusi, *The Challenge of Punitive Damages Mathematics*, 30 J. LEGAL STUD. 313 (2001).

being aided by a table illustrating the appropriate amount of punitive damages for a given probability of detection, many participants in an experimental study did not return the number prescribed by economic theory.[319] Half of these respondents were college graduates or professionals who presumably should have been able to derive the optimally deterrent dollar figure had they been so inclined.[320] And in another survey, University of Chicago law students, steeped in the economic analysis of law, objected to the judicial nullification of an award of punitive damages against a "grotesquely reckless" employer despite being told to assume that there was "no chance" of a hurt employee not seeking and receiving compensation. [321] Respondents vindicated the righteousness of exemplary damages for an especially blameworthy defendant.

These results are striking.[322] They indicate that, from the jury's perspective, corrective justice runs deep in tort law. Punitive damages are not imposed to deter harmful behavior that eludes easy detection; rather, they are expressive in nature.[323] Reckless conduct asserts the superiority of the wrongdoer over the victim.[324] The wrongdoer, in effect, says, "*I* am high and *you* are low. *I* can be negligent in marketing [a defective product] because *you*, the

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[319] Viscusi, *supra* note 318, at 327.

[320] *Id.* at 338.

[321] Sunstein et al., *supra* note 318, at 244–46.

[322] *See* David A. Hoffman & Michael P. O'Shea, *Can Law and Economics Be Both Practical and Principled?*, 53 ALA. L. REV. 335, 414 (2002) ("[Sunstein's] failure to convince University of Chicago law students to maximize what he saw as social welfare has left him shaken.").

[323] *See* Anthony J. Sebok, *Punitive Damages: From Myth to Theory*, 92 IOWA L. REV. 957, 1036 (2007) ("[P]unitive damages fit poorly in our legal system if we measure them against the standard of efficient deterrence. However, if we recognize that they fit within a scheme of civil recourse and provide a unique form of redress where citizens have suffered the indignity of a willful violation of their private rights, then we will have a theory of punitive damages that reflects the reality of the tort system we actually have."); *see also* Thomas B. Colby, *Clearing the Smoke from* Philip Morris v. Williams*: The Past, Present, and Future of Punitive Damages*, 118 YALE L.J. 392, 442 (2008) ("Allowing punitive damages as punishment for private wrongs vindicates the dignity of the victim."); Alexandra B. Klass, *Tort Experiments in the Laboratories of Democracy*, 50 WM. & MARY L. REV. 1501, 1574 (2009) ("'Redress' is not simply monetary compensation to make the victim 'whole,' but the right to have the 'wrong' acknowledged and, if the victim chooses, to seek an appropriate amount of damages to act as 'satisfaction.'").

[324] Jean Hampton, *A New Theory of Retribution*, *in* LIABILITY AND RESPONSIBILITY 377, 386–96 (R.G. Frey & Christopher W. Morris eds., 1991).

customer, do not matter very much."[325] Punitive damages restore moral parity by subjecting the wrongdoer to "expressive defeat".[326] To achieve this result, "[t]he magnitude of punishment must reflect the magnitude and, if possible, the nature of the asserted inequality between wrongdoer and victim." [327] Recall the case of the combustible Ford Pintos:

> Ford had determined Grimshaw's and other customers' prices through the technique of cost-benefit analysis. The jury therefore chose to inflict a monetary defeat on Ford that incorporated within it a reference to Ford's own analysis, a defeat that Ford could not help but understand because the jury held up the cost-benefit analysis as a mirror in which all would recognize the moral truth of the situation.[328]

Exemplary damages thus are a form of *contrapasso*. They convey a message to the wrongdoer that is heard by the community at large.[329]

The expressiveness of punitive damages is not an anomaly in the law of torts. There is a "moral, symbolic element of the tort system" that comes from labelling the defendant as a wrongdoer.[330] Thus, "[even if] the tort system . . . play[s] a marginal role in compensation for injury, it occupies an important symbolic role that may best explain the energy and emotion it generates." [331] Regulatory policy, in contrast, usually does not carry symbolic freight. Or so it is ventured.[332] Given their modest number and

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[325] Galanter & Luban, *supra* note 58, at 1432.

[326] Hampton, *supra* note 324, at 396–409.

[327] Galanter & Luban, *supra* note 58, at 1432.

[328] *Id.* at 1436–37.

[329] *See* Jennifer K. Robbennolt, John M. Darley & Robert J. MacCoun, *Symbolism and Incommensurability in Civil Sanctioning: Decision Makers as Goal Managers*, 68 BROOK. L. REV. 1121, 1139 (2003).

[330] Eduardo M. Peñalver, *Acts of God or Toxic Torts? Applying the Tort Principles to the Problem of Climate Change*, 38 NAT. RESOURCES J. 563, 576 (1998).

[331] Daniel W. Shuman, *The Psychology of Compensation in Tort Law*, 43 U. KAN. L. REV. 39, 65 (1994).

[332] *But see* CALABRESI, *supra* note 133, at 39–40 (suggesting that tort law might avoid or reduce the "moral costs of direct pricing of life and limb" that might otherwise be incurred); Eric A. Posner & Cass R. Sunstein, *Dollar and Death*, 72 U. CHI. L. REV. 537, 595 (2005)

scope, the experiments here do not prove this assertion. But they do corroborate it. Respondents did not spurn the trade-off between traffic fatalities, on the one hand, and the financial burdens of compliance and lost wages, on the other, as a communal denial of the intrinsic and infinite value of life. Neither did they vilify the Danner Commission for comparing deaths from pollution to the economic disadvantages that accrue from a larger deficit, slower growth, and higher taxes.[333]

What might account for this putative difference between liability and regulation? The disparate relational norms governing the private and the public spheres, for one, might explain why tort judgments appear to have an expressive quality to them that regulatory standards lack. Tort liability is private; a tort suit is filed by a plaintiff against a defendant, the gravamen of the complaint being that the defendant breached a duty owed to the plaintiff and that the breach resulted in a foreseeable injury. A tort claim is thus interpersonal in nature. A regulatory decision, on the other hand, is public and impersonal. Richard Craswell doubts whether the government is subject to the same ethical demands that fall on individuals.[334] The government is "by most liberal accounts . . . an inanimate institution, which is justified . . . by what it contributes to its . . . citizens."[335] It does not, therefore, have to demonstrate self-understanding through its choices.[336] And though public officials *are* animate persons, Robert Goodin contends that they do not, as a general matter, have a duty to any one citizen to do or not do something.[337] Rather, their duty is "to see to it that something

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(suggesting that the higher political salience of regulatory decisions vis-à-vis a singular tort could produce "bad or troubling effects[,] . . . [t]he most obvious [of which] is that the symbolism of sensible and disaggregated regulatory decisions may bother people because such decisions seem in conflict with other values—here we have in mind the controversy over valuing human lives at all, or the likely more intense controversy over valuing the lives of the rich more than the lives of the poor").

[333] That is, except when they were told that they were expected to do so.

[334] *See* Craswell, *supra* note 152, at 1461.

[335] *Id.*

[336] *Id. But see* DOUGLAS KYSAR, REGULATING FROM NOWHERE: ENVIRONMENTAL LAW AND THE SEARCH FOR OBJECTIVITY 54–56, 65 (2010) (urging that the very notion of agency implies that the state's "choice[s] . . . reveal[] something intimate and foundational about our collective identity").

[337] ROBERT E. GOODIN, UTILITARIANISM AS A PUBLIC PHILOSOPHY 72–75 (1995); *see also* Thomas Nagel, *Ruthlessness in Public Life* ("Within the appropriate limits, public decisions

[is] done or not done."[338] These positions are defended as normative arguments in favor of utilitarianism in public affairs. But they also evince that those subject to a misguided regulation are not wronged, unlike a tort victim.

Additionally, regulation operates *ex ante*, whereas tort liability is imposed *ex post*. The wisdom of a regulatory rule or standard is debated in the abstract. The reasonableness of a tort defendant's precaution, in contrast, is judged in the aftermath of a palpable harm to life or limb.[339] The occurrence of an accident not only magnifies the dangerousness of an activity through hindsight bias,[340] it also arouses feelings of sympathy for the victim and precipitates a search for blame.[341] The vividness of the accident and its aftermath transform the trial into a defense of the sanctity of life.[342] Eloquent lawyers stoke the jury's anger by telling the story of a defendant who allowed greed to trump basic decency: "With appropriate rhetoric, a skillful plaintiff's lawyer can vivify and dramatize, for the jury's benefit, the traditional public sense of the sanctity of life."[343] The reality and dramatization of grievous injury or death is typically absent from agency decisionmaking.

The expressiveness of tort vis-à-vis regulation—if true—introduces a wrinkle into the choice between liability and regulation

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will be justifiably more consequentialist than private ones."), *in* PUBLIC AND PRIVATE MORALITY 75, 84 (Stuart Hampshire ed., 1978).

[338] GOODIN, *supra* note 337, at 74.

[339] Posner & Sunstein, *supra* note 332, at 594 ("The victims of regulated conduct are not identified, so their personal characteristics do not stand out (although sometimes a disaster or crisis may provoke the regulation). Whereas court cases are emotionally rich, regulatory decisions often (though not always) seem dry and technical, even though usually much more is at stake."); *see also* Karen E. Jenni & George Loewenstein, *Explaining the "Identifiable Victim Effect,"* 14 J. RISK & UNCERTAINTY 235, 254 (1997) ("Most policy decisions about risk involve statistical fatalities, while most private decisions involve identifiable fatalities.").

[340] *See* Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post ≠ Ex Ante: Determining Liability in Hindsight*, 19 LAW & HUM. BEHAV. 89, 89 (1995) (showing that people in hindsight "gave higher estimates for the probability of the disaster occurring").

[341] *See* James K. Hammitt & Nicholas Treich, *Statistical v. Identified Lives in Cost-Benefit Analysis*, 35 J. RISK & UNCERTAINTY 45, 63 (2007).

[342] *See* Neal Feigenson, *Emotional Influences on Judgments of Legal Blame: How They Happen, Whether They Should, and What to Do About It*, *in* EMOTION AND THE LAW: PSYCHOLOGICAL PERSPECTIVES 45 (Brian H. Bornstein & Richard L. Wiener eds., 2010).

[343] Gary T. Schwartz, *Deterrence and Punishment in the Common Law of Punitive Damages: A Comment*, 56 S. CAL. L. REV. 133, 152 (1982).

for managing risk.[344] The tort system as administered may punish defendants more severely than warranted by the overall welfare consequences of their negligence. There undoubtedly is value in such a practice, for "[a] large part of the richness of our lives consists in symbolic meanings and their expression."[345] And symbolic public acts are vital for a society because they declare and reaffirm its fundamental normative commitments. [346] At the same time, however, outsized awards may awe potential tortfeasors into taking precautions that are expensive and time-consuming but accomplish very little.[347] To the extent they do, regulation that displaces or preempts the common law may help achieve a balance between the symbolic and, perhaps, didactic utility of tort law remedies and the prudent allocation of scarce resources.[348]

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[344] For a recent synthesis of the law and economics perspective, see Richard A. Posner, *Regulation (Agencies) Versus Litigation (Courts)*, *in* REGULATION VERSUS LITIGATION: PERSPECTIVES FROM ECONOMICS AND LAW 11 (Daniel P. Kessler ed., 2011).

[345] NOZICK, *supra* note 155, at 27.

[346] *See* Allan Gibbard, *Risk and Value* (entertaining the possibility that "[i]t may nevertheless be dehumanizing to stand idly by when strenuous, expensive effort has a substantial chance of saving lives"), *in* VALUES AT RISK 94, 101–02 (Douglas Maclean ed., 1986).

[347] Availability bias—the tendency to overestimate the probability of an event whose instances come easily to mind—could magnify the impact of a large tort judgment. *See* Steven Garber, *Product Liability, Punitive Damages, Business Decisions and Economic Outcomes*, 1998 WIS. L. REV. 237, 275–284 (1998); *see also* Theodore Eisenberg, Jeffrey J. Rachlinski & Martin T. Wells, *Reconciling Experimental Incoherence with Real-World Coherence in Punitive Damages*, 54 STAN. L. REV. 1239, 1244–45 (2002). An example of socially wasteful precaution is the claimed tendency of physicians to prescribe medically unnecessary tests so as to head off the "threat of [tort] liability." Polinsky & Shavell, *supra* note 317, at 880; *see also* Daniel Kessler & Mark McClellan, *Do Doctors Practice Defensive Medicine?*, 111 Q. J. ECON. 353, 353 (1996) (finding evidence of such a practice in treatments for heart disease); Michael Frakes, *Defensive Medicine and Obstetric Practices*, 9 J. EMPIRICAL LEGAL STUD. 457, 480 (2012) (finding evidence of such a practice for some obstetric procedures but not others).

[348] *See* Klass, *supra* note 323, at 1574 (contending that insofar as the "private law aspects of tort law are seen as valuable in our society, a federal scheme of regulation and compensation cannot replace tort law in meeting these goals, although it may meet other important goals such as providing compensation to victims without the cost and difficulty of litigation."); Kyle Logue, *Coordinating Sanctions in Tort*, 31 CARDOZO L. REV. 2313 (2010) (analyzing the interaction between tort law and other mechanisms for the social control of risk and suggesting rules for achieving optimal deterrence); Victor E. Schwartz & Phil Goldberg, *A Prescription for Drug Liability and Regulation*, 58 OKLA. L. REV. 135 (2005) (arguing for judicial deference to the Food and Drug Administration (FDA) in tort cases involving pharmaceutical drugs that are beneficial but may trigger harmful side-effects);

V. CONCLUSION

Pushed by successive presidential administrations as a means of rationalizing regulation and centralizing control, the cost-benefit paradigm for managing health, safety, and environmental risks has gained traction in both judicial and legislative circles. But there are reasons to doubt the legitimacy of the cost-benefit revolution. Past research has documented a popular aversion to taboo trade-offs.

The survey experiments presented in this Article indicate that Americans do not comprehend a cost-benefit standard for life-saving regulation as an expressive denial of the pricelessness of life. Now, it might be true as a normative matter that citizens ought to reject the brand of consequentialism in public life that treats all things as commensurable and fungible. A recent critique of cost-benefit analysis, for example, distinguishes between goods that are essential for human agency and goods that are not.[349] People have a special claim to the former, and "[a]s a society, we owe it to each other to secure the basic conditions necessary for people to lead decent and independent lives."[350] Descriptively, however, agencies that trade deaths for dollars are not, it seems, punished in the court of public opinion. Their decisions are not reviled, nor do their reputations suffer. The cost-benefit state does not appear to be facing a legitimacy crisis.

None of this implies tolerance for callous or cavalier treatment of values held dear. The social meaning of a choice is largely a matter of norms. Certain situations invite—even demand—a symbolic declaration of the primacy of the sacred over the profane, of people over profits. Others do not. This fact helps make sense of the apparent contradiction displayed by those who routinely make such trade-offs while condemning the idea that there can be a price tag on life. It also offers insights into the relationship between regulation and tort law. Insofar as tort judgments are expressive and regulatory decisions not, regulation that preempts the common law of torts might help temper the tangible costs of symbolism.

Catherine M. Sharkey, *Tort-Agency Partnerships in an Age of Preemption*, 15 THEORETICAL INQUIRIES L. 359 (2014) (arguing for judicial deference to the FDA in determining whether a federal regulation preempts a state law cause of action).

[349] Keating, *supra* note 185, at 251–52, 258–59.

[350] *Id.* at 196.