

# Discounting Life

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Many of the deaths prevented by environmental law are deaths that would have occurred many years hence. This is usually because the disease that would have killed people has a long latency period, or because the people exposed to the regulated hazard did not even exist at the time regulation was imposed. How do these future deaths compare to deaths that occur today? I believe that the resolution of this question depends on our moral commitments to each other's future selves and to future people. It does not turn on financial rates of return, and resort to such figures will obscure rather than illuminate the relevant concerns.

In defending discounting as a means of choosing between present and future life, John Donohue elides the moral issues inherent in discounting by making two assumptions. First, he says, discounting does not devalue future life relative to present life (p. 1906).<sup>1</sup> Second, he believes that there is no difference between discounting money and discounting life (p. 1905). These assumptions are mistaken.

Donohue asserts that discounting in the context of lifesaving regulation is not about valuing future life less than present life, but about the productive capacity of money over time: "[I]f invested, our resources are expected to grow at [the current rate of interest], so that if we forgo spending and invest the money instead, we can save more lives in the future with the amount foregone today" (p. 1905). In his example, we might spend \$40 million today to save ten lives seven years from now, or we could invest the \$40 million at an interest rate of ten percent and thus have \$80 million in seven years, which would enable us to save more than the ten lives we could save today (p. 1905). This assumes that the cost of saving lives increases at a rate lower than the discount rate—a dubious premise that Donohue does not acknowledge, let alone defend.

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1. Parenthetical page references are to John J. Donohue III, *Why We Should Discount the Views of Those Who Discount Discounting*, 108 *YALE L.J.* 1901 (1999).

But just think: If, seven years from now, we invest the money again rather than spend it on lifesaving, in another seven years we will have accumulated \$160 million and can then save even more lives. If we *then* wait *another* seven years to spend the money, we will have \$320 million. And so on. Donohue does not tell us how to decide when to stop investing and when to start saving lives. If his analysis is accepted, we will keep our money in the bank forever.

Others have concluded that the only way out of this spiral is to value future lives less than present ones.<sup>2</sup> They have recognized what Donohue does not: Discounting lives is all about the relative worth of lives today versus lives tomorrow.<sup>3</sup> It is puzzling, then, that Donohue insists that “no one suggests that lives should be discounted in the popular meaning of that term—devalued or disregarded” (p. 1908). This claim is all the more confusing given his belief in the equivalence of money and life. Money is discounted precisely because tomorrow’s dollar is worth less than today’s. If life is equivalent to money, its value also must decline with time.<sup>4</sup>

This brings us to Donohue’s second premise, that there is no difference between discounting money and discounting life. However, both the timing and the nature of the regulatory benefits at stake depend on whether the benefits are represented as dollars or as lives.

The timing of regulatory benefits is critical to the issue of discounting. Discounting comes into play only when there is a temporal lag between costs and benefits. If benefits occur roughly contemporaneously with costs, there is no need to convert costs and benefits to common temporal terms and thus no need to discount. The decision to discount therefore turns not only on whether the appropriate discount rate is zero or some positive number, but also on when costs and benefits occur. Like most people who

2. The Office of Management and Budget (OMB), for example, has written:

Suppose that the resources that would otherwise be used today to achieve a given result could be invested at a positive rate of return (that is, at the discount rate). By forgoing the expense this year and investing the resources at the discount rate, society could spend more next year (by a proportion equal to the discount rate) and achieve a higher level of welfare. *As long as society places the same value on a unit of future benefits as a unit of current benefits (i.e., it does not discount), it will be better off by delaying the action ad infinitum.*

OFFICE OF MANAGEMENT & BUDGET, REGULATORY PROGRAM OF THE UNITED STATES GOVERNMENT, APRIL 1, 1990-MARCH 31, 1991, at 40 (1990) (emphasis added).

3. See, e.g., Environmental Protection Agency, Guidelines for Preparing Economic Analyses, Review Draft, at E-29 (July 17, 1998) [hereinafter EPA Guidelines].

4. This is not to say that valuing future life less than present life is the only way to avoid endless reinvestment of regulatory resources. Regulators do not have the freedom to invest rather than regulate. Legally, there is no mechanism allowing federal agencies to do this. Politically, imagine the public’s reaction if the administrator of the EPA announced she had decided to invest the money at her disposal so that, at some unknown future date, another EPA administrator could start saving lives, and then, when that day came, the next administrator, too, decided to put off lifesaving in favor of investing. The notion that discounting is the only way to prevent regulators from keeping their money in the bank forever is ridiculous.

discuss discounting, Donohue focuses all of his attention on the first question and none on the second.

Many economists believe that the appropriate way to monetize the benefits of lifesaving interventions is to ask how much individuals are willing to pay to reduce their own risks of death.<sup>5</sup> These “willingness-to-pay” studies do not measure the ultimate value a person places on her own life; they measure only the value she places on an increased risk of death. Thus, where the value of lifesaving measures is reported in dollars, the dollars reflect a benefit conferred as of the moment risk is reduced. In most cases the reduction in risk will occur roughly contemporaneously with the expenditure of costs to reduce it. In such cases, discounting is not an issue. Where lifesaving benefits are reported in dollars, therefore, the issue of discounting often evaporates due to timing alone. Donohue can believe that it does not matter whether regulatory benefits are measured in lives or dollars (pp. 1905-06) only because he does not seem to appreciate that *the dollars in question do not represent lives, but only risk.*

The nature of lifesaving benefits also depends on how they are reported. Analysts sometimes report regulatory benefits in terms of lives saved, and discount lives rather than dollars, not due to mere “happenstance,” as Donohue suggests (p. 1906), but out of squeamishness about equating life with dollars. Indeed, the cost-per-life-saved approach adopted by John Morrall in his famous table<sup>6</sup> has emerged as an alternative to cost-benefit analysis partly due to controversies about monetizing human life. Discounting dollars and discounting lives may be “mathematically equivalent” (p. 1905), but they are not morally equivalent. If we decline to represent lives as dollars for purposes of valuing the lives, then we should not pretend the lives are dollars for purposes of discounting. Analysts could, however, exploit the mathematical equivalence of discounting lives and discounting dollars in order to give force to an unstated normative assumption that lives are fungible with dollars. If Donohue wants more honest regulatory analysis, this is not the way to achieve it.

If anything, the debate over discounting shows the oddity of treating human lives as fungible with dollars. The person who “invests” in her future by quitting smoking or exercising regularly will be disappointed if she expects that by doing so she will gain more than one life to live. Lives do not compound the way money does. Nor do they disaggregate the same way. Discounting lives the way we discount money implies that a death in the future is not a whole death, but only part of one. Needless to say, this defies the human experience of death.

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5. See, e.g., W. KIP VISCUSI, FATAL TRADEOFFS: PUBLIC & PRIVATE RESPONSIBILITIES FOR RISK 18 (1992).

6. John F. Morrall III, *A Review of the Record*, REGULATION, Nov.-Dec. 1986, at 25, 30 tbl.4.

Reporting the benefits of lifesaving programs in dollars rather than lives has an ironic consequence: It *decreases* the influence of discounting on estimates of these benefits. A positive discount rate reflects an expectation of productivity growth, which will increase future wages, which will increase willingness to pay for decreased risk.<sup>7</sup> Where lifesaving benefits are reported in dollars, estimates of future benefits must be increased relative to present benefits *due to the same assumptions that underlie discounting itself*.<sup>8</sup> If the monetary valuation of future lifesaving benefits is done properly, therefore, discounting “should not drastically affect the attractiveness of policies with long-term implications.”<sup>9</sup> Where benefits are reported in lives, estimates of future productivity growth do not affect the estimates of benefits. Thus, estimates of future benefits will effectively be lower when benefits are reported in lives, and, as my analysis of John Morrall’s table showed, discounting *will* drastically affect the attractiveness of lifesaving programs if benefits are reported in lives.

Only by assuming that lives are fungible with dollars can Donohue proceed to treat the choice of discount rate as an accountant’s problem. Knotty questions abound (p. 1906): How should corporate income taxes figure into discount rate estimation? What about private risk premiums for financial investments? Where does the rate of return on riskless government bonds fit in? To Donohue’s rather dated list of concerns, one might add others from more recent literature on discounting: Is hyperbolic discounting more appropriate than constant exponential discounting?<sup>10</sup> What is the shadow price of capital?<sup>11</sup> Is the economy “open” or “closed”?<sup>12</sup>

The trouble is: What does any of this have to do with the relative value of present and future life? The irrelevance of the rate of return on government bonds to the relative worth of present and future people seems clear enough; to say that our moral obligations to others decline, lockstep, with temporal distance is, as Derek Parfit has observed,<sup>13</sup> no more sensible than saying they decline with spatial distance. But even where the lives are our own, it seems implausible to insist that financial rates of return describe how we value our future health. Imagine the person who, before quitting smoking, first considered whether the Federal Reserve might soon raise or

7. Viscusi, *supra* note 5, at 145.

8. Donohue thinks it “illogical” (1908 n.32) to spend more to save the lives of the rich than the lives of the poor, but this is only the illogic of his own accounting methods: Where value is measured by willingness to pay, the rich not only get richer, they get safer, too.

9. Viscusi, *supra* note 5, at 145.

10. See, e.g., Norman Henderson & Ian Bateman, *Empirical and Public Choice Evidence for Hyperbolic Social Discount Rates and the Implications for Intergenerational Discounting*, 5 ENVTL. & RESOURCE ECON. 413 (1995).

11. See, e.g., EPA Guidelines, *supra* note 3, at E-11 to E-12.

12. See, e.g., *id.* at E-15 to E-16.

13. DEREK PARFIT, REASONS AND PERSONS 482 (1984).

lower interest rates. Wouldn't that person seem a little crazy? Yet this is the kind of reasoning implied by John Donohue's approach to the future.

Donohue and I agree on an important point: Judgment is an unavoidable part of the administrative process (p. 1908). Donohue believes that our judgment about present and future lifesaving is best informed by the generation of numbers based on financial rates of return. I believe that we should proceed straight to judgment, and skip the quantitative stage where it produces numbers that do not address the issues at hand. Generating numbers that are ultimately irrelevant to the questions to be resolved does more than waste precious regulatory resources. It changes the apparent nature of the decision itself, and permits politics and ideology to hide behind a mask of technical expertise.

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Most people cringe at the logical implications of willingness-to-pay and discounting: The lives of the poor are less valuable than the lives of the rich, and lives in the future are less valuable than lives today. So many people who embrace these methodologies scramble, like Donohue, to reconcile the equal moral worth of all persons with their professional commitments to cost-benefit analysis. In their scrambling they err.

In explaining why willingness-to-pay does not value the lives of the rich more highly than the lives of the poor, for example, Donohue silently transforms this methodology from a measurement of one's own willingness to pay for the protection of one's own health into a measurement of one's willingness to pay for the protection of the health of others (p. 1909). But the premise of willingness-to-pay is that the ones doing the paying are also the ones doing the dying. Asking one group of people what they are willing to pay to protect the health of another group of people just aggravates the very externality one is trying to measure.

Likewise, in striving to reconcile discounting with the equal moral worth of all persons, Donohue explains that just as he does not worry about his neighbor's children because his neighbor can take care of them, so he does not worry about future generations because they, too, will be able to take care of themselves (p.1910). This explanation, again, ignores the very externality discounting attempts to measure. I am certain that Donohue would not dump toxic waste in his neighbors' yard, foul their drinking water, denude their landscape—and blithely explain that his doing so did not devalue his neighbors' moral worth because they could take care of themselves.

