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Valuing Life: A Human Rights Perspective on the Calculus of Regulation

William J. Aceves†

We cannot know why the world suffers. But we can know how the world decides that suffering shall come to some persons and not to others. While the world permits sufferers to be chosen, something beyond their agony is earned, something even beyond the satisfaction of the world's needs and desires. For it is in the choosing that enduring societies preserve or destroy those values that suffering and necessity expose. In this way societies are defined, for it is by the values that are foregone no less than by those that are preserved at tremendous cost that we know a society's character.¹

Introduction

How much is a human life worth? This is both a puzzling and subversive question for human rights advocates to consider.

The concept of human rights is premised on the inherent dignity and equality of all human beings. The Preamble of the Universal Declaration of Human Rights acknowledges that “recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world”² To implement these basic principles, the Universal Declaration provides that “[a]ll human beings are born free and equal in dignity and rights” and that everyone is entitled to human rights without distinctions of any kind.³ It then states that “[e]veryone has the right to life,

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1. GUIDO CALABRESI & PHILIP BOBBITT, TRAGIC CHOICES 17 (1978).

2. G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948) [hereinafter UDHR].

3. *Id.* arts. 1, 2.

liberty and the security of person.”⁴ Similar pronouncements affirming the right to life and the equality of all human beings appear in other multilateral and regional human rights instruments.⁵

The right to life and the corollary right to be free from the arbitrary deprivation of life constitute the defining human right.⁶ Indeed, the “right to life” norm has been characterized “as the supreme human right, since without effective guarantee of this right, all other rights of the human being would be devoid of meaning.”⁷ This right entails both negative and positive obligations, which means that states are prohibited from taking life and they must also undertake affirmative steps to protect life.⁸ The positive obligations associated with the right to life are significant because they expand the breadth of protection and the depth of the state’s obligations.⁹ The primacy of the right to life norm is evidenced by its universality and its non-derogable status under international law.¹⁰

4. *Id.* art. 3.

5. The International Covenant on Civil and Political Rights references the “inherent dignity” of all people as well as their “equal and inalienable rights.” International Covenant on Civil and Political Rights, pmbl., Dec. 16, 1966, 999 U.N.T.S. 171 [hereinafter ICCPR]. *Cf.* THE CONCEPT OF HUMAN DIGNITY IN HUMAN RIGHTS DISCOURSE (David Kretzmer & Eckart Klein eds., 2002) (containing articles that further expand on the concept of “dignity” in human rights documents and culture); Christopher McCrudden, *Human Dignity and Judicial Interpretation of Human Rights*, 19 EUR. J. INT’L L. 655 (2008) (discussing the prevalence of the phrase “dignity” in human rights documents).

6. MANFRED NOWAK, U.N. COVENANT ON CIVIL AND POLITICAL RIGHTS: CCPR COMMENTARY 121 (2d rev. ed. 2005).

7. *See id.*; *see also* Yoram Dinstein, *The Right to Life, Physical Integrity, and Liberty*, in THE INTERNATIONAL BILL OF RIGHTS 114, 114 (Louis Henkin ed., 1981) (“The right to life is incontestably the most important of all human rights. Civilized society cannot exist without legal protection of human life. The inviolability or sanctity of life is, perhaps, the most basic value of modern civilization. In the final analysis, if there were no right to life, there would be no point in the other human rights.”); Stefan Trechsel, *Spotlights on Article 2 ECHR, The Right to Life, in DEVELOPMENT AND DEVELOPING INTERNATIONAL AND EUROPEAN LAW* 671, 674 (Wolfgang Benedek et al. eds., 1999) (“[O]nce life is lost, what does there remain to protect?”).

8. *See* NOWAK, *supra* note 6, at 122 (“Although some States, including the US, sought to structure the right to life exclusively as a claim to forbearance by the State, the majority of delegates in the HRCComm representing a variety of legal systems spoke out in favor of obligating States parties to protect life on the horizontal level as well.”).

9. *Id.* at 123. Positive obligations “extended the scope of protection to include other threats to human life, such as malnutrition, life-threatening illness, nuclear energy or armed conflict.” *Id.*

10. U.N. Human Rights Comm., Gen. Comment 6, Art. 6, Right to Life (Sixteenth session, 1982), U.N. Doc. HRI/GEN/1/Rev.1, ¶ 1, at 6 (1994) (“[The right to life] is the supreme right from which no derogation is permitted even in time of public

To place a price on the value of a human life is, thus, unsettling to human rights advocates. In fact, it seems inconsistent with core human rights principles that treat human life as sacrosanct and all human beings as equal. In absolute terms, it implies that human life is fungible, and a commodity that can be bought, traded, and sold. In relative terms, it implies the value of human life may vary and some lives may be more valuable than others. And yet, valuation of human life occurs frequently.¹¹

Throughout the world, governments use cost-benefit analysis to make countless decisions on a variety of issues that implicate human life.¹² Steeped in utilitarian principles, cost-benefit analysis provides a methodology for decision-making and the allocation of resources.¹³ At its most basic level, cost-benefit analysis simply balances the risks and rewards associated with a particular decision.¹⁴ An essential part of this process is the quantification

emergency which threatens the life of the nation”); *see also* U.N. Human Rights Comm., Gen. Comment 14, Art. 6, Right to Life (Sixteenth session, 1982), Compilation of General Comments and General Recommendation Adopted by Human Rights Treaty Bodies, U.N. Doc. HRI/GEN/1/Rev.1, ¶ 1, at 18 (July 29, 1994) (explaining the importance of the right to life to the Human Rights Committee in the ICCPR).

11. ANTHONY BOARDMAN ET AL., *COST-BENEFIT ANALYSIS* 408–10 (4th ed. 2010) (describing several studies that determined the statistical value of a human life).

12. While commonly used, cost-benefit analysis is subject to significant criticism. *See, e.g.*, MATTHEW D. ADLER, *WELL-BEING AND FAIR DISTRIBUTION: BEYOND COST-BENEFIT ANALYSIS* 92–114 (2012) (explaining that cost-benefit analysis can violate certain economic principles, and while cost-benefit analysis may comply with other economic principles, it is not necessarily morally attractive); FRANK ACKERMAN & LISA HEINZERLING, *PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING* 8 (2004) (“The basic problem with narrow economic analysis of health and environmental protection is that human life, health, and nature cannot be described meaningfully in monetary terms; they are priceless.”); DOUGLAS A. KYSAR, *REGULATING FROM NOWHERE* 2 (2010) (arguing that a focus on economic analysis leads to a lack of regard for other important values); Henry S. Richardson, *The Stupidity of the Cost-Benefit Standard*, 29 *J. LEGAL STUD.* 971 (2000) (arguing that cost-benefit analysis is a poor standard because it fails to account for new information as it comes in).

13. Steven Kelman, *Cost-Benefit Analysis: An Ethical Critique*, 5 *REGULATION* 33, 33–34 (1981); Alasdair MacIntyre, *Utilitarianism and Cost-Benefit Analysis: An Essay on the Relevance of Moral Philosophy to Bureaucratic Theory*, in *THE MORAL DIMENSIONS OF PUBLIC POLICY CHOICE: BEYOND THE MARKET PARADIGM* 179, 184 (John Martin Gilroy et al. eds., 1992).

14. BOARDMAN, *supra* note 11, at 1–2 (describing cost-benefit analysis in simple terms as weighing the benefits and costs of a proposal); CASS R. SUNSTEIN, *VALUING LIFE: HUMANIZING THE REGULATORY STATE* 2 (2014) (giving a simple description of cost-benefit analysis) [hereinafter *SUNSTEIN, VALUING LIFE*]; HAROLD WINTER, *TRADE-OFFS: AN INTRODUCTION TO ECONOMIC REASONING AND SOCIAL ISSUES* 1 (2d ed. 2012) (describing cost-benefits analysis as considering the tradeoffs associated with an issue). *See generally* *COST-BENEFIT ANALYSIS: LEGAL, ECONOMIC, AND PHILOSOPHICAL PERSPECTIVES* (Matthew D. Adler & Eric A. Posner eds., 2001) (containing articles describing issues related to cost-benefit analysis); *RISKS, COSTS,*

and monetization of costs and benefits.¹⁵ The expression of values in monetary terms facilitates comparison and decision-making.¹⁶ Cost-benefit analysis is valued as a decision-making methodology because it purports to offer a transparent and objective approach for the efficient allocation of resources.¹⁷

An important component of cost-benefit analysis involves calculating the value of a statistical life (VSL).¹⁸ The VSL is a discrete number that quantifies the value associated with a reduction in mortality risks within a distinct population.¹⁹ The VSL is then used to compare the financial costs of a proposed action with the benefits established by the reduced probability of death.²⁰ Cost-benefit analysis is primarily an *ex ante* analysis, meaning it is used to make decisions on the proper allocation of resources to reduce or prevent deaths.²¹ This approach is in contrast to the *ex post* analysis courts use in wrongful death cases.²²

AND LIVES SAVED: GETTING BETTER RESULTS FROM REGULATION (Robert W. Hahn ed., 1996) (containing articles describing issues related to cost-benefit analysis).

15. BOARDMAN, *supra* note 11, at 1–2.

16. *Id.* at 10–15 (describing the basic cost-benefit analysis process after the monetization step).

17. See Robert W. Hahn, *The Economic Analysis of Regulation: A Response to the Critics*, 71 U. CHI. L. REV. 1021, 1045–46 (2004) (explaining how the use of “scorecards” can “make the regulatory process more transparent”); William Meadow & Cass R. Sunstein, *Statistics, Not Experts*, 51 DUKE L.J. 629, 641 (2001) (arguing it would be better to use statistical evidence instead of expert testimony in negligence cases). Cost-benefit analysis is one of several methods for decision making. CALABRESI & BOBBITT, *supra* note 1, at 31–49.

18. See generally Mathew D. Adler, *Welfarism, Equity, and the Choice Between Statistical and Identified Victims*, in IDENTIFIED VERSUS STATISTICAL LIVES: AN INTERDISCIPLINARY PERSPECTIVE 53, 59–62 (I. Glenn Cohen et al. eds., 2015) [hereinafter IDENTIFIED VERSUS STATISTICAL LIVES] (describing cost-benefit analysis and VSL); W. Kip Viscusi, *The Value of Life in Legal Contexts: Survey and Critique*, 2 AM. L. & ECON. REV. 195, 196 (2000) (“Economic discussions of the value of life almost invariably focus on the value of a statistical life, considering an individual facing a very small probability of death.”).

19. Viscusi, *The Value of Life*, *supra* note 18, at 201–208.

20. *Id.* at 197 (“[T]he value of a statistical life is a prospective measure that in effect establishes the appropriate price society is willing to pay for small risk reductions.”). For the origins of the VSL concept, see H. Spencer Banzhaf, *Retrospectives: The Cold-War Origins of the Value of Statistical Life*, 28 J. ECON. PERSP. 213 (2014); see also T. C. Schelling, *The Life You Save May Be Your Own*, in PROBLEMS IN PUBLIC EXPENDITURE ANALYSIS 127 (Samuel B. Chase, Jr. ed., 1968) (describing the concept of VSL).

21. BOARDMAN, *supra* note 11, at 3.

22. See generally Ronen Avraham, *Putting a Price on Pain-and-Suffering Damages: A Critique of the Current Approaches and a Preliminary Proposal for Change*, 100 NW. U. L. REV. 87, 90 (2006) (describing “the way pain and suffering is currently handled in the United States”); David W. Leebron, *Final Moments: Damages for Pain and Suffering Prior To Death*, 64 N.Y.U. L. REV. 256 (1989) (discussing pain and suffering damages in the United States).

Governments use cost-benefit analysis and VSL calculations to consider a wide range of issues, including environmental standards, health regulations, transportation rules, and worker safety protocols.²³ This methodology is used to make decisions regarding acceptable levels of carcinogens in the water supply²⁴ or pollutants in the air.²⁵ It can even address mortality risks in vehicle rollover accidents²⁶ or the costs of reducing sexual violence in the prison system.²⁷ In sum, these decisions can affect every aspect of human life. They can extend life or end it. They can enhance the quality of life or degrade it.²⁸

While regulatory decisions using cost-benefit analysis and VSL calculations implicate millions of lives, the underlying methodology has not received any meaningful critique regarding its compliance with human rights law.²⁹ Accordingly, this Article examines the valuing of life from a human rights perspective.³⁰ It

23. U.S. DEP'T OF TRANSP., NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., FMVSS 216, UPGRADE ROOF CRUSH RESISTANCE, 2 (Aug. 2005) [hereinafter FMVSS 216, UPGRADE ROOF CRUSH RESISTANCE]; ACKERMAN & HEINZERLING, *supra* note 12; BOARDMAN, *supra* note 11, at 20 (noting that cost-benefit analysis is used in many countries); SUNSTEIN, VALUING LIFE, *supra* note 14, at 3 (describing the regulatory function of cost-benefit using OIRA as covering “national security, immigration, energy, environmental protection, occupational safety, food safety, education, and much more.”).

24. ACKERMAN & HEINZERLING, *supra* note 12, at 93.

25. *Id.* at 48 (“EPA promptly rejected these [benzene emissions rules] on the grounds that they were too expensive, and achieved too little reduction in risk to be worthwhile.”).

26. *See* FMVSS 216, UPGRADE ROOF CRUSH RESISTANCE, *supra* note 23.

27. *See* U.S. DEP'T OF JUSTICE, PRISON RAPE ELIMINATION ACT REGULATORY IMPACT ASSESSMENT (2012).

28. *See, e.g.*, SUNSTEIN, VALUING LIFE, *supra* note 14, at 3–4 (describing regulatory decisions as having possible positive and negative effects on people and that regulatory decisions are often made by cost-benefit analysis).

29. This article does not address other human rights norms that are also implicated by cost-benefit analysis and VSL calculations such as the right to health. *See* Matthew M. Kavanagh et al., *Evolving Human Rights and the Science of Antiretroviral Medicine*, 17 HEALTH & HUM. RTS. J. 76 (2015); Katharine G. Young, *The Minimum Core of Economic and Social Rights: A Concept in Search of Content*, 33 YALE J. INT'L L. 113 (2008).

30. There is a long tradition of interdisciplinary research in the study of international law. *See, e.g.*, BETH SIMMONS, MOBILIZING FOR HUMAN RIGHTS: INTERNATIONAL LAW IN DOMESTIC POLITICS 9–12 (2009) (describing the growing bond between international relations and international law); INTERDISCIPLINARY PERSPECTIVES ON INTERNATIONAL LAW AND INTERNATIONAL RELATIONS (Jeffrey L. Dunoff & Mark A. Pollack eds., 2013) (containing articles about international relations and international law); Gregory Shaffer & Tom Ginsburg, *The Empirical Turn in International Legal Scholarship*, 106 AM. J. INT'L L. 1, 1 (2012) (“There is a new empirical turn in international legal scholarship. Building on decades of theoretical work in law and social science, a new generation of empirical studies is elaborating on how international law works in different contexts.”); Anne-Marie

does so by reviewing the use of cost-benefit analysis and VSL calculations in the United States and critiquing their compliance with the right to life norm under human rights law. Although this Article examines the U.S. regulatory process, its findings are generalizable and apply to all governments that use cost-benefit analysis and VSL calculations in making decisions that affect mortality rates.³¹ Part I reviews how federal agencies in the United States use cost-benefit analysis to make regulatory decisions. It then offers a brief overview of how VSL calculations are made and their role in cost-benefit analysis. Part II examines the right to life norm under human rights law and its establishment of both negative and positive obligations on states. The right to life norm now imposes a positive obligation on states to protect against threats to human life. As a result, states must take legislative and regulatory action to reduce mortality risks whenever possible. Finally, Part III considers the implications of the right to life norm on cost-benefit analysis and VSL calculations. Human rights law raises both methodological and normative concerns with the use of this approach to decision-making. Specifically, some decisions based on cost-benefit analysis and which use VSL calculations may violate the right to life norm because they undervalue human life. In fact, efforts to monetize human rights may face insurmountable challenges because such rights are not easily amenable to quantification or monetization.

Regulatory decisions implicate the lives of countless people every day. Mortality risks are real, and people live and die based on the decisions that governments make. Because these decisions involve “statistical” or unidentified lives that may be affected in the future, they do not receive the same level of critical review as decisions that involve identified lives.³² Moreover, it is easy to

Slaughter, *International Law and International Relations Theory: A Dual Agenda*, 87 AM. J. INT'L L. 205 (1993) (discussing international law and international relations).

31. In fact, the United States encourages other countries to use cost-benefit analysis in their own regulatory process. *See, e.g.*, Trade Act of 2002, Pub. L. No. 107-210, § 2102(b)(8)(B), 116 Stat. 933, 997 (“The principal negotiating objectives of the United States regarding the use of government regulation or other practices by foreign governments to provide a competitive advantage to their domestic producers, service providers, or investors and thereby reduce market access for United States goods, services, and investments are . . . to require that proposed regulations be based on sound science, cost-benefit analysis, risk assessment, or other objective evidence.”).

32. *See* THOMAS O. MCGARITY, SIDNEY SHAPIRO & DAVID BOLLIER, SOPHISTICATED SABOTAGE: THE INTELLECTUAL GAMES USED TO SUBVERT RESPONSIBLE REGULATION 148 (2004) (describing the current regime as treating identified lives as having more value than unidentified lives); IDENTIFIED VERSUS

overlook or discount the lives of unknown people or potential victims.³³ Indeed, this has been a significant issue in discussions regarding the responsibility of current generations to consider the rights of future generations.

Effective measures of human rights protection are prima facie dependent on certain conditions: [w]e need to be able to identify manifest human rights violations as well as perpetrators and victims, whether these be individuals or groups. Implied here, however, is a latent “presentist bias” in the human rights regime that privileges the rights of people in the here and now. Such bias raises, however, the question of how the regulatory force of this regime relates to the long-term effects of our current actions and their possible impact on the rights of people in the future. Do current human rights regulations take account of such long-term effects?³⁴

This Article seeks to overcome the bias that places less significance on protecting future victims. It also supports the growing movement to prioritize the prevention of human rights abuses.³⁵

I. The Calculus of Regulation

Cost-benefit analysis is a decision-making methodology that compares the risks and rewards associated with a particular

STATISTICAL LIVES, *supra* note 18 (containing articles discussing a bias towards identified lives).

33. RICHARD H. THALER, MISBEHAVING: THE MAKING OF BEHAVIORAL ECONOMICS 12–13 (2015); Alex Gosseries, *On Future Generations’ Future Rights*, 16 J. POL. PHIL. 446, 450 (2008).

34. See Marcus Düwell & Gerhard Bos, *Human Rights and Future People—Possibilities of Argumentation*, 15 J. HUM. RTS. 231, 232 (2016); see also Bridget Lewis, *Human Rights Duties Towards Future Generations and the Potential for Achieving Climate Justice*, 34 NETH. Q. HUM. RTS. 206 (2016) (discussing the rights of future generations as they relate to climate change); Kerri Woods, *The Rights of (Future) Humans Qua Humans*, 15 J. HUM. RTS. 291, 297 (2016) (discussing the theories under which future generations may or may not have rights).

35. See Rep. of the Office of the U.N. High Comm’r for Human Rights, *The Role of Prevention in the Promotion and Protection of Human Rights*, U.N. Doc. A/HRC/30/20 (2015); see also LOUISE DOSWALD-BECK, HUMAN RIGHTS IN TIMES OF CONFLICT AND TERRORISM 32–49 (2011) (discussing the obligations and the realization of rights in international relations); Symposium, *Rights to a Green Future*, 15 J. HUM. RTS. 231 (2016) (containing several articles describing rights and ethics).

decision.³⁶ It is regularly used by governments, including the United States, to justify the allocation of state resources.³⁷

a. The Use of Cost-Benefit Analysis by Federal Agencies

In the United States, federal agencies are required to use cost-benefit analysis in making regulatory decisions.³⁸ The modern origins of this methodology can be traced to President Ronald Reagan's 1981 Executive Order 12,291, which established a set of requirements for regulatory agencies seeking to adopt new rules.³⁹ However, it was Executive Order 12,866, promulgated by President Bill Clinton in 1993, that created the foundation for the current regulatory system.⁴⁰ Executive Order 12,866 was designed to improve efficiency in the regulatory process by requiring clear and objective justifications for regulatory action. Thus, federal agencies may only promulgate regulations in three situations: (1) when regulations are required by law, (2) when regulations are necessary to interpret the law, or (3) when regulations are "made necessary

36. *See generally* STEPHEN BREYER ET AL., ADMINISTRATIVE LAW AND REGULATORY POLICY 155–61 (7th ed. 2011) (describing the process of cost-benefit analysis); CHRISTOPHER HOOD ET AL., THE GOVERNMENT OF RISK: UNDERSTANDING RISK REGULATION REGIMES 7 (2001) (giving a brief description of cost-benefit analysis); Lisa A. Robinson, *How US Government Agencies Value Mortality Risk Reductions*, 1 REV. ENVTL. ECON. & POL'Y 283, 283 (2007) (describing "approaches used by federal agencies to estimate the value of changes in the risk of premature mortality").

37. BOARDMAN, *supra* note 11, at 20. The use of cost-benefit analysis is not limited to governments. Corporations use cost-benefit analysis to make decisions on which safety features to install in their products, thereby affecting the cost of these products and presumably their mortality risks. *See, e.g.*, W. Kip Viscusi, *Pricing Lives for Corporate and Governmental Risk Decisions*, 6 J. BENEFIT-COST ANALYSIS 227 (2015) (discussing the use of cost-benefit analysis in corporations). Even individuals make choices—from using certain modes of transportation to choosing particular medical procedures—that involve balancing financial costs and mortality risks. *See, e.g.*, Jahn K. Hakes & W. Kip Viscusi, *Automobile Seatbelt Usage and the Value of Statistical Life*, 73 SOUTHERN ECON. J. 659 (2007) (showing that people do balance the costs and benefits of seatbelt use). Each of these decisions is made, in part, through cost-benefit analysis. *See* HAROLD WINTER, TRADE-OFFS: AN INTRODUCTION TO ECONOMIC REASONING AND SOCIAL ISSUES 18 (2d ed. 2013).

38. MAEVE P. CAREY, COST-BENEFIT AND OTHER ANALYSIS REQUIREMENTS IN THE RULEMAKING PROCESS 2 (2013) ("[M]any federal agencies are currently required to prepare cost-benefit analyses . . ."). This regulatory process has been subject to criticism. *See, e.g.*, MCGARITY, *supra* note 32, at 8 (criticizing cost-benefit analysis as ignoring important values).

39. *See* Exec. Order No. 12,291, 46 Fed. Reg. 13,193 (Feb. 19, 1981).

40. *See* Exec. Order No. 12,866, 58 Fed. Reg. 51,735 (Oct. 4, 1993). Some commentators trace the origins of the regulatory state even earlier. *See* JAMES T. CAMPEN, BENEFIT, COST, AND BEYOND: THE POLITICAL ECONOMY OF BENEFIT-COST ANALYSIS 16–21 (1986); PRINCIPLES AND STANDARDS FOR BENEFIT-COST ANALYSIS 2–13 (Scott Farrow & Richard O. Zerbe, Jr. eds., 2013); Edward L. Glaeser & Andrei Shleifer, *The Rise of the Regulatory State*, 41 J. ECON. LIT. 401 (2003).

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.”⁴¹

Cost-benefit analysis is an essential methodology for federal agencies considering regulatory action. Indeed, cost-benefit analysis is the centerpiece of Executive Order 12,866. The order requires federal agencies undertaking “significant regulatory action” to prepare detailed regulatory plans (known as regulatory impact assessments or regulatory impact analysis) that consider the costs and benefits of proposed action.⁴² Such plans are not required for every regulatory action. Rather, they are required when regulatory action would result in a rule that may:

- (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;
- (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- (4) Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive order.⁴³

Pursuant to Executive Order 12,866, regulatory impact assessments must be submitted for review to the Office of Information and Regulatory Affairs (OIRA),⁴⁴ which is located within the White House’s Office of Management and Budget (OMB).⁴⁵ OIRA is led by a political appointee, who is nominated by the President and confirmed by the U.S. Senate.⁴⁶ OIRA is given ninety days to review regulatory action, although this deadline can

41. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, §1 (Oct. 4, 1993).

42. *Id.* § 6(a)(3)(B), (C).

43. *Id.* § 3(f).

44. *Id.* § 6(b)(2).

45. *Id.* § 2(b). *See, e.g.*, Scot J. Paltrow, *How a Small White House Agency Stalls Life-Saving Regulations*, REUTERS (Oct. 29, 2015, 3:00 PM), <http://www.reuters.com/investigates/special-report/usa-regulations-oira/> (describing how OIRA slows down the making of regulations).

46. *Frequently Asked Questions (FAQ)*, REGINFO.GOV, <https://www.reginfo.gov/public/jsp/utilities/faq.jsp> (last visited Oct. 28, 2017) (“The Office of the Administrator was created by Congress when it established OIRA in the Paperwork Reduction Act of 1980. The Administrator is nominated by the President and confirmed by the Senate.”).

be extended.⁴⁷ During the review process, OIRA consults with numerous public and private entities.⁴⁸ At the conclusion of the review process, OIRA may approve the proposed regulatory action or return it to the appropriate agency for further consideration.⁴⁹ This can occur for several reasons.

If the rule is not compatible with the law, if the quality of the agencies [sic] analysis is inadequate, if the regulation is not justified by the analysis, if the rule is not consistent with the regulatory principles stated in Executive Order 12866 or with the Presidents [sic] policies and priorities, or if the rule unnecessarily conflicts with other Executive Branch agency regulations or efforts.⁵⁰

In 2011, President Barack Obama adopted Executive Order 13,563 to reaffirm the principles set forth in Executive Order 12,866.⁵¹ This new executive order provides additional details on the regulatory process. It acknowledges that the “regulatory system must protect public health, welfare, safety and our environment while promoting economic growth, innovation, competitiveness, and job creation.”⁵² It emphasizes that regulatory decisions must be based on the best available scientific information and must allow for public participation.⁵³ In particular, Executive Order 13,563 requires federal agencies to:

- (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify);
- (2) tailor its regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations;
- (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity);
- (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that

47. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, § 6(b)(2) (Oct. 4, 1993).

48. *Frequently Asked Questions (FAQ)*, *supra* note 46 (“OIRA’s policy is to meet with any party interested in discussing issues on a rule under review, whether they are from State or local governments, small business or other business interests, or from the environmental, health, or safety communities.”).

49. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, § 6(b)(3) (Oct. 4, 1993).

50. *Frequently Asked Questions (FAQ)*, *supra* note 46.

51. Exec. Order No. 13,563, 76 Fed. Reg. 3,821, § 1(b) (Jan. 21, 2011). See Binyamin Appelbaum & Michael D. Shear, *How the President Came to Embrace Executive Power*, N.Y. TIMES, Aug. 14, 2016, at 1.

52. Exec. Order No. 13,563, 76 Fed. Reg. 3,821, § 1(a) (Jan. 21, 2011).

53. *Id.*

regulated entities must adopt; and

(5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public.⁵⁴

Executive Order 13,563 acknowledges the challenges posed by certain regulatory actions. It recognizes that not all costs and benefits are easily quantified or monetized. Accordingly, Executive Order 13,563 indicates that agencies “may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.”⁵⁵ Finally, Executive Order 13,563 requires federal agencies to consider several principles in the regulatory process:

(1) The importance of public participation.

(2) The need to “promote . . . coordination, simplification, and harmonization” across agencies.

(3) The importance of “identify[ing] and consider[ing] regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public.”

(4) The need to “ensure the objectivity of any scientific and technological information and processes used to support . . . regulatory actions.”

(5) The need to conduct retrospective analysis of regulations that have already been adopted.⁵⁶

To facilitate agency action, OMB issued Circular A-4 in 2003.⁵⁷ Circular A-4 offers detailed instructions to federal agencies on conducting cost-benefit analysis for proposed regulatory actions. At the outset, Circular A-4 acknowledges the primacy of cost-benefit analysis in regulatory analysis.⁵⁸ It recognizes that cost-benefit analysis can provide decision-makers with guidance on policy decisions that will generate net benefits to society “even when economic efficiency is not the only or the overriding public policy objective.”⁵⁹ At the same time, regulatory analysis can reveal the shortcomings of proposed action.⁶⁰ Circular A-4 highlights the importance of considering alternative proposals in a regulatory

54. *Id.* § 1(b).

55. *Id.* § 1(c).

56. *Id.* §§ 2–6.

57. OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, CIRCULAR A-4 (2003), https://obamawhitehouse.archives.gov/omb/circulars_a004_a-4/#2 [hereinafter CIRCULAR A-4].

58. *Id.*

59. *Id.*

60. *Id.*

impact assessment.⁶¹ Therefore, a good regulatory impact assessment should not be limited to offering a single proposal for consideration. Rather, it should identify and discuss competing solutions to the underlying problem.

An essential feature of cost-benefit analysis is the ability to monetize costs and benefits of proposed regulatory action.⁶² As recognized in Executive Order 13,563, some costs and benefits may be difficult to quantify or monetize. Despite such difficulties, regulatory agencies are required to evaluate them.⁶³ Accordingly, Circular A-4 offers suggestions on how to address these situations. Specifically, non-quantified costs and benefits should be examined through break-even analysis, which answers the question: “[h]ow small could the value of the non-quantified benefits be (or how large would the value of the non-quantified costs need to be) before the rule would yield zero net benefits?”⁶⁴ The ensuing value would then be incorporated into the cost-benefit analysis. The use of break-even (or threshold) analysis is not uncommon and has been used in a variety of situations to address benefits that are difficult to monetize, including preventing terrorist attacks and reducing prison rape.⁶⁵

Finally, Circular A-4 emphasizes the importance of objectivity and transparency in the preparation of regulatory impact assessments. “Because of its influential nature and its special role in the rulemaking process, it is appropriate to set minimum quality standards for regulatory analysis.”⁶⁶ Thus, regulatory analysis must be “based on the best reasonably obtainable scientific, technical, and economic information available.”⁶⁷ Studies must be replicable, and information used in these studies should be made publicly available.⁶⁸

Table 1 provides some examples of cost-benefit analysis performed by the federal government in recent years.⁶⁹ The benefits and costs are designated in billions of dollars.

61. *Id.*

62. In measuring costs and benefits, Circular A-4 requires regulatory agencies to address their impact on U.S. citizens and residents. Any foreign implications should be treated separately. *Id.*

63. See Pub. Citizen v. Fed. Motor Carrier Safety Admin., 374 F.3d 1209, 1221 (D.C. Cir. 2004).

64. Circular A-4, *supra* note 57.

65. SUNSTEIN, VALUING LIFE, *supra* note 14, at 191–194.

66. CIRCULAR A-4, *supra* note 57, at 17.

67. *Id.*

68. *Id.*

69. See OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, 2014

Table 1. Examples of Cost-Benefit Analysis			
Federal Agency	Nature of Proposed Regulation	Benefit	Cost
Department of Transportation (DOT)	Ejection mitigation for vehicles	\$1.5	\$0.4
Environmental Transportation Agency	Pipeline safety standards	\$85.0	\$13.0
Health and Human Services	Cigarette warning labels	\$0.2	<\$0.1
DOT	Pilot age limits	\$35.0	\$4.0

In Table 1, the benefits of the proposed regulations outweighed the costs. As a result, the proposed regulations were approved by OIRA and subsequently implemented by the appropriate agency.

In sum, the regulation of risk is a complex and, at times, controversial function of government. In the United States, cost-benefit analysis is an essential feature of the regulatory approval process.⁷⁰ Hundreds of regulations are reviewed each year to confirm that their expected benefits outweigh the expected costs.⁷¹

DRAFT REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS AND UNFUNDED MANDATES ON STATE, LOCAL AND TRIBAL ENTITIES (2014), https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/2014_cb/draft_2014_cost_benefit_report-updated.pdf [hereinafter OMB 2014 Draft Report]; SUNSTEIN, VALUING LIFE, *supra* note 14, at 185–190.

70. In addition to Executive Order 12,866 and 13,563, other executive orders and federal statutes apply to guide the regulatory process. *See, e.g.*, Exec. Order 13,045, 62 Fed. Reg. 19,885 (Apr. 23, 1997) (requiring that agencies identify, assess, and address “environmental health risks and safety risks that may disproportionately affect children”); Exec. Order 13,211, 66 Fed. Reg. 28,355 (May 22, 2001) (“requiring that agencies . . . prepare a Statement of Energy Effects when undertaking certain agency actions”); Paperwork Reduction Act of 1995, Pub. L. No. 104-13 (109 Stat. 163) (requiring federal agencies to take steps to reduce burdens of data collection on the federal government, states, and other entities); Unfunded Mandates Reform Act of 1995, Pub. L. 104-4 (109 Stat. 48) (requiring federal agencies to include in their analyses of regulations the economic effects of regulations on state, local, and tribal governments).

71. Between 2003 and 2013, for example, OMB estimated the annual benefits for major federal regulations were between \$217 and \$863 billion whereas the annual costs were between \$57 and \$84 billion. OMB 2014 Draft Report, *supra* note 69, at 1–4; *see also* CURTIS W. COPELAND, CONG. RESEARCH SERV., R41140, HOW AGENCIES MONETIZE “STATISTICAL LIVES” EXPECTED TO BE SAVED BY REGULATIONS 1–2 (2010) (noting that Executive Order 12,866 requires that federal agencies conduct cost-benefit analyses for “‘significant’ regulatory actions,” and that “in recent years, an average of about 600 federal rules have been considered ‘significant’ each year”).

b. *The Value of a Statistical Life*

The assessment of mortality risks is an important part of regulatory analysis. Through VSL calculations, agencies monetize the value of changes to mortality risks.⁷² The VSL is then used to compare the financial costs of a particular action with the benefits established by the reduced probability of death.

Because this terminology is subject to some controversy, a subtle but critical clarification is necessary. A VSL calculation does not measure or place an actual cost (or price) on human life.⁷³ Rather, VSL calculations measure the value governments place on the reduction in mortality risks rather than mortality itself.⁷⁴ To some critics, this is a distinction without a difference because changes in mortality risks eventually manifest as actual lives that are saved or lost in the studied population.⁷⁵

The use of VSL calculations in cost-benefit analysis involves a five-step process.⁷⁶

i. Step One

The first step is to identify the societal problem that needs to be addressed. Executive Order 12,866 explains that federal regulations should only be promulgated if they are required by existing law or “are made necessary by compelling public need, such

72. Circular A-4 describes an additional methodology that measures the “value of statistical life-years (VSLY) extended.” CIRCULAR A-4, *supra* note 57, at 30; see also Cass R. Sunstein, *Lives, Life-Years, and Willingness to Pay*, 104 COLUM. L. REV. 205, 206 (2004) (arguing that the VSLY methodology should be used for cost-benefit analyses) [hereinafter Sunstein, *Lives, Life-Years*].

73. CIRCULAR A-4, *supra* note 57. VSL analysis is often criticized because of the perception that it places an actual value on human life. Trudy Ann Cameron, *Euthanizing the Value of a Statistical Life*, 4 REV. ENVTL. ECON. & POL’Y 161, 163–64 (2010).

74. W. Kip Viscusi, *The Devaluation of Life*, 3 REG. & GOVERNANCE 103, 105–06 (2009) (“An individual’s VSL amount is a measure of the rate at which he or she is willing to pay for small reductions in mortality risk In contrast, measures of compensation for wrongful death are not based on the willingness to pay for small reductions in risk, but generally are tied to appropriate amounts to address the financial losses to the individual’s survivors.”).

75. See, e.g., Lisa Heinzerling, *The Rights of Statistical People*, 24 HARV. ENVTL. L. REV. 189, 189 (2000) (“I argue that the use of cost-benefit analysis to evaluate life-saving regulatory programs has . . . been justified by the creation of a new kind of entity—the statistical person. A primary feature of the statistical person . . . is that she is unidentified; she is no one’s sister, or daughter, or mother. Indeed, in one conception, the statistical person is not a person at all, but rather only a collection of risks.”) [hereinafter Heinzerling, *Rights of Statistical People*].

76. The five-step process comes from Circular A-4. CIRCULAR A-4, *supra* note 57. For various scenarios using VSL calculations, see SUNSTEIN, VALUING LIFE, *supra* note 14, at 49–64.

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.”⁷⁷ Circular A-4 then provides examples of the major forms of market failure, including externality, market power, and inadequate or asymmetric information.⁷⁸ Other reasons for regulatory action include “improving governmental processes or promoting intangible values such as distributional fairness or privacy.”⁷⁹

A common reason for government regulation is to reduce mortality risks associated with a particular activity, product, or phenomenon.⁸⁰ These risks are typically denominated as a percentage or ratio within a defined population (such as 1 in 10,000 or 1 in 100,000).⁸¹ Based on historical data and scientific studies, mortality risks can be identified for countless societal problems, from acceptable levels of carcinogens in drinking water to the lack of safety features in automobiles.⁸²

ii. Step Two

The second step is to identify a proposed regulatory action that addresses the underlying societal problem and determine the cost for taking such action.⁸³ Typically, regulations are drafted by federal agencies, with feedback from numerous government entities such as the Council of Economic Advisors, National Economic Council, the Office of Science and Technology Policy, and the Domestic Policy Council.⁸⁴ The general public is also provided an opportunity to provide feedback on proposed regulations.⁸⁵

iii. Step Three

The third step is to calculate the appropriate VSL, which quantifies the value associated with a reduction in mortality risks.⁸⁶ The valuation of human life poses unique challenges. As noted by Thomas Schelling, “[d]eath is indeed different from most consumer

77. Exec. Order No. 12,866, 58 Fed. Reg. 51,735, § 1 (Oct. 4, 1993).

78. CIRCULAR A-4, *supra* note 57.

79. *Id.*

80. *Id.*

81. *Id.*

82. *Id.* at 38, 40.

83. *Id.*

84. *See id.*

85. *Id.*

86. *Id.*

events, and its avoidance different from most commodities.”⁸⁷ But as Schelling also recognized, it is possible to quantify the value of reductions in mortality risks. Quite simply, “people have been dying for as long as they have been living; and where life and death are concerned we are all consumers. We nearly all want our lives extended and are probably willing to pay for it.”⁸⁸

Circular A-4 describes the VSL as the “sum of risk reductions expected in a population.”⁸⁹ There are several different approaches for calculating the VSL.⁹⁰ *Revealed preference studies* focus on the actual choices people make, typically in the context of employment decisions. For example, some studies examine differences in wages attributable to a worker’s willingness to accept a greater (or lesser) probability of death in his or her chosen profession. The following summary provides a brief description of a revealed preference study:

To estimate the value of a statistical life, economists can exploit the difference in pay between two jobs and determine how much of that difference stems from the difference in the risk of injury or death. Then, the researchers simply multiply that number by the inverse of the risk difference and call the result the value of a statistical life.

For example, if I make \$40,000 and my twin brother makes \$42,000 at a job that is identical to mine in all respects except for a 1 percent greater chance of death, then an economist assumes that the \$2,000 difference is a premium my twin brother requires to accept the riskier job. If he requires \$2,000 for a 1 percent greater risk, then I can infer that he is placing a value on his life of $\$2,000 \times (1 \div 0.01)$, or \$200,000.⁹¹

Stated preference studies focus on hypothetical choices and usually involve extensive surveys. The surveys typically ask respondents to identify their willingness to pay for reduced risks in various hypothetical situations.⁹² The following summary provides a brief description of a stated preference study:

87. Schelling, *supra* note 20, at 129.

88. *Id.* at 128–29.

89. CIRCULAR A-4, *supra* note 57.

90. Ike Brannon, *What is a Life Worth?*, 27 REG. 60, 60 (2004); *see also* Janusz R. Mrozek & Laura O. Taylor, *What Determines the Value of Life? A Meta-Analysis*, 21 J. POL’Y ANALYSIS & MGMT. 253 (2002) (providing an overview of past analyses of VSL estimates using compensating-wage equations).

91. Brannon, *supra* note 90, at 60.

92. Stated preference studies are also referred to as “contingent valuation.” *Cf.* Paul Glimcher & Michael A. Livermore, *What Is Nature Worth to You?*, N.Y. TIMES (Aug. 8, 2015), <https://www.nytimes.com/2015/08/09/opinion/sunday/what-is-nature-worth-to-you.html> (demonstrating how “willingness to pay” studies may inform natural resource protection). *See generally* Elizabeth Hoffman & Matthew L. Spitzer, *Willingness to Pay vs. Willingness to Accept: Legal and Economic*

In a contingent valuation estimation of the value of a statistical life, the economist surveys a number of people and asks each person the amount of money that he would require to accept a marginally higher chance of dying in the near future. Generally, the subject answers yes or no to a series of questions; for example, the opening question might be, “Would you accept \$1,000 to move from a one in 10,000 chance of death to a five in 10,000 chance of death?” If the answer is yes, then the next question might be whether the person would accept \$800 to assume the higher risk, and so on until the person says he would refuse the money for the risk. After surveying a few hundred people in this manner, the researcher imputes the implicit value that each subject places on the value of a life, as is done in the revealed preference method (multiplying the final dollar figure by the inverse of the additional risk taken) and averages the valuations.⁹³

Several variables may be used to adjust VSL calculations. For example, some mortality risks are valued differently and may result in a higher VSL.⁹⁴ Because cancer is both painful and expensive to treat, reductions in cancer mortality rates may be valued at a higher rate than other deaths.⁹⁵ Deaths associated with terrorism create profound social upheaval that may also justify a higher VSL.⁹⁶ In these scenarios, agencies may seek to adjust the base VSL calculation.

Life expectancy considerations can also be used in cost-benefit analysis, although such calculations have generated significant controversy.⁹⁷ One such effort was referred to as the “senior discount” because it placed a lower value on the lives of older

Implications, 71 WASH. U. L.Q. 59 (1993) (describing the potential problems with the assumption that survey respondents will generally value “willingness to pay” and “willingness to accept” similarly).

93. Brannon, *supra* note 90, at 61.

94. Cass R. Sunstein, *Bad Deaths*, 14 J. RISK & UNCERTAINTY 259, 261–65 (1997); *see also* Fredrik Carlsson et al., *Is Transport Safety More Valuable in the Air?*, 28 J. RISK & UNCERTAINTY 147, 147 (2004) (discussing why people might be willing to pay more for risk reductions in air travel than taxi travel, even though “[m]ost of us know that it is safer to fly compared to traveling by most other transport modes”).

95. U.S. ENVTL. PROT. AGENCY, VALUING MORTALITY RISK REDUCTIONS FOR ENVIRONMENTAL POLICY: A WHITE PAPER 20–21 (2010); James K. Hammitt & Jin-Tau Liu, *Effects of Disease Type and Latency on the Value of Mortality Risk*, 28 J. RISK & UNCERTAINTY 73 (2004).

96. Lisa A. Robinson et al., *Valuing the Risk of Death from Terrorist Attacks*, 7 J. HOMELAND SECURITY & EMERGENCY MGMT. 1 (2010); W. Kip Viscusi, *Valuing Risks of Death from Terrorism and Natural Disasters*, 38 J. RISK & UNCERTAINTY 191 (2009).

97. Robinson, *supra* note 36, at 287; *see also* Memorandum from John D. Graham, Administrator, Office of Information and Regulatory Affairs, Office of Management and Budget to the President’s Management Council on Benefit-Cost Methods and Lifesaving Rules (May 30, 2003) (advising agencies to discontinue use of an “age-adjustment factor” in computing an estimated VSL).

citizens.⁹⁸ In these situations, VSL calculations are assigned based on age-related differences and, typically, the VSL calculations decrease as age increases. Even a “child premium” has been proposed.⁹⁹ A related but distinct consideration is to measure the value of a statistical life-year (VSLY), which represents the value of each year of life extended.¹⁰⁰ An even more nuanced calculation measures the quality-adjusted life-year (QALY), which is meant to capture the quality of life-years saved.¹⁰¹

Another controversial issue is whether VSL calculations should vary by income or wealth.¹⁰² It is certainly correct to say that human beings have individualized preferences, which include differences in risk tolerance and hedonic needs. Such preferences may also be influenced by levels of income. It should not be surprising, therefore, that some people may be less willing to pay for reduced risks on certain issues. “[I]ndividuals display a great deal of heterogeneity in their VSL—not simply because of different tastes and values, but also because of different levels of income and wealth. Willingness to pay depends on ability to pay.”¹⁰³ Similarly, wealth disparities may influence a willingness to accept greater risk.

Because VSL calculations are influenced by various factors, these calculations can differ from year to year. In the United States, no single VSL is used by all federal agencies, although Circular A-4 indicates that academic research offers a VSL range from \$1 million to \$10 million.¹⁰⁴ Accordingly, VSL calculations may differ

98. John J. Fialka, *EPA to Stop 'Death Discount' to Value New Regulations*, WALL STREET J., May 8, 2003, at D3; Katharine Q. Seelye & John Tierney, *EPA Drops Age-Based Cost Studies*, N.Y. TIMES, May 8, 2003, at A34; 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/?utm_term=.d30076de282f; *What's a Granny Worth?*, WASH. TIMES (July 7, 2003), <https://www.washingtontimes.com/news/2003/jul/6/20030706-104810-2250r/>.

99. Sean Hannon Williams, *Statistical Children*, 30 YALE J. ON REG. 63 (2013).

100. See Sunstein, *Lives, Life-Years*, *supra* note 72, at 249–250 (“No regulatory program makes people immortal. The only issue is life extension, and here the length of the extension surely matters.”).

101. See, e.g., Franco Sassi, *Calculating QALYs, Comparing QALY and DALY Calculations*, 21 HEALTH POLY & PLAN. 402 (2006) (“provid[ing] a comprehensive formulation of QALY calculation methods”); Richard Zeckhauser & Donald Shepard, *Where Now for Saving Lives?*, 40 L. & CONTEMP. PROBS. 5, 11 (1976) (introducing the “QALY” term).

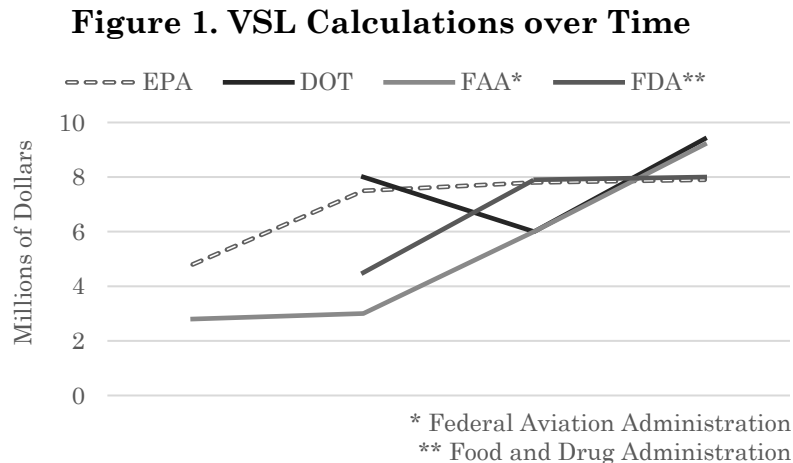
102. See Cass R. Sunstein, *Are Poor People Worth Less Than Rich People? Disaggregating the Value of Statistical Lives*, 3 (John M. Olin Program in L. & Econ., Working Paper No. 207, 2004) (suggesting “that a uniform value is obtuse”).

103. *Id.* at 44.

104. CIRCULAR A-4, *supra* note 57, at 30.

by agency and by issue.¹⁰⁵ In 2013, for example, the Environmental Protection Agency (EPA) used a VSL of \$9.7 million in its regulatory analyses.¹⁰⁶ The EPA has used VSL calculations to study a variety of issues, including the impact of the Clean Air Act, the Clean Water Act, and other pollution rules that affect human life. In 2014, the Department of Transportation (DOT) used a VSL of \$9.2 million.¹⁰⁷ The DOT has used VSL calculations to consider vehicle safety standards and highway construction projects. Other federal agencies have used different VSL estimates when considering regulatory decisions that implicate human life.¹⁰⁸

Figure 1 illustrates how VSL calculations of several federal agencies have changed over the past twenty-five years.¹⁰⁹



105. *Id.*; Robinson, *supra* note 36, at 288–294.

106. U.S. ENVTL. PROT. AGENCY, VALUING MORTALITY RISK REDUCTIONS FOR POLICY: A META-ANALYTIC APPROACH 2 (Feb. 2016), [https://yosemite.epa.gov/sab/sabproduct.nsf/0/0CA9E925C9A702F285257F380050C842/\\$File/VSL%20white%20paper_final_020516.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/0/0CA9E925C9A702F285257F380050C842/$File/VSL%20white%20paper_final_020516.pdf); U.S. ENVTL. PROT. AGENCY, GUIDELINES FOR PREPARING ECONOMIC ANALYSES 7–8 (Dec. 17, 2010), [https://yosemite.epa.gov/ee/epa/ceerm.nsf/vwAN/EE-0568-50.pdf/\\$file/EE-0568-50.pdf](https://yosemite.epa.gov/ee/epa/ceerm.nsf/vwAN/EE-0568-50.pdf/$file/EE-0568-50.pdf) (last updated May 2014) [hereinafter EPA GUIDELINES].

107. U.S. DEP'T OF TRANSP., GUIDANCE ON THE TREATMENT OF THE ECONOMIC VALUE OF A STATISTICAL LIFE IN U.S. DEPARTMENT OF TRANSPORTATION ANALYSES—2015 ADJUSTMENT (2015), https://www.transportation.gov/sites/dot.gov/files/docs/VSL2015_0.pdf [hereinafter DOT GUIDANCE].

108. Robinson, *supra* note 36, at 293–294; Heinzerling, *Rights of Statistical People*, *supra* note 75, at 191.

109. See EPA GUIDELINES, *supra* note 106, at app. B-1; DOT GUIDANCE, *supra* note 107, at 1; see also Kate Sheppard, *The Value of a Human Life*, MOTHER JONES (July 26, 2011), <http://www.motherjones.com/blue-marble/2011/07/statistical-value-human-life>.

As shown, VSL calculations have generally increased over the years. This reflects several factors, including inflation and more nuanced studies on mortality risks.

iv. Step Four

The fourth step is to conduct a standard cost-benefit analysis that compares the costs of the proposed regulatory action (Step Two) with the benefits (multiply the number of people identified in Step One who may be saved by the VSL identified in Step Three). This process is used to determine the net benefits (or costs) of a proposed regulation with respect to mortality. As part of this process, regulators will discount the value of future costs and benefits.¹¹⁰ This allows for an estimation of the net benefits (or costs) of a regulation in light of price inflation, uncertainty, and the rate-of-time preference. Because regulations that address mortality risks will often reduce nonfatal injuries, the reduction of nonfatal injuries is often factored into the analysis. These nonfatal injuries are typically designated as equivalent lives saved. Other benefits not reflected in the VSL calculation may also be included in the analysis. These can include legal costs, administrative costs, property damage, and medical expenses.¹¹¹

v. Step Five

The final step is to decide whether government action is warranted in light of expected costs and benefits. VSL calculations play a critical role in this cost-benefit analysis. If the costs are less than the expected benefits, the regulation will likely be adopted. If the costs are more than the expected benefits, the regulation will be subject to further critical review. Typically, a proposed regulation will not be adopted if the costs exceed the benefits. There are, however, several reasons why an agency might adopt a rule even if costs exceed benefits.¹¹² “Perhaps the law requires them to proceed

110. Circular A-4 recommends that discount rates of 3% and 7% be used in regulatory impact analysis. CIRCULAR A-4, *supra* note 57, at 33–34.

111. *See, e.g.*, LAWRENCE BLINCOE ET AL., U.S. DEP’T OF TRANSP., NAT’L HIGHWAY TRAFFIC SAFETY ADMIN., THE ECONOMIC IMPACT OF MOTOR VEHICLE CRASHES 2000, REP. NO. DOT HS 809 446 (May 2002).

112. *See, e.g.*, *Am. Textile Mfrs. Inst., v. Donovan*, 452 U.S. 490, 509 (1981) (“Thus, § 6(b)(5) directs the Secretary to issue the standard that ‘most adequately assures . . . that no employee will suffer material impairment of health,’ limited only by the extent to which this is ‘capable of being done.’ In effect . . . Congress itself defined the basic relationship between costs and benefits, by placing the ‘benefit’ of worker health above all other considerations save those making attainment of this ‘benefit’ unachievable. Any standard based on a balancing of costs and benefits by the Secretary that strikes a different balance than that struck by Congress would be

even if the monetized benefits are lower than the monetized costs. Perhaps the relevant rule has nonmonetizable benefits that are hard to quantify but nonetheless important to consider.”¹¹³

In sum, cost-benefit analysis and VSL calculations are used to make regulatory decisions on a variety of issues that implicate human life. On some occasions, regulatory action will not be approved because the costs outweigh the expected benefits. On other occasions, regulatory action may be approved. If the regulatory action is approved, VSL calculations will influence the cost-benefit analysis and may lead to the acceptance of higher levels of mortality risk. While these regulatory decisions have a profound impact on human life, they have not been subject to meaningful critique as to their compliance with human rights law.

II. The Right to Life in Human Rights Law

The right to life is the seminal human right and, accordingly, it is codified in numerous human rights treaties and declarations:¹¹⁴

*Everyone has the right to life, liberty and the security of person.*¹¹⁵
—Universal Declaration of Human Rights

*Every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life.*¹¹⁶
—International Covenant on Civil and Political Rights

*Every person has the right to have his life respected. This right shall be protected by law and, in general, from the moment of conception. No one shall be arbitrarily deprived of his life.*¹¹⁷
—American Convention on Human Rights

inconsistent with the command set forth in § 6(b)(5). Thus, cost-benefit analysis by OSHA [Occupational Safety and Health Administration] is not required by the statute because feasibility analysis is.”)

113. SUNSTEIN, VALUING LIFE, *supra* note 14, at 37.

114. See ELIZABETH WICKS, THE RIGHT TO LIFE AND CONFLICTING INTERESTS (2010) [hereinafter WICKS, CONFLICTING INTERESTS]; THE RIGHT TO LIFE IN INTERNATIONAL LAW (B.G. Ramcharan ed., 1985).

115. UDHR, *supra* note 2, art. 3.

116. ICCPR, *supra* note 5, art. 6(1).

117. American Convention on Human Rights art. 4(1), Nov. 22, 1969, 1144 U.N.T.S. 123, 145 [hereinafter American Convention].

*Every human being has the right to life, liberty and the security of his person.*¹¹⁸

—American Declaration on the Rights and Duties of Man

*Everyone's right to life shall be protected by law. No one shall be deprived of his life intentionally save in the execution of a sentence of a court following his conviction of a crime for which this penalty is provided by law.*¹¹⁹

—European Convention for the Protection of Human Rights and Fundamental Freedoms

*Human beings are inviolable. Every human being shall be entitled to respect for his life and the integrity of his person. No one may be arbitrarily deprived of this right.*¹²⁰

—African Charter on Human and Peoples' Rights

The right to life is recognized in other international norms, including the prohibitions against genocide, crimes against humanity, and war crimes.¹²¹ In all its manifestations, the right to life constitutes a *jus cogens* obligation, meaning it is non-derogable and binds all states.¹²² In fact, violation of the right to life can give rise to both civil and criminal liability.¹²³

The right to life norm protects a person's life and their right to exist.¹²⁴ It prohibits the arbitrary deprivation of life. In particular,

118. American Declaration on the Rights and Duties of Man art. I, O.A.S. Res. XXX, May 2, 1948, *reprinted in* Basic Documents Pertaining to Human Rights in the Inter-American System, O.A.S. Doc. OEA/Ser.L.V/II.82 doc.6 rev.1, at 17 (1992).

119. European Convention for the Protection of Human Rights and Fundamental Freedoms art. 2(1), Nov. 4, 1950, 213 U.N.T.S. 221, 224 [hereinafter European Convention].

120. African Charter on Human and Peoples' Rights art. 4, June 27, 1981, 1520 U.N.T.S. 217, 247.

121. *See* Rome Statute of the International Criminal Court art. 5, July 17, 1998, 2187 U.N.T.S. 90.

122. *See, e.g.*, ALEXANDER ORAKHELASHVILI, PEREMPTORY NORMS IN INTERNATIONAL LAW (2006); W. Paul Gormley, *The Right to Life and the Rule of Non-Derogability: Peremptory Norms of Jus Cogens*, in THE RIGHT TO LIFE IN INTERNATIONAL LAW, *supra* note 114, at 135–136.

123. *See, e.g.*, BETH STEPHENS ET AL., INTERNATIONAL HUMAN RIGHTS LITIGATION IN U.S. COURTS 195–98 (2d ed. 2008); M. CHERIF BASSIOUNI, CRIMES AGAINST HUMANITY IN INTERNATIONAL CRIMINAL LAW 300–05 (2d rev. ed. 1999) (noting that every legal system has criminalized murder).

124. The respect for, and protection of, human dignity is a natural extension of the right to life norm. *See, e.g.*, Adeno Addis, *Human Dignity in Comparative Constitutional Context: In Search of an Overlapping Consensus*, 2 J. INT'L & COMP. L. 1 (2015); Elizabeth Wicks, *The Meaning of "Life": Dignity and the Right to Life in International Human Rights Treaties*, 12 HUM. RTS. L. REV. 199 (2012) [hereinafter Wicks, *Meaning of Life*]; *see also* DONNA HICKS, DIGNITY: ITS ESSENTIAL ROLE IN

it establishes two complementary obligations on states.¹²⁵ It imposes negative obligations, which means states are prohibited from taking human life. And it imposes positive obligations, which means states must take affirmative steps to protect human life. Thus, a state violates the right to life norm if it engages in extrajudicial killings. This is, perhaps, the most common example of the norm. But, a state also violates the right to life norm if it fails to affirmatively address other threats to human life:¹²⁶

The right to life implies not only the negative obligation not to deprive anyone of life arbitrarily, but also the positive obligation to take all necessary measures to secure that that basic right is not violated. Such interpretation of the right to life, so as to comprise positive measures of protection on the part of the State, finds support nowadays in international case-law as well as doctrine. There can no longer be any doubt that the fundamental right to life belongs to the domain of *jus cogens*.¹²⁷

While the distinction between negative and positive rights has been subject to some criticism, it is now firmly established and helps clarify the expansive nature of the right to life norm and the affirmative obligations it imposes on states.¹²⁸ This should not be

RESOLVING CONFLICT (2012); MICHAEL ROSEN, DIGNITY: ITS HISTORY AND MEANING (2012); THE RIGHT TO LIFE AND THE VALUE OF LIFE (Jon Yorke ed., 2010); Alan Gewirth, *Human Dignity as the Basis for Rights*, in THE CONSTITUTION OF RIGHTS: HUMAN DIGNITY AND AMERICAN VALUES 10 (Michael J. Meyer & William A. Parent eds., 1992); Christopher McCrudden, *Human Dignity and Judicial Interpretation of Human Rights*, 19 EUR. J. INT'L L. 655, 723 (2008). The connection between the right to life norm and human dignity is significant because the concept of dignity broadens the protections afforded to life and the attendant obligations of the state.

125. See SANDRA FREDMAN, HUMAN RIGHTS TRANSFORMED: POSITIVE RIGHTS AND POSITIVE DUTIES (2008); ALASTAIR MOWBRAY, THE DEVELOPMENT OF POSITIVE OBLIGATIONS UNDER THE EUROPEAN CONVENTION ON HUMAN RIGHTS BY THE EUROPEAN COURT OF HUMAN RIGHTS (2004); Dinah Shelton & Ariel Gould, *Positive and Negative Obligations*, in THE OXFORD HANDBOOK OF INTERNATIONAL HUMAN RIGHTS LAW 562 (Dinah Shelton ed., 2013).

126. See NOWAK, *supra* note 6, at 123 (describing threats “such as malnutrition, life-threatening illness, nuclear energy or armed conflict”); Franz Christian Ebert & Romina I. Sijniensky, *Preventing Violations of the Right to Life in the European and the Inter-American Human Rights Systems: From the Osman Test to A Coherent Doctrine on Risk Prevention?*, 15 HUM. RTS. L. REV. 343, 343–44 (2015) (noting the general consensus “that merely abstaining from inflicting death is insufficient for safeguarding the right to life”); Jeremy McBride, *Protecting Life: A Positive Obligation to Help*, 24 EUR. L. REV. 43 (1999); David Weissbrodt, *Protecting the Right to Life: International Measures Against Arbitrary or Summary Killings by Governments*, in THE RIGHT TO LIFE IN INTERNATIONAL LAW, *supra* note 114, at 297.

127. *Villagrán-Morales v. Guatemala*, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 63, ¶ 2 (Nov. 19, 1999) (Cançado Trindade & Abreu Burelli, JJ., joint concurring opinion) (citations omitted).

128. The distinction between negative and positive rights is most closely associated with the debate between civil and political rights and economic, social, and cultural rights. Some commentators criticize the distinction because it

surprising. Limiting the right to life norm so that it only addresses negative obligations would make it less effective in its scope and reach.

This makes sense when we consider that the most pressing threats to human life, even in relatively affluent Western states, are everyday obstacles such as poverty, starvation, lack of adequate medical care, and lack of housing. The threat of a police officer shooting to kill is more shocking but less frequent. There has to be room within the ambit of a right to life for both such types of threat if human life is really to be accorded the respect that a human right to it implies.¹²⁹

A review of human rights practice demonstrates the growing implications of the right to life norm on state practice.

a. The U.N. Human Rights Committee

The U.N. Human Rights Committee, which was established to monitor implementation of the International Covenant on Civil and Political Rights (ICCPR), acknowledged the expansive nature of the right to life norm in one of its earliest pronouncements.¹³⁰ According to the Human Rights Committee, the right to life norm imposes an affirmative obligation on states to protect human life. This position was acknowledged by the Committee in its General Comment No. 6 on the right to life.

[T]he Committee has noted that the right to life has been too often narrowly interpreted. The expression “inherent right to life” cannot properly be understood in a restrictive manner, and the protection of this right requires that States adopt positive measures. In this connection, the Committee considers that it would be desirable for States parties to take all possible measures to reduce infant mortality and to increase life expectancy, especially in adopting measures to eliminate malnutrition and epidemics.¹³¹

This positive obligation is not limited to protecting against harms caused by state action. It extends to harms caused by private

facilitates the fragmentation of human rights. Others view the distinction between positive and negative rights as increasingly unclear as rights evolve. See PHILIP ALSTON & RYAN GOODMAN, *INTERNATIONAL HUMAN RIGHTS* 181–85 (2013) (noting how rights and classifications “broaden and contract” over time); M. MAGDALENA SEPULVEDA, *THE NATURE OF THE OBLIGATIONS UNDER THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS* 122–33 (2003).

129. Wicks, *Meaning of Life*, *supra* note 124, at 207.

130. See generally SARAH JOSEPH & MELISSA CASTAN, *THE INTERNATIONAL COVENANT ON CIVIL AND POLITICAL RIGHTS: CASES, MATERIALS, AND COMMENTARY* 13–24 (3d ed. 2013) (providing information on the composition, function, and notable decisions of the Human Rights Committee).

131. Human Rights Comm., Gen. Comment No. 6, *supra* note 10, at ¶ 5.

actors.¹³² This was recognized by the Committee in its General Comment No. 31 on the obligations imposed on states by the ICCPR.

[T]he positive obligations on States Parties to ensure Covenant rights will only be fully discharged if individuals are protected by the state, not just against violations of Covenant rights by its agents, but also against acts committed by private persons or entities that would impair the enjoyment of Covenant rights in so far as they are amenable to application between private persons or entities.¹³³

A proposed draft for a new General Comment No. 36 by the Human Rights Committee on the right to life reaffirms and expands the scope of this international obligation.¹³⁴ It notes, for example, that states “are under an obligation to take appropriate positive measure[s] in order to protect life from all possible threats, including from threats emanating from private persons and entities.”¹³⁵ In addition, “[t]he duty to protect life also imposes on States parties a due diligence obligation to take long-term measures to address the general conditions in society that may eventually give rise to direct threats to life.”¹³⁶ The proposed General Comment indicates that this obligation extends to a wide variety of life-threatening phenomena, from disease, poverty, and starvation to pervasive traffic and industrial accidents.¹³⁷

States that have ratified the ICCPR may also ratify the accompanying Optional Protocol which grants the Human Rights Committee the competence “to receive and consider communications from individuals subject to its jurisdiction who claim to be victims of a violation by that State Party of any of the rights set forth in the Covenant.”¹³⁸ In several decisions, the

132. See Jan Arno Hessbruegge, *Human Rights Violations Arising from Conduct of Non-State Actors*, 11 BUFFALO HUM. RTS. L. REV. 21, 23 (2005) (“Today, the continuing shift of power into the non-state sphere makes the issue of how the actions of those within that sphere will be treated, one of the most critical human rights matters of our time.”).

133. Human Rights Comm., Gen. Comment No. 31: The Nature of the General Legal Obligation Imposed on States Parties to the Covenant ¶ 8, U.N. Doc. CCPR/C/21/Rev.1/Add.13 (May 26, 2004).

134. Human Rights Comm., Draft Gen. Comment No. 36, U.N. Doc. CCPR/C/GC/R.36/Rev.2 (Sept. 2, 2015).

135. *Id.* ¶ 23.

136. *Id.* ¶ 28.

137. *Id.*

138. G.A. Res. 2200A (XXI), at 59, Optional Protocol to the International Covenant on Civil and Political Rights (Dec. 19, 1966).

Committee has indicated that the obligation to protect human life creates a positive obligation on states.¹³⁹

In *Lantsova v. Russian Federation*, for example, the Human Rights Committee considered a claim filed by the mother of the victim, who died in government detention.¹⁴⁰ While the victim was healthy when he was first detained by Russian authorities, his medical condition soon deteriorated.¹⁴¹ Despite his worsening medical condition, he was provided limited medical assistance.¹⁴² According to the communication, “the Russian Federation violated her son’s fundamental human rights by causing his death as a result of confinement under conditions unfit for human survival, and that it also failed in its obligation to provide any meaningful legal protection against such violations.”¹⁴³ The Human Rights Committee found the communication admissible and held that Russia had failed to comply with its obligation to protect the right to life.¹⁴⁴

The Committee notes that the State party has not refuted the causal link between the conditions of the detention of Mr. Lantsov and the fatal deterioration of his state of health. Further, even if the Committee starts from the assertion of the State party that neither Mr. Lantsov himself nor his co-detainees had requested medical help in time, the essential fact remains that the State party by arresting and detaining individuals takes the responsibility to care for their life. It is up to the State party by organizing its detention facilities to know about the state of health of the detainees as far as may be reasonably expected. Lack of financial means cannot reduce this responsibility. The Committee considers that a properly functioning medical service within the detention centre could and should have known about the dangerous change in the state of health of Mr. Lantsov. It considers that the State party failed to take appropriate measures to protect Mr. Lantsov’s life during the period he spent in the detention centre.¹⁴⁵

This decision is significant in two respects.¹⁴⁶ First, it acknowledges a state’s positive obligation to protect human life.

139. JOSEPH & CASTAN, *supra* note 130, at 167–185 (detailing cases interpreting Article 6 of the ICCPR).

140. Comm’n No. 763/1997, U.N. Doc. CCPR/C/74/D/763/1997 (2002).

141. *Id.* ¶ 2.2.

142. *Id.*

143. *Id.* ¶ 3.

144. *Id.* ¶ 9.2.

145. *Id.*

146. See *Dermit Barbato v. Uruguay*, Comm’n No. 84/81, ¶ 9.4, U.N. Doc. CCPR/C/OP/2 at 112 (1990) (holding that exhaustion of local remedies is not required where the remedies are “*de jure* or *de facto*” unavailable to the victim). *But see* EHP v. Canada, Comm’n No. 67/1980, ¶ 8, U.N. Doc. CCPR/C/OP/1 at 20 (1984) (finding

States must actively protect human life, particularly when the individual is under state control. Indeed, protection must be provided even if the victim has not requested it.¹⁴⁷ Second, the decision recognizes that claims of financial difficulties cannot obviate state responsibility. The obligation to protect human life is absolute, and a state may not reject this obligation by claiming a lack of financial means.

In cases involving the right to life, the Committee has interpreted the meaning of victim to include individuals who have suffered past harms as well as risks of future harm, although such harm must be imminent. According to the Committee,

[f]or a person to claim to be a victim of a violation of a right protected by the Covenant, he or she must show either that an act or an omission of a State party has already adversely affected his or her enjoyment of such right, or that such an effect is imminent, for example on the basis of existing law and/or judicial or administrative decision or practice.¹⁴⁸

On some occasions, the Human Rights Committee has found a case inadmissible because the claimed victim failed to establish the imminence of the risk to human life. In *E.W. v. Netherlands*, the Committee considered a claim brought by thousands of Dutch citizens that the deployment of nuclear weapons in their country threatened their lives and constituted a violation of the right to life norm.¹⁴⁹ The petitioners asserted that by deploying nuclear weapons in the country, the government had made them a target for possible reprisal, thereby placing their lives in danger.¹⁵⁰ The Committee disagreed:

The Committee finds that the preparations for deployment of cruise missiles . . . and the continuing deployment of other nuclear weapons in the Netherlands did not, at the relevant period of time, place the authors in the position to claim to be victims whose right to life was then violated or under imminent prospect of violation.¹⁵¹

that a State can require a complainant to exhaust local remedies, even if the right to life is seriously threatened and the remedies entail delay).

147. See *Barbato*, U.N. Doc. CCPR/C/OP/2 at 114, ¶ 10 (holding that “appropriate measures” to protect a detainee’s life included provision of medical services, even when unrequested).

148. *E.W. v. Netherlands*, Comm’n No. 429/1990, ¶ 6.4, U.N. Doc. CCPR/C/47/D/429/1990 at 14 (1993).

149. *Id.* ¶ 1.

150. *Id.* ¶ 3.8.

151. *Id.* ¶ 6.4.

A similar decision was reached in *Aalbersberg v. Netherlands*.¹⁵² While the Committee did not provide further elaboration, the imminence of the risk presumably referred to temporal imminence.

On other occasions, the Human Rights Committee has upheld claims where the imminence of the risk to human life was not measured in days or even weeks. Rather, the Committee focused on whether there was a “real risk” of death. In *Yin Fong v. Australia*, the Human Rights Committee considered the claim of an individual detained in Australia who was facing extradition to China.¹⁵³ The petitioner alleged that her extradition would subject her to a possible death sentence and, therefore, her extradition would violate the right to life norm.¹⁵⁴ While she had not yet been charged with a capital offense, the Committee held the potential for such a charge was sufficient to implicate the right to life norm.¹⁵⁵ To hold otherwise would be problematic because “the risk to the author’s life would only be definitively established when it is too late for the State party to protect her right to life under article 6 of the Covenant.”¹⁵⁶ The Committee added it was not necessary to prove “that the author ‘will’ be sentenced to death but that there is a ‘real risk’ that the death penalty will be imposed on her.”¹⁵⁷ Other cases have focused on whether the threat to human life is a “necessary and foreseeable consequence” of state action.¹⁵⁸

In addition to the Human Rights Committee, several human rights tribunals have addressed the positive obligation to protect the right to life.¹⁵⁹ These cases reveal the growing breadth and

152. Comm’n No. 1440/2005, ¶ 6.3, U.N. Doc. CCPR/C/87/D/1440/2005 (2006) (holding that the State actor’s stance on nuclear weaponry did not create an “existing or imminent” violation of the right to life); *see also* *Bordes v. France*, Comm’n No. 645/1995, ¶ 5.9, U.N. Doc. CCPR/C/57/D/645/1995 (1996) (noting in dicta, however, that “the designing, testing, manufacture, possession and deployment of nuclear weapons are among the greatest threats to the right to life which confront mankind today”) (emphasis omitted).

153. Comm’n No. 1442/2005, U.N. Doc. CCPR/C/97/D/1442/2005 (2009).

154. *Id.* ¶ 3.1.

155. *Id.* ¶ 9.5.

156. *Id.*

157. *Id.* ¶ 9.6 (citations omitted); *see also* *Israil v. Kazakhstan*, Comm’n No. 2024/2011, ¶ 9.5, U.N. Doc. CCPR/C/103/D/2024/2011 (2011) (holding that the author, having proven a “real risk” of suffering torture or execution if extradited to China, was owed a remedy).

158. *See* *Bakhtiyari v. Australia*, Comm’n No. 1069/2002, U.N. Doc. CCPR/C/79/D/1069/2002 (2003); *Judge v. Canada*, Comm’n No. 829/1998, U.N. Doc. CCPR/C/78/D/829/1998 (2002).

159. The African Commission on Human and Peoples’ Rights, which was established to monitor the implementation of and compliance with the African Charter, has made similar statements about the positive obligations to protect the right to life. In General Comment No. 3, the African Commission stated that “[t]he

depth of this obligation. And, they establish the parameters of state responsibility for protecting potential victims from the loss of life.

b. The European Court of Human Rights

Osman v. United Kingdom is one of the earliest decisions from the European Court of Human Rights to recognize a state's positive obligation to protect human life.¹⁶⁰ In *Osman*, the applicants brought an action against the United Kingdom for the failure of local officials to prevent a private citizen from killing two individuals and wounding two others.¹⁶¹ The European Court

right to life should be interpreted broadly” and that the state “has a positive duty to protect individuals and groups from real and immediate risks to their lives caused either by actions or inactions of third parties.” African Commission on Human and Peoples’ Rights, Gen. Comment No. 3 on the African Charter on Human and Peoples’ Rights, ¶ 41 (Nov. 4–18, 2015). Accordingly, states have an obligation to take “preventive steps to preserve and protect the natural environment and humanitarian responses to natural disasters, famines, outbreaks of infectious diseases, or other emergencies.” *Id.* States also have an obligation “to address more chronic yet pervasive threats to life, for example with respect to preventable maternal mortality, by establishing functioning health systems and eliminating discriminatory laws and practices which impact on individuals’ and groups’ ability to seek healthcare.” *Id.* ¶ 42; see also Social and Economic Rights Action Center v. Nigeria, African Commission on Human and Peoples’ Rights, Comm’n No. 155/96, ¶ 44 (2001) (“Internationally accepted ideas of the various obligations engendered by human rights indicate that all rights, both civil and political rights and social and economic, generate at least four levels of duties for a State that undertakes to adhere to a rights regime, namely the duty to respect, protect, promote, and fulfil these rights. These obligations universally apply to all rights and entail a combination of negative and positive duties.”). See generally Alain Didier Olinga, *The African Charter on Human and Peoples’ Rights and Positive Obligations*, 15 INTERRIGHTS BULL. 117 (2006) (describing the African Commission’s approach to enforcing states’ positive obligations to protect human rights).

160. App. No. 23452/94, 29 Eur. H.R. Rep. 245 (1998). See generally DIMITRIS XENOS, THE POSITIVE OBLIGATIONS OF THE STATE UNDER THE EUROPEAN CONVENTION OF HUMAN RIGHTS (2012) [hereinafter XENOS, POSITIVE OBLIGATIONS] (asserting that states, at a minimum, must create systems to prevent harm to citizens and provide remedies upon violating that obligation); Colm O’Cinneide, *A Modest Proposal: Destitution, State Responsibility and the European Convention on Human Rights*, 2008 EUR. H.R. L. REV. 583 (suggesting a state’s failure to protect against abject poverty could occasionally constitute a Convention violation); Dimitris Xenos, *Asserting the Right to Life (Article 2, ECHR) in the Context of Industry*, 8 GERMAN L.J. 231 (2007) [hereinafter Xenos, *Right to Life*] (assessing a state’s obligations in the context of industrial regulation); JEAN-FRANCOISE AKANDJI-KOMBE, POSITIVE OBLIGATIONS UNDER THE EUROPEAN CONVENTION ON HUMAN RIGHTS (2007) (articulating each positive obligation embodied by the Convention); DOUWE KORFF, THE RIGHT TO LIFE: A GUIDE TO THE IMPLEMENTATION OF ARTICLE TWO OF THE EUROPEAN CONVENTION ON HUMAN RIGHTS 6 (2006) (providing methods of handling Convention violations according to European Court precedent); Fionnuala Ní Aoláin, *The Evolving Jurisprudence of the European Convention Concerning the Right to Life*, 19 NETH. Q. HUM. RTS. 21 (2001) (advocating for a streamlined jurisprudence to more effectively handle Convention violations).

161. *Osman*, 29 Eur. H.R. Rep. at ¶ 10.

began its analysis by acknowledging the expansive nature of the right to life norm as codified in Article 2 of the European Convention, which “enjoins the State not only to refrain from the intentional and unlawful taking of life, but also to take appropriate steps to safeguard the lives of those within its jurisdiction.”¹⁶² This is a positive obligation to protect those whose lives are at risk. The Court cautioned, however, that this obligation does not require a state to take action with respect to every possible risk to life.

[B]earing in mind the difficulties involved in policing modern societies, the unpredictability of human conduct and the operational choices which must be made in terms of priorities and resources, such an obligation must be interpreted in a way which does not impose an impossible or disproportionate burden on the authorities.¹⁶³

The Court then established a two-part test for determining whether a state had violated its positive obligation to protect the right to life in cases involving the criminal acts of others. First, it must be established “that the authorities knew or ought to have known at the time of the existence of a real and immediate risk to the life of an identified individual or individuals from the criminal acts of a third party . . .”¹⁶⁴ Second, the authorities “failed to take measures within the scope of their powers which, judged reasonably, might have been expected to avoid that risk.”¹⁶⁵ The Court rejected the argument that this required an applicant to establish gross negligence or a willful disregard by the government. “[I]t is sufficient for an applicant to show that the authorities did not do all that could be reasonably expected of them to avoid a real and immediate risk to life of which they have or ought to have knowledge.”¹⁶⁶ Since the Court did not find sufficient evidence to support the assertion that the police knew or should have known about the potential risk facing the victims, it concluded that the United Kingdom had not violated the right to life norm in this case.¹⁶⁷

The European Court subsequently extended its decision in *Osman* to address state liability in cases of environmental disasters.¹⁶⁸ In *Öneriyıldız v. Turkey*, two applicants brought a

162. *Id.* ¶ 115.

163. *Id.* ¶ 116.

164. *Id.*

165. *Id.*

166. *Id.*

167. *Id.* ¶ 121.

168. See also Wicks, *Meaning of Life*, *supra* note 124, at 205 (discussing the right to life as inextricably linked to the right to a “clean and healthy environment”);

claim against the Turkish government following a methane explosion at a landfill that killed their relatives and caused extensive property damage.¹⁶⁹ The applicants alleged that Turkey had failed to fulfill its obligation to protect human life by not mitigating mortal risks emanating from natural or human causes.¹⁷⁰ Turkey responded that the elements of “immediacy” and “reality” had not been established.¹⁷¹ And, in any event, Turkey could not be held responsible for the deaths or property damage because the victims had voluntarily chosen to live there and they were aware of the risks.¹⁷² A Chamber of the Court ruled in favor of the applicants, and the Grand Chamber of the Court affirmed.¹⁷³ The European Court first acknowledged the expansive nature of the right to life norm and its applicability to any activity in which human life is at stake. “[T]he Court reiterates that Article 2 does not solely concern deaths resulting from the use of force by agents of the State but also . . . lays down a positive obligation on States to take appropriate steps to safeguard the lives of those within their jurisdiction.”¹⁷⁴ The Court added that “this obligation must be construed as applying in the context of any activity, whether public or not, in which the right to life may be at stake.”¹⁷⁵ The Court then distinguished between the substantive and procedural aspects of Article 2. Substantively, the right to life norm requires affirmative action by the state to safeguard human life by deterring potential threats.

This obligation indisputably applies in the particular context of dangerous activities, where, in addition, special emphasis must be placed on regulations geared to the special features of the activity in question, particularly with regard to the level of the potential risk to human lives. They must govern the licensing, setting up, operation, security and supervision of the activity and must make it compulsory for all those concerned to take practical measures to ensure the effective protection of citizens

XENOS, POSITIVE OBLIGATIONS, *supra* note 160, at 239 (tracing the Court’s post-*Osman* expansions of Convention enforcement frameworks); Kristian C. Lauta & Jens E. Rytter, *A Landslide on a Mudslide? Natural Hazards and the Right to Life Under the European Convention on Human Rights*, 7 J. HUM. RTS. & ENV’T 111 (2016) (investigating the expansion of the right to life norm to include natural and industrial hazards).

169. App. No. 48939/99, 41 Eur. H.R. Rep. 325 (2005).

170. *Id.* ¶ 2.

171. *Id.* ¶ 77.

172. *Id.* ¶ 80.

173. *Id. passim.*

174. *Id.* ¶ 71 (citations omitted).

175. *Id.*

whose lives might be endangered by the inherent risks.¹⁷⁶

Procedurally, the right to life norm requires states to provide an appropriate response in cases where lives have been lost. The Court determined that Turkey had violated both aspects of the right to life. Turkish officials knew or should have known that there was a real and immediate risk to human life for persons living near the landfill.¹⁷⁷ “They consequently had a positive obligation under Article 2 of the Convention to take such preventive operational measures as were necessary and sufficient to protect those individuals, especially as they themselves had set up the site and authorised its operation, which gave rise to the risk in question.”¹⁷⁸ Following the fatal accident, Turkish authorities had failed to properly respond, thereby precluding effective accountability or “detering similar life-endangering conduct” in the future.¹⁷⁹ For these reasons, the Court found Turkey in violation of the European Convention and awarded approximately 160,000 euros to the applicants.¹⁸⁰

In *Budayeva v. Russia*, six applicants brought a claim against the Russian government following a mudslide that killed one person, injured several other people, and destroyed extensive property.¹⁸¹ The applicants alleged Russian public authorities had been negligent in maintaining a dam, in monitoring the area for possible mudslides, and in providing emergency warnings to local communities in the event of mudslides.¹⁸² The Russian government rejected liability by arguing the mudslide was unpredictable and the ensuing harm could not have been avoided.¹⁸³ “It was an act of God, the time and the extent of which could neither be foreseen nor influenced. Even if the mudslide had been forecast, no effective technical measures could have prevented a catastrophe on that scale at such short notice.”¹⁸⁴ The European Court rejected these arguments, arguing that the positive obligation to protect life “entails above all a primary duty on the State to put in place a legislative and administrative framework designed to provide

176. *Id.* ¶ 90.

177. *Id.* ¶¶ 100–01.

178. *Id.* ¶ 101 (citation omitted).

179. *Id.* ¶ 118.

180. *Id.* ¶¶ 166–71.

181. App. Nos. 15339/02, 21166/02, 20058/02, 11673/02 & 15343/02 (Eur. Ct. H.R. Mar. 20, 2008).

182. *Id.* ¶¶ 20–25, 29, 48, 54–55.

183. *Id.* ¶ 117.

184. *Id.*

effective deterrence against threats to the right to life.”¹⁸⁵ This obligation extends to any activity, whether public or private, that places human life at risk.¹⁸⁶ The Court then reaffirmed that the positive obligation entails both substantive and procedural elements.

The obligation on the part of the State to safeguard the lives of those within its jurisdiction has been interpreted so as to include both substantive and procedural aspects, notably a positive obligation to take regulatory measures and to adequately inform the public about any life-threatening emergency, and to ensure that any occasion of the deaths caused thereby would be followed by a judicial enquiry.¹⁸⁷

Applying these principles, the Court found that Russia had violated its substantive and procedural obligations to protect the right to life.¹⁸⁸ Specifically, Russia had failed to develop an adequate warning system in the event of a disaster and had failed to conduct an appropriate investigation after the mudslide had occurred.¹⁸⁹ Accordingly, the Court awarded the applicants 85,000 euros in damages.¹⁹⁰

In the *Osman-Öneryıldız-Budayeva* line of cases, some of the victims were clearly identified because they had already suffered death. However, death is not required for an individual to bring a claim or for a state to be in violation of Article 2. Potential victims are also recognized under the European Convention.¹⁹¹ Because the European Court recognizes a state’s obligation to prevent harms, it

185. *Id.* ¶ 129 (citations omitted).

186. *Id.* ¶ 130.

187. *Id.* ¶ 131 (citation omitted).

188. *Id.* ¶ 205.

189. *Id.* ¶¶ 153–55, 194.

190. *Id.* ¶ 205.

191. *See, e.g.,* *Sejdić and Finci v. Bosnia and Herzegovina*, App. Nos. 27996/06 & 34836/06, ¶ 28 (Eur. Ct. H.R. Dec. 22, 2009) (“It is reiterated that in order to be able to lodge a petition by virtue of Article 34 of the Convention, a person, non-governmental organisation or group of individuals must be able to claim to be the victim of a violation of the rights set forth in the Convention. In order to claim to be a victim of a violation, a person must be directly affected by the impugned measure. The Convention does not, therefore, envisage the bringing of an *actio popularis* for the interpretation of the rights set out therein or permit individuals to complain about a provision of national law simply because they consider, without having been directly affected by it, that it may contravene the Convention. It is, however, open to applicants to contend that a law violates their rights, in the absence of an individual measure of implementation, if they belong to a class of people who risk being directly affected by the legislation or if they are required either to modify their conduct or risk being prosecuted.”) (citations omitted). *See also* *Burden v. United Kingdom*, App. No. 13378/05, ¶¶ 33–34 (Eur. Ct. H.R. Apr. 29, 2008) (citing to various cases in which a party sought relief while facing the risk of suffering rights violations).

has accepted the admissibility of claims for Article 2 violations brought before death has occurred.¹⁹² And, it has found violations of Article 2 in such cases.¹⁹³ Thus, states have an obligation to prevent future harm to human life.¹⁹⁴

In *R.R. v. Hungary*, for example, the European Court held that Hungary violated the right to life norm in Article 2 by placing the applicants at risk of death by removing them from a witness protection program.¹⁹⁵ While the applicants were fearful of retaliation by a criminal organization, no one had yet been killed. The Court reaffirmed that Article 2 requires each state “to safeguard the lives of those individuals within its jurisdiction.”¹⁹⁶ This obligation may require states “to take preventive operational measures to protect an individual whose life is at risk from the criminal acts of another individual.”¹⁹⁷ The Court also reaffirmed public authorities could be liable under Article 2 if they knew or

192. See *infra* 35–36 and notes 195–200.

193. *Id.*

194. A similar obligation exists with respect to Article 8’s protection of the right to family life in the European Convention. In *Taskin v. Turkey*, for example, the Court considered claims raising violations of Article 2 (right to life) as well as Article 8 (right to family life) of the European Convention. App. No. 46117/89 (Eur. Ct. H.R. Nov. 10, 2004). In *Taskin*, Turkish authorities had approved the development of a gold mine near several villages. *Id.* ¶ 17. The applicants, who lived near the gold mine, argued that Turkey did not properly assess the inherent risks of approving the project. *Id.* ¶¶ 23, 26. They also alleged the development and operation of the mine would cause environmental harm and could have a negative impact on their health and safety. *Id.* ¶¶ 13, 23. The Turkish government responded that these claims were “hypothetical,” and there was no serious or imminent risk since the harms “might materialise only in twenty to fifty years.” *Id.* ¶ 107. Moreover, the “applicants could not point to any specific fact concerning an incident directly caused by the gold mine in question.” *Id.* The European Court found that Article 8 was applicable because it applies to “severe environmental pollution which may affect individuals’ well-being and prevent them from enjoying their homes in such a way as to affect their private and family life adversely.” *Id.* ¶ 113. Article 8 also addresses situations in which “the dangerous effects of an activity to which the individuals concerned are likely to be exposed have been determined as part of an environmental impact assessment procedure in such a way as to establish a sufficiently close link with private and family life.” *Id.* The Court determined that Turkey had failed to comply with its procedural obligations under Article 8. *Id.* ¶ 126. Because it determined that the Article 8 and 2 claims were related, the Court found it unnecessary to find a specific violation of Article 2. *Id.* ¶¶ 139–40. See generally Dinah Shelton, *Legitimate and Necessary: Adjudicating Human Rights Violations Related to Activities Causing Environmental Harm or Risk*, 6 J. HUM. RTS. & ENV’T 139 (2015) (investigating the intersection of human rights and environmental conditions); Svitlana Kravchenko & John E. Bonine, *Interpretation of Human Rights for the Protection of the Environment in the European Court of Human Rights*, 25 GLOBAL BUS. & DEV. L.J. 245 (2012) (advocating for broader incorporation of the European Court’s environmental jurisprudence on a national scale).

195. App. No. 19400/11 (Eur. Ct. H.R. 2012).

196. *Id.* ¶ 28.

197. *Id.*

should have known about the existence of a real and immediate risk to life and failed to take measures within their power that might have reasonably avoided the risk.¹⁹⁸

For the Court, and having regard to the nature of the right protected by Article 2, a right fundamental in the scheme of the Convention, it is sufficient for an applicant to show that the authorities did not do all that could be reasonably expected of them to avoid a real and immediate risk to life of which they have or ought to have knowledge. This is a question which can only be answered in the light of all the circumstances of any particular case.¹⁹⁹

For these reasons, the Court held that Hungary had violated the right to life norm in Article 2 even though no one had died as a result of the government's acts or omissions. Accordingly, the Court awarded the applicants 52,000 euros in damages.²⁰⁰

The European Court thus recognizes a state's obligation to redress harms that have already occurred as well as to prevent harms that have yet to occur. "From whichever angle the state's positive obligations are approached, it is inescapable to conclude that the quintessence of protection concerns the *prevention* of human rights violations."²⁰¹ Accordingly, a state's liability for violating the right to life norm attaches even in the absence of death.²⁰² The state's failure to take appropriate administrative action that adequately protects potential victims from harm is itself sufficient to establish liability.

c. *The Inter-American Court of Human Rights*

The Inter-American Court of Human Rights has adopted a similar approach to the positive obligation imposed on states to protect human life.²⁰³ In fact, the Inter-American Court's first

198. *Id.* ¶ 29.

199. *Id.* (citing *Osman v. United Kingdom*, App. No. 23452/94, 29 Eur. H.R. Rep. 245 (1998)).

200. *Id.* ¶¶ 44, 47.

201. XENOS, POSITIVE OBLIGATIONS, *supra* note 160, at 97 (emphasis in original).

202. *See, e.g.*, *Brincat v. Malta*, App. Nos. 60908/11, 62110/11, 62129/11, 62312/11 & 62338/11, ¶ 82 (Eur. Ct. H.R. July 24, 2014) ("The Court reiterates that it has applied Article 2 both where an individual has died . . . and where there was a serious risk of an ensuing death, even if the applicant was alive at the time of the application.") (citation omitted); *Al Nashiri v. Poland*, App. No. 28761/11 at 217 (Eur. Ct. H.R. July 24, 2014) (holding Poland liable for violating Article 2 when it allowed the CIA to transfer a detainee from its territory knowing there was a real and serious risk that he would be subjected to the death penalty); *Kolyadenko v. Russia*, App. Nos. 17423/05, 20534/05, 20678/05, 23263/05, 24283/05 & 35673/05 (Eur. Ct. H.R. Feb. 28, 2012) (holding Russia liable for violating Article 2 when it released water from a reservoir that placed the applicants at risk of death).

203. *See generally* Martin Nicolas Montoya Cespedes, *The Inter-American Court*

judgment in *Velásquez-Rodríguez v. Honduras* recognized that states are under a positive obligation to protect human life pursuant to Article 4 of the American Convention on Human Rights.²⁰⁴ According to the Court, this duty “includes all those means of a legal, political, administrative and cultural nature that promote the protection of human rights.”²⁰⁵ The Court’s subsequent jurisprudence has significantly clarified and extended this obligation.²⁰⁶

In *Yakye Axa Indigenous Community v. Paraguay*, the Inter-American Court considered whether Paraguay had violated the right to life norm under Article 4 of the American Convention through its treatment of the Yakye Axa indigenous group.²⁰⁷ The

of Human Rights’ Positive Obligations Doctrine, in THE INTER-AMERICAN COURT OF HUMAN RIGHTS: THEORY AND PRACTICE, PRESENT AND FUTURE 765 (Yves Haeck et al. eds., 2015) [hereinafter THE INTER-AMERICAN COURT OF HUMAN RIGHTS] (describing how the judicial dialogue between the Inter-American Court and the European Court works to broaden human rights); Steven R. Keener & Javier Vasquez, *A Life Worth Living: Enforcement of the Right to Health Through the Right to Life in the Inter-American Court of Human Rights*, 40 COLUM. HUM. RTS. L. REV. 595 (2009) (explaining that the Inter-American Court recognizes additional positive obligations on states to enforce the right to a dignified life); Tara J. Melish & Ana Aliverti, *Positive Obligations in the Inter-American Human Rights System*, 15 INTERRIGHTS BULL. 120 (2006) (broadly analyzing positive obligations jurisprudence).

204. Judgment, Inter-Am. Ct. H.R. (ser. C) No. 1, ¶ 188 (July 29, 1988). See generally Laurens Lavrysen, *Positive Obligations in the Jurisprudence of the Inter-American Court of Human Rights*, 7 INTER-AM. & EUR. HUM. RTS. J. 94 (2014) (highlighting the Inter-American Court as a leader in human rights developments due to its positive obligations jurisprudence).

205. *Velásquez-Rodríguez*, Inter-Am. Ct. H.R. (ser. C) No. 1, ¶ 175.

206. See *Luna-Lopez v. Honduras*, Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 269 (Oct. 10, 2013) (holding Honduras responsible for violations of the rights to life and personal integrity); *Gonzalez v. Mexico (Cotton Field)*, Preliminary Objection, Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 205 (Nov. 16, 2009) (finding Mexico accountable for its failure to proactively protect applicants from patterns of gender-related violence); *Pueblo Bello Massacre v. Colombia*, Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 140 (Jan. 31, 2006) (requiring Colombia to proactively recompense victims of rights violations, conduct investigations, and take preventative measures).

207. Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 125 (June 17, 2005). See generally Scott McKenzie, *Yakye Axa v. Paraguay: Upholding and Framing the Human Right to Water*, in THE INTER-AMERICAN COURT OF HUMAN RIGHTS, *supra* note 203, at 241 (highlighting the importance of this case in shaping right-to-life jurisprudence). See also *Villagrán-Morales v. Guatemala*, Merits, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 77, ¶ 144 (Nov. 19, 1999) (“Owing to the fundamental nature of the right to life, restrictive approaches to it are inadmissible. In essence, the fundamental right to life includes, not only the right of every human being not to be deprived of his life arbitrarily, but also the right that he will not be prevented from having access to the conditions that guarantee a dignified existence. States have the obligation to guarantee the creation of the conditions required in order that violations of this basic right do not occur and, in

petitioners alleged Paraguay had failed to protect their land rights, which had forced them to live in poverty and without access to public health care or natural resources, including clean water.²⁰⁸ They also attributed the deaths of several community members to Paraguay's inaction. In response, Paraguay asserted that it had provided adequate resources to the Yakye Axa indigenous group and, in any event, there was "no causal relationship 'between the land and physical survival' and the alleged lack of preservation of the right to life."²⁰⁹ Paraguay also rejected liability for the individual deaths "unless there is proof of negligence in dealing with those specific cases by the public health authorities or by other authorities who were aware of the facts."²¹⁰

In its opinion, the Court acknowledged the significance of the right to life norm and the expansive nature of this right under Article 4 of the American Convention.

Due to the basic nature of this right, approaches that restrict the right to life are not admissible. Essentially, this right includes not only the right of every human being not to be arbitrarily deprived of his life, but also the right that conditions that impede or obstruct access to a decent existence should not be generated.²¹¹

The Court then identified the positive obligation of states to protect the right to life.

One of the obligations that the State must inescapably undertake as guarantor, to protect and ensure the right to life, is that of generating minimum living conditions that are compatible with the dignity of the human person and of not creating conditions that hinder or impede it. In this regard, the State has the duty to take positive, concrete measures geared toward fulfillment of the right to a decent life, especially in the case of persons who are vulnerable and at risk, whose care becomes a high priority.²¹²

To establish Paraguay's liability in this case, the Court indicated it "must establish whether the State generated conditions that worsened the difficulties of access to a decent life for the members of the Yakye Axa Community and whether, in that context, it took appropriate positive measures to fulfill that obligation."²¹³ After reviewing Paraguay's treatment of the Yakye

particular, the duty to prevent its agents from violating it.").

208. *Yakye Axa*, Inter-Am. Ct. H.R. (ser. C) No. 125, ¶ 2.

209. *Id.* ¶ 159(f).

210. *Id.* ¶ 159(a).

211. *Id.* ¶ 161.

212. *Id.* ¶ 162 (footnote omitted).

213. *Id.* ¶ 163.

Axa, the Court concluded that Paraguay had failed to comply with its obligation, “to the detriment of the members of the Yakye Axa Community, [by] not taking measures regarding the conditions that affected their possibility of having a decent life.”²¹⁴ Accordingly, the Court found that Paraguay violated the right to life norm under Article 4. The Court ordered Paraguay to transfer ownership of the disputed territory to the petitioners and to take other action to remedy the underlying violations.²¹⁵

While the Inter-American Court found Paraguay in violation of Article 4 in light of its overall treatment of the Yakye Axa Community, it declined to find Paraguay responsible for the deaths of sixteen members of the group. The petitioners had alleged that these deaths “could have been avoided with adequate food and medical care, and [the deaths were] a consequence of the lack of an appropriate and timely response by the State to the Community’s claim to its ancestral land.”²¹⁶ In response, the Court noted that it did “not have sufficient evidence to establish the causes of said deaths.”²¹⁷ This portion of the Court’s judgment was subject to several dissenting opinions. Judge Abreu Burelli criticized the majority for the manner in which it considered the evidence surrounding the sixteen deaths. Because the Yakye Axa Community lacked basic services, including drinking water, it was “not difficult to infer that the death of children, among others . . . were due to their precarious living conditions.”²¹⁸ Similarly, Judges Cançado Trindade and Ventura Robles argued that the causal link sought by the majority “is clearly established by lack of due diligence by the State regarding the living conditions of *all* members of the Yakye Axa Community (objective international responsibility of the State).”²¹⁹ Given the significance of the right to life norm, Judges Cançado Trindade and Ventura Robles felt the Court should have engaged in a more thoughtful analysis regarding the individual deaths.²²⁰ And, they called for the

214. *Id.* ¶ 176.

215. *Id.* ¶ 242.

216. *Id.* ¶ 177.

217. *Id.*

218. *Id.* ¶ 13 (Abreu Burelli, J., partially dissenting opinion).

219. *Id.* ¶ 11 (Cançado Trindade & Ventura Robles, JJ., separate dissenting opinion) (emphasis omitted).

220. Because there were doubts regarding the cause of death, Judges Cançado Trindade and Ventura Robles felt that only ten of the sixteen deaths could properly be attributed to Paraguay. *Id.* ¶ 8.

Court “to correct, as soon as possible, the regression that . . . the instant Judgment constitutes.”²²¹

One year after the Inter-American Court’s ruling in *Yakye Axa*, it revisited the issue of state responsibility for violations of the right to life norm under Article 4 of the American Convention in *Sawhoyamaxa Indigenous Community v. Paraguay*.²²² The claims raised were similar to those in *Yakye Axa*.²²³ The petitioners alleged Paraguay had failed to protect their land rights, thereby threatening the existence of the community and the health of its members.²²⁴ They also alleged that Paraguay was responsible for the deaths of several community members.²²⁵ Paraguay rejected these claims. It argued that public health services were available to all citizens, including the petitioners.²²⁶ Accordingly, community members must accept a degree of personal responsibility for their own well-being.²²⁷ In addition, the community itself was responsible for any harms that may have occurred to its members.²²⁸ Paraguay also rejected responsibility for any deaths due to natural causes “unless it be proved that there has been negligence to address these particular cases by the health care authorities or by other authorities with knowledge of the facts.”²²⁹

In its decision, the Court restated that the right to life norm creates both negative and positive obligations.²³⁰ It also reaffirmed the primacy of the right to life norm.

[T]he States must adopt any measures that may be necessary to create an adequate statutory framework to discourage any threat to the right to life; to establish an effective system of administration of justice able to investigate, punish, and repair any deprivation of lives by state agents, or by individuals; and to protect the right of not being prevented from access to conditions that may guarantee a decent life, which entails the adoption of positive measures to prevent the breach of such right.²³¹

221. *Id.* ¶ 23.

222. *See* Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 146 (Mar. 29, 2006).

223. *Id.* ¶ 2.

224. *Id.* ¶ 146.

225. *Id.*

226. *Id.* ¶ 147(a).

227. *Id.* ¶ 147(b), (d).

228. *Id.*

229. *Id.* ¶ 147(e).

230. *Id.* ¶ 152.

231. *Id.* ¶ 153 (footnotes omitted).

It then added a significant clarification regarding the responsibility of states.

It is clear for the Court that a State cannot be responsible for all situations in which the right to life is at risk. Taking into account the difficulties involved in the planning and adoption of public policies and the operative choices that have to be made in view of the priorities and the resources available, the positive obligations of the State must be interpreted so that an impossible or disproportionate burden is not imposed upon the authorities.²³²

To determine state liability arising out of the positive obligation to protect the right to life, the Court identified a two-part test, citing the European Court's decisions in *Osman* and *Önerıldız*.²³³ First, "it must be determined that at the moment of the occurrence of the events, the authorities knew or should have known about the existence of a situation posing an immediate and certain risk to the life of an individual or of a group of individuals."²³⁴ Second, it must also be determined "that the necessary measures were not adopted within the scope of their authority which could be reasonably expected to prevent or avoid such risk."²³⁵ Applying these principles, the Court found that Paraguay had "full knowledge about the actual risk and vulnerability situation to which the members of the Sawhoyamaxa Community [were] exposed, especially children, pregnant women and the elderly, and also about their mortality rates."²³⁶ Despite this knowledge, Paraguay had failed to adopt necessary measures to address these risks. Thus, Paraguay had violated the right to life norm because it had "not adopted the necessary positive measures within its powers, which could reasonably be expected to prevent or avoid risking the right to life of the members of the Sawhoyamaxa Community."²³⁷ The Court's decision made clear that the immediacy and certainty of a risk does not refer to temporal imminence but rather to foreseeability.

In contrast to the *Yakye Axa* opinion, the Court also found Paraguay responsible for the deaths of nineteen community members. The Court noted that "most of the Community members that died were boys and girls under 3 years of age," who died from reasonably foreseeable diseases that could have been prevented and

232. *Id.* ¶ 155.

233. *Id.*

234. *Id.* (citations omitted).

235. *Id.* (citations omitted).

236. *Id.* ¶ 159.

237. *Id.* ¶ 178.

treated at low cost.²³⁸ The Court indicated that these deaths were attributable to Paraguay owing to “the lack of adequate prevention and to the failure by the State to adopt sufficient positive measures, considering that the State had knowledge of the situation of the Community and that action by the State could be reasonably expected.”²³⁹ The Court rejected Paraguay’s arguments that these individuals shared responsibility for their illnesses by not seeking appropriate treatment. The Court found such arguments incompatible with the object and purpose of the American Convention.²⁴⁰ In their concurring opinions, Judges Cançado Trindade and Ventura Robles applauded the Court for reversing the narrow evidentiary approach it had used in *Yakye Axa* to deny state liability for individual deaths.²⁴¹ Indeed, Judge Cançado Trindade argued that imposing a higher evidentiary standard on an “ostensibly weaker party, wanting the means for surviving with a minimum of dignity” would constitute a *probatio diabolica* that is wholly inappropriate in human rights law.²⁴²

Like the case law of the European Court of Human Rights, the Inter-American Court has taken a broad approach to claims by potential victims of future harm to human life.²⁴³ The Inter-American Court has accepted the admissibility of claims for Article 4 violations brought before death has occurred. And, it has found Article 4 violations in such cases.²⁴⁴

In *Hilaire v. Trinidad and Tobago*, for example, the Inter-American Court considered whether Trinidad and Tobago violated the right to life norm by sentencing thirty-two detainees to death

238. *Id.* ¶ 171.

239. *Id.* ¶ 172. However, the Court did not attribute responsibility to Paraguay for the death of a child from a rare blood disorder. *Id.* The Court also declined to hold Paraguay responsible for a death attributed to murder, three deaths attributed to work and traffic accidents, and the deaths of three adults caused by pneumonia and tuberculosis. *Id.* ¶¶ 179–80. According to the Court, these deaths could not be attributable to Paraguay.

240. *Id.* ¶ 173.

241. *Id.* ¶ 15 (Ventura Robles, J., separate opinion) (“By entering an unanimous judgment in the case of the Sawhoyamaxa Community, the Inter-American Court rectified a judgment—*Case of the Indigenous Community Yakye Axa*—in which a restrictive interpretation of the right to life had prevailed, and returned to the path, taken in previous judgments, specifically in the *Case of the Street Children*, in which a broad interpretation of human rights violations, especially the breach of the right to life, had at all times guided the Court’s decisions. And this should have always been the case.”) (citations omitted) (emphasis in original); *id.* ¶¶ 1–12 (Cançado Trindade, J., separate opinion).

242. *Id.* ¶ 20 (Cançado Trindade, J., separate opinion).

243. JO M. PASQUALUCCI, *THE PRACTICE AND PROCEDURE OF THE INTER-AMERICAN COURT OF HUMAN RIGHTS* 252 (2d ed. 2013).

244. *Id.*

pursuant to a mandatory death penalty statute.²⁴⁵ The statute offered defendants no opportunity to argue for a lesser sentence.²⁴⁶ Significantly, the detainees in this case had not yet been executed. Nonetheless, they claimed a violation of Article 4 of the American Convention. The Inter-American Court agreed, holding that Trinidad and Tobago had violated Article 4 through its use of the mandatory death sentence statute.²⁴⁷ In his concurring opinion, Judge Garcia Ramirez addressed the applicability of the right to life norm in cases where death has not yet occurred.²⁴⁸

Evidently, there may be a violation of the right to life even whilst the victims have not yet been deprived of theirs. The right to life—like any other right—can be viewed as affected in an *iter* that moves through various stages, named and identified, all of which, by a common design conferred by nature and sense terminate the life of an individual. The last phase in this *iter* culminates in the deprivation of the life itself, object of the maximum affection of this right. Before, there may be other moments: all of which, in conformance with the circumstances, aspire and lead to this end. Such is the case of a general norm that runs contrary to the American Convention (or to the State Constitution, where domestic issues are at stake): the norm may be challenged on jurisdictional grounds before its implementation produces consequences which may give rise to a concrete case.²⁴⁹

Finally, the Inter-American Court offers any “person or group of persons, or any nongovernmental entity” the right to file a petition alleging human rights violations.²⁵⁰ Significantly, such individuals, groups, or entities need not be victims or even potential victims.²⁵¹ They are essentially granted the right to file an *actio popularis*, which serves as a claim on behalf of others.²⁵² The ability to file petitions in such a manner broadens the protective scope of the Inter-American system and reflects the flexible nature of human rights law, particularly in cases involving human life.

245. See Merits, Reparations, and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 94 (June 21, 2002).

246. *Id.* ¶ 88.

247. *Id.* ¶¶ 108–09.

248. See *id.* (Garcia Ramirez, J., concurring).

249. *Id.* ¶ 6 (emphasis in original).

250. American Convention, *supra* note 117, art. 44.

251. PASQUALUCCI, *supra* note 243, at 100; LAURENCE BURGORGUE-LARSEN & AMAYA UBEDA DE TORRES, THE INTER-AMERICAN COURT OF HUMAN RIGHTS: CASE LAW AND COMMENTARY 110–17 (2011).

252. See William J. Aceves, Actio Popularis? *The Class Action in International Law*, 2003 U. CHI. L.F. 353 (2003); Alfred Rubin, Actio Popularis, Jus Cogens and Offenses Erga Omnes?, 35 NEW ENG. L. REV. 265 (2001).

d. Summarizing the Right to Life Test

The right to life norm imposes a positive obligation on states to protect human life. The preceding review of international practice and case law offers the foundation for a three-part test to determine whether a state has complied with this obligation in a manner consistent with human rights law.²⁵³ This test represents an extension of the principles first enunciated in *Osman* and *Velásquez-Rodríguez* and reflects the growing significance of the positive obligation to protect human life. Each element is necessary to implicate state responsibility.

First, is there a risk to human life? This risk can emanate from human or natural causes.²⁵⁴ It can arise from public or private action. And, the risk need not target a specific person. It can involve a risk to members of a larger group or even the general public.²⁵⁵ The risk must be real and immediate, but this simply means the harm can occur at any time.²⁵⁶ Thus, the risk does not require temporal imminence, meaning the harm is not required to

253. Cf. Keener & Vasquez, *supra* note 203, at 619 (proposing a three-part test for examining whether a state's approach for addressing public health matters violates the right to life); Ebert & Sijniensky, *supra* note 126, at 366 (proposing a similar test for examining whether a state's approach for addressing structural risks violates the right to life); Lautá & Rytter, *supra* note 168, at 124 (proposing a test that examines the foreseeability, gravity, and mitigability to determine state responsibility for disasters and threats to human life).

254. Lautá & Rytter, *supra* note 168, at 113.

255. Ebert & Sijniensky, *supra* note 126, at 360–362.

256. XENOS, POSITIVE OBLIGATIONS, *supra* note 160, at 111–112. Cf. Valiuliene v. Lithuania, App. No. 33234/07, (Eur. Ct. H.R. Mar. 26, 2013) (Pinto de Albuquerque, J., concurring) (“One of the most problematic aspects of the State's positive obligation is the definition of the exact ambit of its duty to prevent and protect. The Court has developed the so-called Osman test, which normally assesses if the authorities knew, or ought to have known at the time, of the existence of real and immediate risk to the life of an identified individual or individuals from the criminal acts of a third party and they failed to take measures within the scope of their powers which, judged reasonably, might have been expected to avoid that risk. Put simply, the State answers for the wrongful conduct of non-State actors when their conduct was foreseeable and avoidable by the exercise of State powers. The heart of the dispute in the current case lies in the adequateness of this standard to the particular situation of domestic violence. Realistically speaking, at the stage of an ‘immediate risk’ to the victim it is often too late for the State to intervene. In addition, the recurrence and escalation inherent in most cases of domestic violence makes it somehow artificial, even deleterious, to require an immediacy of the risk. Even though the risk might not be imminent, it is already a serious risk when it is present If a State knows or ought to know that a segment of its population, such as women, is subject to repeated violence and fails to prevent harm from befalling the members of that group of people when they face a present (but not yet imminent) risk, the State can be found responsible by omission for the resulting human rights violations. The constructive anticipated duty to prevent and protect is the reverse side of the context of widespread abuse and violence already known to the State authorities.”) (emphasis omitted).

occur within specified days, weeks, or even months.²⁵⁷ To hold otherwise would undermine the strength of the obligation to protect human life. Significantly, human rights law does not require a risk to be fully realized or for the harm to have already occurred. States are obligated to prevent harm from occurring to potential victims.²⁵⁸ Indeed, the prevention of human rights violations should always be preferred over remedial action taken after such harms have occurred. Thus, states can be held responsible for acts or omissions that place human life at risk.

Second, did the state know or should it have known about the risk to life? Knowledge of any government official, whether national, regional, or local, is attributable to the state and is, therefore, sufficient to establish responsibility.²⁵⁹ Unlike most negative obligations that maintain a heightened *mens rea* standard, positive obligations only require actual or implied knowledge of the risk. The state must be aware of the risk. If the state is unaware, it will still be responsible if it should have known about the risk. As part of this analysis, the foreseeability of the risk must be considered.²⁶⁰ On some occasions, this may involve assessing the probability that a risk will materialize.²⁶¹ On other occasions, foreseeability may be established by identifying a causal link between the state's acts or omissions and the risk to human life.²⁶² "It is an *ex post* test of 'foreseeability' of the event: even if the event was predictable, there is still room, even after the wrongful event occurred, for verifying its place in the chain of events."²⁶³

Third, did the state take or could it have taken reasonable measures within its means and authority to reduce or prevent the

257. Ebert & Sijniensky, *supra* note 126, at 358–360.

258. See BERTRAND G. RAMCHARAN, PREVENTIVE HUMAN RIGHTS STRATEGIES (2010); THE PREVENTION OF HUMAN RIGHTS VIOLATIONS (Christiane Bourloyannis-Vraïlas & Linos-Alexander Sicilianos eds., 2001).

259. This approach to attribution of conduct is consistent with the work of the International Law Commission regarding state responsibility. See JAMES CRAWFORD, THE INTERNATIONAL LAW COMMISSION'S ARTICLES ON STATE RESPONSIBILITY 94–99 (2002).

260. See Kiliç v. Turkey, App. No. 22492/93 (Eur. Ct. H.R. Mar. 28, 2000); see also Benedetto Conforti, *Exploring the Strasbourg Case-Law: Reflections on State Responsibility for the Breach of Positive Obligations*, in ISSUES OF STATE RESPONSIBILITY BEFORE INTERNATIONAL JUDICIAL INSTITUTIONS 129 (Malgosia Fitzmaurice & Dan Sarooshi eds., 2004) (explaining a state's obligations to prevent certain human rights violations).

261. Lauta & Rytter, *supra* note 168, at 124–125.

262. See Conforti, *supra* note 260, at 132–135; see also LCB v. United Kingdom, App. No. 23413/94, 27 Eur. H.R. Rep. 212, 228–29 (1998).

263. Conforti, *supra* note 260, at 135.

risk to life?²⁶⁴ This element requires a fact-intensive analysis and contains several considerations.²⁶⁵ Does the state have the resources to act? What is the nexus between the state's acts or omissions and the risk to life?²⁶⁶ And, could state action have a real prospect of altering the outcome or mitigating the harm to human life? In this analysis, states are not assessed under a strict liability standard. Rather, state behavior is assessed under a due diligence standard wherein states exert their best possible efforts to minimize the risk to life.²⁶⁷ Also, states are not obligated to act without considering the financial and societal costs of such action.²⁶⁸ Human rights law does not require states to meet impossible standards or accept unreasonable burdens.²⁶⁹ And, states cannot reasonably act against every conceivable risk to life as some risks are simply unavoidable.²⁷⁰ In fact, states are granted a wide margin of appreciation in making administrative and budgetary decisions.²⁷¹ States have a right to prioritize public programs and

264. Keener & Vasquez, *supra* note 203, at 619.

265. *Id.* at 620.

266. There is no common rule for establishing causality and various formulations have been used. See CRAWFORD, *supra* note 259, at 203–205; Ilias Plakokefalos, *Causation in the Law of State Responsibility and the Problem of Overdetermination: In Search of Clarity*, 26 EUR. J. INT'L L. 471, 476–86 (2015); PRINCIPLES OF SHARED RESPONSIBILITY IN INTERNATIONAL LAW 129–30 (Andre Nollkaemper & Ilias Plakokefalos eds., 2014); Michael Strauss, *Causation as an Element of State Responsibility*, 16 L. & POL'Y INT'L BUS. 893, 897 (1984). However, causality need not be established to a legal certainty, nor is a high evidentiary standard required to establish causality. See *id.* at 893–97. In fact, such a requirement would be contrary to the basic principles of human rights law.

267. This approach is consistent with international law. See *Pulp Mills on the River Uruguay (Arg. v. Uru.)*, Judgment, 2010 I.C.J. 14, ¶101 (Apr. 20); see also Jan Arno Hessbruegge, *The Historical Development of the Doctrines of Attribution and Due Diligence in International Law*, 36 N.Y.U. J. INT'L L. & POL. 265, 268–75 (2004) (explaining that states may be held responsible for not exercising due diligence to prevent acts by non-state actors); CRAWFORD, *supra* note 259, at 140 (“Obligations of prevention are usually construed as best efforts obligations, requiring States to take all reasonable or necessary measures to prevent a given event from occurring, but without warranting that the event will not occur.”).

268. RADHIKA BALAKRISHNAN ET AL., CTR. FOR WOMEN'S GLOB. LEADERSHIP, MAXIMUM AVAILABLE RESOURCES & HUMAN RIGHTS: ANALYTICAL REPORT 2–4 (2011).

269. Lauta & Rytter, *supra* note 168, at 118.

270. *Id.* at 126.

271. Such an approach is consistent with existing international practice regarding the provision of economic, social, and cultural rights, which must be provided by states “to the maximum of [their] available resources.” International Covenant on Economic, Social and Cultural Rights art. 2(1), Dec. 16, 1966, 993 U.N.T.S. 3. See ANN BLYBERG & HELENA HOFBAUER, ARTICLE 2 AND GOVERNMENTS' BUDGETS 6–9 (2014); BALAKRISHNAN ET AL., *supra* note 268, at 6; Eitan Felner, *Closing the “Escape Hatch”: A Toolkit to Monitor the Progressive Realization of Economic, Social, and Cultural Rights*, 1 J. HUM. RTS. PRAC. 402, 404 (2009). See also XENOS, POSITIVE

government spending.²⁷² But while resource allocation considerations may be relevant, they are “not a blanket excuse for the state failing to intervene to save a life and the courts should investigate the specific circumstances prevailing in each case.”²⁷³ In assessing the reasonableness of state action, courts will balance the interests of potential victims with the needs, abilities, and resources of the state.²⁷⁴ Various factors will also be considered, including the number of potential victims, the probability of harm, and the costs of state action.²⁷⁵ Thus, the failure of a state to take reasonable measures in light of such considerations “is sufficient to engage the responsibility of the State.”²⁷⁶

In sum, human rights law requires a careful analysis of the decision-making process and the rationale for a state’s acts or omissions that threaten human life. Such analysis requires full transparency of the state’s decision-making process.²⁷⁷ Only

OBLIGATIONS, *supra* note 160, at 106 (“The scope of positive obligations . . . relates to a content of protection that can realistically be secured by the state’s resources.”). *Cf.* Responsibilities and Obligations of States, Sponsoring Persons and Entities with Respect to Activities in the Area, Advisory Op. of Feb. 1, 2011, ITLOS Rep. 2011, ¶ 242(5), https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/adv_op_010211.pdf (advising that nations must establish budgetary and administrative regulations but that “[t]he scope and extent of these laws and regulations and administrative measures depends on the legal system of the sponsoring State”). *But see* Kenneth Roth, *Defending Economic, Social and Cultural Rights: Practical Issues Faced by an International Human Rights Organization*, 26 HUM. RTS. Q. 63 (2004) (outlining the practical problems of enforcing economic, social, and cultural rights when states have budgetary and administrative discretion).

272. *See* WICKS, CONFLICTING INTERESTS, *supra* note 114, at 217.

273. *Id.* at 237.

274. *See* Mathias Klatt, *Positive Obligations Under the European Convention on Human Rights*, 71 HEIDELBERG J. INT’L L. 691, 694 (2011); *see also* JONAS CHRISTOFFERSEN, FAIR BALANCE: PROPORTIONALITY, SUBSIDIARITY AND PRIMARITY IN THE EUROPEAN CONVENTION ON HUMAN RIGHTS 94–111 (2009); Ebert & Sijniensky, *supra* note 126, at 344 (“The challenge is, hence, to define the State’s positive obligations in a way that—while ensuring legal certainty—is attuned to the relevant scenario and strikes a fair balance between the interests of the individual and those of the society at large, also given the potentially far-reaching consequences for policy-making and public budgets.”).

275. *See* WICKS, CONFLICTING INTERESTS, *supra* note 114, at 237; Lauter & Rytter, *supra* note 168, at 124.

276. *O’Keeffe v. Ireland*, App. No. 35810/09, ¶ 149 (Eur. Ct. H.R. Jan. 28, 2014); *see* James Gallen, *O’Keeffe v. Ireland: The Liability of States for Failure to Provide an Effective System for the Detection and Prevention of Child Sexual Abuse in Education*, 78 MODERN L. REV. 151, 152 (2015).

277. *See* WICKS, CONFLICTING INTERESTS, *supra* note 114, at 233 (outlining approaches to transparency); *see also* MARIE-BÉNÉDICTE DEMBOUR, WHO BELIEVES IN HUMAN RIGHTS? REFLECTIONS ON THE EUROPEAN CONVENTION 89 (2006) (“The impossibility of assigning a precise value to any of the considered elements makes the method highly susceptible to a lack of transparency.”).

through such case-by-case analysis can the liability of the state be measured.²⁷⁸

III. The Valuing of Human Life

Every year, governments use cost-benefit analysis and value of a statistical life (VSL) calculations to assess mortality risks and make decisions that implicate human life.²⁷⁹ While regulatory decisions are often less visible than other forms of government action, they may still have a profound impact on mortality risks.²⁸⁰ Regulatory decisions on matters pertaining to environmental standards, food quality, labor protection, and transportation safety affect human life on a daily basis.²⁸¹ Decisions regarding disease prevention, disaster preparation, and climate change can have even broader consequences on human life.²⁸² Using cost-benefit analysis and VSL calculations to determine mortality risks in these regulatory fields can readily implicate the right to life norm.²⁸³ Reviewing cost-benefit analysis through the lens of human rights law raises both methodological and normative concerns.²⁸⁴

a. The Methodological Flaws of Cost-Benefit Analysis and VSL Calculations

One problem with using cost-benefit analysis to address mortality risks is evidenced by the wide range of VSL calculations, which currently vary from \$1 million to \$10 million in the United

278. While the three-part right to life test shares some features with traditional tort law, human rights law and tort law pursue distinct societal goals. See Donal Nolan, *Negligence and Human Rights Law: The Case for Separate Development*, 76 MODERN L. REV. 286, 287–88 (2013); François du Bois, *Human Rights and Tort Liability of Public Authorities*, 127 L.Q. Rev. 589, 590 (2011). Simply stated, human rights law is public law, whereas tort law is private law. See Nolan, *supra* note 278. Thus, principles of tort law can inform the development of human rights law, but they do not apply in proceedings before human rights bodies. See *id.*; du Bois, *supra* 278, at 600.

279. SUNSTEIN, VALUING LIFE, *supra* note 14, at 2–3.

280. *Id.* at 4.

281. *Id.* at 3.

282. See, e.g., *Budayeva v. Russia*, App. Nos. 15339/02, 21166/02, 20058/02, 11673/02 & 15343/02, ¶¶ 13–38 (Eur. Ct. H.R. Mar. 20, 2008) (serving as an example of an international law case concerning a natural disaster); Lautá & Rytter, *supra* note 168, at 116–117 (outlining the application of the right to life in *Budayeva*).

283. See Lautá & Rytter, *supra* note 168, at 118.

284. See, e.g., I. Glenn Cohen, *Identified Versus Statistical Lives in US Civil Litigation*, in IDENTIFIED VERSUS STATISTICAL LIVES, *supra* note 18, at 43–76 (discussing the ethical concerns of the statistical method of valuing life and the difficulty in determining how to use “identified” versus “statistical” victims in policy development).

States.²⁸⁵ When governments use a low VSL in cost-benefit analysis, they make it less likely that proposed regulations will be found cost-effective.²⁸⁶ As a result, it is less likely that the proposed regulations will be adopted. In contrast, a high VSL will likely justify more expensive regulatory action and, presumably, a greater reduction in mortality risks.²⁸⁷ “Higher value of statistical life (VSL) amounts increase the assessed benefits of government regulations, making more stringent regulations desirable on an economic basis, and lower VSL amounts have the opposite effect.”²⁸⁸ When these decisions involve public safety, they implicate the right to life norm. Should states have an obligation to use the highest recognized VSL calculation when addressing mortality risks? To do otherwise is to increase the likelihood that regulatory action will not protect some individuals from loss of life.²⁸⁹

In 2005, for example, the Bush administration considered a proposed rule that would require car manufacturers to increase the strength of automobile roofs.²⁹⁰ By strengthening the roofs, passengers would be more likely to survive rollover accidents.²⁹¹ In its regulatory impact assessment, the U.S. Department of Transportation (DOT) considered two rule options.²⁹² The first option would require vehicles to pass a load resistance test of 2.5 times the vehicle weight, which would prevent between 13 to 44 fatalities (and from 498 to 793 nonfatal injuries) per year.²⁹³ The second option would require vehicles to pass a load resistance test of 3.0 times the vehicle weight, which would prevent between 49 to 135 fatalities (and from 1,540 to 2,151 nonfatal injuries) per year.²⁹⁴ In a subsequent Notice of Proposed Rulemaking, the DOT used a \$3.4 million VSL and selected the less stringent rule that would prevent up to 44 fatalities.²⁹⁵ In 2009, the Obama administration reconsidered the rule. This time, the DOT used a VSL of \$6.1

285. Viscusi, *Devaluation of Life*, *supra* note 74, at 107.

286. *Id.* at 103.

287. *Id.*

288. *Id.*

289. SUNSTEIN, VALUING LIFE, *supra* note 14, at 50 (demonstrating that using a lower VSL makes it more likely that the costs of a proposed regulation do not exceed its benefits, thereby failing to protect the lives it was designed to safeguard).

290. See Copeland, *supra* note 71, at 20; Binyamin Appelbaum, *A Life's Value? It May Depend on the Agency*, N.Y. TIMES, Feb. 17, 2011, at A1; see also Ted Mann, *Rail Safety and the Value of a Life*, WALL ST. J., June 18, 2013, at A1.

291. COPELAND, *supra* note 71, at 20; Appelbaum, *supra* note 290.

292. FMVSS 216, UPGRADE ROOF CRUSH RESISTANCE, *supra* note 23, at 2.

293. *Id.*

294. *Id.*

295. *Id.*

million in its analysis.²⁹⁶ It determined that the rule would prevent 135 fatalities and 1,065 nonfatal injuries.²⁹⁷ With the revised VSL calculation, the proposed rule was deemed cost-effective and thereafter approved.²⁹⁸

In this example, the Bush administration rule was expected to prevent 44 deaths each year. But, the Bush administration could have prevented an additional 91 deaths per year if it had adopted the more stringent rule. In other words, the Bush administration adopted a regulatory policy it knew would provide only limited protection to consumers even though the VSL literature supported a higher valuation.²⁹⁹ If the right to life norm was limited to negative obligations, the decision to accept 91 additional deaths each year might not violate human rights law. But, because the right to life norm also imposes positive obligations, the adoption of the original rule by the Bush administration could give rise to a violation, particularly when the academic research supported the higher VSL calculation.

Such criticisms against cost-benefit analysis and VSL calculations gain greater traction when the underlying decisions are found to be influenced by exogenous factors.³⁰⁰

Clearly the value of American drivers' lives did not magically jump by 75% in the span of four years, but both VSLs are within the span of estimates supported by academic literature. So, did the choice of VSL affect the policy choice, or did the policy choice affect the VSL used?³⁰¹

It is evident political interests can influence VSL calculations.³⁰² “[I]t is hard to escape the conclusion that few

296. Federal Motor Vehicle Safety Standards, Roof Crush Resistance, 49 C.F.R. pts. 571 & 585 (proposed Apr. 30, 2009).

297. *Id.*

298. See Federal Motor Vehicle Safety Standards, Roof Crush Resistance, Phase-In Reporting Requirements, 74 Fed. Reg. 22,348, 22,348, 22,377–79 (May 12, 2009); see also Appelbaum, *supra* note 290, at A1.

299. While a VSL of \$3.5 million was used, the Preliminary Regulatory Impact Analysis recognized “that higher values may be justified.” FMVSS 216, UPGRADE ROOF CRUSH RESISTANCE, *supra* note 23, at VII-B.

300. See, e.g., Seth Borenstein, *An American Life Worth Less Today*, USA TODAY (July 11, 2008), https://usatoday30.usatoday.com/news/nation/2008-07-10-796349025_x.htm (“It’s hard to imagine that it has other than a political motivation.”).

301. CHRISTOPHER STOMBERG, POLICY PRIORITIES AND THE VALUE OF LIFE 9 (Oct. 2011) <https://www.bateswhite.com/assets/htmldocuments/media.482.pdf>; see also SUNSTEIN, VALUING LIFE, *supra* note 14, at 85 (“If cost-benefit analysis is the basis for the ultimate decision to approve or reject a proposed regulation, a lot may turn on the selected VSL.”).

302. See Donald Kenkel, *Using Estimates of the Value of a Statistical Life in Evaluating Regulatory Effects*, in VALUING THE HEALTH BENEFITS OF FOOD SAFETY:

decisions about life-saving regulations are being made primarily based on benefits and costs. These so-called ‘haphazard’ decisions may reflect other systematic influences, such as political pressure.”³⁰³ In the United States, regulatory impact assessments must be reviewed and approved by the OIRA Administrator, who is a presidential appointee.³⁰⁴ Organizational incentives may also influence VSL calculations.³⁰⁵

Hence, the overall incentive for a regulatory agency to expand its role with little cost to itself is not inconsistent with the consistent use of a higher estimate of VSL In contrast to agencies that are primarily regulatory, many government agencies that need to fund programs directly out of limited budgets might have a different incentive.³⁰⁶

The legitimacy of regulatory decisions is undermined when political and organizational factors influence the cost-benefit analysis.

Regulatory decisions that are implemented in such a manner and which lead to greater mortality risks may violate human rights law.³⁰⁷ In these cases, there is a risk to human life. This risk is real and immediate. The state knows about the risk to life; it is foreseeable. Indeed, the state’s own cost-benefit analysis establishes acceptable mortality risks.³⁰⁸ If the state fails to adopt measures within its means and authority that could reasonably be expected to reduce or eliminate this risk, it will violate human

A PROCEEDINGS 2, 7 (Fred Kuchler ed., 2001); THOMAS O. MCGARITY, REINVENTING RATIONALITY: THE ROLE OF REGULATORY ANALYSIS IN THE FEDERAL BUREAUCRACY 156 (1991); David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 U. COLO. L. REV. 335 (2006) (discussing whether cost-benefit analysis is truly a neutral method); Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 443 (1981); Douglas A. Kysar, *Politics by Other Meanings: A Comment on “Retaking Rationality Two Years Later”*, 48 HOUS. L. REV. 43, 47 (2011).

303. Kenkel, *supra* note 302, at 7. See also SUNSTEIN, VALUING LIFE, *supra* note 14, at 42–45.

304. Office of Info. & Reg. Affs. Frequently Asked Questions, <http://www.reginfo.gov/public/jsp/Utilities/faq.jsp> (last accessed Nov. 25, 2017).

305. STOMBERG, *supra* note 301, at 10; see also Marion Fourcade, *The Political Valuation of Life*, 3 REG. & GOVERNANCE 291, 295 (2009) (“[T]he differences might also reflect the different play of interests in those agencies, and different configurations of power and organization among the targeted populations.”). But see Cass R. Sunstein, *The Office of Information and Regulatory Affairs: Myths and Realities*, 126 HARV. L. REV. 1838, 1868 (2013) (stating that the outcome of an agency’s cost-benefit-analysis “depends on discussions that are substantive and often highly technical”).

306. STOMBERG, *supra* note 301, at 10.

307. Cf. MCGARITY *supra* note 302, at 275–277 (discussing the political shift in regulation of carcinogens by OIRA from the Carter to Reagan administrations); WICKS, CONFLICTING INTERESTS, *supra* note 114, at 236–237.

308. Fourcade, *supra* note 305, at 291–292.

rights law.³⁰⁹ This is not meant to suggest that governments must reduce every risk or prevent every fatality. Moreover, this does not suggest that cost-benefit analysis or VSL calculations may never be used by governments in the decision-making process. Rather, human rights law requires critical analysis of regulatory decisions to determine whether they comply with the positive obligation to protect human life.³¹⁰ Have all the costs and benefits been quantified and monetized? Which VSL calculation was used? Why was it selected? Could a higher VSL calculation, which is recognized in academic research, have been used to reduce mortality risks? If so, why was the higher VSL not selected? Have political or organizational factors unduly influenced the analysis? Such questions are necessary for determining whether the state's cost-benefit analysis is reasonable or a violation of the right to life norm. For these reasons, transparency in the decision-making process is essential for assessing the legitimacy of state action.

In cases of competing VSL calculations, the precautionary principle may offer an appropriate solution to valuation disparities. In situations involving risks to human life, the precautionary principle requires states to take action that minimizes such potential risks.³¹¹ Pursuant to the precautionary principle, differences in VSL calculations should be resolved by adopting the higher valuation recognized in academic studies, thereby maximizing protection against future harms, including loss of life. Such an approach operates within the existing parameters of cost-benefit analysis as well as the balancing tests identified in human rights law.³¹² It recognizes that states have limited resources.³¹³ It acknowledges that states must make difficult decisions that implicate human life.³¹⁴ It also uses VSL calculations as part of

309. See WICKS, CONFLICTING INTERESTS, *supra* note 114, at 236.

310. *Id.* at 23. See generally *id.* at 223–36 (discussing the evaluation of allocating resources and the procedural reasonableness of regulation).

311. See ACKERMAN & HEINZERLING, *supra* note 12, at 224–229; THE PRECAUTIONARY PRINCIPLE AND INTERNATIONAL LAW 10 (David Freestone & Ellen Hay eds., 1996) [hereinafter THE PRECAUTIONARY PRINCIPLE]; Ling Chen, *Realizing the Precautionary Principle in Due Diligence*, 25 DALHOUSIE J. LEG. STUD. 1, 4 (2016). But see CASS R. SUNSTEIN, LAWS OF FEAR: BEYOND THE PRECAUTIONARY PRINCIPLE (2005) (discussing the possibility that the precautionary principle encourages too much regulation out of fear of the unknown).

312. See, e.g., Chen, *supra* note 311, at 10 (noting that the precautionary principle “may convey a more compulsory meaning than the precautionary approach and precautionary measures”).

313. THE PRECAUTIONARY PRINCIPLE, *supra* note 311, at 12.

314. ACKERMAN & HEINZERLING, *supra* note 12, at 224–229.

cost-benefit analysis.³¹⁵ However, it reduces the impact of exogenous factors in the decision-making process by defaulting to the higher VSL, thereby increasing the likelihood that life-saving action will be undertaken and mortality risks reduced.³¹⁶

To promote compliance with human rights law, regulatory decisions that implicate human life should be removed from the political process. At a minimum, the assessment of acceptable mortality risks should not be subject to partisan influence.³¹⁷ Currently, the Office of Information and Regulatory Affairs (OIRA), which reviews all regulatory impact assessments, operates within the Executive Office of the President.³¹⁸ It is headed by the OIRA Administrator, a position appointed by the President and confirmed by the Senate.³¹⁹ To reduce partisanship in the regulatory process, OIRA could be modeled after the Government Accountability Office (GAO). The work of the GAO is shielded from partisan influence through various mechanisms, including the selection process for its leader.³²⁰ The President selects a nominee from a list prepared by a bipartisan commission of congressional leaders.³²¹ The nominee is then submitted to the Senate for confirmation.³²² A comparable process could be established for the OIRA Administrator. In addition, OIRA's mandate could be revised to place greater priority on reducing mortality risks. This could include an explicit requirement to use higher VSL calculations whenever possible. Through these revisions, OIRA could become more protective of human life when it engages in cost-benefit analysis.

315. *Id.* at 117–22.

316. *Id.* at 227.

317. *Cf.* Alan B. Morrison, *OMB Interference with Agency Rulemaking: The Wrong Way to Write a Regulation*, 99 HARV. L. REV. 1059 (1986) (suggesting that the OMB should be eliminated from the rule-making process); Sidney A. Shapiro, *OMB and the Politicization of Risk Assessment*, 37 ENVTL. L. 1083 (2007) (criticizing the politicization of the Office of Management and Budget and the lack of scientific basis for its guideline establishment process); Rena Steinzor, *The Case for Abolishing Centralized White House Regulatory Review*, 1 MICH. J. ENVTL. & ADMIN. L. 209 (2012) (criticizing partisan approaches to government regulatory schemes).

318. *Frequently Asked Questions (FAQ)*, OFFICE OF INFO. & REG. AFF., <http://www.reginfo.gov/public/jsp/Utilities/faq.jsp> (last accessed Nov. 25, 2017).

319. *Id.*

320. *About GAO*, U.S. GOV'T ACCOUNTABILITY OFF., <https://www.gao.gov/about/index.html> (last accessed Nov. 25, 2017).

321. *Id.*

322. *Id.*

b. *The Normative Flaws of Cost-Benefit Analysis and VSL Calculations*

A more fundamental problem with cost-benefit analysis stems from the very nature of human rights. Is it even possible to meaningfully quantify or monetize life, dignity, or other human rights?³²³ “Values like human life, health, nature, love, honor, justice, or human rights are seen as absolute and inviolable—in effect sacred.”³²⁴ Can such values be monetized?³²⁵ Such questions have caused consternation and uncertainty within human rights tribunals when they have been asked to consider remedies for loss of life.³²⁶

What is the price of a human life? What is the price of the integrity of the human person? What is the price of the liberty of conscience, or of the protection of the honour and of the dignity? What is the price of the human pain or suffering? If the indemnizations are paid, would the “problem” be “resolved”? What is certain is that all the rights protected under the American Convention on Human Rights have an autonomous value and a juridical content of their own, and moreover, are all related *inter se*, indivisible as they are. As to the fundamental right to life, I would go even further: its protection, which requires positive measures on the part of the State, falls under the domain of *jus cogens*, as acknowledged by contemporary juridical doctrine.³²⁷

Because human rights are considered “sacred values,” valuation efforts face significant challenges.³²⁸ At a minimum, cost-benefit analysis will generate “strong negative feelings of distress

323. See, e.g., Martin Hanselmann & Carmen Tanner, *Taboos and Conflicts in Decision Making: Sacred Values, Decision Difficulty, and Emotions*, 3 JUDGMENT & DECISION MAKING 51, 52 (2008).

324. *Id.* at 52.

325. Even the word “value” is itself contested. See Editorial, *Value*, 4 LONDON REV. INT’L L. 1, 1–3 (2016) (discussing the various legal uses and definitions of “value”). See generally William J. Aceves, *Cost-Benefit Analysis and Human Rights* (July 29, 2017) (unpublished manuscript) (on file with author) (examining the challenges associated with monetizing some costs and benefits while creating policy).

326. See, e.g., *Villagrán-Morales v. Guatemala*, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 177, at ¶ 36 (May 26, 2001) (Cançado Trindade, J., separate opinion) (citations omitted).

327. *Id.*

328. Hanselmann & Tanner, *supra* note 323, at 52.

and disturbance,” making valuation difficult.³²⁹ For these reasons, it is simply not possible to quantify or monetize human rights.³³⁰

The challenges facing such valuation efforts are evident in the Department of Justice’s (DOJ) 2012 regulatory impact assessment for the Prison Rape Elimination Act (PREA). Congress adopted PREA in 2003 to reduce sexual violence against detainees and prisoners in U.S. detention facilities.³³¹ To implement PREA, the DOJ proposed a set of regulations and drafted a regulatory impact assessment.³³² While the PREA regulations did not directly address mortality risks, their analysis highlights the problems with using cost-benefit analysis to monetize the value of basic human rights. To establish the benefits of the proposed regulations, the DOJ used stated preference studies, including the “willingness to pay” and the “willingness to accept” models.³³³ Under the “willingness to pay” model, the DOJ monetized “the benefit of reducing the number of prison rape victims by consulting studies that have estimated how much society is willing to pay for the reduction of various crimes, including rape, and assessing whether the conclusions of those studies would be different in the specific context of prisons.”³³⁴ Under the “willingness to accept” model, the DOJ estimated “how much the average victim of prison rape would be willing to accept as compensation for injuries suffered in the assault, including intangible injuries such as pain, suffering, and diminished quality of life.”³³⁵ As part of its analysis, the DOJ examined different forms of sexual misconduct (from nonconsensual sexual acts involving injury or force to consensual contact) and monetized them.³³⁶ Using

329. *Id.* (citing Philip Tetlock, *Thinking the Unthinkable: Sacred Values and Taboo Cognitions*, 7 *TRENDS COGNITIVE SCI.* 320 (2003)), *see also* Philip Tetlock et al., *The Psychology of the Unthinkable: Taboo Trade-offs, Forbidden Base Rates, and Heretical Counterfactuals*, 78 *J. PERSONALITY & SOC. PSYCH.* 853 (2000) (exploring “cognitive, affective, and behavioral responses to proscribed forms of social cognition”).

330. *See* SURYA DEVA, *REGULATING CORPORATE HUMAN RIGHTS VIOLATIONS: HUMANIZING BUSINESS* 141 (2012); Lisa Heinzerling, *Quality Control: A Reply to Professor Sunstein*, 102 *CAL. L. REV.* 1457 (2014) [hereinafter Heinzerling, *Quality Control*] (scrutinizing three possible approaches to the problem of non-quantifiability in cost-benefit analysis); *but see* Cass R. Sunstein, *The Limits of Quantification*, 102 *CAL. L. REV.* 1369, 1375–79 (2014) (advocating that agencies use breakeven analysis when quantification is impossible).

331. Prison Rape Elimination Act of 2003, Pub. L. 108-79, § 3(6), 117 Stat. 972 [hereinafter PREA].

332. *See* U.S. DEP’T OF JUSTICE, *REGULATORY IMPACT ASSESSMENT FOR PREA FINAL RULE* (May 17, 2012).

333. *Id.* at 4.

334. *Id.*

335. *Id.*

336. *Id.* at 63.

this cost-benefit methodology, the DOJ determined that “the total monetizable benefit to society of eliminating all prison rape and sexual abuse in the facilities covered by this regulation is at least \$52 billion annually.”³³⁷ The costs of implementing the PREA standards were far lower.³³⁸ “We conclude that full nationwide compliance with the PREA standards, in the aggregate, would cost the correctional community approximately \$6.9 billion over the period of 2012–2026, or \$468.5 million per year when annualized at a 7% discount rate.”³³⁹ Breakeven analysis also supported the proposed regulations by estimating that the PREA standards would have to reduce “the annual number of prison sexual abuse victims by about 1,671” for the costs to be justified.³⁴⁰ Under standard cost-benefit analysis, therefore, the proposed regulations were cost-effective.

While the PREA regulations were eventually adopted, the DOJ’s analysis of sexual violence was subject to extensive criticism.³⁴¹ “In its 168-page Regulatory Impact Analysis, DOJ treats the reader to a labored, distasteful, and gratuitous essay on the economics of rape and sexual abuse.”³⁴² To determine the benefits of PREA, the DOJ had to monetize the value of nonconsensual sexual assaults.³⁴³ To do so, it identified a list of seventeen different forms of sexual assault and monetized each of them using stated preference studies.³⁴⁴ Using the willingness to pay and willingness to accept models, however, seems grossly unsuitable in the context of sexual assault. “[R]ape is, by definition, a crime of coercion, not consent, and thus the usual economic models that depend on asking what individuals would freely pay to avoid a

337. *Id.* at 2.

338. *Id.* at 1.

339. *Id.*

340. *Id.* at 2.

341. See, e.g., Lisa Heinzerling, *Cost-Benefit Jumps the Shark: The Department of Justice’s Economic Analysis of Prison Rape*, GEO. L. FAC. BLOG (June 13, 2012), http://gulcfac.typepad.com/georgetown_university_law/2012/06/cost-benefit-jumps-the-shark.html [hereinafter Heinzerling, *Cost-Benefit*] (critiquing the federal government’s use of cost-benefit analysis in crafting law and policy on prison rape and sexual abuse).

342. *Id.* *Contra* Rick Hills, *In Defense of Cost-Benefit Analysis: Lessons from Recent Rules for Preventing Prison Rape*, PRAWFSBLAWG (June 16, 2012, 11:51 AM), <http://prawfsblawg.blogs.com/prawfsblawg/2012/06/in-defense-of-cost-benefit-analysis-lessons-from-recent-rules-for-preventing-prison-rape.html> (“The problem with the new prison rape elimination standards is not that the Obama Administration indulged in too much CBA [cost-benefit analysis] but rather they did not use CBA enough.”).

343. See generally Heinzerling, *Cost-Benefit*, *supra* note 341.

344. PREA, *supra* note 331, at 39–63.

particular consequence do not fit.”³⁴⁵ The DOJ also used breakeven analysis to monetize the physical and emotional abuse suffered by victims of sexual assault.³⁴⁶ “In the topsy-turvy world of cost-benefit analysis, DOJ was compelled to treat rape as just another market exchange, coercion as a side note, and the elimination of prison rape as a good idea only if the economic numbers happened to come out that way.”³⁴⁷ Human Rights Watch conveyed similar concerns to the DOJ when it released its own comments on the proposed PREA regulations.³⁴⁸ “Estimating the monetary ‘costs’ of crime is at best a fraught and imperfect effort, particularly when dealing with crimes such as sexual abuse whose principal cost is due to the pain, suffering, and quality of life diminution of the victims.”³⁴⁹

Human rights—including civil and political rights as well as economic, social, and cultural rights—thus pose significant valuation problems. The market assumptions that underpin cost-benefit analysis seem inapplicable to most, if not all, human rights.³⁵⁰ In this respect, human rights are analogous to sacred or “emotional goods,” which are difficult to monetize but are no less significant.³⁵¹

A related concern regarding cost-benefit analysis and VSL calculations stems from the principles of equality and non-discrimination that form the core of human rights law. These principles are viewed as fundamental attributes of human rights law and essential to the protection of human life.³⁵² Human rights

345. Heinzerling, *Quality Control*, *supra* note 330, at 1466.

346. Heinzerling, *Cost-Benefit*, *supra* note 341.

347. *Id.*

348. HUMAN RIGHTS WATCH, HUMAN RIGHTS WATCH COMMENTS ON THE NATIONAL STANDARDS TO PREVENT, DETECT, AND RESPOND TO PRISON RAPE 3–4 (2011).

349. *Id.* at 3.

350. Even the purported objectivity of numbers and mathematics has been questioned. See DIANE M. NELSON, WHO COUNTS? THE MATHEMATICS OF DEATH AND LIFE AFTER GENOCIDE 4 (2015) (“And even ‘Western’ number isn’t just about truth, sober accounting, and rational cost benefit analyses . . . Mathematics is and are inseparable from politics.”).

351. See Melissa Luttrell, *Bentham at the OMB: A Response to Professor Rowell*, 64 ADMIN. L. REV. 1013, 1014, 1029 (2012). See generally Arden Rowell, *Partial Valuation in Cost-Benefit Analysis*, 64 ADMIN. L. REV. 723 (2012) (questioning the use of non-quantifiable values in the cost-benefit analysis of pending vehicle safety regulations); Michael J. Sandel, *Market Reasoning as Moral Reasoning*, 27 J. ECON. PERSP. 121 (2013) (arguing that the application of market values to certain spheres of life erodes important moral and civic goods).

352. See B.G. Ramcharan, *Equality and Nondiscrimination*, in THE INTERNATIONAL BILL OF HUMAN RIGHTS 246, 246–48, 253–58 (Louis Henkin ed., 1981) [hereinafter Ramcharan, *Equality*]; HERSCH LAUTERPACHT, AN

law thus requires all human beings to be treated equally.³⁵³ And yet, cost-benefit analysis and VSL calculations do not always treat human beings equally and without distinction.³⁵⁴ VSL calculations can incorporate age-related differences so that the purported benefits of regulations decrease as the age of the affected population increases.³⁵⁵ Other differences, including income and wealth, can also be incorporated into cost-benefit analysis.³⁵⁶

Even nationality can be incorporated into VSL calculations.³⁵⁷ For example, economists have identified a positive correlation between per capita income levels and VSL.³⁵⁸ As a result, VSL calculations can differ widely across countries.³⁵⁹ The implications of these disparities are evident in studies assessing the costs of war.³⁶⁰ In one study, economists used VSL calculations to measure the mortality costs of the U.S. military intervention in Iraq.³⁶¹ Table 2 lists the combat casualties for three countries that participated in the conflict between 2003 and 2005.³⁶²

INTERNATIONAL BILL OF THE RIGHTS OF MAN 115–25 (1945).

353. See Ramcharan, *Equality*, *supra* note 352, at 246–247.

354. See Wicks, *Meaning of Life*, *supra* note 124, at 225–232; see also GILLES CARBONNIER, HUMANITARIAN ECONOMICS: WAR, DISASTER AND THE GLOBAL AID MARKET 105–07 (2015) (discussing VSL calculations in the context of the War on Terror).

355. See WICKS, CONFLICTING INTERESTS, *supra* note 114, at 230–231.

356. See, e.g., CARBONNIER, *supra* note 354, at 105–107 (discussing VSL calculations in the context of the War on Terror).

357. *Id.* See generally Eyal Benvenisti, *Sovereigns as Trustees of Humanity: On the Accountability of States to Foreign Stakeholders*, 107 AM. J. INT'L L. 295 (2013) (suggesting that states have normative obligations to consider non-citizens in certain decisions).

358. See W. Kip Viscusi & Joseph E. Aldy, *The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World*, 27 J. RISK & UNCERTAINTY 5, 18–30 (2003).

359. *Id.* at 26–30.

360. See, e.g., Scott Wallsten & Katrina Kosec, *The Economic Costs of the War in Iraq* 1–3 (AEI-Brookings Joint Ctr. for Regulatory Studies, Working Paper No. 05-19, 2005) (using VSL, among other calculations, to estimate the economic cost of the Iraq War).

361. See *id.* at 1–8.

362. *Id.* at 14, tbl.6.

Country	Combat casualties	GDP (per capita)	VSL (in millions)	Mortality costs (in millions)
Denmark	2	\$49,192	\$7.7	\$15.0
El Salvador	2	\$2,410	\$3.4	\$7.0
Hungary	2	\$10,978	\$4.2	\$8.0

These countries each suffered two combat casualties during this time period.³⁶³ The gross domestic product (GDP) per capita for each country is also listed.³⁶⁴ Because VSL studies have revealed a positive correlation between GDP and VSL, each country has a distinct VSL.³⁶⁵ As a result, the cost of each casualty varies with each country.³⁶⁶ Those countries with a higher GDP have a higher VSL and, therefore, higher mortality costs.³⁶⁷ In contrast, those countries with a lower GDP have a lower VSL and, therefore, lower mortality costs.³⁶⁸ Such disparities are simply a product of connecting GDP and VSL.³⁶⁹ However, this is also consistent with the general methodology used for calculating the VSL.³⁷⁰ “Simply put, poor people have less money available to pay to lower their risk of death. In economists’ jargon, they display a lower ‘willingness to pay’ or a higher ‘willingness to accept risk’ than the rich.”³⁷¹

The use of VSL calculations to value human life in such a manner is controversial.³⁷² In these studies, economists have used VSL calculations to essentially place a dollar figure on individual

363. *Id.*

364. *Id.*

365. In this study, the United States had a VSL of \$6.5 million. Other economists studying the costs of the War in Iraq have placed the VSL between \$7 and \$8 million. See JOSEPH E. STIGLITZ & LINDA J. BILMES, *THE THREE TRILLION DOLLAR WAR 94–96* (2008); *War at Any Cost? The Total Economic Costs of the War Beyond the Federal Budget: Hearing Before the J. Econ. Comm.*, 110th Cong. 126 (2008). In contrast, German economists used a VSL of €2.05 million to calculate the cost of German fatalities in the Afghanistan War. Tilman Brück et al., *The Economic Costs of the German Participation in the Afghanistan War*, 48 *J. PEACE RES.* 793, 799 (2011). Not surprisingly, this disparity was met with great criticism. CARBONNIER, *supra* note 354, at 106.

366. *Id.*

367. *Id.*

368. *Id.*

369. *Id.*

370. *Id.*

371. *Id.* at 107.

372. *Id.* at 105–07.

lives, thereby valuing the lives of individuals from wealthy countries more than the lives of individuals from poor (or less-wealthy) countries.³⁷³ The implications of such variation are profound. From a human rights perspective, this approach undervalues the actual costs of war in conflicts involving less developed countries.³⁷⁴ In addition, this approach has troubling implications for military operations. Political leaders could use this data to conclude that military personnel from poorer countries should be used in combat operations because it is cost-effective. Moreover, battlefield decisions could be influenced by the risks associated with a particular combat operation and the nationality of the affected military personnel. Indeed, such disparities—where poor countries are more heavily involved in certain military operations than wealthy countries—have already been documented.³⁷⁵ Such outcomes, which treat the value of human life differently based on nationality, raise significant concerns under human rights law.³⁷⁶

A related concern involves how countries should value foreign lives in domestic policy decisions.³⁷⁷ In the United States, the

373. *Id.*

374. Ron P. Smith, *The Economic Costs of Military Conflict*, 51 J. PEACE RES. 245, 252 (2014) (“Counting fatalities treats US, German and Afghan deaths as equivalent; counting costs using VSL does not: having Afghan troops die instead of US or German troops reduces the measured cost of the war.”); see also JOHN BROOME, *ETHICS OUT OF ECONOMICS* 177–95 (1999) (outlining theoretical perspectives on the valuation of life).

375. See Adam McCauley, *Soldiers from Poor Countries Have Become the World’s Peacekeepers*, TIME (Sept. 11, 2014), <http://time.com/3272718/un-undof-peacekeeping-golan-heights-terrorism/>; Heather Timmons & Neha Thirani Bagri, *Poor Nations Fight, Rich Nations Pay*, N.Y. TIMES (Apr. 10, 2013, 8:30 AM), https://india.blogs.nytimes.com/2013/04/10/poor-nations-fight-rich-nations-pay/?mcubz=3&_r=1. But see Tim Worstall, *Soldiers from Poor Countries Should Be the World’s Peacekeepers*, FORBES (Sept. 12, 2014, 5:47 AM), <https://www.forbes.com/sites/timworstall/2014/09/12/soldiers-from-the-worlds-poor-countries-should-be-the-worlds-peacekeepers/> (arguing that peacekeepers should come from poor countries for reasons of comparative advantage).

376. A distinct but related consideration involves intergenerational equity: how should cost-benefit analysis consider future generations? See generally David Weisbach & Cass R. Sunstein, *Climate Change and Discounting the Future*, 27 YALE L. & POL’Y REV. 433 (2009) (endorsing the principle of intergenerational neutrality in economic estimations of climate change impacts); DISCOUNTING AND INTERGENERATIONAL EQUITY (Paul R. Portney & John P. Weyant eds., 1999) (outlining different economic approaches to the discount rate as it applies to intergenerational issues); Edith Brown Weiss, *In Fairness to Future Generations and Sustainable Development*, 8 AM. U. J. INT’L L. & POL’Y 19 (1992) (suggesting intergenerational obligations are a basic principle of sustainable development).

377. See generally David A. Dana, *Valuing Foreign Lives and Settlements*, 1 J. BENEFIT-COST ANALYSIS 1 (2010) (contending that governmental cost-benefit analysis should include foreign life values because surveys suggest U.S. residents

regulatory assessment process is not meant to address foreign lives.³⁷⁸ According to OMB's Circular A-4, regulatory impact assessments "should focus on benefits and costs that accrue to citizens and residents of the United States."³⁷⁹ If a regulation will have effects outside the United States, such "effects should be reported separately."³⁸⁰ Commentators have criticized the manner in which the regulatory assessment process engages in the valuation of foreign lives, describing it as both "atheoretical and opaque."³⁸¹ Under human rights law, the failure to properly consider the implications of domestic policy on foreign lives is problematic.³⁸² "Domestic policies can have many kinds of foreign impacts; climate change, for instance, can be expected to lead to widespread human suffering and loss of life, as well as lasting damage to existing ecosystems. All of these types of harms are potentially important."³⁸³ In other words, a country's human rights obligations do not stop at its borders.

In sum, there are several fundamental problems with using cost-benefit analysis and VSL calculations to make decisions that implicate human life. The market-based assumptions that are used for VSL calculations are contrary to the basic principles of human rights law. Valuing human lives differently based on age, income, wealth, or nationality is equally problematic. These normative concerns exist even if cost-benefit analysis and VSL calculations can overcome their methodological limitations.

c. *Challenging the Calculus of Regulation*

Human rights tribunals offer a receptive forum for the assertion of claims challenging regulatory decisions that violate the positive obligation to protect human life.

value foreign and domestic lives roughly equally); Arden Rowell & Lesley Wexler, *Valuing Foreign Lives*, 48 GA. L. REV. 499 (2014) (outlining foreign life valuation as a distinct analytical category from domestic valuation); Jonathan S. Masur, *The Intractable Normative Complexities of Valuing Foreign Lives*, 2015 U. ILL. L. REV. SLIP OPINIONS 12 (2015) (suggesting ad hoc basis for calculating values for foreign lives in government cost-benefit analyses); Colleen Murphy, *Differentiating Moral Duties: A Response to Valuing Foreign Lives*, 2015 U. ILL. L. REV. SLIP OPINIONS 5 (2015) (arguing disparate life valuations between domestic and foreign lives are potentially justifiable because of different moral and legal duties owed by the state to citizens and non-citizens).

378. CIRCULAR A-4, *supra* note 57, at 15.

379. *Id.*

380. *Id.*

381. Rowell & Wexler, *supra* note 377, at 504.

382. *Id.* at 501.

383. *Id.*

Procedurally, there are fewer obstacles for bringing such claims in human rights tribunals than in domestic courts.³⁸⁴ Evidence rules in human rights tribunals favor truth seeking and accountability, and states cannot ignore allegations with impunity.³⁸⁵ Indeed, states have an obligation to respond to claims, and tribunals can take negative inferences when states fail to participate in legal proceedings.³⁸⁶ Standing and ripeness requirements are less restrictive, thereby allowing a larger group of individuals to bring claims.³⁸⁷ Potential victims may bring claims.³⁸⁸ Individuals representing the interests of affected persons may also bring such claims.³⁸⁹ Thus, there are many opportunities to challenge regulatory decisions. And, states cannot rely on the same immunity rules that often preclude victims from seeking redress against state actors in domestic courts.³⁹⁰ Sovereign immunity, which is typically used to preclude domestic review of human rights abuses, does not apply in proceedings before human rights tribunals when states are sued for their own behavior.³⁹¹

Substantively, human rights law is more protective of the right to life than domestic law.³⁹² As evidenced by their growing

384. *See, e.g.*, Cohen, *supra* note 284, at 161–170 (describing differences in meeting elements of justiciability in U.S. courts for statistical versus identified lives).

385. *See, e.g.*, WILLIAM A. SCHABAS, *THE EUROPEAN CONVENTION ON HUMAN RIGHTS: A COMMENTARY* 810–15 (2015) (describing evidentiary rules for member states and their obligation to cooperate with the European Court of Human Rights); Alvaro Paul, *An Overview of the Inter-American Court's Evaluation of Evidence*, in *THE INTER-AMERICAN COURT OF HUMAN RIGHTS*, *supra* note 203, at 25 (outlining evidentiary rules in the Inter-American Court of Human Rights); PASQUALUCCI, *supra* note 243, at 163–174 (noting procedural standards for preliminary objections before the Inter-American Court of Human Rights).

386. SCHABAS, *supra* note 385, at 810–814; Paul, *supra* note 385, at 36–45.

387. SCHABAS, *supra* note 385, at 736–745.

388. *Id.* at 743; PASQUALUCCI, *supra* note 243, at 133–135.

389. SCHABAS, *supra* note 385, at 736–745; PASQUALUCCI, *supra* note 243, at 100–102; BURGORGUE-LARSEN & UBEDA DE TORRES, *supra* note 251, at 105, 108–112; YUTAKA ARAI ET AL., *THEORY AND PRACTICE OF THE EUROPEAN CONVENTION ON HUMAN RIGHTS* 51–55 (Pieter van Dijk et al. eds., 4th ed. 2006).

390. ARAI, *supra* note 389, at 517.

391. This limitation is evidenced by the state's agreement to respect the underlying treaty obligations and the state's acquiescence to the tribunal's jurisdiction for violations of such obligations. *See, e.g.*, European Convention, *supra* note 119, art. 1 (declaring everyone in the jurisdictions of contracting states is ensured the rights and freedoms in this Convention); American Convention, *supra* note 117, art. 1 (declaring that states parties recognize rights and freedoms enshrined in this Convention for all in their jurisdictions).

392. *Compare* Lenahan (Gonzales) v. United States, Case 12.626, Inter-Am. Comm'n H.R., Report No. 80/11, OEA/Ser.L/V/II.142 (2011) (acknowledging state responsibility for failure to protect domestic violence victims from harm), *with* Town of Castle Rock v. Gonzales, 545 U.S. 748 (2005) (rejecting state responsibility for failure to protect domestic violence victims). *See generally* Amy J. Sennett, Lenahan

jurisprudence, human rights tribunals recognize the existence of positive obligations and the need to hold states accountable for failing to affirmatively protect the right to life. This includes risks to life arising from natural or human causes and from public or private action. Significantly, human rights law does not require a risk to be fully realized or for the harm to have already occurred. States have an obligation to protect potential victims. Accordingly, a state's liability for violating the right to life norm can exist even in the absence of death. Finally, human rights tribunals offer a wide variety of remedies for violations, allowing redress for both pecuniary and non-pecuniary harms.³⁹³

For example, the United States is subject to the jurisdiction of the Inter-American Commission on Human Rights.³⁹⁴ The Inter-American Commission is an autonomous organ of the Organization of American States (OAS) with the authority to consider individual petitions from individuals who are claiming human rights violations by OAS member states.³⁹⁵ Significantly, the Commission is bound by the jurisprudence of the Inter-American Court regarding the positive obligation to protect human life. The United States has already been subjected to several proceedings before the Inter-American Commission on a variety of claims.³⁹⁶ Thus, the Inter-American Commission can serve as a forum for challenging U.S. regulatory policies that implicate the right to life. Individual litigants could bring such claims against the United States and

(Gonzales) v. United States of America: *Defining Due Diligence?*, 53 HARV. INT'L L.J. 537 (2012) (exploring how differing due diligence standards led to distinct decisions in domestic violence cases between U.S. and international courts); Ronagh J. A. McQuigg, *Domestic Violence and the Inter-American Commission on Human Rights: Jessica Lenahan (Gonzales) v. United States*, 12 HUM. RTS. L. REV. 122 (2012) (examining the influence of international case law, especially European Court of Human Rights decisions, on the Commission's reasoning in *Lenahan*).

393. See generally DINAH SHELTON, REMEDIES IN INTERNATIONAL HUMAN RIGHTS LAW 330–54 (3d ed. 2015) (analyzing forms of substantive redress in international human rights law). In this respect, human rights tribunals are particularly innovative in recognizing damages for violations. See, e.g., *Loayza-Tamayo v. Peru, Reparations and Costs, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 42, ¶¶ 147–48* (Nov. 27, 1998) (recognizing damage to a victim's "life plan" as a new form of damage entitling the victim to reparations).

394. See, e.g., *Tercero v. United States, Case 12.994, Inter-Am. Comm'n H.R., Report No. 79/15, OEA/Ser.L/V/II.156* (2015) (finding deficient counsel can violate one's rights to a fair trial and to due process of law).

395. PASQUALUCCI, *supra* note 243, at 2–9, 83–85.

396. See, e.g., *Tercero, Case 12.994, Inter-Am. Comm'n H.R.* (finding deficient counsel can violate one's rights to a fair trial and to due process of law); *Andrews v. United States, Case 11.139, Inter-Am. Comm'n H.R., Report No. 57/96, OEA/Ser.L/V/II.95, Doc. 7 rev. at 570* (1997) (finding racial bias can violate one's rights to a fair trial and to equality before the law).

force it to respond in an adversarial setting. Unlike domestic proceedings, the United States would be subject to the standards of human rights law.

The state reporting requirements of the International Covenant on Civil and Political Rights (ICCPR) offer another mechanism for alleging violations of the positive obligation to protect life in the United States. Under the ICCPR, a state party is required to submit periodic reports to the U.N. Human Rights Committee for review and consideration.³⁹⁷ These reports describe how the state has attempted to comply with the ICCPR's treaty obligations.³⁹⁸ As part of the review process, the Committee examines these reports and offers its own observations about state compliance (or non-compliance) with the treaty along with a set of recommendations.³⁹⁹ Through this process, the Committee can request information from states on the manner in which their regulatory decisions implicate the right to life.⁴⁰⁰ Furthermore, the Committee can express concerns and call upon states to revise their procedures when they fail to provide sufficient protections to human life. Significantly, members of civil society can participate in this process. They may submit "shadow reports" to the Committee offering their own views of a state's compliance with the ICCPR.⁴⁰¹ These shadow reports can play an important role in promoting awareness of discrete issues and placing pressure on both the Human Rights Committee and member states to take action on these issues.⁴⁰² Since states are typically required to submit new reports every four years, the Human Rights Committee (and civil society) have ample opportunities to review and critique state behavior.⁴⁰³

The United States is subject to the reporting requirements of the ICCPR and, therefore, it must submit periodic reports to the

397. International Covenant on Civil and Political Rights art. 40(1), Dec. 19, 1966, 999 U.N.T.S. 171.

398. *Id.*

399. *Id.* art. 40(4).

400. *Id.* art. 40(1).

401. See *Why Do "Shadow Reporting?"*, US HUMAN RIGHTS NETWORK, http://www.njhn.org/uploads/digital-library/resource_492.pdf (last accessed Nov. 25, 2017) [hereinafter *Shadow Reporting*]; *10 Steps to Writing a Shadow Report*, US HUMAN RIGHTS NETWORK, http://www.ushrnetwork.org/sites/ushrnetwork.org/files/10_steps_to_writing_a_shadow_report_-_iccpr.pdf (last accessed Nov. 25, 2017).

402. See *Shadow Reporting*, *supra* note 401.

403. Similar reporting requirements exist in other human rights treaties, including the International Covenant on Economic, Social, and Cultural Rights. International Covenant on Economic, Social, and Cultural Rights arts. 16–23, Dec. 16, 1966, 993 U.N.T.S. 3.

Human Rights Committee describing its compliance with the treaty.⁴⁰⁴ Over the years, the Human Rights Committee has reviewed several U.S. reports. It has issued observations expressing concern with U.S. non-compliance and provided recommendations to promote greater U.S. compliance with the treaty.⁴⁰⁵ In future proceedings, the Human Rights Committee could require the United States to describe its use of cost-benefit analysis and VSL calculations and their implications on the right to life. Through the submission of shadow reports, members of civil society could also raise these issues. And, in its observations, the Human Rights Committee could address the methodological and normative concerns with the use of cost-benefit analysis and VSL calculations in the United States.

Conclusion

Cost-benefit analysis and VSL calculations offer a commonly used and yet controversial methodology for making regulatory decisions that implicate the right to life and other human rights. While this Article addresses the use of cost-benefit analysis and VSL calculations in the United States, its reasoning applies to all entities that use this methodology in their decision-making process. Foreign governments and international organizations regularly use cost-benefit analysis and VSL calculations to examine the benefits of proposed projects and the proper allocation of resources.⁴⁰⁶ For example, the World Bank has used VSL calculations to analyze disaster reduction strategies and the economic consequences of

404. *See, e.g.*, Human Rights Comm., Concluding Observations of the Fourth Periodic Rep. of the U.S., U.N. Doc. CCPR/C/USA/CO/4 (2014) [hereinafter Human Rights Comm., Concluding Observations] (analyzing the United States' self-assessment on its human rights record); Human Rights Comm., List of Issues in Relation to the Fourth Periodic Rep. of the U.S.: Addendum: Replies of the United States of America to the List of Issues, U.N. Doc. CCPR/C/USA/Q/4/Add.1 (2013) (containing the United States' responses on its human rights issues); Human Rights Comm., Consideration of Rep. Submitted by States Parties Under Article 30 of the Covenant: Fourth Periodic Rep.: U.S., U.N. Doc. CCPR/C/USA/4 (2012) (presenting the United States' human rights self-assessment).

405. Human Rights Comm., Concluding Observations, *supra* note 404, at 2–11.

406. *See generally* THE GLOBALIZATION OF COST-BENEFIT ANALYSIS IN ENVIRONMENTAL POLICY (Michael A. Livermore & Richard L. Revesz eds., 2013) (highlighting different academic and governmental cost-benefit analysis approaches); ORG. FOR ECON. CO-OPERATION AND DEV., MORTALITY RISK VALUATION IN ENVIRONMENTAL, HEALTH & TRANSPORT POLICIES (2012) (cataloguing economic survey data and resulting assessments of mortality risk); NILS AXEL BRAATHEN ET AL., VALUING LIVES SAVED FROM ENVIRONMENTAL, TRANSPORT AND HEALTH POLICIES: A META-ANALYSIS OF STATED PREFERENCE STUDIES (2010) (analyzing factors accounting for VSL variation in policy-related cost-benefit analyses).

health care decisions.⁴⁰⁷ The World Health Organization has used VSL calculations to examine the financial implications of climate change and the economic consequences of disease control.⁴⁰⁸ The Australian government has used VSL calculations to examine a variety of health, employment, and transportation decisions.⁴⁰⁹ Researchers have even used VSL calculations to examine the costs of the U.S. intervention in Iraq and risk-taking behavior in Sierra Leone.⁴¹⁰

In a world of limited resources, states must make difficult choices regarding the proper allocation of resources. Economic and financial considerations have a profound impact on the decision-making process.⁴¹¹ Human rights law does not preclude states from making these choices. Rather, it requires a more nuanced and rigorous review of decisions that affect human life.⁴¹² Partisan influence and bureaucratic bias must be removed from the calculus of regulation when human life is at stake. Greater care must be taken when monetizing human life. In the calculus of regulation, miscalculations carry great costs. Simply stated, “[u]ndervaluing life leads to death.”⁴¹³

407. INDEP. EVALUATION GRP., WORLD BANK, COST-BENEFIT ANALYSIS IN WORLD BANK PROJECTS 2, 12–15 (2010); Maureen L. Cropper & Sebnem Sahin, *Valuing Mortality and Morbidity in the Context of Disaster Risks* 2–3, 11–22 (World Bank Human Dev. Network, Working Paper No. 4832) (2009), <http://documents.worldbank.org/ezp1.lib.umn.edu/curated/en/819371468153273223/pdf/WPS4832.pdf>; Ramanan Laxminarayan et al., *Economic Benefit of Tuberculosis Control* 8–14 (World Bank Human Dev. Network, Working Paper No. 4295)(2007), <http://documents.worldbank.org/ezp1.lib.umn.edu/curated/en/554871468175465282/pdf/wps4295.pdf>.

408. WORLD HEALTH ORG., CLIMATE CHANGE AND HEALTH: A TOOL TO ESTIMATE HEALTH AND ADAPTATION COSTS 1, 20 (2013); WORLD HEALTH ORG., WHO GUIDE TO IDENTIFYING THE ECONOMIC CONSEQUENCES OF DISEASE AND INJURY 2–7, 97 (2009).

409. AUSTRAL. SAFETY AND COMP. COUNCIL, THE HEALTH OF NATIONS: THE VALUE OF A STATISTICAL LIFE 53–63 (2008), <https://www.safeworkaustralia.gov.au/doc/health-nations-value-statistical-life>.

410. STIGLITZ & BILMES, *supra* note 365, at 94–96; Gianmarco Leon & Edward Miguel, *Risky Transportation Choices and the Value of Statistical Life* 1–10 (Barcelona GSE Working Paper Series, Paper No. 716, 2016), http://www.barcelonagse.eu/sites/default/files/working_paper_pdfs/716_0.pdf; Alicia P.Q. Wittmeyer, *What’s an African Life Worth?*, FOREIGN POL’Y, Dec. 2013, at 28.

411. Austerity measures taken in response to fiscal crises have affected human rights in countless states. See Lutz Oette, *Austerity and the Limits of Policy-Induced Suffering*, 25 HUM. RTS. L. REV. 669, 669–71 (2015).

412. See FREDMAN, *supra* note 125, at 80–84; see also Martha C. Nussbaum, *The Costs of Tragedy: Some Moral Limits to Cost-Benefit Analysis*, 29 J. L. STUD. 1005, 1024 (2000) (describing the moral calculus required when the cost-benefit analysis of administrative agencies includes fundamental entitlements).

413. Ben Trachtenberg, *Tinkering with the Machinery of Life*, 59 UCLA L. REV. DISCOURSE 128, 134 (2012).

While cost-benefit analysis offers a powerful methodology for assessing the feasibility of state action, the calculus of regulation is itself a costly endeavor. In balancing the costs and benefits of human life, we reveal as much about ourselves as we do about those whose lives we sacrifice.