THE PAIN AND SUFFERING OF ENVIRONMENTAL LOSS: USING CONTINGENT VALUATION TO ESTIMATE NONUSE DAMAGES

JEFFREY C. DOBBINS

There will always be controversy where intangible losses have to be evaluated in monetary terms.¹

INTRODUCTION

In the summer of 1987, the last known dusky seaside sparrow died in captivity in Florida.² Despite the permanence of this loss, it probably had no effect on our individual standards of living. The dusky seaside sparrow was not sold on the market and was not a source of decorative feathers nor of any other resource. Most of us have never even seen a dusky seaside sparrow. In terms of market value, at least, its loss appears to have been costless.

Our society, however, recognizes that market value alone does not fully capture the injury that occurs when species are driven to extinction. The Endangered Species Act (ESA), for example, imposes a complete ban on activities that threaten the well-being of

Copyright © 1994, Jeffrey C. Dobbins.

1. Report of the National Oceanic and Atmospheric Administration (NOAA) Panel on Contingent Valuation, 58 Fed. Reg. 4601, 4611 (1993) [hereinafter NOAA Panel Report]. The Panel was established to "evaluate the use of [contingent valuation] in determining nonuse values and provide comments to NOAA." *Id.* at 4602. The Panel members were Kenneth Arrow and Robert Solow (co-chairs), Edward Leamer, Paul Portney, Roy Randner, and Howard Schuman. *Id.*

2. For a history of the demise of the species, see Barry Bearak, *Three Dusks Remain: Tiny Birds Soon to Sing Swan Songs*, L.A. TIMES, Jan. 3, 1985, § 1, at 1 (linking the passing of the species to habitat loss caused by development and discussing the last three birds, all male, that had been moved into a captive back-breeding program in an effort to recover a population); Kerry Gruson, *Effort to Save a Species: Brief Cheer, Then Gloom*, N.Y. TIMES, Oct. 7, 1985, at A23 (describing the remaining two birds and the poor success of the back-breeding program); John N. Wilford, *Last Dusky Sparrow Struggles On*, N.Y. TIMES, Apr. 29, 1986, at C1; *Last of Dusky Sparrows Dies*, N.Y. TIMES, July 17, 1987, at A20.

endangered species, even when doing so results in significant economic losses.³ That ban is a political and legal reflection⁴ of the feelings of many people in the United States and throughout the world who value the mere existence of a species and suffer a deep sense of regret at its passing. Whether this emotion stems from a semi-spiritual connection that individuals feel with other species, from a sense that the way we treat other species is representative of our ability to respect each other, or from a sense that those species deserve respect merely because they, too, are alive,⁵ this "existence value" is an important part of the total value⁶ that our natural resources provide to the nation.⁷ But the existence value

3. 16 U.S.C. §§ 1531-44 (1988 & Supp. IV 1992). On rare occasions when potential economic losses are particularly large, the Endangered Species Committee may be called into action to determine whether those losses are truly justified in the name of saving the species. *See id.* § 1536(e). If not, the Committee can grant an exemption, even if to do so leads to the extinction of the species. *See id.* § 1536(e)(2). Thus, although we place an extremely high value on the protection of endangered species, it is not infinitely high. The recent debates in the Pacific Northwest over the spotted owl have provided one case in which the economic (and political) costs have whittled away at the Act's near-absolute commitment to species survival. For a discussion of the ethical choices represented in the Act and other environmental statutes, see Mark Sagoff, *Economic Theory and Environmental Law*, 79 MICH. L. REV. 1393, 1396-97 (1981).

4. Other absolute or "inefficient" environmental regulations similarly reflect the importance of noneconomic values in environmental management. *See* Mark Sagoff, *Where Ickes Went Right or Reason and Rationality in Environmental Law*, 14 ECOLOGY L.Q. 265, 272-73 & n.21 (1987) (noting that "a majority of our environmental laws" emphasize noneconomic considerations and listing examples).

5. *Cf.* Mark Sagoff, *On the Preservation of Species*, 7 COLUM. J. ENVTL. L. 33, 56-58 (1980) (outlining the intellectual tradition of valuing diversity of species for its own sake).

6. The term "value" carries with it several meanings that are used throughout this Note. Under one meaning, a value is a preference or weightiness that we place on the state of an environment or object. "Existence value" and "use value," then, are preferences for certain conditions of natural resources or personal comfort. Value may be defined even more broadly to encompass not only preferences but also noneconomic commitments to certain conditions.

"Value" also can mean the location of a preference on a scale of measure. In this Note, that scale is usually cash, and I will generally avoid using the term by itself in this way, referring instead to "price," "dollar value," "economic value," or "monetary value." Finally, this Note uses "value" in its verb form to mean the translation of preference values into dollar values. When we "value," "assess," or "estimate" existence value, we assign it a price.

7. Sagoff, *supra* note 3, at 1398-99 & n.25 (citing surveys regarding the importance that individuals place on maintaining a relatively pristine natural environment). Even poets have recognized nonuse values.

The city had withdrawn into itself
And left at last the country to the country;
When between whirls of snow not come to lie

of the dusky seaside sparrow—or for that matter of the redwood forests or Prince William Sound—is not traded on a market. Putting a price on that value, therefore, may be very difficult. Yet recent interpretations of a set of federal environmental statutes call for just this sort of valuation.⁸

Under the Clean Water Act (CWA),⁹ the Oil Pollution Act (OPA),¹⁰ and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),¹¹ government “trustees” are permitted to sue polluters for damages to natural resources.¹² Those damages are made up of two components: “use” and “nonuse” values. Use values are, not surprisingly, those values based on the use of the resource. Often, that use is market-based.

And whirls of foliage not yet laid, there drove
 A stranger to our yard
 He asked if I would sell my Christmas trees;
 My woods—the young fir balsams like a place
 Where houses all are churches and have spires.
 I hadn't thought of them as Christmas trees.
 I doubt if I was tempted for a moment
 To sell them off their feet to go in cars
 And leave the slope behind the house all bare,
 Where the sun shines now no warmer than the moon.
 I'd hate to have them know it if I was.
 Yet more I'd hate to hold my trees except
 As others hold theirs or refuse for them,
 Beyond the time of profitable growth,
 The trial by market everything must come to.

ROBERT FROST, *Christmas Trees*, in COMPLETE POEMS OF ROBERT FROST 132, 132 (1964). For a discussion of existence and other nonuse values, see *infra* Section II(B).

8. See Department of the Interior, Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,330 (1993) (discussing previously proposed rule to be codified at 42 C.F.R. pt. 11 that calls for the recovery of all “compensable value,” including existence values); NOAA, Natural Resource Damage Assessments, 59 Fed. Reg. 1062, 1182 (1994) (to be codified at 15 C.F.R. § 990.77(g)(2)) (proposed Jan. 7, 1994) [hereinafter NOAA Proposed Rules] (proposing a rule under the Oil Pollution Act that would permit recovery of values “derived from protecting the natural resource for its own sake”); see also Proposed Water Quality Guidance for the Great Lakes System, 58 Fed. Reg. 20,802, 21,001 (1993) (discussing the use of nonuse values as a means of projecting benefits from proposed regulations).

9. 33 U.S.C. §§ 1251–1387 (1988 & Supp. IV 1992).

10. *Id.* §§ 2701–61 (Supp. IV 1992).

11. 42 U.S.C. §§ 9601–75 (1988).

12. 33 U.S.C. § 1321(f)(2) (CWA); *id.* § 2702(b)(2) (OPA); 42 U.S.C. § 9607(a)(4)(C) (CERCLA). “Trustees” of natural resources are government bodies (federal, state, or tribal) that either own or exercise significant control over the use of natural resources. They are the only parties authorized to recover natural resource damages under these statutes. See *infra* note 150 and accompanying text.

In the case of the Exxon Valdez oil spill in Prince William Sound, for example, use losses included the value of fish that were killed or could not be caught, the value of other game animals lost, and even the loss in tourism and recreation.¹³ Although establishing an exact level of loss for these use values may be difficult, the connection between use values and the market makes it possible to use the market price as an economic measure of their value.

For nonuse values, however, finding such an economic measure is more difficult. Nonuse values exist because of the mere presence of the natural resource. They do not depend on the use of the resource and are not generally traded on the market; they leave few clues from which economists can deduce their dollar value. As a result, the only known way to assess the level of these values directly is through a survey method known as "contingent valuation" (CV).

Contingent valuation, as developed by environmental economists over the last twenty years,¹⁴ has been increasingly important in the attempt to estimate the full range of the public's estimation of environmental resources.¹⁵ In a CV study, researchers create a hypothetical market in which people are asked how much they are willing to pay to preserve or protect a given resource.¹⁶ By averaging the responses over a population, the study results in a value that represents how much individuals would be willing to pay for the existence of a resource and, therefore, how much the destruction of that resource would cost the public.¹⁷ Regulations governing the assessment of natural resource damages (NRDs) under the CWA, OPA, and CERCLA include the use of CV.¹⁸

Although the federal agencies, and even federal courts,¹⁹

13. See *infra* Section II(A) (discussing measures of use values).

14. See NOAA Panel Report, *supra* note 1, at 4603; V. Kerry Smith, *Nonmarket Valuation of Environmental Resources*, 69 LAND ECON. 1, 8 (1993).

15. See NOAA Proposed Rules, *supra* note 8, at 1142-43.

16. An individual's willingness to pay is "contingent" on a change in the status of the resource. For a general description of CV and its process, see NOAA Panel Report, *supra* note 1, at 4603. For a more detailed analysis of the methodology, see ROBERT C. MITCHELL & RICHARD T. CARSON, *USING SURVEYS TO VALUE PUBLIC GOODS: THE CONTINGENT VALUATION METHOD* (1989).

17. For a further discussion of the mechanics of CV, see *infra* subsections III(B)(1)-(2).

18. See Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,772 (1991) (to be codified at 42 C.F.R. § 11.83(C)(2)(i)(D)) (proposed Apr. 29, 1991); NOAA Proposed Rules, *supra* note 8, at 1182-83 (to be codified at 15 C.F.R. § 990.78(b)(5)).

19. See *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 474-81 (D.C. Cir.

have been willing to accept CV as a means of evaluating NRDs, many scholars in the fields of both law and economics have questioned CV. As the financial stakes have increased,²⁰ so has the volume of rhetoric,²¹ with those industries that may be subject to CV-based natural resource damage claims pouring money into critical analyses of the CV method.²² This increasing interest in the legal and political appropriateness of CV has led to an explosion of economic literature discussing the utility of the method. For example, a recent symposium organized by Exxon²³ and a blue-ribbon panel of economists organized by NOAA²⁴ have provided a wealth of information both supporting and criticizing the use of CV.

The bulk of the economic debate regarding the utility of CV methodologies has focused on the sensitivity of the results—or the lack thereof—to factors like the framing of questions, the means of conducting the survey, and the nature and extent of the natural resource under consideration.²⁵ This technical debate is paralleled

1989) (upholding provisions in Department of Interior regulations for NRD assessment using CV).

20. The ability to recover for the full range of environmental losses has provided federal and state agencies with the ability to impose ever-increasing NRD costs on polluters. *See, e.g.*, Department of Justice Proposed Consent Decree: Nautilus Motor Tanker Co., 58 Fed. Reg. 46,216 (1993) (\$3.3 million NRD settlement); Department of Justice Proposed Consent Decree: Port of Tacoma, 58 Fed. Reg. 44,855, 44,855–56 (1993) (\$12 million NRD settlement); Department of Justice Proposed Consent Decree: Charles George Trucking Co., 57 Fed. Reg. 61,923 (1992) (\$1.38 million NRD settlement); Department of Justice Proposed Consent Decree: Montrose Chem. Corp. of Cal., 57 Fed. Reg. 54,608, 54,608–09 (1992) (\$42.3 million NRD settlement); *see also* Jonathan Marshall, *Putting a Price on the Environment*, S.F. CHRON., Feb. 9, 1993, at A1 (noting that a CV study conducted by the state of Alaska placed losses from the Exxon Valdez spill at nearly \$3 billion).

21. Upon its departure, the Bush Administration's Interior Department issued "strict rules that would have sharply curtailed the use of contingent valuation in government claims against polluters." Marshall, *supra* note 20, at A1. The Clinton Administration rescinded the rules soon after taking office. *Id.*

22. *See id.* (describing the lobbying efforts of major corporations seeking to prevent the use of CV in NRD assessment); *see also* CONTINGENT VALUATION: A CRITICAL ASSESSMENT (Jerry A. Hausman ed., 1993) [hereinafter Exxon Symposium] (collecting essays presented at a two-day symposium in April 1993, all of which report on research funded by Exxon Company, U.S.A.).

23. *See* Exxon Symposium, *supra* note 22.

24. *See* NOAA Panel Report, *supra* note 1.

25. *See, e.g.*, A. Myrick Freeman III, *Nonuse Values in Natural Resource Damage Assessment*, in VALUING NATURAL ASSETS 264, 288–92 (Raymond J. Kopp & V. Kerry Smith eds., 1993) (presenting the characteristics of a good CV study); Exxon Symposium, *supra* note 22 (collecting critical essays).

by a more profound set of questions regarding whether the very goal of CV—attempting to measure nonuse values—is appropriate or even possible for economics.²⁶ In addition, legal criticism of CV has grown along with the economic attacks. The legal reviewers have been skeptical of CV's premises and scornful of its uncertain results. The instability of CV, they argue, is simply too great to justify a role for it in proving NRDs.²⁷

At the heart of these criticisms is an assumption that there is no place in the economic or legal system for the assessment of values that, like most nonuse values,²⁸ are not obviously translatable into monetary terms. The value of a species or a wilderness area is, for many, "incommensurable" with money,²⁹ making any attempt to price nonuse values uncertain and, for some, incoherent.³⁰ Failing to distinguish between academic criticism and politi-

26. Compare Daniel Kahneman & Jack L. Knetsch, *Valuing Public Goods: The Purchase of Moral Satisfaction*, 22 J. ENVTL. ECON. & MGMT. 57, 69 (1992) (concluding that, rather than measure economic value, CV only measures an "amount that individuals are willing to pay to acquire moral satisfaction") with V. Kerry Smith, *Arbitrary Values, Good Causes, and Premature Verdicts*, 22 J. ENVTL. ECON. & MGMT. 71 (1992) (reinterpreting Kahneman and Knetsch's results and concluding that CV does provide a measure of value for a particular good). See also Department of the Interior Proposed Rule: Natural Resource Damage Assessments, 58 Fed. Reg. 39,327, 39,350 (1993) (outlining the debates in the comments on proposed rulemaking regarding the meaning of CV results); NOAA Proposed Rules, *supra* note 8, at 1142-64 (same).

27. See, e.g., Charles J. Cicchetti & Neil Peck, *Assessing Natural Resource Damages: The Case Against Contingent Value Survey Methods*, 4 NAT. RESOURCES & ENV'T, Spring 1989, at 6; Frank B. Cross, *Restoring Restoration for Natural Resource Damages*, 24 U. TOL. L. REV. 319, 327-33 (1993); John F. Daum, *Some Legal and Regulatory Aspects of Contingent Valuation*, in Exxon Symposium, *supra* note 22, at 389; Steven Shavell, *Contingent Valuation of The Nonuse Value of Natural Resources: Implications for Public Policy and the Liability System*, in Exxon Symposium, *supra* note 22, at 371; Note, "Ask a Silly Question . . .": *Contingent Valuation of Natural Resource Damages*, 105 HARV. L. REV. 1981 (1992). But see Barry Breen, *Citizen Suits for Natural Resource Damages: Closing a Gap in Federal Environmental Law*, 24 WAKE FOREST L. REV. 851 (1989) (supporting and calling for an extension of the natural resource damage provisions).

28. See NOAA Panel Report, *supra* note 1, at 4602.

29. For discussions and varying definitions of incommensurability, see Margaret Jane Radin, *Compensation and Commensurability*, 43 DUKE L.J. 56 (1993); Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. (forthcoming Feb. 1994) (manuscript at 12, on file with author) (defining incommensurability as the inability to align goods "along a single metric without doing violence to our considered judgments about how these goods are best characterized"); Richard Warner, *Incommensurability as a Jurisprudential Puzzle*, 68 CHI.-KENT L. REV. 147, 149-50 (1992) (labelling his attitude toward his daughter as incommensurable with cash incentives to give her up because "it is in part constitutive" of his attitude toward her that he "refuse[s] to count such financial considerations as reasons to part with her").

30. See, e.g., Paul Milgrom, *Is Sympathy an Economic Value? Philosophy, Economics,*

cal and legal necessity, the critics of CV have concluded that any uncertainty is enough to justify barring the use of CV.

Mere uncertainty in valuation, however, does not preclude CV from offering valuable information to courts. Such uncertainties exist in many other areas of the law. One obvious example is the tort system, which awards money damages for losses as unmonetizable as pain and suffering, emotional distress, and loss of society, yet manages to cope with the uncertainty of the jury-based award system.³¹ The presence of values only loosely translatable into monetary terms in the tort context indicates that "compensating" for incorporeal (but very real³²) values is something that at least *can* be done.³³

In the case of nonuse environmental values, it is also something that *must* be done. Excluding nonuse values from environmental liability threatens economic efficiency and creates a risk that our political and legal system will ignore their very existence.³⁴ Claiming that it is best to exclude nonuse values rather than to admit uncertain evidence of their magnitude fails to appreciate both the role of these types of values in other areas of the law and the importance of including them in the liability system.

and the Contingent Valuation Method, in Exxon Symposium, *supra* note 22, at 417 (arguing that nonuse values are largely based on altruism and therefore should not be a part of economic valuation); Donald H. Rosenthal & Robert H. Nelson, *Why Existence Value Should Not Be Used in Cost-Benefit Analysis*, 11 J. POL. ANALYSIS & MGMT. 116, 116-18 (1992) (arguing that nonuse values should not be a part of cost-benefit analysis because they are based on ever-changing values).

31. See *infra* Part I. Our legal system also includes nonmonetizable values in areas of the law ranging from property to contracts to bodily integrity, although not necessarily in ways that require a translation of those values into a (potentially) incommensurable metric. See Margaret Jane Radin, *Market-Inalienability*, 100 HARV. L. REV. 1849, 1905-06 (1987) (discussing the noncommodifiability of certain aspects of self and noting that thinking of them as monetizable does "violence to our deepest understanding of what it is to be human"); Sunstein, *supra* note 29, at 31-46 (noting the role of incommensurable values in legal debates over religion, free speech, the environment, cost-benefit analysis, remedies, and feminism); Warner, *supra* note 29, at 157-68 (discussing incommensurability in environmental, property, and contract law).

32. For a discussion of the existence of nonuse values, see Shavell, *supra* note 27, at 381 (agreeing that the nonuse value placed on environmental resources "is often positive"); V. Kerry Smith, *Can We Measure the Economic Value of Environmental Amenities?*, 56 S. ECON. J. 865, 874 (1990) (noting that "the public has consistently expressed substantial concern and a tangible willingness-to-pay to avoid" environmental losses); *infra* Section II(B).

33. See also *infra* subsections III(B)(2)-(4) (discussing ways that CV can provide useful information in NRD cases).

34. See *infra* Part IV.

For those values that grow out of the existence of natural resources, the only way to reasonably include them is through the use of CV.³⁵

To review the uncertain nature of valuation, this Note begins, in Part I, by looking at compensation for pain and suffering in the tort liability system. Part II turns to the problem of environmental loss and sets forth in more detail the nature of use and nonuse values and the uncertain nature of the latter's valuation. Part III examines how the federal environmental statutes and their associated regulations include nonuse values within the assessment of NRDs. It then reviews the literature regarding CV's potential role as an assessment methodology and concludes that, despite its difficulties, CV can overcome the basic methodological and legal criticisms to provide useful information in an NRD proceeding. Finally, Part IV explains why it is important that the nonuse values CV represents have a place in our system of environmental liability and examines how such a role for CV and nonuse values would fit into the present discussions regarding how incommensurable values are taken into account in our legal and political systems.

I. PAIN AND SUFFERING: COMPENSATING PLAINTIFFS FOR NONPECUNIARY LOSSES

Values that are not traded or bartered in a market system are difficult to value for several reasons. First, individuals are not accustomed to assigning dollar values to such goods, and simple inexperience may make their prices difficult to estimate. Second, because these values generally manifest themselves only as emotions or intellectual conclusions, there is no way to use revealed preferences (such as the purchase of insurance or the price of a fishing license) to compare the values to market goods as a means

35. Two alternatives to using CV to estimate nonuse losses may exist. One possibility, the use of restoration costs, fails to recognize the full extent of the lost values. See *infra* note 122. The other possibility is to follow the tort model and leave the assessment of damages wholly to jurors. Even if jury trials are permitted in NRD actions, which is by no means certain, see Frederick R. Anderson, *Natural Resource Damages, Superfund, and the Courts*, in VALUING NATURAL ASSETS, *supra* note 25, at 26, 49-50 (finding jury trials unlikely despite some decisions to the contrary), CV is little more than a sophisticated form of jury deliberation, with the jury as the surveyed market. It seems appropriate to use CV as a means of incorporating the views of more than twelve individuals into a deliberation over the value of resources that, in a way, everyone owns.

of estimating a price. Finally, these values are often incommensurable with the very notion of monetary estimation. Inherent in the sanctity of a human body, love for a child, or respect for another species is a sense that those things are not meant to be put onto a scale where they may be compared, one against the other, to sums of money. This unwillingness even to conceive of these values in monetary terms makes estimating their price all the more difficult.

These nonmarket characteristics and their accompanying difficulties apply to many different types of loss in our society. Yet despite the valuation problems, our society and our legal system nonetheless choose to value some of these losses. In tort law, in particular, judges and juries are faced on a daily basis with the difficulty of converting a menagerie of nonpecuniary, nonmarket³⁶ losses into dollar amounts. Although the "process" by which pain and suffering awards are derived has drawn criticism, they appear to be a permanent part of the legal milieu. Understanding the uncertainty surrounding their valuation and the reasons justifying their retention is critical to understanding and justifying the role of CV in estimating nonuse NRDs.

A. *A Taxonomy of Nonpecuniary Values*

When one individual inflicts injuries on another, the injuries can take on two different forms: monetary (or pecuniary) losses and nonmonetary (or nonpecuniary) losses. Monetary losses, which include lost wages, lost support for the family, and medical expenses, are easier to estimate than nonpecuniary losses³⁷ because

36. When referring to losses and values, the adjectives "nonpecuniary," "nonmarket," and "incommensurable" are used somewhat interchangeably in this Note. Generally, a loss only has a monetary value if it is traded in a market, and something traded in a market generally has a price, or at least a price analog. Nonpecuniary losses and nonmarket losses are therefore largely identical. "Commensurable" is used narrowly in this Note to denote that an individual believes that a loss may be compensated with cash. Incommensurable losses, therefore, cannot be so compensated, *see* Radin, *supra* note 29, at 61, and are thus nonpecuniary and nonmarket. On the flip side, the nonpecuniary or nonmarket nature of a loss may be based on the unwillingness of society or an individual to trade the good that has been lost for a price, making nonpecuniary and nonmarket losses largely incommensurable. Finally, nonuse NRDs are either largely incommensurable with dollar values and/or are not tradeable on a market, making them a subset of all these other types of losses.

37. See JOHN G. FLEMING, *THE LAW OF TORTS* 230 (8th ed. 1992); W. Kip Viscusi, *Pain and Suffering in Product Liability Cases: Systematic Compensation or Capricious Awards?*, 8 INT'L REV. L. & ECON. 203, 203 (1988).

they are not subject to the absence of experience, the lack of revealed preferences, and the unwillingness to monetize to which nonpecuniary losses are subject.³⁸

Nonmonetary losses are largely defined in contrast with the more easily priced monetary injuries. These more ethereal notions of loss³⁹ take the form of emotions and sensations like discomfort, pain, anguish, and the loss of love and companionship. Although awards for pain associated with physical injuries have been permitted since ancient times,⁴⁰ the range of nonmarket losses is today much larger than it was under traditional common law. Claims for pure emotional distress, for example, were not regularly permitted until well into the 1900s.⁴¹ More recently, some commentators have called for awards based on "hedonic injury," or injury stemming from the loss of enjoyment of life, which may occur when an individual no longer suffers from physical pain but cannot engage in those activities that are thought to make up a fulfilling life.⁴² In wrongful death cases, a plaintiff may claim the "loss of love, advice, comfort, companionship and society" or even the mental anguish, stemming from the death of a spouse, child, or other relative.⁴³ Although jurisdictions differ on which sorts of injuries are compensable and on how those injuries are characterized to the jury,⁴⁴ recovery for the most fundamental nonpecuniary loss—pain and suffering—is available throughout the nation's legal system.⁴⁵

38. See *supra* text preceeding note 36.

39. For a discussion of the concept of recovery for "ethereal torts," see Nancy Levit, *Ethereal Torts*, 61 GEO. WASH. L. REV. 136 (1992).

40. See Jeffrey O'Connell & Theodore M. Bailey, *The History of Payment for Pain and Suffering*, Appendix to Jeffrey O'Connell & Rita J. Simon, *Recovery for Pain & Suffering: Who Wants What, When & Why?*, 1972 U. ILL. L.F. 1, 83-109.

41. See Levit, *supra* note 39, at 141-42. For more recent history on the development of an action for the infliction of emotional distress, see Daniel Givelber, *The Right to Minimum Social Decency and the Limits of Evenhandedness: Intentional Infliction of Emotional Distress by Outrageous Conduct*, 82 COLUM. L. REV. 42, 43-45 (1982).

42. See 2 DAN B. DOBBS, *LAW OF REMEDIES: DAMAGES-EQUITY-RESTITUTION* 383-88 (2d ed. 1993); Kyle R. Crowe, Note, *The Semantical Bifurcation of Noneconomic Loss: Should Hedonic Damage Be Recognized Independently of Pain and Suffering Damage?*, 75 IOWA L. REV. 1275, 1277 (1990).

43. See *Sanchez v. Schindler*, 651 S.W.2d 249, 253 (Tex. 1983); DOBBS, *supra* note 42, at 425, 439-45.

44. See, e.g., DOBBS, *supra* note 42, at 386-88 (examining whether hedonic losses are encompassed within pain and suffering).

45. Limits do remain on the types of claims that can lead to awards. For example, some jurisdictions require the plaintiff to demonstrate physical injury due to either the

Despite the wide range of nonpecuniary damages and the subtle differences governing their recovery, this Note collectively labels nonpecuniary losses "pain and suffering," after their largest component. "Pain and suffering," notes one author, "may be used as a catch-all category for the jury's consideration of all nonpecuniary losses in a case of nonfatal injury, subsuming other qualitative categories, like mental anguish or humiliation."⁴⁶ Moreover, despite the different terms that are used for different sorts of tort injuries, the approach to valuing the losses, as well as the rationale behind including them in tort recovery at all, is very similar.⁴⁷

B. *Measuring and Defining Nonpecuniary Loss*

The pain and suffering portion of a tort liability award is, in all likelihood, a significant part of the total award.⁴⁸ Each year in the United States, the cumulative awards for pain and suffering run into the hundreds of millions, and perhaps billions, of dollars.⁴⁹ One might expect that such an important part of the tort

provoking act or the severity of the distress before recovering for nonpecuniary loss. See DOBBS, *supra* note 42, at 382; Levit, *supra* note 39, at 145-46. Recovery for the infliction of emotional distress is generally limited to those cases in which a plaintiff can demonstrate that the inflicting party has engaged in actions "exceeding all bounds usually tolerated by decent society, of a nature which is especially calculated to cause, and does cause, mental distress of a very serious kind," W. PAGE KEETON ET AL., PROSSER AND KEETON ON THE LAW OF TORTS 60 (5th ed. 1984); see also RESTATEMENT (SECOND) OF TORTS § 46 (1963), or where the plaintiff was a close relation of the person injured or killed and actually witnessed the injury. See DOBBS, *supra* note 42, at 443 n.22.

Legislatures have also imposed statutory limits on recovery of nonpecuniary loss. See David W. Leebron, *Final Moments: Damages for Pain and Suffering Prior to Death*, 64 N.Y.U. L. REV. 256, 258 n.8, 260 n.13 (1989) (citing statutes in Colorado, Florida, Idaho, and Maryland); see also CAL. CIV. CODE § 3333.2 (Supp. 1993) (permitting recovery for noneconomic injury in medical malpractice cases but limiting recovery to \$250,000); *Fein v. Permanente Medical Group*, 695 P.2d 665 (Cal.) (upholding statute), *appeal dismissed*, 474 U.S. 892 (1985). Some state courts, however, have struck these laws down as unconstitutional under their state constitutions. See Leebron, *supra*, at 260 n.13 (noting that Texas, Florida, and Ohio have all struck down their statutes).

46. Randall R. Bovbjerg et al., *Valuing Life and Limb in Tort: Scheduling "Pain and Suffering,"* 83 NW. U. L. REV. 908, 912 (1989).

47. See, e.g., DOBBS, *supra* note 42, at 445 (noting the similar standards for nonpecuniary losses in wrongful death and injury cases); Stanley Ingber, *Rethinking Intangible Injuries: A Focus on Remedy*, 73 CAL. L. REV. 772, 774 & n.11 (1985) (noting the similarities between emotional distress and pain and suffering).

48. See Viscusi, *supra* note 37, at 208 (finding, in one dataset of awards, that the average portion of pain and suffering in verdicts awarding such damages was approximately two-thirds of the total award).

49. See, e.g., *Too Much Suffering*, NAT'L L.J., June 28, 1993, at 8 (citing Brookings

system would be measured using a carefully established methodology that could estimate the value of the loss with certainty. This is not the case. As with any nonmarket value, there is no certain way to determine the "price" of a person's pain. Pain and suffering is not reflected in market values, and there is no market for pain and suffering from which dollar figures can be derived.⁵⁰

The surprising result is that this multimillion dollar heart of the liability system⁵¹ is relitigated from scratch, without any sort of algorithm or procedure for calculating damages, *every time* nonpecuniary losses must be estimated. There is, as one author pointed out, "almost no standard for measuring pain and suffering damages, or even a conception of those damages or what they represent."⁵² Although the parties may present evidence regarding the nature of the injuries and the life of the plaintiff before and after the injury,⁵³ they are barred from providing the jury (which is almost always the factfinder) with a recommended means of evaluating the losses. For example, jurors cannot be asked to value the injury at the price that they would have to be paid to accept an injury like the plaintiff's.⁵⁴ Nor, in some states, may a plain-

Institute study which argues that "pain and suffering awards . . . appear to have cost consumers tens of billions of dollars per year"); *see also* News Conference with Coalition of Consumer Groups, Federal News Service, Sept. 2, 1992, *available in* LEXIS, Nexis library, FNS file (statement of Ralph Nader citing estimates ranging from \$2 billion to \$100 billion per year for total product liability damages).

50. *See* DOBBS, *supra* note 42, at 382; *see also* *Andrulonis v. United States*, 724 F. Supp. 1421, 1524 (N.D.N.Y. 1989) (noting that, although valuing pecuniary losses is difficult, "it is the calculation of damages for conscious pain and suffering that is fraught with the greatest uncertainty"), *aff'd in part and rev'd in part*, 924 F.2d 1210 (2d Cir. 1991); RICHARD A. EPSTEIN, *CASES AND MATERIALS ON TORTS* 741 (5th ed. 1990) ("Pain and suffering, while accepted heads of damages, have no market value, and thus are enormously difficult to measure.").

51. *See* Viscusi, *supra* note 37, at 208 (noting that pain and suffering "are the driving force of compensation levels in situations in which [their value is] positive").

52. DOBBS, *supra* note 42, at 383; *see also* *Steel v. Bemis*, 431 A.2d 113, 116 (N.H. 1981) (noting that "[u]nlike one to our knowledge has been able to devise a formula by which compensation for pain and suffering can be determined with precision").

The response of the legal system to the doctrinal and factual complexity of pain and suffering has been to make the awarding of this element of damages procedurally simple but analytically impenetrable. The law provides no guidance, in terms of any benchmark, standard figure, or method of analysis, to aid the jury in the process of determining an appropriate award. Many jurisdictions even make it reversible error for counsel or a witness to suggest one.

Leebron, *supra* note 45, at 265.

53. *See* Bovbjerg et al., *supra* note 46, at 913-14 (discussing the sorts of evidence with which a jury is presented in a damages case).

54. *See* DOBBS, *supra* note 42, at 383.

tiff's lawyer even suggest that the jury think in terms of a per diem compensation for pain as a means of calculating injury.⁵⁵ By barring any standardized means for calculating the value of pain and suffering, courts mandate an ad hoc calculation. The assignment of "a pecuniary value to pain and suffering is not a scientific exercise, and reasonable people may differ as to how to translate a particular plaintiff's depression and other emotional distress into a dollar amount."⁵⁶

The only guideposts left to the members of a jury are their own experience and any past outside influences to which they may have been subject, such as award amounts in past cases or the amount being sought by the plaintiff. Beyond that, jurors are "expected to arrive at an appropriate figure for compensating pain and suffering based on their experience with the general run of humanity,"⁵⁷ their "background and experience,"⁵⁸ and their "enlightened conscience."⁵⁹ The only real constancy between pain and suffering awards in different cases is that they are determined by random groups of twelve individuals.⁶⁰ In some ways, then, the deliberations of the jury might be thought of as a sort of poorly executed CV study to determine the value of the victim's losses.⁶¹

Even the appellate process imposes no systematic check on jury decisions. Trial and appellate judges can review the jury ver-

55. The rule might be presented as follows: "Ladies and gentlemen, consider, if you will, an amount that you consider to be fair compensation for one day's worth of the pain that my client has to endure. Now multiply that by the number of days in a year, and the number of years that my client will be expected to live." Because this sort of formula seems, for some courts, too seductive, many states permit its use only with restrictions, and others bar it altogether. *See id.* at 394-96; *see also* *Henne v. Balick*, 146 A.2d 394, 398 (Del. 1958) ("[U]se by counsel for plaintiff of a mathematical formula setting forth the claim of pain and suffering on a per diem basis was merely a speculation of counsel for plaintiff unsupported by the evidence and was for that reason improper.").

56. *Jacobson v. Chaglassian*, No. 90 Civ. 3535 (KC), 1992 WL 233891, at *3 (S.D.N.Y. Sept. 9, 1992) (jury instructions).

57. *Butler v. Dowd*, 979 F.2d 661, 684 (8th Cir. 1992) (Arnold, J., dissenting).

58. *Ballard v. Uribe*, 715 P.2d 624, 631 (Cal. 1986) (Mosk, J., concurring).

59. *Leebron*, *supra* note 45, at 265 n.43 (citing jury instructions on pain and suffering).

60. At the upper limit of awards, some consistency has been legislatively imposed by setting caps for pain and suffering. *See supra* note 45.

61. In this sense, two critics of contingent valuation are wrong in suggesting that there are no CV-like valuation systems in the law. We *do* "establish damages to a plaintiff who has lost a limb by asking members of the public what they think their arms or legs are worth." Cicchetti & Peck, *supra* note 27, at 6. We ask the jury.

dict only in the event of "egregious error."⁶² Furthermore, there is no evidence in the record that can be reviewed to show the extent of the plaintiff's pain, and there are no objective standards by which either such evidence or the jury's verdict could be reviewed.⁶³ Valuation of nonpecuniary harms in the tort system lies almost entirely in the hands of the jury.

C. Criticisms of the Existing System

As might be expected in any attempt to value intangible losses,⁶⁴ the lack of valuation methodologies for pain and suffering can lead to both large and dramatically inconsistent verdicts.⁶⁵ Although some studies have demonstrated that pain and suffering awards increase with increasingly severe levels of injury,⁶⁶ such consistency neither removes the problem of variation within those levels nor guarantees that the absolute level of damages is appropriate.⁶⁷

Sinelling uncertainty, critics have flocked to attack both the means of and the rationale behind granting pain and suffering awards. Some critics claim that the size and variability of verdicts have a variety of secondary effects: they overdeter otherwise useful activities by encouraging excessive caution,⁶⁸ they threaten the

62. See Bovbjerg et al., *supra* note 46, at 915. There is, of course, no standard governing what is or is not "egregious error."

63. *Id.* at 915-16.

64. *Cf. supra* note 1.

65. See, e.g., *Slade v. Whitco Corp.*, 811 F. Supp. 71 (N.D.N.Y.) (awarding plaintiff \$20.5 million, of which \$6 million was for past and future pain and suffering), *aff'd*, 999 F.2d 537 (2d Cir. 1993); *Drews v. Gobel Freight Lines*, 578 N.E.2d 970, 981 (Ill. 1991) (Heiple, J., dissenting) (characterizing a wrongful death award of over \$8.3 million to the wife and children of the deceased and \$150,000 for the pain and suffering of the deceased as "illustrative of the irrational tort system under which we operate [that] falsely pretends that such sufferings have a cash value when they clearly do not"); *Chung v. New York City Transit Auth.*, N.Y. L.J., Jan. 18, 1990, at 21 (N.Y. Sup. Ct.) (decreasing jury award to a plaintiff who lost both legs in a subway accident from \$61 million (\$40 million for pain and suffering) to \$5 million (\$3.4 million for pain and suffering)); see also Bovbjerg et al., *supra* note 46, at 936-38 (showing significant variation in similar cases); Viscusi, *supra* note 37, at 207-08 (noting that both the absolute level of compensation and the variation within similar cases is high). Critics of the existing tort system use such variability and "excessiveness" as a basis for seeking reform. See, e.g., PETER W. HUBER, *LIABILITY* 121-27 (1988) (using cases with excessive awards to invoke the need for tort reform).

66. See Viscusi, *supra* note 37, at 217.

67. See *id.*

68. See Bovbjerg et al., *supra* note 46, at 917-19, 925.

integrity of a system that should be perceived as fair;⁶⁹ they encourage litigation by preventing parties from adequately assessing the risks of trial;⁷⁰ and they simply do not accomplish the asserted goal of compensation.⁷¹ Other critics question whether pain and suffering is even an appropriate subject for compensation. Alan Schwartz, for example, has argued that individuals would probably not choose to insure themselves against a significant level of nonpecuniary loss. Therefore, it seems inappropriate to allow full recovery for pain and suffering, which leads to increased prices that effectively force individuals society-wide to take insurance that they never would have purchased on their own.⁷² Others have pointed out that it is inefficient to charge defendants for pain and suffering because they really do not make the still-suffering plaintiff better off. Taking money from the defendant creates two harms where only one previously existed.⁷³

Finally, some authors have raised philosophical concerns regarding the appropriateness of placing dollar amounts on intrinsic human values like the nature of pain and the joys of life. As one author notes, "Translating [injuries such as emotional distress] into dollars and cents . . . only demeans and trivializes the interests at stake."⁷⁴ Allowing awards based on pain and suffering "commodif[ies] our unique experience" and demeans the importance of the emotions.⁷⁵ These authors recognize the incommensurable nature of pain, sorrow, and companionship and warn against a process that treats them as cash equivalents, fearing that it will somehow diminish the value (in the broadest sense) of these feelings.⁷⁶

69. *Id.* at 924-25.

70. See DOBBS, *supra* note 42, at 399-400; Bovbjerg et al., *supra* note 46, at 917-18.

71. DOBBS, *supra* note 42, at 398.

72. See Alan Schwartz, *Proposals for Product Liability Reform: A Theoretical Synthesis*, 97 YALE L.J. 353, 364-67 (1988); see also DOBBS, *supra* note 42, at 399; Leebron, *supra* note 45, at 273-74. But see Bovbjerg et al., *supra* note 46, at 933 (arguing that the failure to insure should not mean that we should not compensate, since failure to purchase insurance only indicates that it is not available at a reasonable price, not that nonpecuniary values are unimportant).

73. See Ingber, *supra* note 47, at 780.

74. *Id.* at 784.

75. Richard L. Abel, *A Critique of American Tort Law*, 8 BRITISH J.L. & SOC'Y 199, 207 (1981); see also *id.* at 208; Radin, *supra* note 31, at 1876.

76. See Radin, *supra* note 31, at 1876; Radin, *supra* note 29, at 83 (concluding that we should be careful about assigning specific values for given amounts of pain and suffering until we are clear about how such a change in our legal system would alter our conceptions of those underlying emotions). This sort of argument can be mustered against

D. *In Support of Pain and Suffering*

Despite these criticisms of the existing tort system, there are few calls to eliminate pain and suffering awards altogether. Most reformers seek overhaul rather than elimination of these awards.⁷⁷ For example, one article proposing a "schedule" of standard awards for pain and suffering nonetheless concedes that pain and suffering does have economic importance and recognizes that individuals have come to expect compensation.⁷⁸ Economic analysts note that the award of such damages ensures that the full range of losses to society are considered by those who threaten injuries.⁷⁹ And the legal and political entrenchment of pain and suffering awards means that it would be almost impossible to remove them from the system even if we wanted to.

More than inertia, however, justifies retaining awards for pain and suffering. As Nancy Levit puts it in her argument for fuller recognition of "ethereal torts" (which include injuries for nonpecuniary losses), those losses should be a part of the tort system "because of the reconstructive nature of tort law: the messages that tort law sends about what 'reasonable people' ought to feel and how they ought to behave. The individual expectancy, dignity, and autonomy interests that ethereal torts protect are intrinsically valuable."⁸⁰ Compensation for these injuries forces society to acknowledge them. In a system that takes nonmonetizable "facets of the human condition" and turns them into legal claims, the courts have a "heightened obligation . . . to be sensitive to the real nature of injuries."⁸¹

Margaret Jane Radin echoes this notion of recognition and social acknowledgment when she suggests that what tort compensation tries to do in awarding damages is not to compensate for

almost any nonmarket value. Because most of these values are nonmarket due to a sense that they are incommensurable with money, any effort to translate them into monetary terms, according to some individuals, risks the possibility of cheapening those values. For a discussion of this argument in the context of nonuse values, see *infra* subsection III(B)(5).

77. See, e.g., Bovbjerg et al., *supra* note 46, at 938-65 (advocating a standardized "schedule" of awards for pain and suffering); *supra* note 45 (discussing legislative caps on pain and suffering awards).

78. See Bovbjerg et al., *supra* note 46, at 934-36.

79. See, e.g., RICHARD POSNER, *THE ECONOMIC ANALYSIS OF LAW* 196-97 (4th ed. 1992).

80. Levit, *supra* note 39, at 140.

81. *Id.* at 179.

the injury as much as to acknowledge its value by "recognizing the wrong and signifying its weightiness."⁸² This affirmative nature of pain and suffering awards justifies their retention far better than a claim that they somehow restore the plaintiff to her pre-accident condition.⁸³ Because money is the currency of value in our society, awarding money to the injured party is the most likely way to demonstrate that society recognizes the importance of her losses.⁸⁴

By valuing individuals on emotional, rather than economic, potential, damage awards for pain and suffering serve an additional rationale: they are much less regressive in their distributive effects than are awards based on "lost economic potential" or some other economic award.⁸⁵ Pain and suffering awards are not as inherently biased against minorities, the poor, and those that are not part of the economic system (such as parents that remain at home to care for their children rather than work outside the home). Allowing awards for psychic loss ensures that at least some portion of the total award is not necessarily based on a measure—economic loss—loaded with cultural bias⁸⁶ and irrelevant to the value of intangible losses. Unlike awards for economic loss, awards for the pain and suffering of a single, poor, African-American mother from Harlem working as a domestic—or her daughter—should be at least as great as that suffered by a rich, white, male Wall Street financier—or his son.⁸⁷ Even if the magnitude

82. Radin, *supra* note 29, at 74.

83. For a discussion of the implausibility of this latter view of compensation, see RESTATEMENT (SECOND) OF TORTS § 903 cmt. a (1979); Radin, *supra* note 29, at 69–71.

84. See Ingber, *supra* note 47, at 781 ("Because money is highly valued in our society, we use it to measure and recognize the worth of both tangible and intangible items. If society is to signify its commitment to the support of psychic well-being, damages for intangible injuries must be permitted.") (footnotes omitted); Levit, *supra* note 39, at 188–89 ("Because money is the measure of value in a market economy, the refusal to compensate an injury is a direct message about the worth of the injury; compensation legitimizes the interests and emotions it rewards.").

85. I would like to thank Professors James D.A. Boyle and Jerome M. Culp for helping me to see and clarify this point.

86. Because the bulk of monetary losses depends on proof of lost present and future earnings, see DOBBS, *supra* note 42, at 364–69, 430–39 (describing methods for proving economic loss), the size of those losses is almost entirely dependent on the profession of the plaintiff—or her likely future profession. Biases that influence an individual's profession are thus reinforced and sanctioned by awarding losses on the basis of salary. Pain and suffering losses, at least theoretically, can escape these biases. *But see infra* note 87 (noting that even pain and suffering awards are probably influenced by cultural and economic status).

87. Of course, the bias of markets probably affects pain and suffering awards as well.

of these losses is not easily predictable, and even if they are paid with cash, they nonetheless establish a measure of legal loss based on connections between individuals, rather than one intermediated by a cultural and economic system that too easily dismisses the importance of too many.

Although our means of valuing the magnitude of awards for nonpecuniary loss is imperfect, our judges, our legislators, and our entire society continue to permit it. We recognize that these values are important and that some sacrifice of precision is necessary to ensure that the values can take their proper place in the allocation and recognition of loss. A careful consideration of nonuse environmental values will demonstrate that this realization is as true for the societal loss due to environmental harm as it is for individual losses due to personal injury.

II. A TAXONOMY OF ENVIRONMENTAL LOSSES⁸⁸

Our "environment," in a holistic sense, extends to everything outside of our persons, whether owned by no one, ourselves, another person, or a government. In the context of natural resource damages, however, the "environment" of concern is the set of resources under public ownership or control.⁸⁹ This set is essentially the "environment" as defined in our nation's legal, political, and social debates. It includes that common property⁹⁰ and those

The use of the market as a measure of worth is so prevalent in society that even awards for pain and suffering—which should have nothing to do with an individual's economic status—are probably influenced by that status. In all likelihood, however, the correlation is not as direct as for economic injuries. More importantly, with economic injuries this bias is an inherent and unchangeable part of the definition of the award structure: as long as economic losses are based on wages, those with higher salaries will be awarded more in damages. With pain and suffering awards, the bias is inherent in society, but it is hopefully subject to change.

88. Cf. Holmes Rolston III, *Valuing Wildlands*, 7 ENVTL. ETHICS 23, 24 (1985) (outlining another "taxonomy of values").

89. See *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 459–60 (D.C. Cir. 1989) (ruling that CERCLA and the CWA do not permit recovery for injuries to lands and resources "under purely private ownership"). The statutory recovery provisions apply to lands not only owned by, but also under "control" of the trustee. This application significantly extends the scope of the NRD assessment regulations. See Department of the Interior, *Natural Resource Damage Assessments*, 56 Fed. Reg. 19,752, 19,761 (1991) (extending possible application of NRD liability to resources that are merely "managed" by the trustee).

90. In environmental economics, "[c]ommon property resources are those that are not exclusively controlled by a single agent or source." TOM TIETENBERG, *ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS* 47 (2d ed. 1988).

public goods⁹¹ that the nation owns or significantly manages,⁹² such as national parks and forests, fisheries, wild animals, navigable waters, and even airspace. For both historic and economic

91. Economists apply the term "public good" to resources the use of which is "nonrival" or "indivisible" in the sense that one individual's use of the good does not reduce the availability of that good for the next user. See TIETENBERG, *supra* note 90, at 49-50; KEVIN M. WARD & JOHN W. DUFFIELD, NATURAL RESOURCE DAMAGES: LAW AND ECONOMICS 228-29 (1992). Examples include the use of wilderness areas or national defense. In many instances, seemingly nonrival goods considered limitless in their availability may in fact become rival due to congestion or environmental degradation. *Id.* at 229. Such "congestible" goods include the view at Yosemite during Labor Day weekend or degraded streams, rivers, and lakes.

The vast bulk of public goods, particularly environmental resources, are also "common property," in that individuals may not be excluded from their use. See *supra* note 90. Some confusion in definitions results, but the term "public good" nonetheless is often used to encompass such resources. See WARD & DUFFIELD, *supra*, at 230.

92. It is not an accident that so many of these "environmental" goods are owned or closely regulated by the government. Absent a regulatory regime, the use of common property and public goods will be inefficient. The major difficulty with common property is that it is subject to "the tragedy of the commons," in which no one has an incentive to restrain herself from withdrawing as much of a resource as possible before others get to it. See TIETENBERG, *supra* note 90, at 48-49; Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243 (1968) (the classic review of the "tragedy" concept). In the case of public goods, the inefficiency can be framed in two ways. From the perspective of the consumer, there is the "free rider" problem, in which individuals realize that they need not invest much in public goods since they can enjoy the benefit of the good as soon as others supply it. The result is a lower level of supply than is actually desired. See WARD & DUFFIELD, *supra* note 91, at 230. From the perspective of the producer, since the marginal (next) individual that wants to use the resource can use it at no added cost, the marginal cost, and therefore the optimal price, is zero. If the optimal price is zero, there is no incentive to provide the resource. *Id.* at 229. Because these types of resources are valuable to society, and yet society will not efficiently allocate them, the government must step in to regulate the use of common property and public goods to ensure their proper allocation. It is "the clear duty of Government, which is the trustee for unborn generations as well as for its present citizens, to watch over, and, if need be, by legislative enactment, to defend, the exhaustible natural resources of the country from rash and reckless spoliation." John V. Krutilla, *Conservation Reconsidered*, 57 AM. ECON. REV. 777, 777 (1967) (quoting ARTHUR C. PIGOU, *THE ECONOMICS OF WELFARE* 29-30 (4th ed. 1932)). (This is not to say that private organizations cannot supply some portion of public goods, see TIETENBERG, *supra* note 90, at 52 (noting that the Nature Conservancy privately provides a public good), only that the total amount of public goods provided will be inefficient if government does not intervene.)

Some might point out that the Coase theorem argues in favor of a *laissez faire* policy leaving the supply of these resources to a private negotiation scheme. See R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960); WARD & DUFFIELD, *supra* note 91, at 236-39. The Coase theorem, however, both assumes the absence of transaction costs and ignores the effect of property ownership on the ability of the parties to demand prices. Unfortunately, in the case of environmental goods, transaction costs are very high (because of large numbers of people), and the uncertain nature of property rights in those goods can have a significant impact. See *id.* at 239.

reasons, it has largely fallen to the government to protect the environment. Federal environmental statutes exist largely to accomplish that goal.

The extent of regulatory control over the environment is ultimately driven by the value that the nation places on the protection of natural resources. These values can take on a variety of forms, but economists generally place them into two categories: use and nonuse values.⁹³ The representative subset of nonuse values—the epitome—consists of benefits derived from public goods that are out of physical reach of the vast majority of the public, but with which individuals nonetheless feel some connection. This portion of a public good's value is the most difficult to estimate and is the focus of the debate over CV. Because nonuse values, as with the measure of pain and suffering, are typically best defined as that element of the total loss *not* due to use (or monetary) values, it is important to explore both aspects of environmental loss before moving on to the actual process of measurement.

A. Use Values

When people directly interact with a natural resource, their decisions implicitly and explicitly represent the use value that they place on that resource.⁹⁴ Under this categorization, as long as the individual uses her five senses to derive value from the environment, it has a use value. Included are not only "consumptive" use values such as hunting and logging but also direct and indirect "nonconsumptive" use values such as bird watching and reading about others' use of the resource.⁹⁵ Use values make up a signifi-

93. See, e.g., WARD & DUFFIELD, *supra* note 91, at 230. The taxonomy of environmental values is subject to the confusion of any field in which the borders are unclear. The following two Sections make an effort to organize the field in a fashion that presents a representative view of the traditional characterizations. For a more rigorous effort to define a taxonomy, see Alan Randall & John R. Stoll, *Existence Value in a Total Valuation Framework*, in *MANAGING AIR QUALITY AND SCENIC RESOURCES AT NATIONAL PARKS AND WILDERNESS AREAS* 265, 267-68 (Robert D. Rowe & Lauraine G. Chestnut eds., 1983).

94. See Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269, 281 (1989); see also Randall & Stoll, *supra* note 93, at 266-67 (defining use values as those involving the combination of the existence of the natural resource with any goods or services other than the resource itself). Randall and Stoll's definition of use value encompasses essentially all "uses" of the resource other than mere contemplation of it. *Id.* at 267-68.

95. See Steven Edwards, *In Defense of Environmental Economics*, 9 ENVTL. ETHICS

cant portion of the value of the most popular natural environments in the country.⁹⁶

Use values are relatively easy to price.⁹⁷ They generally involve "observed choice"⁹⁸ or "revealed preferences." For example, individuals purchase hunting and fishing licenses, buy and sell fish and other sports animals, and travel to get to recreation areas, where they spend money enjoying the land in various ways. Although these transactions do not necessarily convey the full use value that people place in environmental goods,⁹⁹ they do provide a basis for examination and extrapolation. When recreational use, for example, is the subject of study, economists can use revealed preference models to determine the dollar value of this sort of complex use.¹⁰⁰ These indirect methods use preferences revealed through consumer actions (e.g., amounts spent on travel, property, and the avoidance of hazards) to determine the price placed on the use value for certain resources.¹⁰¹ As in so many other areas

73, 79 (1987); Randall & Stoll, *supra* note 93, at 267.

96. See, e.g., Richard G. Walsh et al., *Valuing Option, Existence, and Bequest Demands for Wilderness*, 60 LAND ECON. 14, 25 tbl. 3 (1984) (citing a use value as \$58 million of the \$93 million total value found).

Demonstrating that different authors approach classification of values in different ways, another commentator discusses values such as "vicarious" use values, which are gained by the knowledge that someone else is going to use the land, separately from use values. See Cross, *supra* note 94, at 285-86. Holmes Rolston lists among the utility of wildlands their therapeutic value, their cultural, religious, and historic significance, and their role in the development of scientific knowledge and "character" (e.g., the Boy and Girl Scouts). See Rolston, *supra* note 88, at 27-30.

97. See, e.g., Jerry A. Hausman et al., *Assessing Use Value Losses Caused by Natural Resource Injury*, in Exxon Symposium, *supra* note 22, at 342.

98. See Smith, *supra* note 32, at 867.

99. Consider the example of national parks, which intentionally set admission prices low to encourage attendance. See *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 463 (D.C. Cir. 1989).

100. See Robert Mendelsohn, *Assessing Natural Resource Damages with Indirect Methods: Comments on Chapter 8*, in VALUING NATURAL ASSETS, *supra* note 25, at 197, 202. These are "indirect" methods because they consider the actions of consumers, rather than asking them directly about their preferences.

101. See Kenneth E. McConnell, *Indirect Methods for Assessing Natural Resource Damages Under CERCLA*, in VALUING NATURAL ASSETS, *supra* note 25, at 153, 162-90 (discussing the hedonic pricing, travel cost, random utility, and averting behavior models of indirect measurements of use value). For a detailed discussion of the use of the "travel cost" method to calculate recreational value, see WARD & DUFFIELD, *supra* note 91, at 256-62.

Contingent valuation (a "direct," as opposed to "indirect," method) also can be used to measure complex sorts of use values. See Department of the Interior, *Natural Resource Damage Assessments*, 43 C.F.R. § 11.83(d)(5)(i) (permitting, in the original

of the law, the calculation of pecuniary values is the most straightforward step.

The next set of environmental values are the so-called "option values," which are often placed into a category between use and nonuse values. Although option values do not involve the immediate use of a natural resource, implicit in their definition is the possibility that the resource may someday be used.¹⁰² If the continuing availability of a use value is uncertain, there is a corresponding option value that individuals are willing to pay to retain the option to use that value.¹⁰³ Since continuing availability of environmental resources can be particularly uncertain, option values take on many forms. For example, the value that people place on preserving resources for the use of their children, the "bequest value" of a resource, is an option value.¹⁰⁴ The common argument for preservation of biodiversity—that unknown or endangered species may contain compounds that would improve human quality of life—relies on retaining the option for future use.¹⁰⁵ In the context of unique environmental resources, option value is particularly relevant since some uses could result in irreversible damage, thereby eliminating the option for the future use of those resources.¹⁰⁶

DOI regulations, the use of CV for measuring use values); 56 Fed. Reg. 19,772 (1991) (to be codified at 43 C.F.R. 11.83(c)(2)(ii)(D)) (proposed Apr. 29, 1991) (proposing a revised § 11.83(c)(2)(ii)(D)) that would retain that permission); WARD & DUFFIELD, *supra* note 91, at 342–44. In this context, CV is less contentious than when it is used to estimate nonuse values because the CV study can be validated by comparing its results with those of "revealed preference" measures. See 58 Fed. Reg. at 39,351 (1993); 56 Fed. Reg. 19,762 (1991) (discussing why CV estimates of nonuse values are less reliable than those for use values).

102. The potential for future use is not a part of "option existence values"—i.e., the price that an individual would be willing to pay to be able to value the mere existence of a place or species in the future. In general, however, option values involve the possibility of future use, and they are therefore addressed in this Section with other use values.

For a general discussion of option values, see Richard C. Bishop, *Option Value: An Exposition and Extension*, 58 LAND ECON. 1 (1982); V. Kerry Smith, *Nonuse Values in Benefit Cost Analysis*, 54 S. ECON. J. 19, 20 (1987). Option values were first articulated by Burton Weisbrod. See Burton A. Weisbrod, *Collective-Consumption Services of Individual-Consumption Goods*, 78 Q.J. ECON. 471 (1964).

103. See Randall & Stoll, *supra* note 93, at 267.

104. See, e.g., Note, *supra* note 27, at 1981.

105. See Cross, *supra* note 94, at 286 (calling it "quasi-option value"); Krutilla, *supra* note 92, at 780–81 (discussing option value of genetic variation and other manifestations of option value).

106. Indeed, Kerry Smith indicates that these values are *only* relevant in the context

Because it is generally an option for use that is being retained, option values are often considered a subset of use values. At the same time, however, option values are largely nonmonetary. Except through donations to environmental and wildlife organizations, people rarely reveal their preference for preserving future uses of natural environments.¹⁰⁷ Unlike most use values, then, and like those nonpecuniary losses compensated for in personal injury cases, option values rarely manifest themselves as revealed preferences. Because of this absence of market activity, option values can generally be estimated only by constructing fictional markets in which one would ask, for example, "If you could pay to ensure the preservation of this prime swimming hole, how much would you pay?" This regime of fictional markets is the land of contingent valuation. For purposes of looking at the problem of nonuse and nonmarket values in NRD assessment, then, this Note will generally include option values within the range of nonuse values.¹⁰⁸

B. Nonuse Values

1. *Definitions.* If no human were ever permitted to access or view a wilderness area, individuals might still place some value on the mere knowledge that such a pristine area existed. This nonuse value, felt by the "spiritual descendants of John Muir," would manifest itself as "acute distress and a sense of genuine relative impoverishment" when natural resources are damaged.¹⁰⁹ It requires neither contact with the resource in question nor the

of unique resources. See Smith, *supra* note 102, at 25. Allan Randall and John Stoll disagree, however, and indicate that every environmental resource—even those that are not unique—may have existence value. See Randall & Stoll, *supra* note 93, at 268–70.

107. Because of the free rider problem, see *supra* note 92, one cannot assume that the level of donations is equivalent to the option value individuals place on natural resources.

108. The administrative agencies also group option values with nonuse values. See 56 Fed. Reg. 19,772 (to be codified at 40 C.F.R. § 11.83(c)) (proposed Apr. 29, 1991) (grouping option values with nonuse values); NOAA Proposed Rules, *supra* note 8, at 1169 (to be codified at 15 C.F.R. § 990.13) (grouping option values with passive use values).

109. Krutilla, *supra* note 92, at 779 n.7. Krutilla's article was the first in which existence values were explicitly recognized. His recognition, however, related less to existence as an end in itself than to the option of future use. Although he recognized those who "place a value on the mere existence of biological and/or geomorphological variety and its widespread distribution," *id.* at 781, he did not appear to put much credence in the utility of holding this value separate from the possibility of use. See *id.* at 781 n.11.

belief that others will use the resource in the future.¹¹⁰ Instead, it is a pure conviction that segments of the natural world should remain unaltered.¹¹¹

Although existence value is not the only type of nonuse value,¹¹² its careful segregation from use makes it the quintessential nonuse value. Existence value, therefore, is recognized as "the major element" of nonuse values.¹¹³ Because its expression also is the most removed from how an economically "rational" individual is expected to behave, existence value has drawn the most attention in assessments of the validity of CV studies.

The heart of that attention has been a debate over the motivation behind existence values that reflects differing views of economists and others regarding the nature of human actions.¹¹⁴ Un-

110. Following this descriptive definition of nonuse values, some economists have defined nonuse values as those values derived from natural resources that are not dependent on any goods rationed by prices. See Randall & Stoll, *supra* note 93, at 267-68; Smith, *supra* note 14, at 19. This perspective may be contrasted with another definition that simply classifies nonuse values as those involving anything other than "on site" uses. See Bruce Madariaga & Kenneth E. McConnell, *Exploring Existence Value*, 23 WATER RESOURCES RES. 936, 937 (1987) (contrasting Randall and Stoll's perspective on the existence/use value distinction with one in which reading a magazine about another's use of a natural resource would have a nonuse value).

111. As Sagoff describes it, "[M]any Americans oppose the transformation of our most beautiful and expressive landscapes into trailer parks and Shangri-las. They base their opposition, which is sometimes fierce, not on an interest in using the areas in question but on a belief that certain areas should be preserved for their own sake." Sagoff, *supra* note 3, at 1407; see also Thomas C. Heller, *The Importance of Normative Decision-Making: The Limitations of Legal Economics as a Basis for a Liberal Jurisprudence—As Illustrated by the Regulation of Vacation Home Development*, 1976 WIS. L. REV. 385, 405 ("For some, a serious loss of well-being . . . results from a broadly held commitment to the normative position that nature is a source of value not because it is used but because it continues to exist.").

112. As noted above, there is an argument that option value and its contained values also should be considered nonuse. See *supra* note 108 and accompanying text. Furthermore, as the DOI points out in discussing its proposed revised regulations, "there are many categories of nonuse values that have not been consistently defined. Any attempt to categorize explicitly different types of nonuse value would involve arbitrarily selecting a single definition." 56 Fed. Reg. 19,752, 19,760 (1991). DOI includes existence, bequest, preservation, and intrinsic value within the definition of nonuse values. *Id.* NOAA includes bequest, intrinsic, and vicarious values within its proposed definition of nonuse values (which it calls "passive use" values). See NOAA Proposed Rules, *supra* note 8, at 1073.

113. See, e.g., NOAA Panel Report, *supra* note 1, at 4602.

114. See, e.g., Edwards, *supra* note 95 (discussing the alternative visions of "economic man" and "altruistic man"); Amartya K. Sen, *Rational Fools: A Critique of the Behavioral Foundations of Economic Theory*, 6 PHIL. & PUB. AFF. 317 (1977) (critiquing the economic portrayal of man as self-interested and, when making choices based on moral

der the economists' view, it is assumed that individuals holding existence values are acting "rationally"—i.e. that they derive some self-interested "utility" out of the resource.¹¹⁵ From this perspective, existence values are merely the value of "passive uses" of the resource.¹¹⁶ So conceived, existence values represent either an "implicit change in [the economic] definition of consumption" that does not involve an actual *consumption* of the good,¹¹⁷ or nothing more than the value placed on "a very pure public good."¹¹⁸ Because this conception of behavior retains the assumptions of economic theory regarding a self-interested motivation, this perspective does not present serious conceptual difficulties for economic valuation.

As Holmes Rolston argues, however, calling nonuse values passive use values merely creates an economic fiction that forces them into the "alien reference frame" of a use typology. Saying that these values are passive *uses* "exactly reverses what those so categorized would say of themselves: that wildlands are valuable when left alone, apart from questions of human use."¹¹⁹ The al-

commitment, irrational).

Myrick Freeman argues that the discussion should stop before ever entering this debate. Why bother trying to determine the nature of the motivation, he asks, when all that really matters is whether nonuse values are positive—i.e. whether they exist? Freeman, *supra* note 25, at 267. As is pointed out below, the consensus is that they do. See *infra* subsection II(B)(2).

115. See Edwards, *supra* note 95, at 75–77 (describing the nature of "economic man").

116. See, e.g., NOAA Panel Report, *supra* note 1, at 4602 (choosing the term "passive use"); NOAA Proposed Rules, *supra* note 8, at 1073 (same). As the leading case on NRD assessment pointed out, "[o]ption and existence values may represent 'passive' use, but they nonetheless reflect utility derived by humans from a resource, and thus, *prima facie*, ought to be included in a damage assessment." *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 464 (D.C. Cir. 1989).

117. Smith, *supra* note 102, at 20. Smith seems to have changed his view regarding the nature of consumption in the context of nonuse values, arguing now that consideration of them need not require a redefinition of consumption. See Smith, *supra* note 14, at 19; see also *infra* note 118 (assessing one way that existence values could be conceived of without redefining "consumption").

118. Raymond J. Kopp, *Why Existence Value Should Be Used in Cost-Benefit Analysis*, 11 J. POL'Y ANALYSIS & MGMT. 123, 124 (1992); see also Kenneth E. McConnell, *Existence and Bequest Value*, in *MANAGING AIR QUALITY AND SCENIC RESOURCES AT NATIONAL PARKS AND WILDERNESS AREAS*, *supra* note 93, at 254, 262 (discussing the preferences of the public that create existence value); Milgrom, *supra* note 30, at 417. As we have already seen, public goods will generally not be efficiently provided without regulatory intervention. See *supra* note 92. This is a first small hint about the importance of ensuring that nonuse values are included within NRD assessment.

119. Rolston, *supra* note 88, at 36 n.11 (addressing the term "off-site users"). Despite

ternative motivation of Rolston and others, which might be called the "intrinsic" or "altruistic" view of nonuse values,¹²⁰ stands in significant tension with the self-interested view.

Under the intrinsic view, existence value is dependent not merely on the extent or uniqueness of the physical characteristics of a resource¹²¹ but on the unique self-identity of every particular resource.¹²² It is a value placed on the "naturalness" of

NOAA's use of the term "passive use," the agency's proposed rules on NRD assessment explicitly recognize that nonuse values include "the value derived from protecting the natural resource for its own sake." NOAA Proposed Rules, *supra* note 8, at 1169 (to be codified at 15 C.F.R. § 990.13).

120. Economic literature in fact considers "altruistic" and "intrinsic" existence value to be based on two different motivations. *See, e.g.*, Cross, *supra* note 94, at 290-93 (separately categorizing altruistic existence values and intrinsic values); Madariaga & McConnell, *supra* note 110, at 938 (stating that intrinsic existence value is motivated by concern about the state of the world, rather than concern for others). The former is the value one gains from the knowledge that others are benefitting or will benefit from the use of the land, whereas the latter emphasizes the value of nature for its own sake. *See* Cross, *supra* note 94, at 292-97 (describing intrinsic values); P.S. Elder, *Legal Rights for Nature—The Wrong Answer to the Right(s) Question*, 22 OSGOOD HALL L.J. 285, 286 (1984); Rolston, *supra* note 88, at 30 (discussing the category of "intrinsic moral value").

In practice, however, the two perspectives tend to blend since both stand in contrast to the self-interested motivation described previously. *See, e.g.*, Edwards, *supra* note 95, at 82 (noting that "ethical views that argue for the intrinsic value or rights of other humans, wildlife, and future generations could be personified by a genuine altruist with unselfish commitments to the well-being of others"). One might even consider "intrinsic" values "altruistic," at least in the sense that they involve altruism with respect to natural resources. In the context of CV, these differently-motivated values are difficult to separate out because neither are traded on markets. *But see* Madariaga & McConnell, *supra* note 110, at 940-41 (making an effort to distinguish between different motivations in a CV study). Because of all these difficulties, this Note also may refer to the values interchangeably.

At the same time, however, there is a critical difference. Like option values, the majority of altruistic existence values are ultimately based on the use of natural resources. Intrinsic values are not, and are therefore the more natural contrast to self-interested passive use values. It is, therefore, in intrinsic nonuse values that the arguments favoring the incorporation of nonuse values take on their strongest form, and it is this sort of value on which the most compelling reasons for including nonuse values in NRD assessment are based.

121. This characterization is not meant to imply that all existence values are entirely independent of the physical uniqueness of the resource. Option values, altruistic existence values, and to some extent even the intrinsic notion of existence value may be at least partial functions of the physical uniqueness of the resource. Nonuse values "are most significant for irreversible or long-lasting changes to well-known, unique natural resources." 56 Fed. Reg. 19,760 (1991). Nevertheless, they are not limited to such resources. *See* Randall & Stoll, *supra* note 93, at 268-70; NOAA Proposed Rules, *supra* note 8, at 1152 ("NOAA has found no empirical evidence to suggest that a natural resource must be unique . . . , non-reproducible and/or permanently injured in order to have significant passive use values.").

122. As the court in *Ohio v. United States Dep't of the Interior*, 880 F.2d 432 (D.C.

those resources that we perceive as untouched by humans.¹²³ This perception of naturalness¹²⁴ is, as Carol Rose puts it, de-

Cir. 1989), noted, Congress's reliance on restoration costs was based on a realization that natural resources are not fungible goods. *Id.* at 456. This asymmetry between resources must be based on something more than the trivial physical differences between a site and its "restored" version; the asymmetry must be found in the intrinsic value that individuals place on particular resources and their naturalness.

We would not say that one person can "replace" another. For example, the pain from the loss of a child is not assuaged for those parents who have another. We could not "compensate" parents for the loss of their child by providing them with a substitute child. Only if we think of people as commodities can we make this sort of exchange, and we do not think of individuals in that way. See Radin, *supra* note 31, at 1905-06, 1925 (discussing arguments against commodification of the person in general and baby-selling in particular). Nonetheless we compensate parents for their loss.

In a similar way, mere "restoration" of a natural resource does not "restore" the value of the damaged resource. Such a view improperly makes natural resources fungible. John Daum, for example, simply ignores the extent to which the value that we place on resources depends on their individual uniqueness. He states that, since "[e]xistence value reflects the value . . . of the fact that a resource is in existence[,] there should be no impairment of this value if the resource is restored," Daum, *supra* note 27, at 399, and he repeats the claim for option and bequest values. *Id.* He does not see that there is no restoring "the resource," much as there is no restoring "the child." The nonuse values that he wants to ignore are not part of the market system, are not compensated for by the physical "restoration" of a resource, and yet are largely what make natural places, organisms, and relationships important to us. Cf. Radin, *supra* note 31, at 1884-86 (arguing that the maintenance of noncommodifiable objects is critical to "human flourishing").

123. For one view of what "naturalness" means, and an apocalyptic vision of what is happening to "natural" places in a world threatened by global climatic change, see BILL MCKIBBEN, *THE END OF NATURE* (1989). McKibben argues that the pervasiveness of human activities on the planet has an impact on every possible resource. As a result, there are no longer places to which an individual can go to feel alone, to feel like humanity is not intruding. Because such feelings are integral to our idea of what "nature" is, argues McKibben, nature itself has essentially been eliminated. *But see infra* note 124 (outlining the argument that this sense of nature is naive).

A classic example of the importance of naturalness in resources and the inadequacy of replacement is that of the "plastic trees." Mark Sagoff and Laurence Tribe wondered whether trees of plastic made to match real trees in every way would be identical for purposes of a utilitarian calculation. Both concluded "no," arguing that plastic trees would not capture the full range of values held in the original. The difference is the existence value of the original, "natural" tree. Mark Sagoff, *On Preserving the Natural Environment*, 84 YALE L.J. 205 (1974); Laurence H. Tribe, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law*, 83 YALE L.J. 1315 (1974).

124. Critics of McKibben and others have argued that this sense of nature is naive. See, e.g., Cross, *supra* note 27, at 334-35 (stressing that "nature" is an ever-changing "kaleidoscope" rather than a single pristine state); Lynn Margulis & Edwin Dobb, *Untimely Requiem*, THE SCIENCES, Jan.-Feb. 1990, at 44, 47 (reviewing MCKIBBEN, *supra* note 123, pointing out that humans have been influencing ecosystems on regional and global scales for millions of years and arguing that a view of nature founded in a notion of an unchanging "natural" state is simply "bunkum"). Logical naivete, however, does not alter the importance of this view of nature to the issue of existence value. We often

rived from the deep ecology movement and based on "kinship-talk," not "preference-talk."¹²⁵

Existence values spurred by non-self-interested motivations are difficult for economic models to incorporate. Individuals gain no benefit from the values and thereby act against the "rational" preference model of traditional economics.¹²⁶ The values "drive[] a wedge between personal choice and personal welfare, and much of traditional economic theory relies on the identity of the two."¹²⁷ As for any portion of nonuse values based in an "altruistic" perspective, they may not be included because they "double count" benefits that others receive¹²⁸ and thereby skew the analysis. For many economists, attempting to measure such values through CV deviates from appropriate economic modelling.

Self-interested values, intrinsic values, and the tension between them lie at the heart of the struggle over contingent valuation.

value goods based merely on our opinions and beliefs, even if those beliefs are not founded in rigorous logic or scientific fact. (Consider, for example, the money donated to churches as a weekly tithe.) For all their flaws, those values are no less important than those deriving their weight from a more "rational" belief. Even if the general perception of nature is not rigorously justifiable, then, the value individuals place on seemingly "natural" resources is still entitled to economic and policy recognition.

125. Carol M. Rose, *Environmental Faust Succumbs to Temptations of Economic Mephistopheles, or, Value by Any Other Name Is Preference*, 87 MICH. L. REV. 1631, 1644 (1989) (reviewing MARK SAGOFF, *THE ECONOMY OF THE EARTH* (1988)).

This focus on existence value may link rights for the environment too closely to human values for most deep ecologists. A reformulation of this definition of nonuse values à la Christopher Stone might be more appealing because it would place these values in the hands of the resources themselves, rather than making their existence depend on humans. See, e.g., Christopher D. Stone, *Should Trees Have Standing?—Toward Legal Rights for Natural Objects*, 45 S. CAL. L. REV. 450, 475-76 (1972) (describing intrinsic, nonuse-like values from the perspective of the resource).

126. See Edwards, *supra* note 95, at 82-83; see also *infra* subsection III(B)(2) (regarding the criticisms of CV targeted at the irrational nature of interviewee decisions).

127. Sen, *supra* note 114, at 329.

128. See Milgrom, *supra* note 30, at 420. Milgrom argues just this—that including altruistic values double counts those values held by others. For altruistically motivated existence values such as bequest value, this claim may be true. His point, however, suffers from the fact that the altruism being measured is not exclusively, or even mostly, altruism based either explicitly or implicitly on benefits enjoyed by another individual. Instead, altruism (in the form of *intrinsic* values) may be felt for the injury to the *environment itself*, which has no other representation in the cost-benefit assessment analysis. Nothing in economic analysis should preclude consideration of a unique value held by an individual who happens to be dependent on the "well-being" of an object that is not an actor for purposes of the economic analysis. See also Madariaga & McConnell, *supra* note 110, at 941 ("Making existence value contingent on altruism" imposes a faulty structure on cost-benefit analysis, but "[e]xistence value which stems from intrinsic motives . . . has an unambiguous effect on the measurement" of nonuse values.).

Frustratingly, the real motivation behind existence value, and in fact all nonuse value, is probably some combination of all these stimuli.¹²⁹ Moreover, these two perspectives may not describe different values as much as they describe two different ways of interpreting the same value. Economics therefore faces a dilemma: should it risk contaminating the analysis with altruistically motivated nonuse values or should it disregard nonuse values altogether and risk the effect of ignoring what may be a substantial part of the value individuals hold in natural resources?¹³⁰ Although either route is possible, both threaten the integrity of the process.

In the context of the environmental statutes governing NRD assessment, the decision between the threats is a political and legal one.¹³¹ Critics of CV have argued that the threat of "contaminated" analysis is greater than the threat of ignoring nonuse values. The remaining Parts of this Note argue that the former threat is much less,¹³² and the latter much greater,¹³³ than the critics believe. The resolution of the dilemma should permit analytical uncertainty in the name of ensuring legal, economic, and environmental stability. As in the tort system, any uncertainty that remains part of the valuation must simply be accepted as the price of including nonuse values in legal analysis. The decision whether to use an imperfect means of valuation cannot wait until the academic community has resolved its debate over the validity of those methods. As the next subsection points out, there are values to be

129. See Edwards, *supra* note 95 (contrasting the views of economic and altruistic man); Smith, *supra* note 102, at 20 (noting that existence value may be explained by both indirect use and altruistic models); see also Mark Sagoff, *Environmental Economics: An Epitaph*, RESOURCES, Spring 1993, at 2, 4 (noting the complex factors accounting for preference decisions).

130. See Sagoff, *supra* note 129, at 5.

131. The importance of political decisions is recognized even by critics of economic valuation, who have concluded that such valuation can inform the political process. These authors' main objection is that economic valuation can never establish the "true value" of environmental losses. See Milgrom, *supra* note 30, at 418; Sagoff, *supra* note 3, at 1393, 1409 (noting that economics might play a useful role in informing political analysis). As noted above, however, in the context of tort verdicts, very few individuals think that pain and suffering awards are the "true value" of the loss. See *supra* note 83 and accompanying text. Similarly, the measurement of nonuse values does not give a "true value" of the environmental loss. It is merely an estimate, and any dangers stemming from the imperfection and imprecision of that estimate are outweighed by the political and legal necessity of including nonuse values in our measure of loss.

132. See *infra* Section III(B).

133. See *infra* Part IV.

considered, and as long as we have an acceptable (although imperfect) method for translating those values into economic prices,¹³⁴ we are free to conclude that such a method should be used as a means of guaranteeing that society is reimbursed for the full extent of the environmental losses it suffers.

2. *The Positive Value of Existence and the Difficulties of Assessment.* Nonuse values do exist and they do have a positive price.¹³⁵ As one author points out, "[t]he strongest argument for including existence values [in NRD assessment] is that they indubitably exist."¹³⁶ Another commentator, after reviewing twelve CV studies, noted that, despite questions regarding the precision of the studies, they do "provide substantial support for the hypothesis that nonuse values . . . are positive."¹³⁷ The NOAA Panel "start[ed] from the premise that passive-use loss—interim or permanent—is a meaningful component of the total damage resulting from environmental accidents."¹³⁸ Even some critics grant that the magnitude of nonuse values is "often positive."¹³⁹ The few examples of revealed preferences regarding nonuse values support the conclusions of the CV studies and our own intuition. Consider, for example, the millions of individuals who donate to environmental organizations with the intent of protecting species that the donors may never see.¹⁴⁰ Despite the somewhat uncertain character of existence value, it is an important part of resource values.

Unfortunately, just as with nonpecuniary losses in tort cases, the absence of a "behavioral trail" associated with nonuse values makes them extremely difficult to measure.¹⁴¹ Inherent in the no-

134. As I argue below, CV is such a method and does provide valuable information. See *infra* Section III(B).

135. Although not necessarily every individual holds positive nonuse values, the vast majority of us do, see *supra* note 7, and there is little debate that, in the aggregate, nonuse values are positive.

136. Cross, *supra* note 94, at 286.

137. Freeman, *supra* note 25, at 297.

138. NOAA Panel Report, *supra* note 1, at 4610.

139. See, e.g., Shavell, *supra* note 27, at 381.

140. See Freeman, *supra* note 25, at 287; Krutilla, *supra* note 92, at 781. Freeman recognizes that the true level of nonuse values is probably significantly higher than is revealed through such donations: "[I]f 'free-rider' behavior is significant, these donations would be only a lower bound of true aggregate willingness to pay for preservation. . . . [A]ggregate nonuse values are likely to be larger, and perhaps very much larger, than observed acquisition and advocacy expenditures." Freeman, *supra* note 25, at 287-88.

141. See NOAA Panel Report, *supra* note 1, at 4610.

tion of nonuse values is the lack of a direct relationship between an individual and the resource. Because preferences are not revealed through the market, or even through forced decisionmaking (e.g., whether to stay home and work or to take a vacation and go hiking), it is particularly difficult to apply traditional pricing methodologies to the value.

An additional problem with the pricing of nonuse values is the difficulty that individuals face in trying to value their own preferences. "[A]s values grow intangible," Rolston points out, "the individual's capacity to price them becomes progressively poorer."¹⁴² Without the experience of market trading, most individuals have a difficult time translating values into prices—if they can even conceive of the values as something transferrable into dollars. Individuals asked to put a price on these values "are unaccustomed to citizen 'purchases' of genetic diversity, wildlife encounters, scenic vistas, or wild cultural symbols, especially on lands that the citizens already own and in situations where no money changes hands."¹⁴³ In CV studies, some individuals may completely reject the implicit equivalence of economic and environmental values by providing a "protest bid"—arguing that they would be willing to pay either nothing or everything for the environmental good in question.¹⁴⁴

This unwillingness and inability to place values on an economic scale is the classic problem of incommensurability. For some, this incommensurability means that the effort to price nonuse values cannot and should not be done.¹⁴⁵ But these values do exist, and federal statutes and regulations governing recovery for NRDs recognize them. In a legal system in which the basic language is cash, an expression to the court of the "pricelessness" of a resource or the "deep anguish" associated with its loss or despoilment may draw sympathy but will not result in recovery. Recovery under this system requires something more than plat-

142. Rolston, *supra* note 88, at 35.

143. *Id.*

144. See Sunstein, *supra* note 29, at 36; see also Rolston *supra* note 88, at 34; Sagoff, *supra* note 3, at 1396–99 (outlining societal "protest bids" in the form of absolutist or merely economically inefficient statutes).

145. See Rolston, *supra* note 88, at 38 (arguing, from an environmentalist's perspective, that pricing existence values is a category mistake); Rosenthal & Nelson, *supra* note 30, at 116–18 (arguing, from a conservative point of view, that dollar estimates of existence value mean little in a world where values constantly change).

itudes; it needs a consistent method for assessing all forms of environmental loss.

III. ASSESSING NONUSE LOSSES: THE STATE OF CONTINGENT VALUATION

Correctly implemented, the NRD recovery provisions of the federal environmental statutes will prevent polluters from escaping liability for the full impact of the injuries they cause to the environment. The heart of the implementation is the statutory and regulatory regime for assessing NRDs. Recognizing the importance of complete liability for resource damages, the agencies charged with the implementation and enforcement of the statutes have concluded that the statutes require that both use and nonuse values be recoverable. Recent critics have targeted that conclusion because they believe that the only existing means of assessing nonuse values, contingent valuation, is economically and legally useless. In light of recent work by economists, this assertion cannot be maintained.¹⁴⁶ Furthermore, a reasonable examination of existing goals and demands of the legal system fully supports the conclusion that CV can and should be a part of NRD assessment.¹⁴⁷ Understanding the criticisms and the ultimate validity of CV, however, must begin with a look at the place that CV and nonuse values have in the full regime of NRD assessment.

A. Statutory and Regulatory Provisions

1. *Statutory Language.* Although the three statutes that permit NRD recovery address different environmental problems, the basic structure of an NRD recovery action is the same under all three. As an example, consider the derailment of a railroad car that spills a pesticide into a mountain stream, killing nearly every plant and animal closely associated with it.¹⁴⁸ Under CERCLA,¹⁴⁹ the company responsible for the spill must pay both to

146. See *infra* Section III(B).

147. See *infra* Part IV.

148. This scenario is essentially what happened to the Upper Sacramento River in July 1991. See Jenifer Warren, *Spill Turned Sacramento River into a Graveyard*, *Scientists Say*, L.A. TIMES, July 28, 1991, at A1. It also resembles one of the few cases that has directly addressed the use of nonuse values in a CERCLA action. See *Idaho v. Southern Refrigerated Transp.*, No. 88-1279, 1991 WL 22479 (D. Idaho Jan. 24, 1991).

149. CERCLA, 42 U.S.C. §§ 9601-75 (1988), governs damages due to the release of

clean up the spill and for the loss of the natural resources. The NRDs may be recovered only by a "trustee" of the resource, which would include any state, federal, tribal, or foreign government that owns or controls¹⁵⁰ the stream, plants, and animals. In this case, lost use values might include damages from lost fisheries or tourism. Lost nonuse values might include the value individuals place on the pleasure of living in the midst of a vital, growing environment, on the knowledge that one could enjoy the stream if one wanted, and on the mere existence of the fish, plants, trees, and a healthy, vibrant ecosystem.

Natural resource damage recovery in the United States can be traced to the CWA,¹⁵¹ but it is in CERCLA and the OPA that NRD recovery has come into its own.¹⁵² Both of these statutes are more explicit than the CWA regarding the nature of both recoverable injuries and the assessment process. Under both CERCLA and the OPA, responsible parties are liable for "damages for injury to, destruction of, or loss of" natural resources.¹⁵³

hazardous substances other than oil. Damages from oil spills are governed by the Clean Water Act (for spills prior to August 18, 1990) and the Oil Pollution Act (for spills occurring on or after August 18, 1990). See WARD & DUFFIELD, *supra* note 91, at 65.

150. A trustee may recover for natural resources "belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by" a government. 42 U.S.C. § 9601(16) (1988) (defining "natural resource" under CERCLA); 33 U.S.C. § 2701(20) (Supp. IV 1992) (defining same under the Oil Pollution Act); see also 56 Fed. Reg. 19,752, 19,761 (1991) (noting that the language of the statute ensures "a wide range of legitimate government interest in natural resources that may . . . be held in private ownership"); Lutz v. Chromatex, Inc., 718 F. Supp. 413, 419 (M.D. Pa. 1989) (noting that state-controlled water supplies are natural resources under CERCLA).

151. See WARD & DUFFIELD, *supra* note 91, at 66. The Clean Water Act provides that a federal or relevant state government may recover "any costs or expenses incurred . . . in the restoration or replacement of natural resources damaged or destroyed as a result of a discharge of oil or a hazardous substance in violation of [the Act]." 33 U.S.C. § 1321(f)(4) (1988). Funds recovered must be used "to restore, rehabilitate, or acquire the equivalent of such natural resources." *Id.* § 1321(f)(5). According to the legislative history, when the "damaged or destroyed resource is irreplaceable[,] . . . the measure of liability is the reasonable cost of acquiring resources to offset the loss." H.R. CONF. REP. NO. 830, 95th Cong., 1st Sess. 92 (1977), reprinted in 1977 U.S.C.C.A.N. 4424, 4467.

152. Any spill of oil or a hazardous substance in water or any spill of a hazardous substance on land occurring after 1990 is covered by either CERCLA or the OPA. See *supra* note 149.

153. 42 U.S.C. § 9607(a)(1)-(4)(C) (1988) (CERCLA); 33 U.S.C. § 2702(b)(2)(A) (Supp. IV 1992) (OPA). The OPA permits recovery for damages for the "loss of use of" natural resources, but the legislative history indicates that this language does not necessarily limit recovery to "use values." See S. REP. NO. 94, 101st Cong., 1st Sess. 15 (1990), reprinted in 1990 U.S.C.C.A.N. 722, 736-37 (providing, for example, that the value

The damages may be used to fund the restoration, rehabilitation, or replacement of natural resources, or the acquisition of equivalent natural resources.¹⁵⁴

The most important provisions in the statutes are those governing the nature of NRD assessment. The language in CERCLA explicitly requires that "[t]he measure of damages . . . shall not be limited by the sums which can be used to restore or replace such resources."¹⁵⁵ In the few cases that have detailed the nature of the losses compensable under this section,¹⁵⁶ courts have included aesthetic and existence values among recoverable losses.¹⁵⁷ Similarly, the OPA provides that the measure of natural resource damages is:

(A) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resources;

(B) the diminution in value of those natural resources pending restoration; plus

(C) the reasonable cost of assessing those damages.¹⁵⁸

Both statutes are also notable for their requirements regarding the promulgation of NRD assessment methods by federal agencies.¹⁵⁹ Although their presence is remarkable in contrast to the CWA (which contained no requirement for assessment methodology rules), the OPA regulations are relatively unexceptional, merely delegating the responsibility for the promulgation to NOAA.¹⁶⁰

of sea otters is more than the value of their pelts).

154. See 42 U.S.C. § 9607(f)(1) (mentioning all but "rehabilitation" under CERCLA); 33 U.S.C. § 2706(c)(1)(C) (Supp. IV 1992) (under the OPA).

155. 42 U.S.C. § 9607(f)(1); see also *id.* § 9651(c)(2).

156. "There continue to be very few cases involving nonmarket valuation which have actually been ruled on by the courts as opposed to settled out of court." John Loomis & Peter Anderson, *Idaho v. Southern Refrigerated*, in WARD & DUFFIELD, *supra* note 91, at 389, 390.

157. See *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 464 (D.C. Cir. 1989); *In re Acushnet River & New Bedford Harbor Proceedings*, 716 F. Supp. 676, 686 (D. Mass. 1989) (considering aesthetic values). The court in *Acushnet* also noted the possibility that "'existence' and 'intrinsic' values attributable to natural resources" may be diminished and implied that such values may be a basis for recovery. *Id.* at 686 n.15; cf. *Idaho v. Southern Refrigerated Transp.*, No. 88-1279, 1991 WL 22479, at *18-19 (D. Idaho Jan. 24, 1991) (rejecting CV evidence of existence value in this case, although "not mean[ing] to suggest that the steelhead had no existence value").

158. 33 U.S.C. § 2706(d)(1).

159. See 42 U.S.C. §§ 9651(c)(1)-(2); 33 U.S.C. § 2706(e)(1).

160. 33 U.S.C. § 2706(e)(1) (also requiring NOAA to consult with the EPA and the Fish and Wildlife Service). Nonetheless, NOAA has conducted a detailed rulemaking process and promulgated a set of proposed rules that are substantially similar to those pro-

In contrast to the OPA, the CERCLA provisions are quite detailed. The statute requires the regulations to include "type A" procedures for "simplified assessments requiring minimal field observation" and alternative "type B" protocols "for conducting assessments in individual cases to determine the type and extent of short- and long-term injury, destruction, or loss."¹⁶¹ Type B methods, which presently govern the use of CV, were intended to "identify the best available procedures to determine such damages, including both direct and indirect injury, destruction, or loss and . . . take into consideration factors including, but not limited to, replacement value, use value, and ability of the ecosystem or resource to recover."¹⁶² The responsibility for promulgating the regulations for CERCLA, which also will apply to the remaining damage assessments under the CWA,¹⁶³ was delegated to the Department of Interior (DOI). After some delay, the regulations were issued in 1987.¹⁶⁴ Under both the OPA and CERCLA, trustees need not use the recommended methodology to assess NRDs, but those who do enjoy a "rebuttable presumption" that their estimate of damages is correct.¹⁶⁵

posed by the Department of Interior (DOI). *See* NOAA Proposed Rules, *supra* note 8, at 1069-71.

161. 42 U.S.C. § 9651(c)(2). The streamlined computer modelling approach of the type A methods will be of the most use when the impact is minor. *See* Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,329 (1993) (noting that a Great Lakes model is in progress); *Ohio*, 880 F.2d at 484-85, 487 (describing the original computer model and discussing legislative intent regarding the scope of type A regulations); WARD & DUFFIELD, *supra* note 91, at 157. Since minor releases will be more common than major ones, type A methods will ultimately be the most heavily utilized. *See infra* text accompanying notes 275-79. It is, nonetheless, the more complex type B rules that have drawn the most attention. Not only does their more flexible approach to assessment reflect underlying assumptions about the propriety of assessing nonuse values, but the cases that they will be applied to are the ones in which the most will be at stake. The proposed NOAA regulations conceive of a similar division of methodologies into simple and complex types. *See* NOAA Proposed Rules, *supra* note 8, at 1067-68 (describing four basic methods for NRD assessment, of which two are relatively simple, one intricate, and one of intermediate complexity).

162. *Id.*; *see also Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 464 (D.C. Cir 1989) (noting that this language "is expressly not limited to use value; if anything, the language implies that DOI is to include in its regulations other factors in addition to use value"); *id.* at 478 (sustaining CV as a "best available procedure").

163. *See* 42 U.S.C. § 9651(c)(1).

164. *See* 43 C.F.R. pt. 11 (1992).

165. 42 U.S.C. § 9607(f)(2)(C) (applying rebuttable presumption to uses of developed methodology in both CERCLA and the CWA); 33 U.S.C. § 2706(e)(2) (OPA).

Although trustees may enjoy a "rebuttable presumption," the agencies promulgating the regulations were not so lucky. Soon after DOI issued its first set of rules, they were challenged in the U.S. Court of Appeals for the District of Columbia Circuit by states, environmental groups, and industries. In response to the court's ruling in that case,¹⁶⁶ DOI has had to revise the regulations.¹⁶⁷ NOAA has simultaneously been developing its own set of regulations for the OPA, and the agencies have been working together in the development of their respective regulations.¹⁶⁸ This effort to standardize the procedure for NRD assessment has been a lightning rod for debates over the role of nonuse values and contingent valuation in NRD cases.¹⁶⁹

166. See *Ohio*, 880 F.2d at 481.

167. For a further discussion of the DOI regulations (both old and new), see *infra* subsection III(A)(2).

168. See Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,333 (1993) (noting that the DOI "will continue to coordinate its rulemakings with those of NOAA"); NOAA Proposed Rules, *supra* note 8, at 1069 (noting that NOAA is doing the same with DOI).

169. Some commentators have pointed out that the DOI regulations will likely become "a sort of primer or scientific evidentiary manual instructing federal judges on how to understand and apply complex technical natural resource injury assessment methodologies." Anderson, *supra* note 35, at 26, 47-48; see also Howard Kenison, *Uncertain Legal Issues: Comments on Chapter 3, in VALUING NATURAL ASSETS*, *supra* note 25, at 63, 72. This observation is true for several reasons. First, the regulations represent a long process of careful scholarly consideration regarding the appropriate methods for NRD valuation. The results, especially for the more complex type B regulations, are supposed to represent the "best available procedures" for determining damages. See 42 U.S.C. § 9651(c)(2) (1988). Second, in addition to their intellectual value, the proposed rules are likely to be at the center of almost any attempt at NRD recovery. Despite the voluntary nature of the rules, any state that launches into the field of NRD assessment without relying on them will face a much more difficult case than if it remained true to the regulations. One barrier is the loss of the rebuttable presumption gained by following the rules. A second is the evidentiary implication: if the regulations represent the "best available procedures," what does that say about procedures that do not comport with the regulations? Facing damage estimates prepared on the basis of those regulations and the congressionally mandated "rebuttable presumption" they carry, judges will have little choice but to turn to the regulations and regulatory history in an effort to judge the value and validity of the evidence. See *infra* subsection III(B)(3) (discussing how judges will resolve the evidentiary issues in such an event).

NOAA and DOI also intend to develop a guidance document to direct the use of CV as a means of estimating nonuse values. See NOAA Proposed Rules, *supra* note 8, at 1147. The administrative and intellectual weight behind such a jointly issued document would ensure that judges would give it great weight when evaluating the use of CV in an NRD case.

2. *DOI Regulations Governing NRD Assessment and Ohio v. United States Department of the Interior.* The regulations issued by DOI in 1986 and 1987,¹⁷⁰ the court case challenging those rules,¹⁷¹ and the subsequent proposed revision¹⁷² present a microcosm of the debate over nonuse values. The case at the center of this debate, *Ohio v. United States Department of the Interior*, was filed with the U.S. Court of Appeals for the District of Columbia Circuit soon after the initial promulgation of the regulations.¹⁷³ Several states, environmental organizations, and industry representatives challenged those regulations as unreasonable interpretations of the statute. The foci of the debate were three regulatory presumptions that governed the appropriate measure of damages (restoration or diminished use),¹⁷⁴ the types of values that should be considered in that measurement (use or nonuse),¹⁷⁵ and the methodologies that should be used to estimate those values (market price or CV, for example).¹⁷⁶

The first presumption with respect to the measure of damages required that the trustee select the lesser of 1) restoration or replacement costs or 2) diminution of use values as the basis for the injury.¹⁷⁷ In *Ohio*, the court struck down this provision as improperly ignoring congressional intent that the basic measure of NRDs be restoration value.¹⁷⁸ In place of this "lesser of" rule, DOI's proposed revised regulations use "compensable value" as a basis for recovery.¹⁷⁹

170. Natural Resource Damage Assessments, 43 C.F.R. pt. 11 (1987) (type A regulations); Natural Resource Damage Assessments, 43 C.F.R. pt. 11 (1986) (general provisions and type B regulations).

171. *Ohio v. United States Dep't of the Interior*, 880 F.2d 432 (D.C. Cir. 1989).

172. Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,767 (1991) (to be codified at 43 C.F.R. pt. 11) (proposed April 29, 1991).

173. The NRD rules contained expedited type A assessment methodologies as well as more complex type B processes. The *Ohio* decision addressed the rules governing the latter, whereas a simultaneous case, *Colorado v. United States Dep't of the Interior*, 880 F.2d 481 (D.C. Cir. 1989), challenged the type A methodologies.

174. *Ohio*, 880 F.2d at 441.

175. *Id.* at 462.

176. *Id.*

177. Natural Resource Damage Assessments, 43 C.F.R. § 11.35(b)(2) (1989).

178. *Ohio*, 880 F.2d at 459.

179. Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,768 (1991) (proposing a revised 43 C.F.R. § 11.81(a), which called for assessment of compensable value, as defined in proposed 43 C.F.R. § 11.83(c), to include both use and nonuse values); see also NOAA Proposed Rules, *supra* note 8, at 1181 (proposed 15 C.F.R. § 990.77, calling

The second and third presumptions were contained within the hierarchy of assessment models outlined in section 11.83(c) of the rules. Under this hierarchy, the best means of estimating losses was to rely on the market price of use values. Nonuse values and nonmarket methods of valuation like CV were permitted only when the more preferred method or value was impossible to use.¹⁸⁰

The *Ohio* court also struck down this "hierarchy of values." Recognizing the way in which the type of value to be considered was governed by the valuation methodology, the court rejected the step-by-step process required by the regulations.¹⁸¹ "[R]esources have values that are not fully captured by the market system," the court noted, and the requirement that only market value be used to assess those values departed from that view.¹⁸² Permitting nonmarket methods to be used only when the resource's use values are not ascertainable was unduly restrictive because having market value does not preclude the resource from also having nonmarket value.¹⁸³ Neither the statute nor congressional intent permitted this hierarchy of assessment favoring use values.¹⁸⁴ The court's reading of the statutory mandate is unambiguous: values other than "use values" should be considered in the assessment methodologies.¹⁸⁵ Option value is clearly included under either of the court's notions of nonuse values, and existence value is also either a "passive use" or a factor "not limited to use value."¹⁸⁶

for assessment of compensable value, as defined to include both use and passive use values).

180. Natural Resource Damage Assessments, 43 C.F.R. § 11.83(b)(2) (1989) (permitting nonuse analysis only if use values could not be determined); Natural Resource Damage Assessments, *id.* § 11.83(d)(5)(ii) (permitting CV analysis of nonuse values only when use values could not be determined).

181. *Ohio*, 880 F.2d at 462-64.

182. *Id.* at 463.

183. *Id.*

184. *Id.*

185. *Id.* at 464. ("Option and existence values may represent 'passive' use, but they nonetheless reflect utility derived by humans from a resource, and thus, *prima facie*, ought to be included in a damage assessment.").

186. *Id.* Unfortunately, the court's extension of its analysis to nonuse values reveals a somewhat confused characterization of those values. It first required DOI to include "non-consumptive values, such as option and existence values, in the calculation of use values," *id.*, thereby implying that these values should be considered use values. It then rejected DOI's argument that such values need not be included since § 301(c) "mentions only use values." *Id.* As the court correctly pointed out, the statute in fact says that the methodologies "shall take into consideration factors, including, *but not limited to* . . . use

This more complex view of the nature of values is encompassed in the proposed revised DOI regulations under the rubric of "compensable value," which is a combination of use and nonuse values.¹⁸⁷ Although the assessment methods used must be justified and the costs must remain "reasonable" compared to the level of damages,¹⁸⁸ a trustee may use any of the many alternative methodologies to estimate the range of values contained within "compensable value."¹⁸⁹

If a trustee seeks to recover for nonuse values (as it almost certainly will), the absence of other useful methodologies means that it must turn to CV to estimate those values.¹⁹⁰ The DOI regulations governing the use of CV were upheld by the *Ohio* court as reasonably representing the "best available procedure"¹⁹¹ but have nonetheless been under review by DOI because of both the level of debate that has been engendered regarding CV's use and the ongoing review regarding that use that has been taking place at NOAA.¹⁹²

B. *The Nature and State of Contingent Valuation*

1. *General Concepts.* Contingent valuation can be used to measure any economic value. It is "the most flexible of the valuation techniques" available to economists and, in the context of

value" and implies that additional values should be included. *Id.* The court thereby suggests that option and existence values are *not* use values, but it then asks why they should not be considered "use values," even under DOI's interpretation of the statute, since "[o]ption and existence values may represent 'passive' use, but they nonetheless reflect utility derived by humans from a resource." *Id.*

187. Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,772 (1991) (to be codified at 43 C.F.R. § 11.83(c)) (proposed Apr. 29, 1991).

188. *See id.* at 19,756 (referring to the Compensation Determination Plan and the requirement that the trustee "give a brief rationale for the choice of . . . the methodologies used to estimate . . . the compensable value"); *id.* at 19,754 (noting the requirement that the cost of the assessment be reasonable as compared to the "anticipated amount of damages to be recovered").

189. *See id.* at 19,759.

190. "[Contingent valuation] is the only nonmarket valuation methodology currently available that is capable of explicitly estimating nonuse values." *Id.*; *see also* NOAA Proposed Rules, *supra* note 8, at 1142.

191. *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 476-78 (D.C. Cir. 1989). *Ohio* upheld DOI's decision to include CV in the NRD assessment methodologies as "intelligent" and "cautious," *id.* at 476, "reasonable and consistent with congressional intent," *id.* at 477, and fairly representing the "best available procedure," *id.* at 478.

192. *See* Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,351-52 (1993) (discussing the DOI evaluation of CV and nonuse values).

NRD assessment, to natural resource trustees.¹⁹³ It is also the only way of explicitly measuring nonuse values.¹⁹⁴

The method's name comes from its premise and underlying structure. By setting up a "contingent market" for a particular resource and querying individuals with a carefully designed and administered survey about how they would act in such a market, CV measures the value that people would place on goods bought and sold there. It is a "direct" method of assessment¹⁹⁵ that asks people what the value of a resource is. Its roots lie in the idea that conversation is the best way to discover an individual's true preferences.¹⁹⁶

In the context of market values, this method poses few problems because it essentially mimics real world purchases and because other methods can be used to check the validity of CV results.¹⁹⁷ As use values become increasingly separated from markets, however, the complexity of questions and the care with which they are administered must increase. The pinnacle of difficulty is reached with nonuse values: they have no corresponding market, so CV markets look like nothing familiar to the survey designer;

193. Richard C. Bishop & Thomas A. Heberlein, *The Contingent Valuation Method*, in WARD & DUFFIELD, *supra* note 91, at 281, 283.

194. See Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,759 (1991) (to be codified at 43 C.F.R. §11) (proposed Apr. 29, 1991).

Some have argued, however, that this is not quite the case. See Cross, *supra* note 27, at 333 ("[R]estoration can itself embrace the non-use values and capture them better than contingent valuation."); Daum, *supra* note 27, at 397-99. Restoration cost, they claim, implicitly includes nonuse values since it "replaces" the resource in which individuals had existence, option, or bequest value. See Cross, *supra* note 27, at 333; Daum, *supra* note 27, at 398. As I argue above, however, see *supra* note 122, a restoration cost approach ignores the fundamental uniqueness of natural resources. CV is able to calculate those additional values without assuming the fungibility of natural resources. Unlike restoration costs, it ensures that the value placed on unique resources can be fully recovered. Also unlike restoration cost, it makes explicit a link between loss and damage payments that is necessary to the efficiency and value recognition roles that nonuse recovery should serve.

Although restoration cost may be useful, it is an imperfect measure of NRDs. DOI agrees, pointing out that "restoration" costs (in the sense of physical restoration) are not able to encompass the full range of losses to the site. CV is the only way of estimating those additional losses. See 56 Fed. Reg. 19,752, 19,759 (1991).

195. See William D. Schulze, *Use of Direct Methods for Valuing Natural Resource Damages*, in VALUING NATURAL ASSETS, *supra* note 25, at 204. Compare this direct method with the indirect methods addressed above. See *supra* notes 97-101 and accompanying text.

196. See Smith, *supra* note 32, at 868-69, 875.

197. See *supra* note 101 (discussing how CV is more acceptable in this context since it can be compared with techniques such as the travel cost method).

individuals have little experience with putting prices on noneconomic goods, so the slightest suggestion regarding an appropriate price can bias the results; and there is generally no "behavioral trail" to use as a basis for checking the results of a CV study. Despite these difficulties, CV is the only method available for estimating nonuse values associated with environmental resources.

The questions posed by the typical NRD CV study are designed to determine the "willingness to pay" (WTP) of the person answering the survey. In the area of natural resources, the focus on WTP is incongruous. After all, most natural resources are conceived of as part of the public trust.¹⁹⁸ Why should citizens be asked how much they are willing to pay for the resources they "own?" The proper value would seem to be the "willingness-to-accept" (WTA),¹⁹⁹ which is the amount an individual would be willing to accept to give up ownership or a particular quality of a given resource. As one might expect, however, WTA is generally much higher than WTP since the individual setting the price has both control over the disposition of the good and the wealth reflected by owning it.²⁰⁰ It is so much higher in NRD situations, in fact, that DOI and NOAA, along with many economists, reject WTA in an effort to bias CV in a more conservative direction.²⁰¹ The NOAA Panel concurred in this decision.²⁰²

The decision not to use WTA and its higher values may make political sense, but it is really just that—a political decision.²⁰³

198. See *supra* text accompanying notes 89–92.

199. See Schulze, *supra* note 195, at 209; NOAA Proposed Rules, *supra* note 8, at 1150, 1161 (agreeing that "the conceptually correct measure of lost passive use value for environmental damage is WTA" because "the government is holding natural resources in trust for the public").

200. See Duncan Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STAN. L. REV. 387, 401–07 (1981) (describing the disparity between WTP and WTA as the "offer-asking problem").

201. Natural Resource Damage Assessments, 51 Fed. Reg. 27,674, 27,721 (1986); NOAA Proposed Rules, *supra* note 8, at 1182 (to be codified at 15 C.F.R. § 990.78(b)(5)(i)(A)(1)); see *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 476 n.82 (D.C. Cir. 1989); Richard C. Bishop & Thomas A. Heberlein, *Measuring Values of Extramarket Goods: Are Indirect Measures Biased?*, 61 AM. J. AGRIC. ECON. 926 (1979) (citing results of survey in which WTA was over four times higher than WTP); see also Bishop & Heberlein, *supra* note 193, at 283 ("[M]ost—though by no means all—CVM studies have measured only willingness to pay.").

202. NOAA Panel Report, *supra* note 1, at 4612.

203. Cf. Kennedy, *supra* note 200, at 444 (concluding that the distribution of

There is no economic reason that WTA should not be used. After all, it does represent a situation more comparable to the actual state of affairs, in which ownership of (or at least substantial control over) the natural resources is vested in the public, rather than in those who injure those resources. The vesting of that control in the public is, in part, a political affirmation of the psychic value that individuals place in the existence of those resources. It gives the "owners" of the land the power to effectively exclude those who would injure it. Measuring WTP rather than WTA removes that recognition from the damage calculus by permitting industrial polluters to use the land as they wish as long as they are willing to pay for it. By removing this "ownership capital" from the calculus, the WTP measure removes from individuals the impact that they would otherwise have on those who injure a resource. Even as presently constituted, then, CV is likely to significantly underestimate the true value that individuals place on the destruction of nonuse resources.²⁰⁴

The decision to use WTP in most CV studies is representative of decisions made throughout the process of designing a CV study to ensure a conservative bias in the assessment procedure.²⁰⁵ Because of its bias, skeptics of CV should be particularly willing to accept a WTP-based survey as a basis for assessing nonuse damages, and advocates of CV and the importance of nonuse values should press all the harder to have such studies included. Although they do not represent the reality of property rights in the environment, such studies provide the only way of representing the sense of connection between individual and environment, which is

entitlements in cost-benefit analysis is a political decision).

204. This is particularly true in well-conducted CV studies in which individuals are forced to work within their own budgetary constraints. See *infra* text accompanying notes 234-35. If individuals are not forced to work within their own budgets, they may, among other things, think of public ownership of resources and the accompanying ability to entirely exclude polluters from natural resources as part of their own wealth, thus artificially inflating reported WTPs. See *infra* text accompanying notes 220-22.

205. See NOAA Panel Report, *supra* note 1, at 4607, 4608 (discussing the need for a conservative design in the CV process).

Incredibly, in its proposed rules, NOAA felt compelled to further bias the estimates of nonuse losses by requiring in most cases that estimates of WTP be cut in half to provide the actual WTP. See NOAA Proposed Rules, *supra* note 8, at 1146. The NOAA valuation not only begins with a conservative and conceptually problematic estimate (WTP) but also arbitrarily slashes it in half. At least under the NOAA rules, there should be little fear of excess liability.

all that is left of that ownership once a resource has been destroyed.

2. *The Methodology of CV and Economic Criticisms.* Although the heart of CV is the asking of questions, the construction of a well-conducted study begins long before the first encounter between interviewer and interviewee.²⁰⁶ The importance of approaching the design of surveys with care and deliberateness is often ignored. As William Schulze points out, CV "encourages the unfortunate tendency in the uninformed to consider themselves experts in survey design."²⁰⁷ Its simplicity "may lull the inexperienced into the belief that a study may be conducted cheaply with little development effort."²⁰⁸ Early surveys that did not comprehend the full range of complexities necessarily led to flawed results. As Donald McCloskey notes, "Foolish inquiries into motives and foolish use of human informants will produce nonsense. But this is true of foolish use of any evidence."²⁰⁹ Recent work by economists has set forth several requirements that must be followed to ensure that a CV study, and particularly the questions it asks, are well-designed.²¹⁰

206. More detailed discussions of CV than the brief outline that I have presented here are available. See, e.g., RONALD G. CUMMINGS ET AL., *VALUING ENVIRONMENTAL GOODS: AN ASSESSMENT OF THE CONTINGENT VALUATION METHOD* (1986); MITCHELL & CARSON, *supra* note 16; see also Bishop & Heberlein, *supra* note 193, at 281; Freeman, *supra* note 25, at 288-98 (reviewing standards for reliable CV studies and twelve past studies).

207. Schulze, *supra* note 195, at 205.

208. Richard T. Carson & Robert C. Mitchell, *Contingent Valuation and the Legal Arena*, in *VALUING NATURAL ASSETS*, *supra* note 25, at 231, 232.

209. DONALD N. MCCLOSKEY, *THE RHETORIC OF ECONOMICS* 181 (1985). As McCloskey points out, then, it is not surprising that if you "Ask a Silly Question," see Note, *supra* note 27 (using that as its title and concluding that the answers are too silly to be used as a basis for environmental liability), your answers will be silly. The solution is not to stop asking questions but to stop asking silly ones.

210. For reviews of the sorts of issues that are necessary to ensure a proper CV study, see NOAA Panel Report, *supra* note 1, at 4611-13; Freeman, *supra* note 25, at 288-89 (listing "six characteristics of a reliable [CV] instrument for estimating nonuse values"); CUMMINGS ET AL., *supra* note 206, at 231 (listing eleven "reference operating conditions" that, when satisfied, may improve the accuracy of a CV study); see also MITCHELL & CARSON, *supra* note 16, at 289-303 (arguing for a "best practice" standard for judging CV reliability and setting forth questions to use as a means of evaluating the quality of a CV study). The proposed NOAA rule also details many of the requirements proposed by its CV Panel. See NOAA Proposed Rules, *supra* note 8, at 1182-83 (to be codified at 15 C.F.R. § 990.78(b)(5)).

A good CV study, then, begins well before the interviewees are ever questioned. Such an approach ensures that the biases and uncertainties inherent in assessing nonuse values can be minimized. A researcher conducting a CV study can begin with a variety of steps that recent reviews have recommended for the design phase.²¹¹ A sample population should be identified. The questions themselves must be drafted, and the interviewer must determine which payment vehicle²¹² and which answer format she will use.²¹³ These decisions will alter the form of the questions and may produce biases of one sort or another.²¹⁴ To check for those biases, a surveyor should pretest the topic of review both with groups of experts on the resource and in focus groups made up of members of the public. The information that will introduce the questions also should be pretested to ensure that interviewees will understand and accept the premises of the question.²¹⁵ If the questioning is to occur in personal interviews, as many economists have suggested,²¹⁶ the possibility of "interviewer effects" (the desire to impress the questioner by offering a higher willingness to pay) should be examined early in the process.

Once the preliminary work has been completed, field work begins. First, a randomly selected individual is provided with a set of introductory statements that introduce the individual to the resource in question. The individual is then asked a painstakingly

211. See, e.g., NOAA Panel Report, *supra* note 1, at 4611-13 (listing several pre-questioning guidelines to be followed).

212. Will the interviewee, for example, be asked to pay more for consumer goods or more in taxes?

213. Will the question, for example, be open-ended, or will it ask whether the interviewee would be willing to spend a particular amount? The NOAA Panel recommended that the questions be of a referendum or dichotomous choice (i.e. yes-or-no) format. This format appeared to them to be the most useful format for conducting a bias-free study. According to the Panel, the format was useful because it corresponded to a real-world choice format and a payment vehicle with which individuals are familiar: that of a referendum placed on a ballot for a vote. See NOAA Panel Report, *supra* note 1, at 4612. The proposed rules concur with this recommendation. See NOAA Proposed Rules, *supra* note 8, at 1144.

214. See Bishop & Heberlein, *supra* note 193, at 288-91 (discussing the interview bias in five different approaches to CV studies).

215. See NOAA Panel Report, *supra* note 1, at 4612.

216. Both mail and telephone interviews also are possible, but they may be less reliable than personal interviews. In addition, they may not offer the flexibility and responsiveness to interviewees that is necessary for the best studies. *Id.* at 4611. For this reason, the NOAA proposed rules recommend that personal interviews be conducted whenever possible. See NOAA Proposed Rules, *supra* note 8, at 1144.

crafted series of questions regarding how much she would be willing to pay to guarantee the integrity of that resource. After gathering the answers to these questions from an appropriately large number of people, the researchers analyze the data to produce an average value per person. This average value is then multiplied by the number of individuals in the relevant hypothetical market to determine the total economic value behind an environmental resource.

Unfortunately, even well-designed studies cannot completely eliminate uncertainties and bias. As the epigram to this Note suggests, as Part I illustrates in the context of the tort system, and as the discussion of nonuse values points out, any attempt to translate nonuse values into prices will carry with it uncertainty. This has been particularly true for CV. Individuals simply are not accustomed to putting prices on nonuse, nonmarket values. When posed with questions from a CV survey, particularly a survey that has not been properly designed, the respondents' inexperience with pricing nonuse values results in poorly considered answers. Forced to place a cash value on a resource, many individuals, if not led through a process of careful consideration, will utilize seat-of-the-pants calculations or take mere stabs in the dark to determine what they would be willing to pay.²¹⁷ Alternatively, they may be led in a surprisingly forceful manner by the question format, which they take as a cue regarding the proper approach to value estimation.²¹⁸ Whatever the ultimate motivation behind the proffered answer, the lack of consideration behind it leads to a number of different problems.²¹⁹

217. See, e.g., David A. Schkade & John W. Payne, *Where Do the Numbers Come From? How People Respond to Contingent Valuation Questions*, in Exxon Symposium, *supra* note 22, at 271, 275-76.

218. See, e.g., William H. Desvousges et al., *Measuring Natural Resource Damages with Contingent Valuation: Tests of Validity and Reliability*, in Exxon Symposium, *supra* note 22, at 92, 114 (noting that, when an initial bid is provided to interviewees, they "may agree to pay the offered bid because their preference for the commodity is ill-defined and because the bid provides a cue about acceptable values"). Differences in WTP responses, of course, will change the ultimate outcome of the study. See Walter J. Mead, *Review and Analysis of State-of-the-Art Contingent Valuation Studies*, in Exxon Symposium, *supra* note 22, at 305, 326 (noting that different approaches to survey design "lead to substantially different estimates of the same resource value").

219. Time for consideration is, in fact, one way that researchers can try to minimize upward estimation error. See, e.g., Dale Whittington et al., *Giving Respondents Time to Think in Contingent Valuation Studies: A Developing Country Application*, 22 J. ENVTL. ECON. & MGMT. 205, 222 (1992) (noting that WTP fell for those individuals who were

First, individuals do not do a good job of budgeting. Only rarely do individuals answer CV questions after considering what other spending they would be willing to forgo in return for spending on the value presented in the CV questions. As a result, the real willingness to pay is generally less than that reported.²²⁰ In addition, individuals rarely consider other demands that might compete for a similar allocation of resources. A person might say that she would be willing to pay two dollars to protect a whooping crane, but she would probably not give that much for every endangered species and all the additional environmental concerns seeking contributions. Eventually, the WTP per cause would have to be revised downward.²²¹ In the absence of the careful analysis and questioning that should characterize a careful study, the result of these failures to consider budgets means that the average reported willingness to pay is generally higher than if individuals were forced to make real trade-offs.²²²

A high reported measure of WTP leads rapidly to extreme results—especially when the scope of the market in a CV study is national. Errors and variations in WTP results are multiplied by the number of households in a survey's market, so that a one dollar change in each household's contribution may translate into an additional \$100 million that the nation is willing to pay to avoid the loss.²²³ Although the resulting large estimates for non-use values are not per se incorrect, intuition causes one to recoil from an aggregated willingness to pay of \$10 billion for a few days worth of slightly better viewing in the winter at the Grand Canyon.²²⁴ One might choose to limit the extent of the market, but

given time to think but declining to extend conclusions to developed economies without further study).

220. See NOAA Panel Report, *supra* note 1, at 4605 (discussing the absence of a meaningful budget constraint).

221. See *id.* at 4604-05 (addressing the "implausibility of responses"); Mead, *supra* note 218, at 317 (extrapolating from a \$130-per-species WTP for the whooping crane and arguing that, if those numbers held, the total WTP per household for the over 500 endangered species in the U.S. would be over \$60,000—"clearly an impossible result").

222. For a methodology and survey design that seems to counteract some of these difficulties, see Michael A. Kemp & Christopher Maxwell, *Exploring a Budget Context for Contingent Valuation Estimates*, in Exxon Symposium, *supra* note 22, at 217 (discussing the "disaggregation" method). They report that the disaggregation method resulted in significantly lower WTP amounts than did a single focus question method. *Id.* at 232.

223. See Note, *supra* note 27, at 1993 n.84 (calculating the impact of certain changes given the potentially large market size).

224. See, e.g., Mead, *supra* note 218, at 311.

even that decision is weighted with political and legal considerations.²²⁵

Critics also point out that CV is subject to "embedding problems," which occur when individuals place nearly identical values on what seem to be very different levels of environmental loss.²²⁶ For example, individuals might be willing to pay the same amount to save 200,000 birds as to save 2000.²²⁷ Rather than measuring a rational willingness to pay, economists argue, the individual interviewee is merely expressing a general willingness to pay for all environmental resources and perhaps simply a willingness to pay for what is perceived as "a good cause."²²⁸ Critics back this charge by noting that many bids offered by individuals are in amounts like ten or fifty dollars, which are very similar to those traditionally given to charities.²²⁹

For several reasons, this effect is of major concern for CV.²³⁰ First, it seems to indicate that the value being measured in these studies is not the value that CV intends to measure. CV should measure not how much people think a certain charity is

225. See NOAA Panel Report, *supra* note 1, at 4605; Smith, *supra* note 14, at 21 (recognizing the problem of the geographical extent of the market and tracing fundamental differences in studies to differences in the size of the market). To extend the conservative bias that began with choosing WTP over WTA, it might be useful to make a legal decision to limit the market size to individuals within the scope of the trustee's control. A state trustee, for example, would be able to recover only for losses in that state.

Although limiting market size would ignore the lost nonuse values of those outside the state, practical considerations may justify such a limitation. For example, maintaining a link between the trustee seeking to recover losses and the individuals from whom the loss derives ensures that each sovereign is able to govern its own natural resource values. Furthermore, the loss in values is likely to be increasingly smaller as one moves away from the site of the loss. See NOAA Panel Report, *supra* note 1, at 4605 (discussing the limits on market size in one study as based on an expectation of diminishing reported values as well as on sovereignty grounds). Limiting the extent of the market to comply with both the borders of the trustee and the political and intuitive notions of those who are most affected by NRDs may be a conservative yet reasonable decision in the context of calculating total losses.

226. See Desvousges et al., *supra* note 218, at 113; Kahneman & Knetsch, *supra* note 26, at 58-59; Schkade & Payne, *supra* note 217, at 289. These identical values can be either positive and of a "charitable" amount, say \$10 or \$20, or they may be zero—a decision not to give at all. See NOAA Panel Report, *supra* note 1, at 4605.

227. See Desvousges et al., *supra* note 218, at 113.

228. See, e.g., Freeman, *supra* note 25, at 297 (suspecting that at least some CV studies capture "a general sentiment for environmental protection"); Kahneman & Knetsch, *supra* note 26, at 69.

229. See NOAA Panel Report, *supra* note 1, at 4605.

230. The problem is "[p]erhaps the most important internal argument against the reliability of the CV approach." *Id.* at 4607.

worth but how much a given environmental good is worth. Second, even if these questions measure something more resource-specific than charitable giving, there is a fear that they reveal that the decisionmaking process underlying these nonuse values fails to follow the traditional view of rational economic decisionmaking. The absence of a "rational" approach casts doubt on the nature of the goods being measured and suggests that they may have no place in economic analysis.

Finally, economists have criticized CV by arguing that what it attempts to measure—existence value—seems to depend on one's knowledge about a given resource. This realization is disturbing to some commentators, who argue that a value either should or should not exist and that making value depend on information leads to perverse incentives that might encourage the hiding of environmental losses.²³¹

Given the complexities of good design and administration, it is not surprising that such criticisms have been targeted at CV. In their calls for the complete exclusion of CV, and therefore of nonuse values, however, the critics have gone too far. Cautious design and administration such as that outlined above can solve many of CV's problems, making consideration better than elimination.²³² As long as the questions being asked are contained within a well-constructed survey, the results will provide useful information. As the court in *Ohio* noted, "[t]he simple and obvious safeguard against overstatement [of willingness to pay] . . . is more sophisticated questioning."²³³

The first step to more sophisticated questions is following the procedures necessary to good design before asking the questions. For example, the concern over the lack of budget context in most CV answers might be avoided by bringing budget constraints to the attention of the interviewee through the question format. One possible way to do so is via a "disaggregation" method like that

231. See Milgrom, *supra* note 30, at 419, 423 (arguing that values must not depend on knowledge but on facts of resource loss).

232. See NOAA Panel Report, *supra* note 1, at 4608-09 (listing guidelines necessary to a well-conducted CV study); Department of Interior Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,351 (1993) (noting that a well-designed survey can alleviate many of the criticisms directed against the use of CV); NOAA Proposed Rules, *supra* note 8, at 1156-64 (responding to criticisms of CV by arguing that well-designed studies can overcome most problems).

233. *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 478 (D.C. Cir. 1989).

discussed by Michael Kemp and Christopher Maxwell at the Exxon Symposium.²³⁴ Under this method, the survey begins by seeking the value that individuals would contribute yearly to a broad range of charitable needs. By narrowing from that context, more economically and intuitively satisfying results might be derived.²³⁵

The more realistic average WTP amount that will result from careful survey design will moot a variety of other criticisms of CV. For example, if the average WTP in the study is valid (and not excessively high on an individual level), then the aggregation of the value over the entire market should be valid as well.²³⁶ More careful surveys also will go far toward solving the dilemma of embedding by ensuring that individuals are forced to take their full range of donative options—and their budget constraint—into account. Rather than report a generic amount appropriate for donation to a charity, the individual would be forced to consider the underlying rationality of his or her decision, which would presumably lead to a decrease in the willingness to donate to the protection of the resource. Such a falling off of total WTP is one indicator that individuals are behaving in an economically rational manner.²³⁷

To the extent that the embedding effect is not entirely eliminated by more careful questioning, it may simply reflect a conscious or subconscious value that is *event*—rather than *extent*—based.²³⁸ Rather than provide a logical and rational sliding scale corresponding to different levels of loss, one might expect that individuals holding an intrinsic or altruistic existence value would provide a single intuitively “right” price for its loss. That this price would correspond to that given to charities is not surprising; it simply reveals the inherent difficulty that individuals

234. See Kemp & Maxwell, *supra* note 222, at 232. But see NOAA Proposed Rules, *supra* note 8, at 1160 (appearing to reject this “top-down” approach).

235. See Kemp & Maxwell, *supra* note 222, at 232.

236. For a discussion of the proper scope of a market, see *supra* note 225 and accompanying text.

237. This conclusion comports with the assumption made by economists, see NOAA Panel Report, *supra* note 1, at 4604, that individuals will act as rationally with respect to any given public good as with any private, rival good.

238. See *supra* subsection II(B)(1) (describing the nature of intrinsic existence values and discussing how they do not fit into traditional economic notions of rationality); cf. Smith, *supra* note 14, at 15 (noting that, if individuals demand some minimal level of resource production, the embedding effect is not as counterintuitive).

have in valuing nonmarket goods. One of the few familiar mechanisms for nonmarket "valuation" is, after all, charitable giving.²³⁹ When David Schkade and John Payne accuse individuals of not thinking "as rational economic actors calculating Hicksian compensating variation functions,"²⁴⁰ they are probably right, at least with respect to the extent of those values that are not easily monetizable. That some aspect of the value reported by CV is not economically rational does not mean, however, that those values *cannot* be considered as part of the liability system. A similar valuation occurs in tort law, yet the uncertain and arguably irrational nature of the award system has not led to its elimination.

Finally, the criticism that existence interests are not real because they can "spring up" when an individual hears about a natural resource should not prevent them from being integrated into environmental liability. The notion of values "springing up" is not so impossible in our legal system. In many instances, we only consider placing a "value" on goods once they are threatened or taken from us. It may be, for example, only after a good is placed into the market stream that it takes on value. And in one study of pain and suffering cases, some 70% of the plaintiffs surveyed did not realize before the trial that they could recover for pain and suffering.²⁴¹ Is it so surprising that the same is true for the value some individuals place on their association with natural places? As Rolston noted, "Expect wildland decisions to awaken previously latent and newly emerging values. . . . We never miss the water until the well runs dry. We learn what is at stake only when we learn that it is at stake. We awaken to goods when their opposites threaten" ²⁴²

239. Even in the charitable context, however, it is difficult to consider one's level of donation a proper estimate of the "value" that one places on the charitable purpose. Only when put into the most crude market terms is that donation equivalent to the level of feeling for the charity. Cf. Radin, *supra* note 31, at 1859-63 (discussing the rhetoric of universal commodification and how it treats everything "equivalent to a sum of money"); Radin, *supra* note 29, at 57, 65-66 (discussing the commensurability message broadcast by market rhetoric). Similarly, the extent of the value that we place on environmental goods cannot be fully captured by this reported amount.

240. David A. Schkade & John W. Payne, *Where Do the Numbers Come From? How People Respond to Contingent Valuation Questions*, in *CONTINGENT VALUATION: A CRITICAL ASSESSMENT* tab 6, at 22 (Cambridge Economics, Inc. 1992), *edited and reprinted in* Exxon Symposium, *supra* note 22.

241. See O'Connell & Simon, *supra* note 40, at 20.

242. Rolston, *supra* note 88, at 47.

Although CV has its theoretical problems, then, an increasing number of economists nonetheless are coming to the conclusion that CV *can* provide valuable information about the level of non-use values lost in damages to a particular resource.²⁴³ With careful construction of surveys and thoughtful presentation, the difficulties and biases of the early surveys can be solved,²⁴⁴ and with further work in the area, the guidelines can do nothing but improve. In the minds of these researchers, CV does not have irreconcilable difficulties, and, when properly done, can serve as a useful basis for valuing environmental losses.²⁴⁵

3. *Legal Criticisms.* Despite the growing evidence that CV can be a useful part of the legal system, the economic criticism of CV has resulted in attacks on its legal appropriateness. Starting from the premise that CV's results are too uncertain, legal writers have concluded that CV is too tenuous a basis for legal proof and that its use threatens excessive complexity in determining nonuse values.²⁴⁶ After all, under the common law, damage calculations

243. Perhaps the most telling confirmation of the utility of CV is the report of the NOAA Panel, which categorically rejected assertions that "there can be no useful information content to CV results." NOAA Panel Report, *supra* note 1, at 4610. Although establishing what it considered to be "stringent guidelines" for the development, conduct, and presentation of CV studies, the Panel also noted that studies that complied with those guidelines could "convey useful information" and "produce estimates reliable enough to be the starting point of a judicial process of damage assessment." *Id.* Although those results would necessarily remain subject to the traditional review of evidence by judge and jury, they would provide "an adequately reliable benchmark" to begin that review. *Id.* at 4611. DOI has adopted a similar perspective, noting that it "believes that a well-designed CVM survey can satisfy many of the reference operating conditions" necessary to ensure its reliability. Natural Resource Damage Assessments, 58 Fed. Reg. 39,328, 39,351 (1993). NOAA also agrees. See NOAA Proposed Rules, *supra* note 8, at 1156 ("CV is a valid, proven technique when properly structured and professionally applied, and as such is an acceptable method for use by natural resource trustees.").

244. See MITCHELL & CARSON, *supra* note 16, at 231-59 (arguing that CV works in principle and implicitly asserting that it will meet necessary standards to survive court challenges); Smith, *supra* note 32, at 876 ("[T]he growing body of comparative evaluations (using choice- and survey-based methods to estimate the values of amenities), field experiments, and ultimately the \$1 billion-a-year market research industry all confirm that hypothetical questions can be consistent indicators of actual behavior.").

245. This assessment is true notwithstanding the Exxon Symposium. See Exxon Symposium, *supra* note 22 (collecting the results of eleven Exxon-funded groups of researchers, most of which rejected the utility of CV).

246. See, e.g., Cicchetti & Peck, *supra* note 27; Cross, *supra* note 27, at 332-33 (arguing that CV "lacks the indicia of reliability necessary for legal use"); Shavell, *supra* note 27, at 380-81; Note, *supra* note 27, at 1995 (arguing for a complete ban because the er-

must be established with "reasonable certainty."²⁴⁷ For legal opponents of CV, its inherent difficulties in determining nonmonetizable values essentially mean that it will never be able to meet legal requirements.²⁴⁸ Some authors²⁴⁹ also have argued that the unreliability of the surveys and the methodology of CV suggest that it should be inadmissible because it fails to comply with the rules of evidence regarding the admissibility of surveys²⁵⁰ and does not satisfy the rule regarding the admissibility of expert testimony.²⁵¹ Although this critical approach must overcome the "rebuttable presumption" that the statutes grant to the trustee,²⁵² most of the legal commentators that have argued the point see CV as so fundamentally flawed that they are confident that it will never be admitted.

A full response to these legal attacks has two parts. First, it is important to establish the statutory basis for including nonuse values—both the more traditional option and existence values as well as intrinsic existence values—within the rubric of NRDs. Second, the evidentiary concerns regarding the admissibility and weight of CV must be evaluated to determine whether judges will be able to consider it as they would any other evidence of damages.

As to the first issue, nonuse values are recoverable under the language of environmental statutes. For CERCLA recovery, the statutory analysis begins at 42 U.S.C. § 9607(f)(1), which mandates that "[t]he measure of damages . . . shall not be limited by the

ror is too large); *cf.* *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 476 (D.C. Cir. 1989) (noting and rejecting arguments of CV opponents based on common law analysis that CV cannot be considered a permissible basis for recovery).

247. *See, e.g., Idaho v. Southern Refrigerated Transp.*, No. 88-1279, 1991 U.S. Dist. LEXIS 1869, at *55 (D. Idaho Jan. 24, 1991) (ruling that a CV study conducted for unrelated purposes could not serve as a basis for proving existence values). Curiously, however, and importantly for the purposes of this Note, this requirement is not imposed on those attempting to establish nonpecuniary damages. Because setting the level of such damages is essentially a judgment call, establishing proof with "reasonable certainty" is essentially impossible. The system recognizes this and grants nonpecuniary tort losses an exemption from this standard. The same should be true for estimates of nonuse losses.

248. *See Cicchetti & Peck, supra* note 27; Cross, *supra* note 27, at 332-33; Shavell, *supra* note 27, at 380-81; Note, *supra* note 27, at 1995.

249. *See Cicchetti & Peck, supra* note 27; Note, *supra* note 27.

250. *See* FED. R. EVID. 703; MANUAL FOR COMPLEX LITIGATION § 21.483 (2d ed. 1985).

251. *See Daubert v. Merrell Dow Pharmaceuticals*, 113 S. Ct. 2786, 2796-97 (1993); *Christopherson v. Allied-Signal Corp.*, 939 F.2d 1106, 1110 (5th Cir. 1991) (en banc) (per curiam); Note, *supra* note 27, at 1999.

252. *See supra* note 165 and accompanying text.

sums which can be used to restore or replace such resources.”²⁵³ Additional sums recovered can be used to acquire additional resources.²⁵⁴

The legislative history of CERCLA suggests that the increment over restoration cost is intended to include the price of the lost use values that occur between damage and restoration.²⁵⁵ There is nothing in the recovery provisions regarding the appropriateness or inappropriateness of also including nonuse values in that additional amount or of the possibility that permanent loss of some kind demands more significant compensation. Furthermore, the provision assigning the responsibility for assessment methodologies is more explicit. It makes room for nonuse inclusion, requiring that the methodologies “take into consideration factors including, *but not limited to* . . . use value.”²⁵⁶ The court in *Ohio* supports the natural conclusion: “Option and existence values are non-consumptive values compensable under the terms of CERCLA.”²⁵⁷

Under the OPA, the measure of NRDs is somewhat narrower,²⁵⁸ but room remains for the assessment of nonuse damages. The legislative history of the OPA, for example, makes clear that the value of sea otters is more than the value of their pelts.²⁵⁹ Further, although the OPA focuses attention on the restoration of the resource or the acquisition of an equivalent resource,²⁶⁰ it permits the difference in costs between damage and restoration to be assessed. As with CERCLA, if the “replacement” resource does not encompass the full range of lost values (as it rarely will²⁶¹),

253. 42 U.S.C. § 9607(f)(1) (1988).

254. See *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 454, (D.C. Cir. 1989) (citing legislative history); see also H.R. CONF. REP. NO. 830, 95th Cong., 1st Sess. 92 (1977), reprinted in 1977 U.S.C.C.A.N. 4424, 4467 (noting that, under the CWA, when the “damaged or destroyed resource is irreplaceable[,] . . . the measure of liability is the reasonable cost of acquiring resources to offset the loss”).

255. *Ohio*, 880 F.2d at 454 n.34.

256. 42 U.S.C. § 9651(c)(2) (emphasis added).

257. *Ohio*, 880 F.2d at 476 n.77.

258. See 33 U.S.C. § 2706(d)(1) (Supp. IV 1992) (outlining the measure of natural resource damages); *id.* § 2702(b)(2)(A).

259. See S. REP. NO. 94, 101st Cong., 1st Sess. 15 (1990), reprinted in 1990 U.S.C.C.A.N. 722, 737.

260. See 33 U.S.C. § 2706(d)(1)(A).

261. See notes 122 and 194 (discussing and rejecting a restoration-based damage calculation as unable to fully compensate nonuse losses).

additional costs would be applied to the acquisition of additional resources.²⁶²

There is, therefore, plenty of statutory room for the inclusion of nonuse values. Since CV is the only explicit means of conducting that assessment, the only remaining legal barrier addresses the admissibility of and evidentiary weight that should be given to CV.

As should be the case when nonmonetary values are translated into prices,²⁶³ the standards governing admissibility of CV should be relatively lenient. This conclusion is true for several reasons. First, the general rule governing CERCLA and other remedial environmental statutes is that they should be read liberally to ensure that they are implemented in favor of the public.²⁶⁴ The court in *Ohio*, for instance, notes that, although the extent of damage due to losses may be severe, "it is in the mission of CERCLA to assess the public loss."²⁶⁵ The broad reading, in the eyes of the court, included using a "more expansive survey and correspondingly higher assessment of damages" in a CV study of Texas whooping cranes.²⁶⁶ This approach, which reflects the remedial intent of CERCLA, certainly seems to approve of the use of CV methodologies.

Second, the rebuttable presumption will reinforce any attempt by the trustee to admit CV—even if the presumption has been rebutted. The presumption serves as a counter to common law rules requiring "precision" in the proof of damages, which might otherwise be imported into the evidentiary requirements.²⁶⁷ As the *Ohio* court noted, common law strictures, including the one that bars recovery for speculative injuries, do not apply to CERCLA.²⁶⁸

Third, rules of evidence regarding standards of scientific accuracy and overall probativity can be met by a well-executed CV study. The probativity is indicated by the absence of other means

262. See, e.g., *id.* § 2706(c)(1)(C). NOAA's proposed rules agree with this assessment and require inclusion of nonuse values in the measure of compensable damages under the OPA. See NOAA Proposed Rules, *supra* note 8, at 1151.

263. Witness the nearly nonexistent standards governing what jurors may consider in deliberating over the level of awards for nonpecuniary injuries. See *supra* Part I.

264. See, e.g., *Idaho v. Hanna Mining Co.*, 882 F.2d 392, 396 (9th Cir. 1989) ("CERCLA should be given a broad, liberal construction.").

265. *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 477 (D.C. Cir. 1989).

266. *Id.* at n.87.

267. See *supra* note 247.

268. See *Ohio*, 880 F.2d at 476.

of including nonuse values and by the body of literature supporting the usefulness of well-conducted CV studies.²⁶⁹ Given the dramatic increase in the number of CV studies, the methodology also can meet the requirement that expert testimony be reliable and relevant.²⁷⁰

Admitting CV results as evidence in NRD trials does not end the analysis. As with all other evidence submitted by witnesses, the relative weight given the CV-based evidence is subject to evaluation by the judge. When the survey is not conducted well or when the amount reported by the survey simply seems irrationally large, it will be within the prerogative of the judge to determine that the nonuse values should not be priced in precisely the manner called for by the CV results. Just as past cases and personal experience provide a basis (albeit a weak one) for consistency in awarding damages for pain and suffering, the judge may use CV as a basis for determining the level of nonuse values that should be awarded in NRD cases.

4. *Practical Concerns.* The economic challenges to the use of CV are backed up in the minds of its critics not only by the legal challenges but also by the various practical difficulties associated with its use. For its critics, the most important of these difficulties is the uncertainty and ultimate cost of awards based on these surveys. These critics point to figures suggesting awards regularly aggregating into the billions of dollars for relatively minor environmental injuries and argue that such results, among other things, seem to "stretch the 'reasonableness standard' to the breaking point"²⁷¹ and that the magnitude and range of the a-

269. See, e.g., Carson & Mitchell, *supra* note 208, at 231.

270. The new standard comes from *Daubert v. Merrell Dow Pharmaceuticals*, 113 S. Ct. 2786 (1993), and its interpretations of FED. R. EVID. 703. Under *Daubert*, scientific evidence need no longer be based on practices that are "generally accepted" in the scientific community. The new standard, based firmly in the Federal Rules of Evidence, merely requires that the methodology be reliable and relevant. 113 S. Ct. at 2795; see also FED. R. EVID. 403, 703. Even if the "generally accepted" standard still carries some weight, CV would have little problem qualifying. See Carson & Mitchell, *supra* note 208, at 231 ("If asked by a judge, an economist as an expert witness for either plaintiff or defendant would have to say that [CV] is now clearly a method that many experts routinely rely on as a base for their judgments."); NOAA Proposed Rules, *supra* note 8, 1142-43 (CV "has become one of the most widely used methods of nonmarket valuation.").

271. Mead, *supra* note 218, at 316.

wards are "enormous"²⁷² and "contrary to both common sense and current allocations of public resources."²⁷³ Although inappropriately large awards can lead to economic inefficiency, it is perhaps the uncertainty associated with the level of awards that most threatens economic planning and that will generate excessive amounts of litigation.²⁷⁴

Several points can be made in response. First, pain and suffering awards are just as uncertain in amount as are awards for environmental injuries. Yet pain and suffering awards have been a part of the legal system for centuries, and the system nonetheless remains stable. Second, judicial reviewability of CV evidence provides a check on "runaway" CV studies. Third, carefully designed studies will report realistic damages—even if those damages seem excessive. Finally, CV is not and will not be used in every litigated NRD case. Valid CV studies take time, energy, and money. As the NOAA Panel points out, "[I]n the present state of the art, a reliably conservative CV study should be conducted with personal interviews of significant duration and will therefore be relatively costly."²⁷⁵ Although litigants will provide the necessary resources when the stakes are high,²⁷⁶ using CV in minor spills with minimal nonuse values would be extravagant. The DOI regulations, for example, largely reflect these considerations, with divisions between simple-to-conduct, resource-lean type A regulations and complex, resource-intensive type B methodologies.²⁷⁷ Being a streamlined approach to evaluation, type A methods will be of the most use when the impact is minor.²⁷⁸ Type B processes, on the other hand, "would cover 'large or unusually damaging releases.'"²⁷⁹ Since minor releases will be more common than major

272. *Id.* at 324.

273. *Id.* at 325. As is noted above, however, *see supra* text accompanying note 269, if an award is "beyond the bounds of common sense," it would be within the capacity of the judge or jury as factfinder or the judge as adjudicator to unilaterally reduce the amount suggested by the CV study. Such adjustment is not uncommon in the case of awards for nonpecuniary losses.

274. Shavell, *supra* note 27, at 378-81; Note, *supra* note 27, at 1990-92.

275. NOAA Panel Report, *supra* note 1, at 4607.

276. Consider, as an extreme example, the \$3 million CV study done by the state of Alaska. *See* Ken Miller, *How Much Is a View Worth? Commerce Agency Wants to Know*, GANNETT NEWS SERVICE, Feb. 6, 1993, available in LEXIS, Nexis library, GNS file.

277. *See supra* note 161.

278. *See* *Colorado v. United States Dep't of Interior*, 880 F.2d 481, 487 (D.C. Cir. 1989) (discussing legislative intent regarding the scope of type A regulations); WARD & DUFFIELD, *supra* note 91, at 157.

279. *Colorado*, 880 F.2d at 487 (quoting S. REP. NO. 848, 96th Cong., 2d Sess. 86

ones, type A methods will ultimately be the most heavily utilized. In addition, both methods require the cost of assessment to be reasonable in light of the expected recovery,²⁸⁰ further discouraging a blunderbuss approach to the use of CV in estimating nonuse values.²⁸¹

Even some of the harshest critics of CV understand this important aspect of the nature of CV's utility, admitting that it might be useful when the extent of the injury is large, when the damage occurs to unique resources, when individuals are familiar with the damaged resource, and when the damage cannot be repaired over a short period of time—i.e. in precisely those situations in which CV would be most likely to be used.²⁸² In such cases, however, the stakes will be high enough that the parties will invest significantly in making sure that the study is done in the most effective way possible.²⁸³

(1980)).

280. 56 Fed. Reg. 19,752, 19,754 (1991) (to be codified at 43 C.F.R. pt. 11). Critics might argue that the malleability of CV would permit greedy trustees to conduct a sloppy study in an effort to bump up the expected level of damages. This outcome is unlikely because any attempt to do so would be met with both the skepticism of the court and the absence of the rebuttable presumption that is available only when very detailed regulations addressing the development and administration of the survey have been followed.

281. One unfortunate practical implication of this approach to the use of CV is that it ignores the intrinsic value that individuals place on completely undisturbed resources that are relatively unremarkable in size or uniqueness. Over time, and after extended academic and legal considerations of CV, it may be possible to create a schedule of damages based on prior awards that would permit at least some recovery of these nonuse values that will otherwise be slipping through the cracks. The NOAA Panel seemed to have had something like this "scheduling" in mind (although perhaps not as directed toward minor recoveries) when it called on "appropriate federal agencies [to] begin to accumulate standard damage assessments for a range of oil spills." NOAA Panel Report, *supra* note 1, at 4611. For a scheduling approach to the award of pain and suffering, see Bovbjerg et al., *supra* note 46. Such an approach will admittedly be an imperfect compromise between the reality of intrinsic nonuse values and the reality of NRD recovery, but it would ensure at least some level of recognition for those rights.

282. See Note, *supra* note 27, at 1995–96 (permitting, as a "second-best alternative," the use of CV in cases of "irreversible, or very long-lasting, adverse impacts to unique, widely-recognized natural resources") (quoting Natural Resource Damage Assessments, 56 Fed. Reg. 19,752, 19,760 (1991) (to be codified at 43 C.F.R. pt. 11)).

283. Charles Cicchetti and Neil Peck therefore jump the gun: they ask a facetious question regarding what economist would invest the necessary time and energy to ensure that a CV study is conducted properly and assume that the answer is "none," Cicchetti & Peck, *supra* note 27, at 8, when the reasoned answer is, "any economist that will be conducting a CV study in a significant, litigated case."

5. *Philosophical Concerns.* A final criticism of CV, curiously enough, comes not from those who might have an interest in avoiding the pecuniary losses associated with increased damage awards but from those one might expect to draw satisfaction from the imposition of damages. According to these environmental ethicists, attempting to fit nonuse values into a system of economic valuation cheapens the values and the resources from which they derive by forcing them into the very anthropocentric structure that intrinsic existence values are attempting to escape.²⁸⁴ Imposing an economic value on a resource, and particularly on that part of the resource represented by its intrinsic worth, is at best a meaningless task²⁸⁵ and at worst another step in the fragmentation and economic colonization of natural values.²⁸⁶ The monetization of non-use values, and therefore CV itself, "forces the user to be a consumer and compromising pragmatist in a decision context in which he ought to be a citizen, esthete, philosopher, and ethicist."²⁸⁷

This perspective, which argues for the sanctity of certain natural values, has some parallels with the observation by Margaret Jane Radin that certain "goods" in society are kept inalienable for a reason.²⁸⁸ For example, according to Radin, one reason to place limits on the ability to sell our bodies—whether in the form of slavery, prostitution, or "paying" donor organs—is because it is only in an incommensurable state that our concept of the body can play a critical role in our development as individuals and as a society.²⁸⁹ As with Rolston's view of intrinsic values, there is a sense that pricing the body would somehow diminish its place in society. This perspective also echoes the criticisms that have been

284. See Edwards, *supra* note 95, at 78 (noting that there "seems to be general agreement with Kelman's view that monetizing environmental values somehow cheapens the resource") (citing Steven Kelman, *Cost-Benefit Analysis*, REGULATION, Jan.-Feb. 1981, at 33, 38-40); Rolston, *supra* note 88, at 36 n.11 (noting that calling those who value mere existence "off-site users" "exactly reverses what those so categorized would say of themselves").

285. See Rolston, *supra* note 88, at 38 ("To insist on pricing is to insist on a category mistake . . ."); Sagoff, *supra* note 3, at 1410.

286. See Rolston, *supra* note 88, at 33 (Valuation forces individuals "to translate a good which is collective and nonmarket . . . into a good which is private and market."); Sagoff, *supra* note 3, at 1394 (Valuation "makes economic efficiency our only goal."); Sagoff, *supra* note 4, at 269-70 n.14 (referring to valuation as economic "imperialism").

287. Rolston, *supra* note 88, at 34.

288. See Radin, *supra* note 31, at 1855.

289. *Id.* at 1907-09.

directed against awards for pain and suffering that argue that those awards cheapen the emotions involved in individual pain and sorrow.²⁹⁰

By isolating at least nonuse values from the assessment process, environmental ethicists believe that we would be better able to celebrate and understand the nature of these values and the resources from which they are derived. By not condoning the equivalence of nonuse or nonpecuniary values, we do not risk that they will fall into the trap of commodification in which everything is available for the right price.

The response to this criticism can only be that the inclusion of nonuse values does more good than harm. Understanding that good is the topic of the final Part.

IV. THE PAIN AND SUFFERING OF ENVIRONMENTAL LOSS AND THE NECESSITY OF CV

The discussion thus far establishes that CV can provide a reliable starting point for discussions about nonuse losses in natural resource damage assessments. It has said much less, however, about why those damages, and therefore CV, *should* have a role in NRD assessment. This Part reviews the reasons why nonuse values should be included in NRD assessment, using the model of recovery for pain and suffering as a template for the introduction of CV into the legal system.

A. *The Identity of Pain and Suffering and Nonuse Values*

Perhaps one of the most persuasive replies to the critics of CV is simply to point a finger in the direction of tort recovery. Pain and suffering and CV are subject to many of the same criticisms, yet the former is a sizable part of the tort liability system. Since the problems with including nonuse values are neither qualitatively nor quantitatively different from those directed at the use of pain and suffering, there is no practical reason why CV should not play a significant role in the assessment of nonuse values. The rationales behind retaining pain and suffering awards further contribute to the conviction that nonuse values, through CV, should be part of environmental liability damages.²⁹¹

290. See *supra* notes 74-76 and accompanying text.

291. Christopher Stone briefly drew this parallel over twenty years ago and concluded,

The first important parallel between CV and pain and suffering is that the two measurement systems face the same mechanical difficulties. Each measures the gap between full compensation and compensation for monetary loss. Nonuse value is the difference between the total environmental loss at a site and the measure of use values,²⁹² whereas pain and suffering is the difference between the total recovery and the monetary losses like medical expenses and lost wages.²⁹³ Distant from physical or market anchors, both types of value face the imprecisions and frustrations that necessarily result when "intangible losses have to be evaluated in monetary terms."²⁹⁴ Both value systems are incommensurable with economic analysis, requiring the legal system to approach the problem of their valuation in much the same way.²⁹⁵ As Randall Bovbjerg and his colleagues have noted, "The problem with non-economic damages is, in sum, not that they are inappropriate or unreal, but rather that they are extremely difficult to consistently monetize in the absence of quantitative standards."²⁹⁶ That absence does not mean that they should be eliminated from consideration. As Stanley Ingber lamented, although the extent of loss is uncertain, "the existence of such economic loss is virtually assured. To refuse any compensation because of the danger of error in determining an amount is to guarantee that all such costs are absorbed by the plaintiff rather than the defendant."²⁹⁷

as this Note does, that the presence of uncertainties in valuation does not justify a complete bar on the assessment of nonuse values. See Stone, *supra* note 125, at 478-79. The benefits of that inclusion are simply too great.

292. See 56 Fed. Reg. 19,752, 19,760 (1991) (to be codified at 43 C.F.R. pt. 11).

293. See Viscusi, *supra* note 37, at 205.

294. NOAA Panel Report, *supra* note 1, at 4611.

295. Some might argue that pain and suffering valuation is different than interviewees' valuation of nonuse values since "jurors at least have some frame of reference in their own general experience to appreciate what the plaintiff has lost." Turpin v. Sortini, 643 P.2d 954, 964 (Cal. 1982). Presumably, that reference is their own experience with pain. There is no reason to think, however, that individuals have any more experience with pain or anguish than they do with environmental loss; in fact, their experience with the latter might be greater than with the former.

Another claim might be that juror exposure to the tort system through the news and other experiences has given them a sense of "appropriate" awards. Although possible, it would be true only because the system has been in place for years. In the beginning, pain and suffering relied merely on individual perceptions of appropriate damages. There was no systemic meltdown when pain and suffering, emotional distress, or any other nonpecuniary loss was introduced into the liability system. The system would handle nonuse assessment similarly well.

296. Bovbjerg et al., *supra* note 46, at 936.

297. Ingber, *supra* note 47, at 780. Ingber actually was talking about difficult-to-value

Faced with a lack of a behavioral trail that reveals individual preferences, both types of values must turn to the conversation-gathering mode²⁹⁸ as a means of directly determining loss values. Whether it be in a jury room or at an interview table, the process of determining nonmarket losses is based on the same premise—that the only way to determine them is to reflect on one's own value system and then attempt to place a price on the intrinsic values that reside there. Contingent valuation's methodology imposes a more cautious scientific structure on the valuation progress than does a jury deliberation; a jury verdict on pain and suffering amounts to nothing more than the end result of an extremely unsophisticated, extremely uncontrolled CV process.²⁹⁹ If put through the academic and economic rigors to which CV has been subjected, juries would likely fare no better, and likely much worse, than CV. In all likelihood, jury verdicts are less fact-based and more prone to subjective appeals and biases than any well-conducted CV study.

The mechanical and practical difficulties in measuring nonmarket values, at least in the case of pain and suffering, are outweighed by the economic and philosophical value gained from including these values within the tort system. These rationales supporting the role of pain and suffering in the tort system, not surprisingly, also apply to the inclusion of nonuse values in NRD assessment.

pecuniary losses in this quotation—he believed that nonuse values should be excluded from consideration because of the “double cost” problem that arises from compensating individuals who cannot be made whole again. *See id.* Even if his argument is valid for pain and suffering, it does not establish that nonuse values should not be considered in environmental compensation programs. In fact, it shows the opposite. For nonuse values, the “double counting” argument does not apply since the environment, or perhaps we should say the public good that is environmental preservation, is better off, in that the additional recovery is translated into additional purchases of environmental goods. Even if there is a little bit of overcompensation, there is no duplication of the defendant's loss because the value of the additional resource damages recovered will go to purchase of more goods.

298. *See* Smith, *supra* note 32, at 867–68.

299. In that CV attempts to impose some rational order on this process, it actually has more structural potential for achieving a valid result than does the jury analysis of pain and suffering.

B. *Economic Justifications Supporting a Role for Nonuse Values in Liability Awards*

The simple fact that nonmarket values have a positive magnitude counsels in favor of including them in liability assessment. Economically, ignoring positive values leads to inefficiencies.³⁰⁰ Unless individuals are required to pay for the full measure of harms they impose on society, they will not have an incentive to act efficiently.³⁰¹ As the court in *Ohio* noted in the context of environmental losses, "[o]ption and existence values may represent 'passive' use, but they nonetheless reflect utility derived by humans from a resource, and thus, *prima facie*, ought to be included in a damage assessment."³⁰²

Additional rationales favor the inclusion of nonuse environmental values. First, they are nonconsumptive "uses." As such, they are public goods,³⁰³ and government must act to ensure that they are fairly represented in the legal and policymaking processes.³⁰⁴ In addition, failing to include nonuse values favors the present, to the exclusion of future, generations. Because use values are almost exclusively targeted at present use, those future generations are left out of resource allocation. Including option values in NRD assessment provides one way for us to explicitly include future users in our decisions about resource allocation and liability.

300. "Furthermore, when it is recognized that even small per capita nonuse values may be very large in the aggregate if they are held by a substantial fraction of the population, there is a real possibility that ignoring nonuse values could result in serious misallocation of resources." Freeman, *supra* note 25, at 297.

301. This is the problem of "externalities," which occurs, in economic terms, when producers do not see the same costs to their activities as those activities actually impose on others. Although they may be profiting at a given level of production, then, or acting with a given level of caution, that level is not efficient for society as a whole. See generally TIETENBERG, *supra* note 90, at 45-47 (introducing externalities); WARD & DUFFIELD, *supra* note 91, at 225-28 (same). The solution—to "internalize" the externality—requires that those suffering the uninternalized costs determine how to force the producer/actor to take them into account. See *id.* at 226-28. This result can be accomplished through taxation, standard setting, or (in the case of NRDs) the liability system. See Stone, *supra* note 125, at 474-76 (recognizing the beneficial effect on economic efficiency of recognizing nonuse values, albeit values based in the individual resource, and not in mankind); NOAA Proposed Rules, *supra* note 8, at 1151 (recognizing a similar effect in justifying the inclusion of nonuse values in NRD assessment).

302. *Ohio v. United States Dep't of the Interior*, 880 F.2d 432, 464 (D.C. Cir. 1989).

303. See *supra* note 118 (discussing the nature of nonuse values as public goods).

304. See *supra* note 92 (discussing the reasons why the government must step in to ensure proper allocation of public goods).

Any apparent "irrationality" in resource valuation need not preclude recovery of nonuse values. In pain and suffering cases, for example, individuals do not have well-articulated values for pain and suffering losses. Nonetheless, the process of translating those losses from unmonetizable feelings into cash is one with which we have become familiar and that we trust to provide results that do not disrupt our intuitions about how costs change with injuries. Even if those results are not precisely logical or ordered, they do represent a level of stability sufficient to permit a continuing role for pain and suffering. They should do the same for nonuse values.

C. *Nonmarket Damages and the Importance of Affirmation*

As this Note has pointed out, nonmarket values in both tort and environmental law contain significant components that are incommensurable with a system of economic valuation.³⁰⁵ This aspect of nonmarket values is seen in practice in the difficulty that individuals (and economists and the legal system) have in estimating the value of these losses.³⁰⁶ Cass Sunstein points out that the confusion and uncertainty inherent in the determination of damage awards is in fact a clash between valuation regimes—an "incommensurability" on the part of a regime that sees values as a sort of perfect hierarchy not subject to the boiling down that occurs all the time in the economic regime.³⁰⁷ This complexity and the occasional refusal to participate reflects not "sentimentality or simple confusion" but a true alternative value judgment that does not admit an economic valuation.³⁰⁸

If the values lost are incommensurable with the money received, why should we award damages at all? We should award damages because ignoring nonuse values in the assessment of NRDs may have a philosophical and psychological impact as well as an economic one. In a system in which the currency that conveys value is money, not only does the exclusion of nonuse values

305. See, e.g., *supra* subsection II(B)(1) (discussing the nature of existence values).

306. In addition to the examples that permeate the discussion above, individuals may register this inability by giving a "protest bid" response to a CV question. See Rolston, *supra* note 88, at 34; Sunstein, *supra* note 29, at 36-37. The unwillingness to provide "realistic" bids represents this incommensurability in our environmental values.

307. See Sunstein, *supra* note 29, at 38.

308. *Id.*

assign them an economic value of zero³⁰⁹ but it also indicates that the legal and political system fails to recognize them at all. Especially in a society as litigious as the United States, the absence of nonuse values from the legal decisionmaking and compensation process may diminish them in the mind of society, thereby reducing the overall value that we derive from the environment. Awarding trustees of natural resources damages for the full range of nonuse values recognizes the importance that individuals place on the preservation of pristine areas.³¹⁰ It affirms that those values—and those places—are an important part of our national psyche. The award also provides, at least at some level, a distraction from the loss itself in the form of additional environmental protection through the purchase or restoration of another natural resource.

In addition to acknowledging loss, pain and suffering awards affirm the importance of every individual in society, regardless of their earning potential, and guarantee that at least part of the tort liability system is based on individuals as people, not as wage earners.³¹¹ In a similar way, nonuse value awards affirm the importance of every part of the environment, not just those that have “market potential.” Relying exclusively on use values reduces the value of environmental goods to their market potential and ignores the full range of values that are held in those resources. Even if the magnitude of nonuse losses is not easily established, assessing those losses ensures that our society is compensated for the full value of losses to environments that are not subject to development, not subject to extractive uses (such as fishing or lumbering), or merely too remote for recreational use. The very point of recognizing nonuse values is that every environment—even those not represented by market prices—is of value to us and our children.

309. See Freeman, *supra* note 25, at 6, 19.

310. At least one economist has explicitly recognized this ethical content of nonuse valuation. See Raymond J. Kopp, *Environmental Economics: Not Dead but Thriving*, RESOURCES, Spring 1993, at 8; see also Ingber, *supra* note 47, at 781 (“[B]ecause money is highly valued in our society, we use it to measure and recognize the worth of both tangible and intangible items. If society is to signify its commitment to the support of psychic well-being, damages for intangible injuries must be permitted.”) (citation omitted); Levit, *supra* note 39, at 188–89 (“Because money is the measure of value in a market economy, the refusal to compensate an injury is a direct message about the worth of the injury; compensation legitimizes the interests and emotions it rewards.”).

311. See *supra* text accompanying notes 85–87.

These points begin to suggest a resolution of the philosophical concerns raised by Steven Kelman, Holmes Rolston, and others regarding the risks of "cheapening" natural values by forcing them into an economic valuation regime.³¹² Under a system in which CV merely attempts to establish *some* correlation between nonuse values and money, and in which compensation is not necessarily viewed as commensurable with lost values, those values retain the core of their identity—their incommensurability. This incommensurability cannot be resolved by CV because CV is not and probably never can be a perfect translator between environmental values and economic ones. Even for well-conducted CV studies, the imperfect translation manifests itself in residual uncertainties and doubts. Those uncertainties are more than a manifestation of incommensurability, however; they actually help us to maintain that incommensurability—that barrier between the two types of values—and in doing so, those uncertainties buffer moral convictions from the "economic imperialism"³¹³ that ethicists fear. This value of uncertainty also is present in the complexities and uncertainties of tort law. As Margaret Jane Radin appropriately notes, we may want to be careful about making the relationship between injury and recovery too clear through, say, schedules of loss.³¹⁴ By making the system work more smoothly, we actually encourage a commensuration between previously incommensurable values and thereby remove some of the value from the mystery of those emotions. As long as the processes for valuing these losses remain "black boxes," we need not force ourselves to understand how the values on opposite ends are commensurable, and we need not fear that they will actually so become.³¹⁵

In a system in which the incommensurable nature of the values we are trying to estimate is protected through the very difficulty of translation—through the "black boxes" of pain and suffer-

312. See *supra* subsection III(B)(5).

313. See *supra* note 286.

314. See Radin, *supra* note 29, at 83.

315. There is one valid fear, however: our environmental beliefs may not be as resilient in their incommensurability as are our beliefs regarding pain and suffering. See Sunstein, *supra* note 29, at 23–24 (noting that our once-inviolable views regarding the environment have already taken on economic terminology). Under such a perspective, any slippage in our unwillingness to enter into pricing activities for intrinsic environmental values threatens a switch to commensurability. This slippage may not be as likely in the context of pain and suffering awards if, as Radin believes, our view of pain and suffering is quite resilient. See generally Radin, *supra* note 29.

ing verdicts or CV—it makes sense to at least play along with the valuation game. After all, the need is there. Ignoring the nonuse values, for example, permits far too great a loss in the world of environmental recovery. As long as the values that we cherish are not inherently convertible into cash, trying to make that conversion will be disturbing. But as long as our legal system—and our businesses—think of damages solely in monetary terms, recognition of those injuries will not truly occur until we can place a value on them.³¹⁶ Contingent valuation does just that.

V. CONCLUSION

The various economic, philosophical, and legal arguments posed against the validity of CV will continue for some time to come. Despite uncertainties in CV methodologies, however, agencies and courts should permit CV to serve as one piece of evidence in the effort to properly assess the value of natural resource damages. The consistently positive response to CV studies and our own experience indicate that many of us do place a value on the mere existence of natural places and organisms. The difficulties involved in translating this value into monetary terms do not justify the complete rejection of a method that has the potential for reporting useful information. Although a significant body of criticism regarding the mechanics of CV methodology has been developed, caution in design and administration can resolve most of the difficulties recognized by those critics.

To the extent that criticisms of even well-conducted CV studies remain, they go not so much to the validity of the method as to questions regarding the appropriateness of inserting these sorts of values into the litigation and policymaking processes. The decision, then, is not a technical decision, but a political, moral, and legal one: are existence values the sorts of things that we consider an important part of natural resource damage recovery?

As this Note has argued, nonuse values should be a part of NRD assessment. Just as in the award of damages for nonpecuniary losses, the economic and moral arguments in favor of including nonuse values overwhelm any residual concerns regarding certainty or excessive fines. In at least one area of the law, the

316. On the necessity of reducing values that need to be considered in policy analysis to monetary terms, see *infra* text accompanying note 318.

political, moral, and legal judgments have been resolved in favor of including nonmarket values. Reaching a similar resolution in the case of environmental liability is both possible and necessary.

In recognizing that necessity, this Note is a detailed investigation into one example of the insight offered by Cass Sunstein in a forthcoming paper.³¹⁷ In it, he suggests that incommensurability crops up as a driving force in many areas of the law. Although he acknowledges that we must not try to force our society to work with only one system of valuation, that acknowledgment is not

fatal to the view that law and public policy sometimes ought to be founded on modes of valuation that are unitary. It is possible to think that under ideal conditions, the best system of valuation is diverse and plural, but that in light of the weaknesses of human institutions and the constant prospect of bias and arbitrariness, public choices should assume a single mode as the best way of promoting all of the relevant goods. This is not a question that can be answered a priori or in the abstract. It is possible to believe, for example, that government officials should value relevant goods along . . . a single metric as a way of promoting the best form of government regulation, all things considered. But it is important for those who take this position to understand that it is best defended as a means of overcoming certain institutional obstacles, and not as a fully adequate understanding of the relevant problems.

All this leaves much uncertainty.³¹⁸

The approach to CV advocated by this Note—and CV itself—is not perfect economically, ethically, politically, or legally. That imperfection, however, is largely the result of a clash between two different ways of looking at the world. In one, cash is the common denominator. In the other, ethics reject common denominators as a vehicle by which values are compromised. We are already familiar with the resulting clash in a variety of fields,³¹⁹ one of which—pain and suffering—is presented here,

317. See Sunstein, *supra* note 29, at 49.

318. *Id.* (citations omitted). When Holmes Rolston parodies politicians and policymakers by arguing that “[t]hey believe that one sure route into human caring is by pricing . . . in matters of resource use,” he recognizes this very point. Rolston, *supra* note 88, at 24. He disagrees, however, with its necessity, and, were this a perfect world, I might agree with him.

319. See Sunstein, *supra* note 29, at 26–48 (discussing the manifestation of this conflict in nine different areas).

and we also already know that the practical manifestation of the conflict is uncertainty and dissatisfaction.³²⁰ As with those other areas, however, the best option is not rejection of one perspective or another but an effort to accommodate both in the most reliable way possible. In the regime of nonuse values, that way is contingent valuation.

320. *See id.*