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## Bringing People Back: Toward A Comprehensive Theory Of Taking In Natural Resources Law

*William H. Rodgers, Jr.\**

### INTRODUCTION

Contemporary legal theory, at times, seems to have degenerated into a contest of false modeling. The still popular economic analysis,<sup>1</sup> on the one hand, assumes a person who is a rational maximizer of self-interest bearing scant resemblance to the thinkers and actors known to social investigators.<sup>2</sup> A principal competitor to economic analysis in the law schools is the contract justice theory of John Rawls,<sup>3</sup> who posits a state of nature, and a calculated social compact stemming from it, that is utterly at odds with what paleoanthropology knows of the evolution of the human species.<sup>4</sup> One of the lingering dissatisfactions with

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\* William H. Rodgers, Jr., Professor of Law, University of Washington. For the title, the author is indebted to Homans, *Bringing Men Back In*, 29 AM. SOC. REV. 809 (1964). Appreciation is expressed to my colleagues Stewart Jay, Arval Morris, and William Stoebuck for comments on a draft of this paper.

1. See, e.g., R. POSNER, ECONOMIC ANALYSIS OF LAW (2d ed. 1977); *Symposium on Efficiency as a Legal Concern*, 8 HOFSTRA L. REV. 485 (1980). A normative version of the economic theory of law appears in Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUDIES 103 (1979).

2. See, e.g., H. LEIBERSTEIN, BEYOND ECONOMIC MAN: A NEW FOUNDATION FOR MICROECONOMICS (1976); C. LUMSDEN & E. O. WILSON, GENES, MIND, AND CULTURE: THE COEVOLUTIONARY PROCESS 86-92 (1981) [hereinafter cited as LUMSDEN & WILSON]; Simon, *The Behavioral and Social Sciences*, 209 SCIENCE 72, 75 (1980).

3. J. RAWLS, A THEORY OF JUSTICE (1971).

4. Holden, *The Politics of Paleoanthropology*, 213 SCIENCE 737 (1981). See also J. BONNER, THE EVOLUTION OF CULTURE IN ANIMALS (1980); Carneiro, *A Theory of the Origin of the State*, 169 SCIENCE 733 (1970). There is a great deal of evidence to suggest that the human species was living as a social animal long before the biological development of the intellectual capacities presupposed by contract theories of justice. According to this view, social rules, law, and governments preceded the human capacity to enter into social com-

comprehensive theories of this sort is that they invoke versions of human nature, whether grasping maximizer or fairminded noble, that are built around behavioral assumptions describing people greatly unlike the people we know.

This Article attempts to bring people back into legal analysis by drawing upon behavioral preferences of human beings suggested by the laws of biology.<sup>5</sup> Biological theory offers no all-encompassing explanations of legal outcomes, although it offers important, and much neglected, partial explanations. That the law can be explained in this light suggests that courts have a view of human nature departing from the caricatures of much contemporary legal theory.

We take as our setting an issue faced by each society in every era—property rights in natural resources. Part I takes up the task of theory development by recanvassing property theory and assigning special importance to four prominent themes—biological and social functional explanations, the concept of natural resource rights in common, and the process component of property rights definition. The ideas developed include the human property right, which is inalienable except upon terms of the holder, and provisional rights to the common stock of natural resources, called social property, representing wealth that may be reallocated without compensation. These themes constitute the basis of a comprehensive theory of property. All four of the theoretical themes are amply represented in historical justifications of property, and one would expect these themes to reappear in contemporary legal doctrine governing actual property conflicts.<sup>6</sup>

Part II tests this comprehensive theory against legal experience in the natural resources field.<sup>7</sup> Used for this purpose are the statutes and case law addressing a variety of resource conflicts in five different doc-

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facts. See J. JAYNES, *THE ORIGIN OF CONSCIOUSNESS IN THE BREAKDOWN OF THE BICAMERAL MIND* (1976); D. JOHANSON & M. EDEY, *LUCY: THE BEGINNINGS OF HUMANKIND* (1981).

5. E. O. Wilson defines sociobiology as "the systematic study of the biological basis of all social behavior." *SOCIOBIOLOGY: THE NEW SYNTHESIS* 4 (1975). A full bibliography is found in LUMSDEN & WILSON, *supra* note 2, at 305-415. For the views of a philosopher and political scientist, respectively, see P. SINGER, *THE EXPANDING CIRCLE: ETHICS AND SOCIOBIOLOGY* (1981) and A. ROSENBERG, *SOCIOBIOLOGY AND THE PREEMPTION OF SOCIAL SCIENCE* (1980).

6. See *infra* text accompanying notes 224-25. It is at the point of confirmation theory that normative social science is severely impoverished. In the physical sciences, theory is descriptive, and accurate observation will confirm or disprove. In normative social science, such as much law review analysis, the practice is to accept some observations as confirmatory and discard others as being incompatible and wrong. This is by no means confirmation, of course; it is simply a comparison of *a priori* suppositions with real world observations. The persuasiveness of the normative theory still depends on the appeal of its *a priori* rationale. The theory presented here is offered as descriptive theory, so the notions of confirmation or invalidation make sense. See *infra* notes 52 & 66.

7. See *infra* notes 53-223 and accompanying text.

trinal settings—nuisance and takings law, waste, and the reserved rights and public trust doctrines. These doctrines define crucial relationships among people, and between people and their collective representatives. In testing the theory articulated here, a subsidiary purpose of this Article is to develop a taking theory offering descriptive guidance for the law of natural resource wealth allocation.<sup>8</sup>

These doctrines, dealing as they do with resource conflict, all are closely related to classical nuisance law; the discussion is organized around the ideas of spatial conflict (disputes between neighbors and other contemporaneous contestants for the same resource) and temporal conflict (disputes between different users of the same resources over time, typified by the law of waste, reserved rights, and public trust). The discussion in Part II singles out for attention some selected issues, elaborating and extending the introductory discussion of Part I.<sup>9</sup>

The property arrangements emerging from the analysis that follows can be stated simply. A property rights holder may possess three types of property: a core “human” property, which may be taken only upon the terms of the holder; private property or entitlements that may be taken only with compensation; and a “social” or provisional property interest in the resource commons, which may be redefined to the detriment of the holder without compensation. All property interest losers, including holders of provisional rights, are accorded process protections against attempts to diminish or redefine their resource holdings.

The takings test suggested by the analysis is as follows. First, the

8. This article will not pursue the “public use” issue in takings law; for a general overview of that issue, see Meidinger, *The “Public Uses” of Eminent Domain: History and Policy*, 11 ENV. LAW 1 (1980).

9. In graphic terms the doctrines covered by this Article are:

	Nuisance Doctrine	Takings Law	Public Trust Doctrine	Reserved Rights Doctrine	Law of Waste
Biological Theme (human property)	Yes	Yes		Yes	Yes
Social Functionary Theme (social property)	Yes	Yes			
Common Property Theme (social property)	Yes	Yes	Yes	Yes	Yes
Process Rights Theme	Yes	Yes	Yes	Yes	

core "human" property is protected from invasion by substantive due process limits on legislative power. Second, compensation is required when a government improves its own wealth position by taking over private entitlements. The test requires a search for official advantage. Finally, legislatures have considerable freedom to reallocate "social" property, with or without payment to the losers. The choice of compensation is a matter of policy rather than constitutional necessity.

## I

### PROPERTY RIGHTS IN NATURAL RESOURCES: GUIDANCE FROM PROPERTY THEORY

Past inquiries into the nature of property disclose four theoretical themes offering criteria for allocating natural resource wealth—biological influence, social function, common property, and process right. These themes are derived from a variety of disciplines, and invoke both empirical assertion and *a priori* assumption. Much of the theoretical support is normative, in that acceptance of the conclusions depends upon acceptance of the values behind them. We are engaged at this point, however, not in attempts at evaluation but only in a historical survey<sup>3</sup> of property theory argumentation.

#### *A. Biological Theories: A Touch of Absolutism*

In one important regard, "private" property has been viewed as an extension of the person. This is understandable, for since the beginnings of civilization people have engaged in the resource use, possession and consumption that characterizes human existence. They occupied space, breathed air, and appropriated energy needed to sustain life. The notion of occupancy, or needed breathing space, is a central perception of this early view of property. Naturally one could only possess what one could occupy and use.<sup>10</sup>

Space and territorial needs of animals long have been recognized,<sup>11</sup> and biologists have identified similar needs in humans.<sup>12</sup> The reasons for these needs are many, including maintenance of a food base, provision of security and identity, and protection of privacy. The space demanded includes microspace, a mobile bubble of personal ju-

10. See the discussion of fitness suppression in human society, in LUMSDEN & WILSON, *supra* note 2, at 297-98. Compare the point made forcefully by Rousseau, commenting on the practice of European explorers to appropriate by declaration, THE SOCIAL CONTRACT 20-21, bk. I, chap. ix (1959) ("On such a showing . . . the Catholic King need only take possession, from his apartment, of the whole universe, merely making a subsequent reservation of what was already in the possession" of others).

11. See, e.g., K. LORENZ, ON AGGRESSION (1966).

12. R. DUBOS, MAN ADAPTING 108 (1965); see E. O. WILSON, ON HUMAN NATURE 107-10 (1978); Dyson-Hudson & Smith, *Human Territoriality*, 80 AMERICAN ANTHROPOLOGIST 21 (1978).

risdiction, and mesospace, the home base. A home is an area in which an individual has made an investment, and which is actively defended as a place of "sure refuge."<sup>13</sup> Human commitments, to be sure, may extend outward—to neighborhood, community, and beyond—but the bedrock for the individual is the home.

Closely related to occupancy concepts of property are "personality" theories, which for "the most part proceed from psychological perceptions, whether intuitive or empirically based, of a human proclivity to identify the self with its possessions and thus to experience from a loss of possession the anguish of intimate personal loss."<sup>14</sup> This is a psychological justification of property, and the human need it represents is documented regularly by vehement defenses of right against utilitarian-justified policies of ouster.<sup>15</sup> This link between person and place is now an important consideration in contemporary architecture and urban design, which stress that surroundings are intimately tied to the enjoyment of life.<sup>16</sup>

The best known variation of the personality theory of property is Locke's celebrated labor theory, which holds that people are entitled to what they produce by their own initiative, intelligence, and efforts. This theory starts from a premise of entitlement in one's own body (everyone "has a property in his own person; this nobody has a right to but himself")<sup>17</sup> and carries over to natural things made more useful by one's efforts.<sup>18</sup> Locke's ideas have a number of problems, but they carry a powerful root appeal. It is not transparently unfair to accept as a postulate nature's allocation of human endowments,<sup>19</sup> or to honor

13. J. PORTEOUS, *ENVIRONMENT & BEHAVIOR: PLANNING AND EVERYDAY URBAN LIFE* 61-62 (1976); see E. O. WILSON, *supra* note 12, at 107 ("territories contain an 'invincible center.' The resident animal defends the territory far more vigorously than intruders who attempt to usurp it, and as a result the defender usually wins. In a special sense, it has the 'moral advantage' over trespassers."). On a legislative zone of noninterference, see H. ARENDT, *THE HUMAN CONDITION* 60-67 (1958); T. MORAWETZ, *THE PHILOSOPHY OF LAW: AN INTRODUCTION* 154-75 (1980).

14. Michelman, *Property, Utility, and Fairness: Comments on the Ethical Foundations of "Just Compensation" Law*, 80 HARV. L. REV. 1165, 1205 (1967).

15. Illustrative cases include the vehement tribal opposition to the proposed divestiture of Indian treaty fishing rights, see *generally* notes 165-80 *infra* and accompanying text; Polish-American resistance to the renovation of downtown Detroit, see Wash. Post, June 1, 1981, col. 1, and numerous other instances where people ousted by public policy cling to their holdings with determined if pitiable insistence. See also Michelman, *Property as a Constitutional Right*, 38 WASH. & LEE L. REV. 1097 (1981).

16. See J. PORTEOUS, *supra* note 13, at 61-89.

17. L. BECKER, *PROPERTY RIGHTS* 33 (1977) (quoting Locke, *Two Treatises on Government*, 2nd treatise, ¶ 27).

18. *Id.* at 33, 48-56.

19. See B. ACKERMAN, *SOCIAL JUSTICE IN THE LIBERAL STATE* 123-24, 129-33 (1980); J. FINNIS, *NATURAL LAW AND NATURAL RIGHTS* (1980); Rodgers, *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1, 3-4, 16-21 (1980). On the importance of environmental endowments to cultural development, see R. DUBOS, *So*

what a person earns as a result. These claims of personal desert are but modest extensions of the values accidentally bestowed upon individuals by the genetic lottery.<sup>20</sup>

Locke in his own time was beset with questions about resource limits—what happens after several generations of Robinson Crusoes have appropriated all tillable land by annexing “labor” to it?<sup>21</sup> In response, Locke engrafted a less well-known proviso to his basic labor theory: appropriation of land by labor can proceed at least where there is “still enough and as good” left in common for others and where everyone takes only what they can use.<sup>22</sup> Of course allocation is never a problem until appropriation approaches the limits of available resources. Still, the modesty of the entitlement endorsed by Locke deserves emphasis; it takes no account of wealth accumulated other than by the sweat of one’s brow and is prepared to forbid even hard-charging merit claimants from fencing the commons to the detriment of others who come to the table too late or who are encumbered by their natural limitations.<sup>23</sup> The Lockean proviso (approving labor-related appropriations only where there is “enough and as good left in common for others”) is a stark reminder, as L.T. Hobhouse has told us, that “ethical individualism in property, carried through, blows up its own citadel.”<sup>24</sup> What is a “justification of property” becomes a “reprobation of riches” when the social system concentrates wealth and denies its citizens the kind and amount of wealth needed to develop fully their personalities.<sup>25</sup>

Lockean theory has influenced strongly American property law. It is best described as an extension-of-the-person biological theory. The cabin, the game, or the crop belongs to the one who built it, captured it, or nurtured it. This is a merit theory. Wealth is bestowed upon the one

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HUMAN AN ANIMAL 47-48 (1968). For further discussion, see J. GARDINER, EXCELLENCE (1961).

20. See R. SCHLATTER, PRIVATE PROPERTY 151-61 (1951).

21. Locke, *An Essay Concerning the True Original Extent and End of Civil Government*, in E. BARKER, SOCIAL CONTRACT 3, § 33. See generally *id.*, §§ 25-51.

22. *Id.*, §§ 31 (“Nothing was made by God for man to spoil or destroy”); 37 (“if the fruits rotted or the venison putrified before he could spend it, he offended against the common law of nature”); 46.

23. S. NOZICK, ANARCHY, STATE & UTOPIA 174-82 (1974).

24. L. HOBHOUSE, *The Historical Evolution of Property, In Fact and In Idea*, in PROPERTY, ITS DUTIES AND RIGHTS 1, 29 (1913).

25. *Id.* at 28-29. The Lockean proviso is alive and well in international dialogue today. Strong distributional concerns of underdeveloped nations have been largely responsible for assurances in written agreements that the resources of Antarctica, the oceans, and the moon, are the “common heritage of mankind.” The phrase “common heritage of mankind,” as it is used in the U.N. Conference on the Law of the Sea, is taken from G. A. Res. 2749, 25 U.N. GAOR, Supp. (No. 28) 24, U.N. Doc. A/8028 (1970). See Newlin, *An Alternative Legal Mechanism for Deep Sea Mining*, 20 VA. J. INT’L L. 257, 258 n.5 (1980); Kotz, “The Common Heritage of Mankind:” Resource Management of the International Seabed, 6 ECOLOGY L. Q. 65 (1976).

who earns it, not in response to the dictates of historical entitlements or the sympathies of public charity.

While this sketchy account is not the whole story of property justification in the United States today, it suggests some little-noticed dimensions of a comprehensive takings theory. First, a biologically-justified property theory is strongly rights-oriented. It hints at limits of human manipulability. The honoring of property intimately tied to the person—say, the lifelong residence—evokes questions not about whether its taking should be attended by a “just” compensation, but rather about whether it should be taken at all. If tearing down the roof over someone’s head is a psychological battery, deep and irreparable, has society made amends by offering a “just” compensation? Surely the state would have difficulty justifying the condemnation of an “unnecessary” eye or kidney from one of its citizens, even while offering monetary recompense and in generous pursuit of a program to aid the handicapped. The classical understanding of a property right, of course, is not a right to sell at a mandated compensation but a right to sell at the owner’s price if one exists.<sup>26</sup> All of this suggests that biological property theory may be more useful in defining what can be taken than in determining whether compensation should be paid.

A second dimension of biological property theories, perhaps a reflection of circumstances throughout early history, is that the property respected is that won by human effort unaided to any substantial degree by slavery or by technology. This emphasizes the close link between biologically-justified property and its owner, as manifested by the personality, possession, and labor theories. A hardcore Lockean labor theory justifies wealth accumulated by personal merit and effort, not by human slavery or energy holdings.

Third, biological theories, by original assumption and function, anticipate limits on the extent to which nature’s wealth can be appropriated by acquisitive humans. Wealth accumulation is restricted by the biological realities advanced as justification and by the comparable claims of others. These appropriation barriers are acknowledged by the Lockean proviso, and are often expressed as an obligation to maintain a “commons” for latecomers, about which more will be said below.<sup>27</sup>

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26. See Honore, *Ownership*, in OXFORD ESSAYS IN JURISPRUDENCE 107 (A. Guest ed. 1961); Calabresi & Melamud, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972). Cf. *Baldwin v. Fish & Game Comm’n of Montana*, 436 U.S. 371, 387-88 (1978) (discussing the “fundamental rights” protected by the Privileges and Immunities Clause).

27. See *infra* Part IC.



*B. Social Functionary Theories: A Touch of Utilitarianism*

A second group of property theories can be described by a social functionary rationale. Classical economist Irving Fisher defined property as a right to obtain future services from an article of wealth, and wealth as simply something owned by human beings.<sup>28</sup> People may not be moved to create (or lay claim to) wealth, however, unless they are rewarded for their efforts, and thus the assignment of property rights is a means of bringing together human, financial, and natural resources to increase production. Professor Michelman points out that one interpretation of Locke's views

is that production at any level sufficient to advance consumption beyond what will support the crudest kind of subsistence requires planning, foresight, and organization in the employment of resources; requires, that is to say, saving, capital formation, investment, and management, all of which it is supposed could not occur without ownership.<sup>29</sup>

The utilitarians, notably David Hume and Jeremy Bentham, defended private property as a means of achieving human happiness. Property became a "basis of expectations" necessary to encourage the will to labor and invest.<sup>30</sup> Many property rationales in vogue today refine and extend these utilitarian considerations by asserting that private property rights encourage risk-taking and experimentation, prompt investment, furnish incentives to internalize spillovers, and facilitate exchange and associated gains.<sup>31</sup>

Social functionary theories, perhaps even more than the strictly biological theories, invoke a variety of debatable assumptions about what motivates people to plan, work, and invest.<sup>32</sup> If expectations are decisive, then thieves should not be deprived of their ill-gotten gains; if the goal is to attract capital and inspire labor, then the government never should depreciate private values without compensation; if social demoralization caused by income transfer is the problem, then payment should be made to obviate it. These utilitarian justifications, read

28. I. FISHER, *THE NATURE OF CAPITAL AND INCOME* 3-6, 53 (1906).

29. Michelman, *supra* note 14, at 1207.

30. *Id.* at 1211-12. Another plausible empirical assumption is that high tax rates encourage one to work harder to make up the difference.

31. See Anderson & Hill, *The Evolution of Property Rights: A Study of the American West*, 18 J. L. & ECON. 163, 178 (1975) ("a comparison of the benefits and costs of defining and enforcing property rights explains and predicts the evolution of property institutions"); Cheung, *The Structure of a Contract and the Theory of a Non-Exclusive Resource*, 13 J. LAW & ECON. 49 (1970); Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 354 (1967) ("property rights arise when it becomes economic for those affected by externalities to internalize benefits and costs").

32. See, e.g., Kennedy & Michelman, *Are Property and Contract Efficient?*, 8 HOFSTRA L. REV. 771 (1980) (discussing economic justifications of the legal institution of private property).

into the taking clause, could be invoked to justify a rigid maintenance of income. Far from being committed to rigidity, however, utilitarianism has two overarching features suggesting great latitude in effecting uncompensated wealth transfers or cash substitutes for specific holdings. The first is that, in calculating the overall "human happiness" associated with any property arrangement, the utility to the rights holder may be outweighed by the utilities of others. This conditional nature of utility-justified entitlements makes any property assignment susceptible to redefinition in response to the changing values of other people, even as they may extend to non-human interests of nature. A second feature of utilitarian definitions of property is that they reflect empirical judgments about what rights assignment will lead to the greatest good or the most happiness or the highest benefits.

There are thus two dynamic features of a socially justified property law that must be accounted for—human value changes and shifting empirical assumptions about the extent to which expectations should be honored to get the most out of available resources. Utilitarian property theory tells us little about drawing the line between compensable and noncompensable takings, but it raises questions that have important process implications. The questions posed about the propriety of taking this "utilitarian" property are legislative in character, calling for a communitywide assessment of costs and benefits. They require judgments about whether the trimming of expected values will boomerang by damaging incentives. These questions differ distinctly from the inquiries suggested by biological theories, which focus upon individualized needs served by "human" property.<sup>33</sup>

It is true, moreover, that the questions that arise in implementing any utilitarian property theory are not easily answered by the courts. Contemporary empirical accounts of human behavior and shifts in beliefs or values are hardly the grist for firm judicial utterances. This suggests strongly that the form of any "just compensation" for the tak-

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33. Compare Professor Bruce Ackerman's "legal" and "social" property, developed in *PRIVATE PROPERTY AND THE CONSTITUTION*, 116-23 (1977). The book is reviewed thoughtfully in Epstein, *The Next Generation of Scholarship?* 30 *STAN. L. REV.* 635 (1978) and Sofer, *On the Relevance of Philosophy to Law: Reflections on Ackerman's Private Property and the Constitution*, 79 *COLUM. L. REV.* 44 (1979). Social property, to Ackerman, is that type of property any well-socialized person would recognize as his (e.g., surface rights in a plot of land). Legal property requires the opinion of a legal specialist and embraces abstract claims of value in things that cannot be reduced to possession. Legal property, says Professor Ackerman, may be restricted without compensation more readily than social property. This typology hardly accounts for many of the uncompensated losses inflicted on "well-socialized" persons under takings law. Ackerman's contribution of immediate interest is in recognizing that different criteria of protection may turn on the functions served by various properties. Arguments presented here follow a similar path by suggesting that some types of human property are unsuitable for taking, whereas uncompensated use restrictions may encroach heavily upon human wealth built upon natural resource appropriation.

ing of "utilitarian" or "social" property will be chiefly a question of legislative judgment. It can be predicted that legislatures will be given wide latitude to define this type of property, and to define further the conditions, including compensation, for its reallocation.

This "utilitarian" property is heavily represented in contemporary wealth holdings in the United States. Many of the assets of capital-intensive resource management enterprises are of this type. By contrast, Lockean fruits-of-the-labor claims are asserted more suitably by the labor-intensive small entrepreneur. Large enterprises whose wealth holdings depend upon maintenance of the shifting sands of empirical support underlying utilitarian property also are well situated to protect themselves. Their voices are likely to be heard, and heeded, in the legislative process upon which their continued wealth positions so heavily depend.<sup>34</sup>

### C. Common Property Theory: A Source of Provisional Wealth

Our understanding of property rights in natural resources can be assisted further by exploring the line dividing personal from communal property. The notion that natural resources are held in common by the community has philosophical, historical, and empirical foundations. The idea of common property rights can be traced to the starting points of civilization hypothesized by philosophers—the state of nature or an original contract. Under such hypothetical conditions nature's store is needed by all and open to all. Thus to Seneca nature was a "communal treasure,"<sup>35</sup> to Aquinas a "common possession,"<sup>36</sup> to Grotius a "common inheritance,"<sup>37</sup> and to Locke a gift from God to Adam and his posterity "in common."<sup>38</sup>

Moreover, early humans, left to their devices unaided by technology, perceived wide ranges of compatible uses.<sup>39</sup> These communal treasures of air, water, sun and soil offered only limited room for conflict, and temporary occupancy or use of the commons would not defeat latecomers. A corollary of this powerful concept of resources in common was that humans did not strive to hold or to claim that which was out of reach; everyone had what no one could secure.<sup>40</sup> There were no

34. See J. ELY, *DEMOCRACY AND DISTRUST: A THEORY OF JUDICIAL REVIEW* (1980).

35. R. SCHLATTER, *supra* note 20, at 25 (quoting SENECA, *LETTERS*, No. 90 (E. Barker trans. 1932)).

36. *Id.* at 49-50 (quoting T. AQUINAS, *SUMMA THEOLOGICA*, I-II, Q. 94, Art. 5).

37. *Id.* at 127 (citing H. GROTIUS, *DE JURE BELLI AC PACIS*, ch. ii (F. Kelsey trans. 1925)).

38. Locke, *supra* note 21, at § 24.

39. See M. SAHLINS, *STONE AGE ECONOMICS* (1972).

40. See I. FISHER, *supra* note 28, at 3 ("Rain, wind, clouds, the Gulf Stream, the heavenly bodies—especially the sun, from which we derive most of our light, heat, and energy—are all useful, but are not appropriated, and so are not wealth as commonly understood").

conflicts over claims to mine the stars, take the blue out of the sky, or lock away the icecaps.

This captivating and idealistic notion of natural resources "in common" fit comfortably with optimistic views of the relationships of humans with one another, with posterity, and with nature. The outpouring of wealth was ongoing, perpetual, seemingly limitless, and by definition available to future generations. It is hardly surprising that philosophical thought has dwelt upon this relationship between humans and nature. What is ours is ours and what is nature's is ours "in common."

In the context of the takings issue, this perception of a natural resource commons reinforces the social nature of value expectations in this property. The commons, according to the Lockean proviso, is an ongoing resource bank open to the claims of others in this and future generations. Because the commons is open to all, needs claims are easy enough to justify even if they cannot be satisfied. Lockean fruits-of-the-labor claims run into difficulties because the resource itself and much of its practical value remain a gift of nature rather than a product of individual effort. Claims based upon a chain of paper, but lacking even a Lockean sweat-of-the-brow justification, are especially hollow. There is something unconvincing about property claims to the moon, even those tracing title back to a legally constituted king. Natural resource commons, from this point of view, are strongly resistant to exclusionary claims; this is provisional wealth open to all claimants.

Two powerful empirical considerations undergird the social nature of natural resource property. The first is the recognition that much resource use, obviously including all consumption of nonrenewables,<sup>41</sup> is strictly a zero-sum affair; B loses what A gains. This is not a world where individual wealth desires can be fully protected. Any allocation decision is simultaneously a decision to inflict a loss. To borrow from the language of takings law, it can be safely predicted that a necessarily large number of losers will not be protected by the cover of "just compensation." Their disappointments will be uncompensated.

Second, it so happens that often the world is not only an ugly zero-sum affair; it is worse than that. Open resource competition not only divides the pie but often shrinks it in the process. This is the "tragedy

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Common property notions are clearly evident among hunter-gatherer peoples. See, e.g., M. DALY & M. WILSON, *SEX, EVOLUTION, AND BEHAVIOR: ADAPTATIONS FOR REPRODUCTION* 324-25 (1978).

41. See Daly, *Enough is Enough—The Economic Concept of Sufficiency*, in *LIFE AFTER '80: ENVIRONMENTAL CHOICES WE CAN LIVE WITH* 159 (K. Courrier ed. 1980) (arguing that it is crucial to protect the renewable resources of forests, fisheries, grasslands, and croplands, and that overexploitation of nonrenewables leads to overexploitation of renewables). Additional remorse should attend the destruction of renewables as they are consigned by human choice to the zero-sum category of nonrenewables.

of the commons" where the pursuit of individual self-interest works to the detriment of all.<sup>42</sup> This empirical reality justifies a sharp social constraint around accumulations of natural resource wealth. Some expectations may be aroused, others dashed to combat the loss; but individual entitlements may be defined and redefined to protect the overall productivity of the social commons.

#### D. Process Theories: Sources of Fair Treatment

The fourth and final theoretical component of this taking theory is the assumption that losers singled out by society at least should be given a chance to contest and argue about their loss of status or material standing. In support of such a view, most legal theorists today reflexively would invoke Anglo-American concepts of due process, and with good reason.<sup>43</sup> The roots run even deeper, however. Human hunter-gatherer traditions, enduring for perhaps 99.9 percent of our species' history, are characterized by small group interactions, participatory decisionmaking, and meaningful opportunities to be heard.<sup>44</sup> Here is a natural law of procedural due process with remote and august origins.

Anthropological theory also recognizes that the study of relationships between individuals and the group requires close attention to how decisions are made. Some expectation of fair dealing between the group and its members inevitably appears in human cultural patterns, often in the definitions of property.<sup>45</sup> Admitting that any society with property ideas must have ways of dealing with individual and group conflict, however, does not take us far along the road toward adjudging what process is "due." Some of the most outrageous impositions of human cruelty, destruction, and harm have been accompanied by process arrangements making some sort of bizarre sense.<sup>46</sup> Much philosophical thinking has been devoted to prescribing the ingredients of fair process,<sup>47</sup> and many of our great ideas such as equal treatment and reciprocity of obligation flow from this tradition. One prominent view is that the legal profession never will be able to say much about justice

42. See Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968); Schelling, *On the Ecology of Micromotives*, 25 *THE PUBLIC INTEREST* 59 (1971).

43. See, e.g., J. ELY, *supra* note 34.

44. See L. TIGER & R. FOX, *THE IMPERIAL ANIMAL* chs. 7-9 (1971).

45. See E. HATCH, *THEORIES OF MAN AND CULTURE* 107-10 (1973); J.H. STEWARD, *THEORY OF CULTURE CHANGE: THE METHODOLOGY OF MULTILINEAR EVOLUTION* 103-08 (1963).

46. N. CALDER, *HUMAN SACRIFICE* (1981). Perhaps the appeal of hunter-gatherer due process ethics, *supra* note 44, stems from the fact that we always will be guessing (and thus may be guilty of wishful thinking) about how our prehistorical ancestors went about deciding individual and group property questions.

47. See, e.g., J. LUCAS, *ON JUSTICE* (1980); see Mashaw, *Administrative Due Process: The Quest For A Dignitary Theory*, 61 *B.U.L. REV.* 885 (1981).

beyond purely process contributions.<sup>48</sup>

Applied to taking theory, the extensive tradition of process rights offers little guidance in distinguishing compensable from noncompensable governmental actions. It does suggest, however, that "just compensation" in a constitutional sense assures not a particular amount of wealth but rather a tradition of fair treatment. Some victims may be justly compensated under this view not by getting paid but by being heard, by being treated like others similarly situated, and by being assured that the loss was kept to a minimum.

Furthermore, allocation of process fairness, unlike scarce natural resources, presents no zero-sum choice between A and B.<sup>49</sup> Due process, unlike fossil fuel, is easily created; extending some of it to A does not necessarily diminish the supply available to B. What this means for taking theory, perhaps, is that we can expect process fairness to be spread more widely than the income maintenance so often perceived to be at the core of the takings doctrine.

### E. Summary

Part I of this Article has described four prominent themes of contemporary property theory—biological and social functionary justifications, and the ideas of a resource commons and process fairness. Acceptance of this description does not necessarily entail acceptance of the normative and empirical argument advanced in support of these four themes. All the Article has attempted thus far is to search the universe of property theory and identify four beacons discernible there. These themes are the foundation of the taking theory offered here, and they can be found in the case law of resource allocation to which we now turn. Thus far this Article has built a theoretical structure by intuition, and constructed a rough prototype. It is time now to cast the net, tighten the mesh, and improve its design and operation.<sup>50</sup>

For the moment, we will proceed on the assumption that the four themes can be tested by the legal experience of natural resource property rights. While the point is debatable,<sup>51</sup> the notion is simply that the pronouncements of the courts and legislatures will embrace and reflect faithfully patterns of argumentation that have long persisted. Where

48. See, e.g., J. ELY, *supra* note 34.

49. See Rodgers, *Building Theories of Judicial Review in Natural Resources Law*, 53 U. COLO. L. REV. 213, 227 (1981).

50. See K. POPPER, *THE LOGIC OF SCIENTIFIC DISCOVERY* 59 (1959): "Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavor to make the mesh ever finer and finer."

51. The transformation of academic or philosophical argument into legal doctrine takes place only upon satisfaction of a variety of preconditions that may not exist in the legal process. For example, a particular view may not be urged by litigants, or, if urged, may not be accepted.

no single philosophy triumphs, discord is to be expected also in the rulings of public institutions, especially among those purporting to follow various versions of the popular will. On the basis of this assumption, the theory can be validated and further explained by the case law of resource allocation; it also can be invalidated by examples rejecting the themes urged here.<sup>52</sup>

## II

### RESOURCE CONFLICTS IN SPACE AND TIME

This Part examines resource disputes, and the concepts of taking underlying them, in three contexts: (1) the horizontal and vertical nuisances, posed classically by conflicts between adjoining landowners and by simple surface/subsurface disputes; and "universal nuisances," which typically involve more complex resource disputes such as those between surface owners and airspace users;<sup>53</sup> (2) classical takings cases where the property holder and the state are quarreling over resources;<sup>54</sup> and (3) conflicts over time involving the same resource, illustrated by the common law of waste, and the federal reserved rights and public trust doctrines.<sup>55</sup>

#### A. *The Messages of Nuisance Law*

Nuisance law confirms the idea that human property is protected by right and utilitarian or social property is vulnerable to uncompensated redefinition. Nuisance cases also demonstrate a strong process theme aimed at assuring that the social sacrifice be kept to a minimum.

##### 1. *The Absolutist Component (Human Property)*

An absolutist sanctuary in nuisance law is unmistakable, and to

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52. See *supra* note 6. Much legal theory is formulated in terms that effectively defy invalidation. See, for example, Landes & Posner, *The Positive Economic Theory of Tort Law*, 15 GA. L. REV. 851, 864 (1981) ("If a rule of tort law cannot be explained on efficiency grounds, this is not a contradiction or even a puzzle; it is consistent with the proposition that most, rather than all, tort doctrines are efficient"). Under Posner's view any tort case eschewing efficiency in favor of, say, justice, does not invalidate his theory at all. See Rabin, *The Historical Development of the Fault Principle: A Reinterpretation*, 15 GA. L. REV. 905, 942, 955 (1981). To invalidate such a theory, it is apparently necessary to search the entire universe of tort doctrine, and demonstrate that "most" of the time (i.e., in more than 50 percent of the samples) the results contradict the efficiency hypothesis. See Landes & Posner, *supra*, at 864.

The descriptive taking theory of this paper can be invalidated by examples rejecting the pattern of argumentation here developed. I am free to argue, of course, that the courts are wrong to resist the considerations advanced, let us say, in support of biological property theory. But then all turns upon the persuasiveness of the argument, and no "scientific" claim is made that courts actually hew to the detected patterns.

53. See *infra* sections II.A. 1 & 2.

54. See *infra* section II.A.3.

55. See *infra* sections II.B.1-3.

this observer at least is one of the most prominent features of the doctrine.<sup>56</sup> Core interests are protected in nuisance cases, commonly by the grant of injunctive relief, which represents a refusal to substitute compensation for the elimination of the encroachment.<sup>57</sup> Whenever a court decides that a plaintiff has been pushed too far, it repels the invasion. The focus is rights-oriented and oblivious to claims that the offender must give up more than the value of that preserved. The object of this rights orientation is not community betterment but individual security and freedom. For most nuisance plaintiffs, who can safely be viewed as spillover recipients, the core interests protected in the face of utilitarian objections include health, abode, and other essentials of living reminiscent of the biological property components discussed earlier.<sup>58</sup> This respect for central interests of "human" property might account also for the hands-off approach in the social nuisance cases,<sup>59</sup> which accord wide tolerance to half-way houses, hospitals, and other human undertakings attacked as nuisances.

Nuisance case law discloses a distinct preference for technological or operational solutions short of ouster of one of the principals.<sup>60</sup> This search for conflict avoidance postpones the issue of limits of available resources. Insistence upon the best operational practices extends the space available for use. This is an illustration of the tendency, widespread in natural resources law, to seek avoidance of zero-sum outcomes.<sup>61</sup>

Nuisance law thus yields a working illustration of friction minimization—the use of best efforts to avoid interference with other parties.<sup>62</sup>

56. See W. RODGERS, *HANDBOOK ON ENVIRONMENTAL LAW* §§ 2.1-10 (1977); Ellickson, *Alternatives to Zoning: Covenants, Nuisance Rules, and Fines as Land Use Controls*, 40 U. CHI. L. REV. 681, 719-22, 748-60 (1973); Epstein, *Nuisance Law: Corrective Justice and Its Utilitarian Constraints*, 8 J. LEGAL STUD. 49, 65-73 (1979); Rabin, *Nuisance Law: Rethinking Fundamental Assumptions*, 63 VA. L. REV. 1299 (1977).

57. W. RODGERS, *supra* note 56, at § 2.11 (1977); Polinsky, *Resolving Nuisance Disputes: The Simple Economics of Injunctive and Damage Remedies*, 32 STAN. L. REV. 1075 (1980).

58. See Coquillette, *Mosses from an Old Manse: Another Look at Some Historic Property Cases and the Environment*, 64 CORNELL L. REV. 761, 770-82 (1979) (stressing tendency in early nuisance cases to protect against interferences with residential living). This nuisance law could be said to provide "empirical evidence for a positive 'rights theory' of law." Posner, *supra* note 1, at 109 n.32. Additional empirical evidence for a rights theory can be found in the doctrines of waste, reserved rights, and public trust discussed below. On individual veto aspects of rights analyses, see J. BUCHANAN & G. TULLOCK, *THE CALCULUS OF CONSENT: LOGICAL FOUNDATIONS OF CONSTITUTIONAL DEMOCRACY* (1967); R. DWOR-KIN, *TAKING RIGHTS SERIOUSLY* 1-13 (1977).

59. W. RODGERS, *supra* note 56, at § 2.4, 116; Epstein, *supra* note 56, at 90-94.

60. W. RODGERS, *supra* note 56, at § 2.6. On the utilitarian nature of these decisions, see Greenawalt, *Policy, Rights, and Judicial Decision*, 11 GA. L. REV. 991, 1012-26 (1977).

61. Legislators customarily embrace growth models because they want to please everybody and avoid the testiness and political costs associated with reallocation decisions in a no-growth world.

62. See Blumm, *Hydropower v. Salmon: The Struggle of the Pacific Northwest's Anadro-*



The best practices are socially defined but are constrained by the resources of the actors. The policy is one of peaceful coexistence, and the courts work hard to achieve this reconciliation. Potential losers are promised a close look to assure that the loss be kept to a minimum, and that best efforts be taken to avoid it.

A rule of friction minimization is a rough approximation of what might be expected from judges whose view of human nature conforms to the teachings of sociobiology. After their basic needs are satisfied, individuals in human society long have been expected to sacrifice for the benefit of neighbors. Human altruistic behavior<sup>63</sup> extends to a variety of activities (sharing food and knowledge, helping in times of danger), and it is thought to have evolved because of the wide range of human reciprocal relations.<sup>64</sup> Crudely put, an individual is kind and generous to others because it is useful to have them return the kindness and generosity. Biological theory supports a rule of best efforts to prevent resource usage from working to the disadvantage of another member of the society.<sup>65</sup> Thus, in protecting human property and in enforcing reciprocity, nuisance law confirms the themes of biological property theory adverted to earlier.<sup>66</sup>

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*mous Fish Resources for a Peaceful Coexistence with the Federal Columbia River Power System*, 11 ENV. L. 211, 295-300 (1981); Rodgers, *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1, 22-23 (1980). Compare the interesting analysis in Fredrickson & Stephanopolis, *Microbial Competition*, 213 SCIENCE 972 (1981) (taking up the question of whether "complete competitors" can coexist).

63. Altruism is defined by biologists as an act benefitting another individual to the physical detriment of the donor who expects no repayment. *E.g.*, Hamilton, *The Genetic Evolution of Social Behavior I*, 7 J. THEORETICAL BIOLOGY 1, 14-16 (1964). A limited "selfish gene" version of altruism is challenged in M. SAHLINS, *USE AND ABUSE OF BIOLOGY: AN ANTHROPOLOGICAL CRITIQUE OF SOCIOBIOLOGY* (1976).

64. Trivers, *The Evolution of Reciprocal Altruism*, 46 W. REV. BIOLOGY 35, 45-53 (1971). Biologists usually distinguish nepotism (sharing with relatives) from reciprocity among unrelated individuals. *See* R. ALEXANDER, *DARWINISM AND HUMAN AFFAIRS* 25, 256 (1979); Fletcher, *Fairness and Utility in Tort Theory*, 85 HARV. L. REV. 537 (1972).

65. *See* Rodgers, *supra* note 62, at 18-23. More formally, the biological rule is viewed as one that maximizes inclusive fitness or genetic representation in future generations. *See Preface*, *EVOLUTIONARY BIOLOGY AND HUMAN SOCIAL BEHAVIOR: AN ANTHROPOLOGICAL PERSPECTIVE* (M. Chagnon & W. Irons eds. 1979). The rationales of reciprocity and preference for kin are developed within this framework. R. DAWKINS, *THE SELFISH GENE* (1976); Hamilton, *supra* note 63; Trivers, *supra* note 64. *Cf.* G. WILLIAMS, *ADAPTATION AND NATURAL SELECTION: A CRITIQUE OF SOME CURRENT EVOLUTIONARY THOUGHT* 26 (1966). It is sufficient for our purposes to acknowledge that biological theory recognizes that individuals do what is best for themselves, and this often includes being very generous. Compare Locke's remonstrances against wasting resources, *supra* note 22.

66. *See supra* Section I.A. This paper assumes that courts will adopt property justifications strongly held by the population. There are other reasons why judges in nuisance cases might embrace allocation rules tending to approximate biological sharing theory. One is that a search for a community standard of good behavior might lead intuitively to the rule commonly governing sharing among people with high reciprocal interactions. Nuisance law, after all, has roots long preceding the industrial revolution, and thus its perceptions of how neighbors should behave predictably might borrow from kinship and friendship shar-

## 2. *The Utilitarian Component (Social Property)*

A biological rights theory does not explain nuisance law completely. A doctrine that claims as a principal feature the "balancing" of interests is not bereft of utilitarian considerations.<sup>67</sup> Apart from the uncompromising protection of core property, the cases manifest a consistent aim to get the most out of conflicting uses. More is better so long as the basics are protected. The "balancing" that takes place thus often includes not only consideration of interparty interests (who was there first, the comparative ease of adjustment) but also social interests (the character of the neighborhood, the welfare of employees on defendant's payroll).

Nuisance law, in its classical form, can be viewed as a reallocation of wealth in a world of limited resources. One party appropriates resources, a loser protests, the court intervenes to enforce restoration. The remedy, it should be emphasized, can be highly disruptive of the status quo. The original appropriator, after all, has been obliged to relinquish (1) something of value—call it a property right, (2) that the appropriator has put to actual use, (3) often with longstanding acquiescence or approval of the state, and the loss is (4) uniquely felt by a single party, and (5) brings disappointment and frustration of investment-backed expectations, perhaps (6) to the full extent of the anticipated value.<sup>68</sup> The response to these weighty objections is that justice to the loser requires that we repudiate investments that intrude upon another's property rights. An appropriator suffers, but the property was something in which the appropriator's "ownership" was temporary and fleeting, and subject to others' interests.

A sizeable component of nuisance law thus deals with social property subject to uncompensated reallocation.<sup>69</sup> Close scrutiny reveals that this reallocation is justified by two arguments suggestive of theo-

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ing rules developed within closely knit groups. Judges, who are teachers of sorts, also might be inclined to adopt a rule of qualified altruism, such as minimizing friction, which comes close to the behavioral advice given by parents to children. See R.D. Alexander, *Darwinism and Human Affairs* 262-66, 273-76 (1979). Judges as historians and judges as teachers thus might come around to similar views of human nature and fair dealing.

An exogenous explanation is that courts might be led unknowingly to biological sharing rules because departures from the biological optimum would be challenged repeatedly by those suffering the deprivation. Compare Priest, *The Common Law Process and the Selection of Efficient Rules*, 6 J. LEGAL STUDIES 65 (1977).

67. See W. RODGERS, *supra* note 56, at §§ 2.1-2.3; see *supra* note 60 and accompanying text.

68. These factors constitute a reasonably complete list of criteria invoked by the courts in support of the conclusion that a taking has occurred. See Soper, *The Constitutional Framework of Environmental Law*, in ENVIRONMENTAL LAW INSTITUTE, FEDERAL ENVIRONMENTAL LAW 20, 57-71 (E. Dolgin & T. Guilbert eds. 1974).

69. This is so despite the fact that nuisance law can be safely viewed as predominantly a corrective justice doctrine. See Epstein, *supra* note 56.

retical property themes discussed earlier. The first is that some kinds of property are held in common, immune from claims of permanent entitlement.<sup>70</sup> Nature made it, goes the argument, and this is provisional wealth open to reallocation as competing needs emerge. The second is that the Lockean legacy, honoring the right to produce and to work, creates a reciprocal network under which the right to human property appropriations must be honored in others.<sup>71</sup> Group living necessitates accommodation to others' needs. At their roots, both of these justifications stem from ideas of contributive justice. This Article will explore these ideas in further detail by considering types of losses that can be considered just.

*a. Social property and the just loss*

At least two types of just loss are widely recognized in the law.<sup>72</sup> The first is occasioned by presumed misconduct of the loser, where surrender of the gains is thought to be appropriate. This is an expression of corrective justice and it appears in the "noxious" use and nuisance theories of taking.<sup>73</sup> Under this view government enforcement of divestitures is not a taking, however disappointing it may be, but rather reinstatement of the original understanding.

This theory, premised upon personal fault in overreaching a socially prescribed norm, can be reformulated quite easily into a theory of contributive justice dependent not at all upon showings of culpability. As Professor Michelman explains, in some cases "society reserves the right to preempt the exploitation of a certain *narrowly described class of resources* at any time, and . . . no one is to form any inconsistent expectations about the future use and control of those resources."<sup>74</sup> But expectations can be dashed quickly by society; when this is done the result is hardly perceived as an instance of slapping down the wrongdoer who did not get the word. In Pennsylvania, to mention one example, a broad spectrum of resources is now "subject to" the public's reassertion of interest in them. For a number of years, that state's constitution has provided that

the people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all

70. See Coquillette, *supra* note 58, at 799-820 (discussing *res communes* doctrine).

71. See Epstein, *supra* note 56, at 82-87 (discussing the "live and let live" rule in nuisance cases). Nuisance law has a strong corrective justice theme. That which is restored, however, is presumed to belong to the winning party under some version of fair sharing.

72. A third possibility might be losses attending natural mishaps. How many tort plaintiffs are told they must depart emptyhanded because the injury was occasioned by an Act of God? This outcome might be described as random justice.

73. Michelman, *supra* note 14, at 1236-41; Soper, *supra* note 68, at 52-55.

74. Michelman, *supra* note 14, at 1240 (emphasis added).

the people, including generations yet to come.<sup>75</sup>

Appropriators, dipping too deeply into this resource bank, might be said to have been forewarned that they may be obliged to disgorge values without compensation. A more credible justification for compelling the relinquishment of this wealth is that, regardless of expectations, society reserves the right to redefine property in natural resources perceived as being held in common. By this route, a nuisance theory of corrective justice can be recast as a public trust theory of contributive justice.

The main issue is not the differences one may have with Professor Michelman over the range of values preempted by a commitment to "the commons" and expectations associated with it.<sup>76</sup> The key is in the structure of this anti-nuisance or public trust theory of taking law. This idea recognizes a condition qualifying the use of the natural resources that make up social wealth; these "common" assets are subject to divestiture by reallocation or taxation. Private legal interests in the resource commons are real enough, and are given meaningful process protections,<sup>77</sup> but considerable latitude is afforded legislatures to reassign natural resource wealth in light of shifting assumptions and values.

A second type of just loss occurs as a price of honoring protected behavior by others. The idea is that a Lockean fruits-of-the-labor property rationale presupposes adequate opportunities for the other person. Consequently, the early appropriators are limited, and their wealth curtailed, to keep the door open for later appropriators. This is a type of forced contribution we could call contributive justice.<sup>78</sup> The

75. Pa. Const. art. I, § 27.

76. Professor Michelman would find an illegitimate expectation where "investments . . . (a) interrupted some else's enjoyment of an economic good, . . . or (b) were of a sort which society had adequately made known should not become the object of expectations of continuing enjoyment." Michelman, *supra* note 14, at 1239-41. One might ask why the expressions of the Pennsylvania environmental bill of rights have not been an operative assumption since our hunter/gatherer predecessors acknowledged resources in common, or at least since Locke announced his famous proviso. Lewis H. Lapham, editor of *Harper's*, has expressed the view that natural resources belong to the people in common, rather than to individuals or nations:

Oil differs from grain or corn in that crops must be planted and harvested, and thus they reflect the labor of men. But what labor resulted in the seas of oil or the fields of the ocean? By what right can any nation claim to own the residue of the evolutionary past? Just as money is the fossil record of creative labor, so oil is the fossil record of the death of billions upon billions of organisms, all of them the common ancestors of man.

Who owns the Atlantic or the Mediterranean? Who owns the biosphere or the outer reaches of space? . . .

Why should not all commodities essential to human life be held in common? Perhaps this is a futile and idealistic question, but it is one that not enough people ask. The failure to discuss the question in the voices of reason shifts the argument into the bombast of war.

Lapham, *On Risk, Ignorance, and Oil*, HARPERS' 8, 10 (June 1980).

77. See *infra* Section B.2.b.

78. See J. LUCAS, *supra* note 47, at 231-54. Horace Greeley's advice to "go West"

most prominent examples are found in tort law, where victims are obliged to bear all sorts of losses occasioned by another's uncalculating behavior.<sup>79</sup> The beneficiaries of a wide variety of government supports and subsidies could be made poorer overnight by shifts in policy, presumably without offending preconceived notions of a "vested right."<sup>80</sup> Grants to one group do not foreclose the reallocation pleas of other groups; nuclear power, for example, is every bit as vulnerable to a repeal of the Price-Anderson Act<sup>81</sup> as it is to a series of crucial permit denials, but neither of these catastrophic losses would raise colorable taking claims. Nor, indeed, would there be any taking problems if the federal government damaged nuclear or fossil-based power assets indirectly by sudden and drastic shifts in support of conservation and solar alternatives.

This discussion of just losses is intended to underscore the "social" component of a natural resources property theory. Corrective and contributive rationales justify widespread reallocations, and we would expect them to reappear in the sources to which we turn to fill out the theory. With these preliminaries out of the way, it is time to look more closely at the role of the legislature in reallocating social wealth, which is held subject to revisable expectations.

*b. Social property: universal nuisances and the reallocative role of the legislature*

Legislatures often speak on the subject of resource allocation in nuisance suits and courts take their words seriously.<sup>82</sup> The interesting question is whether, in moving the line one way or the other, the lawmakers run afoul of taking claims when they tip the balance strongly in favor of one of the parties.<sup>83</sup>

For instruction on the scope of legislative freedom to reallocate social property, we will examine a class of resource conflicts that can be

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wasn't extended to everyone: "Give the first chance at the gold region to those who have as yet had no chance elsewhere." Quoted in D.D. Jackson, *Gold Dust* 73 (1980).

79. The freedom to take from another through economic competition, for instance, is sacrosanct in principle and often honored in fact. Indeed, it could be said that there is little "property" interest in the United States that is not held subject to divestiture by exercise of the universal right to compete.

80. The principal nonrenewable fuel industries today (uranium, coal, oil, and natural gas) are supported by a variety of subsidies said to approach in value \$100 billion per year. See R. STOBAUGH & D. YERGIN, *ENERGY FUTURE: REPORT OF THE ENERGY PROJECT AT THE HARVARD BUSINESS SCHOOL* 294 (1979).

81. 42 U.S.C. § 2210 (1976 & Supp. IV 1980).

82. W. RODGERS, *supra* note 56, at § 2.10. For a valuable discussion of whether courts should demand higher performance levels than those legislatively mandated, see Michelman, *Pollution as a Tort: A Non-Accidental Perspective on Calabresi's Costs*, 80 *YALE L. J.* 647 (1971).

83. See, e.g., *Richards v. Washington Terminal Co.*, 233 U.S. 546, 553 (1914) (Holmes, J.).

described as universal nuisances. The concept of universal nuisance is intended to embrace a variety of resource conflicts with many users and pervasive effects (air pollution, jet noise, fluorocarbons, ground water, fishing resources). Universal nuisances differ from the classical horizontal and vertical conflicts in the following particulars: (1) users are numerous, indeterminate and diffuse; (2) appropriation is incomplete, with an increment of the natural wealth remaining economically or technologically out of reach; (3) private property rights in the resource commons are poorly defined, which often leads to excessive entry and high environmental costs in mutual spillovers.<sup>84</sup> These conflicts illustrate the wide scope of the legislature's power to accommodate opposing interests free from the restrictions of taking law.

Legislative linedrawing in the context of universal nuisances routinely is sustained against constitutional objections<sup>85</sup> under rationales commonly associated with taking theories. Illustratively, abatement of air pollution for the protection of human health<sup>86</sup> would be justified by reference to a noxious use or anti-nuisance rationale.<sup>87</sup> That is, "what you thought was yours is not yours at all; we have now decided to put an end to your overreaching, a step we always have reserved the right to take."

Legislative interventions in these contexts also are sustainable because behavior limitations imposed by pollution laws ordinarily allow some use, avoiding the often fatal charge that a valuable property interest has been rendered worthless.<sup>88</sup> The legislative objectives—for example, more to go around for this generation, transfers of wealth to "more productive" hands, ceilings to protect use by the next generation—are met short of forbidding all usage.

84. See Hardin, *supra* note 42.

85. At common law, users are acknowledged as having against one another a legal right to prevent "unreasonable" consumption. *Tulare Irrigation Dist. v. Lindsay-Strathmore Irrigation Dist.* 3 Cal. 2d 489, 567-79, 45 P.2d 972, 1007-13 (1935) (water); *Elliff v. Texon Drilling Co.*, 146 Tex. 575, 582, 210 S.W.2d 558, 563 (1948) (oil). This formulation uses the language of nuisance law, and it is understood as inviting judicial linedrawing to prevent resource waste (in the sense of certain benefits being rendered unavailable to anyone) or misallocation (in the sense that someone is securing more than an officially sanctioned "fair" share of benefits in the face of conflicting claims by others). These disputes invite legislative intervention, and the resulting laws in turn lead to revisions in wealth expectations, often attacked as takings.

86. This standard is established by federal law, 42 U.S.C. § 7409(b)(1) (1976 & Supp. III 1979), without hint of taking difficulties, despite widespread efficiency objections. See Rodgers, *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 HARV. ENV'T'L L. REV. 191, 201-04 (1980).

87. See, e.g., *H.F.H. Ltd. v. Superior Court*, 15 Cal. 3d 508, 521, 542 P.2d 237, 247 (1975), *cert. denied*, 425 U.S. 904 (1976) (possible changes in zoning laws are clearly foreseeable to land speculators and other property purchasers); Michelman, *supra* note 14, at 1236-41; Soper, *supra* note 68, at 52-55.

88. Stoebuck expounds upon this "too far" test in *Police Power, Takings, and Due Process*, 37 WASH. & LEE L. REV. 1057, 1062-65 (1980).

Another feature of universal nuisances, suggestive of taking doctrine, is that private property claims are fuzzy at the boundaries, wealth expectations problematical and in fluctuation. Interests to be weighed are overlapping, abstract, interrelated in uncertain ways, and thus suitable for definition by legislative guess.<sup>89</sup> The point is that where the private right is in flux or in doubt the user loses something of only speculative value when the government closes the door upon further attempts to appropriate.

Illustrative is the *ferae naturae* theory of wildlife ownership,<sup>90</sup> which has been applied to some fugaceous minerals.<sup>91</sup> This theory reserves the "property" label exclusively for those resources reduced to possession. Private rights must be explicitly and narrowly carved out of nature's commons. After all, the object of the hunt was the catch, not an investment-backed expectation, and stiff competition had to be overcome.<sup>92</sup> Whatever the origins of the *ferae naturae* rules, it defeats taking claims against hunting and fishing closures, despite convincing assertions that existing investments wedded only with opportunity soon would yield individual wealth.<sup>93</sup> Nevertheless, this conventional idea that wealth in wildlife counts only when the benefits are in one's pocket sharply conditions expected returns from the resource.

An example of the ample leeway accorded legislative accommodation under conditions of extreme uncertainty can be found in the Price-Anderson Act,<sup>94</sup> which reallocates the financial risks of nuclear power plant accidents from utilities to potential victims by establishing a ceiling on prospective tort claims. In this situation the membership of the winning and losing classes is obscure and overlapping; some potential accident victims also would be beneficiaries of nuclear power. The

89. See Rodgers, *supra* note 86, at 216-18. The legislative discretion to define ambiguous property rights presupposes also a discretion to define partial compensation that would be considered "just." See Hagman, *Compensable Regulation*, in *WINDFALLS FOR WIPEOUTS: LAND VALUE CAPTURE AND COMPENSATION* 256 (D. Hagman & D. Misczynski eds. 1978); Bozung, *Judicially Created Zoning With Compensation: California's Brief Experiment With Inverse Condemnation*, 10 *ENV'TL L.* 67 (1979); Costonis, *Fair Compensation and the Accommodation Power: Antidotes for the Taking Impasse in Land Use Controversies*, 75 *COLUM. L. REV.* 1021 (1975).

90. See M. BEAN, *THE EVOLUTION OF NATIONAL WILDLIFE LAW* (1977). Chimpanzees subscribe to a food sharing rule under which the first appropriator, regardless of status, is entitled to the find. See D. FREEMAN, *HUMAN SOCIOBIOLOGY: A HOLISTIC APPROACH* 42 (1979). So, too, with dolphins and wolves. See R. PETERS, *MAMMALIAN COMMUNICATION: A BEHAVIORAL ANALYSIS OF MEANING* 207, 235 (1980).

91. See *Elliff v. Texon Drilling Co.*, 146 Tex. 575, 210 S.W.2d 558 (1948).

92. See *Pierson v. Post*, 3 Cai. R. (N.Y.) 175, N.Y. (1805). To this day, hunting retains its lottery characteristics despite a decided tilt of the technological balance in favor of the human hunter.

93. See, e.g., Note, *Legal Dimensions of Entry Fishery Management*, 17 *WM. & MARY L. REV.* 157, 766-67 (1976) (citing among other authorities *Miller v. McLaughlin*, 221 U.S. 201 (1930), and *Lawton v. Steele*, 152 U.S. 133 (1894)).

94. 42 U.S.C. § 2210 (1976 & Supp. IV 1980).

prospect of loss by a named victim, and its extent, are problematical and uncertain. The Supreme Court has sustained the constitutionality of the statute, with a bow to legislative authority to tackle uncertainty.<sup>95</sup>

Legislatures have freedom not only to resolve uncertainty but also to express new values. Illustrative is North Dakota's Surface Owner Protection Act,<sup>96</sup> which abolishes the traditional superiority of mineral rights over surface rights<sup>97</sup> by requiring payment to the surface owner for losses of agricultural production caused by mining activity.<sup>98</sup> This is a case where only two parties are involved and opportunities for private agreements yielding the best combination of uses are relatively unimpeded.<sup>99</sup> Legislative intervention thus cannot be justified by concern for future generations or non-human values, or as an attempt to resolve uncertainty. The wealth shift is more likely an expression of the view that strict liability will minimize the friction<sup>100</sup> or that greater "overall happiness" will attend an income shift from mineral to surface owners. This is frankly redistributive but it is a reassignment of natural resource wealth accommodating the survival interests of the prominent claimants.

The universal nuisance experience confirms a broad legislative discretion to reallocate natural resource wealth free of constitutional strictures. Legislatures may draw lines where wealth expectations are unsettled and may guess about what losses temporarily imposed may expand the pie.<sup>101</sup> They may go further to identify new values, including a respect for nature, that may defeat previously settled wealth expectations.<sup>102</sup> They may also, based upon wide-ranging empirical

95. *Duke Power Co. v. Carolina Environmental Study Group, Inc.*, 438 U.S. 59, 84-87 (1978) (rejecting substantive due process attack on the Price-Anderson Act).

96. N.D. CENT. CODE ch. 38-18.

97. See Dycus, *Legislative Clarification of the Correlative Rights of Surface and Mineral Owners*, 33 VAND. L. REV. 871, 872-73 (1980).

98. N.D. CENT. CODE § 38-18-08. The statute requires, if a surface mining operation comes within five hundred feet of any farm building, payment of either "the fair market value of the farm building or the entire cost of removing the farm building to a location where the mining operation will not come within five hundred feet [152.4 meters] of such building or buildings." *Id.*, § 38-18-07(2). This conflict would be considered a vertical nuisance under my typology.

99. Note, however, that since the legislature made the surface owner's rights "absolute and unwaivable," *id.*, § 30-18-07(3) it apparently recognized disparities in bargaining power between surface and mineral owners.

100. See G. CALABRESI, *THE COSTS OF ACCIDENTS* 145-73 (1970) (on general deterrence); *supra* notes 56-61 and accompanying text.

101. See, e.g., *Texas v. Donoghue*, 302 U.S. 284 (1937); *Patterson v. Stanolind Oil & Gas Co.*, 305 U.S. 376 (1939).

102. See *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978); cf. *Baldwin v. Fish & Game Comm'n*, 436 U.S. 371 (1978); *Andrus v. Allard*, 444 U.S. 51 (1979); *Delby Pharmaceuticals, Inc. v. Department of Commerce*, 409 F. Supp. 637 (D.D.C., 1976) (rejecting due process arguments against seizure of spermicetti from sperm whale although the product was legally imported).



estimates, reassign wealth upon the understanding that productivity or satisfaction gains will offset disappointment costs.<sup>103</sup> Thus, the legislature is given room to expand, extend, and reallocate natural resource wealth. It may revise the roster of those with recognized claims (including future generations and nonhuman life), define the reach of uncertain claims, and make judgments about what reassignments will reduce friction or increase satisfaction or productivity. In doing so it develops criteria distinguishing winners from losers and contributes to prescribing the process within which allocation judgments are made.<sup>104</sup>

Thus far we have reaffirmed a broad legislative discretion to revise wealth expectations in the resource "commons." We must look elsewhere to discover the limits within which this legislative freedom operates. We will look first at some leading takings theories, then attempt to fill in the details of a theory that would be faithful both to the takings case law and to the prominent theoretical themes outlined earlier in this Article.

*c. Social property: prominent takings theories*

Professor Joseph Sax, viewing many contemporary takings conflicts as contests over a resource commons, would find no taking whenever the government intervenes to settle a conflict.<sup>105</sup> The key for Sax is to determine "whether an owner is being prohibited from making a use of his land that has no conflict-creating spillover effects."<sup>106</sup>

The no-spillover test has promise for defining both private wealth holdings not subject to redefinition by the state and the courts' role in protecting them. Applying the test, however, Professor Sax characterizes the classic airport/residence noise problem as a spillover standoff where "each of the conflicting uses, residence and airport, demands the imposition of a form of servitude on the other. The airport requires the adjacent land to serve as a receptacle for noise, and the resident requires the airport to be held as a zone of quiet."<sup>107</sup> This notion of citizens spilling over into adjacent airspace implies an economic test for spillovers under which a contestable "commons" arises whenever A's beneficial use imposes costs on B.<sup>108</sup>

103. *E.g.*, *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1 (1976).

104. For an indication of the substantial legislative role in developing process rights in resource reallocation decisions, see Rodgers, *A Hard Look at Vermont Yankee: Environmental Law Under Close Scrutiny*, 67 GEO. L.J. 699, 716-18 (1979).

105. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 154 (1971).

106. *Id.* at 164.

107. *Id.* at 164-65.

108. *Id.* at 152 n.9 (citing Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960)). In days past, first year torts students were told that "everyone can understand a punch in the nose." C. GREGORY & H. KALVEN, *CASES AND MATERIALS ON TORTS* 21 (2d ed. 1969). These days, with the discovery of the triviality of causation in an economic sense, it seems that nobody can understand a punch in the nose: interaction between victim and

Thus, under the Sax view, the resident spills over into the airspace, the homeowner spills over onto the smelter, and the farmer spills over onto the power company.<sup>109</sup> The government, as referee, could hold in each of these cases for the party who would appear intuitively to be the offender. Of course, these interactions can be viewed as not at all symmetrical in a physical sense. The non-smoker's act of breathing, after all, has no effect on the smoker, and a physical test reveals without too much difficulty who is imposing the servitude on whom.<sup>110</sup>

Thus the first problem with the spillover test, at least in its economic version, is that it is causation-oblivious, making all joint interactions neutral before the governmental reallocator. The reviewing court is supposed to be indifferent between the shooter of the cannon and the recipient of the shot. This could lead to divestability, without compensation, of even the core values of health and abode protected by nuisance law. By contrast, a causation-sensitive takings test, responsive to the nonreciprocal nature of the interactions outlined above, would require that courts define the "human property" rights presumptively protected against outside assault and legislative reallocation.<sup>111</sup>

Professor Sax approves a wide discretion in legislatures to realign without compensation the wealth expectations of claimants to a resource commons. The problem with using any spillover test as the measure of a property right, however, is that it is entirely utilitarian in structure, making property revocable upon revision of external sentiments or actions. Wealth becomes wealth "in common" depending upon what others think or do. While the range of defeasible interests is broad and nicely described by the idea of a resource commons, the picture is incomplete. All possessions should not be put in jeopardy by

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injurer is seen as a mutual problem, and the solution might as well be nose guards as fist restraints. See Rodgers, *supra* note 62, at 29-33. On the importance of a coherent test of causation in tort justice theory, see Horwitz, *Law and Economics: Science or Politics?*, 8 HOFSTRA L. REV. 905, 911 (1980).

109. To extend the examples, if I desire my neighbor's truck, are we in the presence of a conflict over property held "in common," resolvable either way by the legislature?

110. See Epstein, *supra* note 56, at 60-65.

111. The protections would take the form of rules of construction, process constraints, or even constitutionally defined minima of human existence. The common law of nuisance is without constitutional basis but uses a rights analysis to protect a nonutilitarian core. See *supra* section II.A.2. On the possibility of a disparity between the "property" protected by the due process and takings clauses, see Stoebuck, *supra* note 88, at 1081-83.

It is also plausible to expect that restrictive readings of the "public use" requirement would be invoked against reallocation proposals with regressive income distribution effects and to protect human property. See, e.g., *Richards v. Washington Terminal Co.*, 233 U.S. 546 (1914); *Handley v. Cook*, 252 S.E.2d 147, 152 (W. Va. 1979) (McGraw, J., dissenting) (recognizing as valid the "no public use" argument on behalf of small landowners whose property was taken by power company to construct high voltage power line serving a single coal mining operation). Cf. F.A. HAYEK, *LAW, LEGISLATION AND LIBERTY* 24 (1979) (It is important to remember that "even the majority should have unrestricted power only over the use of those resources which have been dedicated to common use.").

shifts in opinion. Acknowledgement of a human property core would protect against an unconstrained power to reallocate.

Against this background, a tripartite conception of property emerges: (1) core "human" property interests that may be taken only upon terms of the owner; (2) private property not included in this core, which may be taken upon payment of compensation; and (3) social property in the resource commons, which may be redefined to the owner's detriment without payment of compensation.

Professor Michelman, contrary to Sax, believes that the principal problem in takings cases is not overcompensation but undercompensation. He argues that courts could require compensation if its absence would be critically demoralizing.<sup>112</sup> Professor Michelman recognizes that the courts are not well suited to determine demoralization costs occasioned when other property owners hesitate to pursue future investments in recognition of a legislative power to alter expectations.<sup>113</sup> Any community standard, especially a measure of group psychology, is subtle and elusive, and varies with time; if the disappointment is sharply perceived and losers especially vehement, compensation under such a standard is arguable. Thus it is that an appealing judicial case could be built for former slaveowners, discouraged by the downturn in their expectations,<sup>114</sup> or brewers who suffer setbacks as a result of a temporary surge in public opinion favoring prohibition.<sup>115</sup> Looking ahead, consider the widespread demoralization costs that would attend a national repudiation of nuclear power, placed in a new light by Three Mile Island, or, say, a prohibition on the sale or purchase of coal occasioned by insights into the consequences of warming the earth by exces-

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112. Michelman, *supra* note 14, at 1214. Some, of course, would be indifferent to the redistribution taking place and still others would gain a positive satisfaction from the decision not to pay; there would be a saving, after all, of tax dollars, and some would consider it a social tonic of sorts to withhold payment, say, to a pesticide manufacturer suffering losses from a public decision banning a product. These are details, however, and we can assume that satisfaction gains can be set off against the dissatisfaction losses. The important point is that a community standard, which might be called a reasonableness test, is invoked to tell us when a legislative body must pay for the right to legislate.

113. Professor Michelman is quite sensitive to the institutional difficulties of courts applying the standards he develops, *see id.* at 1245-1257, but he is also prepared to invoke his utilitarian test to explain a good deal of the case law on just compensation, *see id.* at 1224-45. The test, in any event, is suitable, if not recommended, for judicial application. *Cf.* Soper, *supra* note 33, at n.9. ("This peculiar view of the judge—in essence transforming him into a super-legislator who can never settle for less than best—results from ignoring the fact that a judge starts with a mandate to protect property, not a roving commission to maximize utility wherever he can").

114. Jeremy Bentham would have paid compensation to this group. *See* Long, *Bentham on Property*, in *THEORIES OF PROPERTY: ARISTOTLE TO THE PRESENT* 221, 243 (Calgary Institute of Humanities 1979). An argument to the contrary is that payment is not required for the reallocation of wealth built upon appropriation of another's physical and genetic resources.

115. *Mugler v. Kansas*, 123 U.S. 623 (1887).

sive releases of carbon dioxide.<sup>116</sup> Such legislative steps, which would revise wealth expectations enormously, surely are not susceptible to judicial recalculation.

Wholly apart from whether expectations stand still long enough, or come out of hiding often enough, for the courts confidently to identify them, is the question of whether the issue of compensation ought to turn on whether the community is sufficiently incensed to call for a payoff. We should not ignore the possibility that utilitarianism, conceived to advance compensation, can be turned against it. The potential underinclusiveness of inquiries into demoralization costs would be tested by attacks on the property of minorities whose causes are unlikely to enlist sympathy because their experiences are not universal. Thus the forced relocation of Japanese-Americans during World War II might entail an excusable loss because the peculiar burdens are quickly forgotten by a society at war.<sup>117</sup> Indian fishing rights, to mention another example, have been taken in every practical sense of the word by state actions for the better part of this century with limited external remorse,<sup>118</sup> perhaps because onlookers have in jeopardy very little wealth of their own remotely resembling a treaty right to take fish. No doubt utilitarian arguments can be devised that would authorize payment to native and Japanese-Americans, but the theory of utilitarianism and its applications contain no kernel of nonnegotiable protection immune from utilitarian override. By contrast, the law of nuisance exhibits a strong rights component that invites a confident judicial inquiry into whether the individual has been pushed too far.<sup>119</sup> Courts can undertake this inquiry without probing the flabby structure of community expectations.

There is reason to expect, moreover, that expectations grossly exceed any plausible prospects of fulfilling them. Evidence is accumulating that people measure success in relative terms. The question is not how well they are doing, but rather how well they are doing in relation to others.<sup>120</sup> The sum of individual expectations far surpasses the available stock of status and resources, especially as we now approach

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116. On the problem of climate modification, see NATIONAL ACADEMY OF SCIENCES, NATIONAL RESEARCH COUNCIL, ENERGY AND CLIMATE (1977); H. BERNARD, JR., THE GREENHOUSE EFFECT (1980).

117. See *Korematsu v. United States*, 323 U.S. 214 (1944). The prospects for minorities are decidedly more bleak if utilitarian calculators can hold down "the demoralization costs of a failure to compensate either by preventing the matter from becoming widely known or by not revealing the general implications of the particular decision," Michelman, *supra* note 14, at 1224. Torture, it might be said, is often attended by secrecy.

118. Some of the details appear in *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658 (1979).

119. See *supra* section II.A.1.; R. DWORKIN, *supra* note 58, at 1-13.

120. R. ALEXANDER, *supra* note 64, at 239-40.

a zero-sum world where gains to one person are losses to another.<sup>121</sup> The better question is not whether expectations are disappointed but whether the setback imposed renders a party unable to compete.<sup>122</sup>

Thus the Sax and Michelman views confirm what the universal nuisance cases make clear—that legislatures have considerable room to reallocate resource wealth. But they do not account fully for two crucial components of the taking theory we are exploring—the absolutist individual property entitlement and the reach of social or provisional property reallocable without compensation. Nor do these respective takings tests give us firm guidance in defining that middle ground of private property which is important enough to justify compensation but insufficiently indispensable to allow the holder a veto. It is to this classification job that we now turn. Our raw material is drawn from the takings cases.

### 3. *Combining Absolutism With Utilitarianism: The Takings Doctrines*

#### a. *Protecting the core*

Of the prominently recognized classifications of takings law,<sup>123</sup> the judicial favorite is the "too far" formulation whose modern origins go back to Justice Holmes' famous dictum in *Pennsylvania Coal Co. v. Mahon*.<sup>124</sup> "While property may be regulated to a certain extent," according to Holmes, "if regulation goes too far it will be recognized as a taking."<sup>125</sup> This theory ties compensability to the extent of loss suffered by the rights holder. Significant recent scholarship<sup>126</sup> interprets this inquiry into whether the loser has been pushed beyond the limits of the call of duty as a question more of legislative power than of compensation. So viewed, the "too far" test resembles a substantive due process inquiry, asking whether the legislature should be doing this sort of thing to people, not whether it should pay for the vandalism.<sup>127</sup>

This diminution of value test for a taking can be reconciled with a view of human nature compatible with biological theory. Courts attempt, as in nuisance cases, to ascertain that core of property necessary to carry out a trade or make a living. This is a search for a survival minimum, or conversely, the limits of social incursion. Biological the-

121. See L. THURLOW, *THE ZERO-SUM SOCIETY* (1980); HIRSCH, *SOCIAL LIMITS TO GROWTH* (1976).

122. See the discussion of the "too far" or diminution of value test, *infra* Section II.A.3.

123. See *supra* note 68 and accompanying text.

124. 260 U.S. 393 (1922); see McGinley & Barrett, *Pennsylvania Coal Company v. Mahon Revisited: Is the Federal Surface Mining Act a Valid Exercise of the Police Power or an Unconstitutional Taking?* 16 U. TULSA L.J. 418 (1981).

125. 260 U.S. at 415.

126. See Oakes, *Property Rights in Constitutional Analysis Today*, 56 WASH. L. REV. 583 (1981); Stoebuck, *supra* note 88.

127. See Henkin, *Privacy and Autonomy*, 74 COLUM. L. REV. 1410, 1424-25 (1974).

ory predicts, after all, that a society based upon high reciprocity and altruism would be monitored closely by the participants to make sure that benefits and costs are fairly distributed.<sup>128</sup> What counts is whether the sacrifice is too drastic, either in comparison to others or absolutely in the sense of whether the victim can take the blow and continue to function. This analysis suggests a substantive due process or equal protection constitutional inquiry,<sup>129</sup> which underscores the distinction between whether the legislature can do this sort of thing and whether it should pay for what it can do.<sup>130</sup>

*b. Compensating for the loss of private property*

Even if the "too far" test can be understood as a form of constitutional protection for what this Article calls human property, a comprehensive taking theory should attempt a plausible account of ordinary private property for which compensation is required. Obviously, governments "take" and pay for a good deal of property that is neither an untouchable core nor a freely revocable commons. Compensation by the payment of money represents protection of what has been called a liability right.<sup>131</sup> It might be helpful to look at the problem through a tort lens, reformulating the issue of takings compensation as a question of whether government action toward the losers can be viewed as tortious and therefore compensable. This question in turn opens up inquiries into what governments do, and should do, and when they should pay for the losses they impose.

The fourfold account of property theory in Part I has little to say about what governments do, but a clear perception of the role of the state is discernible there. The biological and social functionary property theories are expressed in terms of what is best for the citizens as individuals. The principal reasons we have property are to protect their biological needs and fulfill their social needs. Even the natural resource "common" property is something the citizens, not necessarily

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128. See Irons, *Natural Selection, Adaptation, and Human Social Behavior*, in *EVOLUTIONARY BIOLOGY AND HUMAN SOCIAL BEHAVIOR: AN ANTHROPOLOGICAL PERSPECTIVE* 4, 26 (N. Chagnon & W. Irons eds. 1979) ("One would further expect that the willingness of each individual to incur further costs for the benefit of the other would depend on each participant's evaluation of the history of exchanges").

129. See *infra* Section II.B.2.b; Stoebuck, *supra* note 88.

130. See *San Diego Gas & Elec. Co. v. City of San Diego*, 450 U.S. 621 (1981) (Brennan, J., concurring). Empirical evidence raises the suspicion that Congress and the courts often understand that a judgment that compensation is required will defeat regulation as a practical matter. A good example is the compensation requirement of the federal Highway Beautification Act of 1965, 33 U.S.C. §§ 131, 136, 319 which, coupled with a preemptive purpose and low appropriations, hampered the states from moving against aesthetically offensive billboards and junkyards under the police power. See Lamm & Yasinow, *The Highway Beautification Act of 1956: A Case Study in Legislative Frustration*, 46 DENVER L.J. 437 (1969).

131. See Calabresi & Melamud, *supra* note 26.

the state, jointly own. The government in this picture has some distributive, policing, and process functions. Nevertheless, the sum total of social wealth is owned by the citizens, not their states. This "minimal state" view is in accord with the popular contract justice theories of the origins of the state, which hold that prescribed government powers are the product of citizen cession. The same sort of limited state is an empirical reality in hunter-gatherer societies, which have little use for imperial trappings and ostentatious official wealth.<sup>132</sup>

A state expected to dispense fair process and reallocate occasionally might be thought to be stepping out of character when it undertakes to accumulate wealth. In takings law, a direct government takeover long has been a key indicium of compensation.<sup>133</sup> Scholars have built taking theories around the distinction between government undertakings that regulate and those that enhance the official resource base. Professor Sax has advocated a distinction between the government as referee, not obliged to pay losers, and the government as entrepreneur, which must pay for losses from which it benefits.<sup>134</sup> Professor Stoebuck invokes historical arguments in support of a similar view that "just compensation" is constitutionally required only when the government functionally transfers property to itself, and not when it rearranges private rights under the police power.<sup>135</sup>

One key is whether the government physically takes over the property, either to hold for its own account or to redistribute elsewhere. It is the use of the medium of a government enterprise that is important. The government that must take hold in order to reallocate is prone to the same temptations of sticky fingers, over-reaching, and self-dealing as the government that seizes to build its own dreams.

A takings test turning upon whether the state practically confiscates property is closely akin to doctrines of governmental tort liability. Tort liability rules leave room for official policy choices that benefit some to the detriment of others,<sup>136</sup> but liability is imposed if government gains from a calculated choice inflicting physical damage on another.<sup>137</sup> The typical case is one where government work is made easier

132. See E. HATCH, *supra* note 45, ch. 10 (discussing the work of B. MALINOWSKI, *LAW AND ORDER IN POLYNESIA* 293-940 (1934), which points out that much of the chiefs' wealth is redistributed).

133. See *Pumpelly v. Green Bay Co.*, 80 U.S. (13 Wall.) 166 (1871).

134. See Sax, *Takings and the Police Power*, 74 *YALE L.J.* 36, 62-67 (1974).

135. See Stoebuck, *supra* note 88, at 1083-89.

136. W. RODGERS, *supra* note 56, at 35-36.

137. *Hatahley v. United States*, 351 U.S. 173 (1956) (Navajo Indians may recover damages for deliberate destruction of their houses on federal lands by federal agents); Boyer, Giterstein & Verkuil, *The Federal Tort Claims Act Intentional Torts Amendment: An Interpretative Analysis*, 54 *N. CAR. L. REV.* 497, 526-27 (1976).

by the imposition of unasked-for risks upon its citizens.<sup>138</sup> In takings cases, a comparable government benefit triggers compensation for the appropriation of private property.

*c. The social property and process themes*

While the human property theme lies beneath the surface of contemporary takings doctrine, the social property concept is more easily detectable. Many authors identify the deep historical roots of the reallocation themes in takings law.<sup>139</sup> Indeed, several of the accepted descriptive classifications of the takings cases (the nuisance, public trust, and balancing tests) presuppose an uncompensated disgoring of values. The rationales are that the individual overreached and should be required to give back what was seized; that the wealth previously was committed to the public and that the individual's holdings are subject to the preexisting claims; or that the individual's interests are vulnerable to a utilitarian override or "balancing" against other concerns, a calculus few entitlements can survive. One of the central enigmas of takings law, which this Article has undertaken to clarify, has been the reconciliation of these redistributive themes with the rights-protection stance of *Pennsylvania Coal Co. v. Mahon*.<sup>140</sup>

The process theme of takings law is perhaps not as conspicuous as the redistributive doctrine, but determined scholarship has brought it to the surface. Courts are influenced in land use conflicts by legislative or administrative linedrawing that is carefully tailored, flexible, and responsive to new insights.<sup>141</sup> This attention to procedural nicety could be decried as another manifestation of the hard look doctrine, which imposes an impressive regime of fair dealing upon a wide range of administrative reallocative decisions.<sup>142</sup> Professor Sax has written that the point of the takings clause is to "spread the cost of operating the governmental apparatus throughout the society rather than imposing it upon some small segment of it."<sup>143</sup> This so-called equal protection per-

138. See Gellhorn & Laver, *Federal Liability for Personal and Property Damage*, 29 N.Y.U.L. REV. 1325 (1954).

139. See, e.g., Durham, *Griggs v. Allegheny County in Perspective: Thirty Years of Supreme Court Expropriation Law*, 1962 SUP. CT. REV. 63; Stoebuck, *supra* note 88; Oakes, *supra* note 126.

140. 260 U.S. 393 (1922). See Oakes, *supra* note 126, at 607.

141. See Soper, *supra* note 68, at 70-71 ("By providing procedures to adjust regulations on a case-by-case basis, and by carefully tailoring restrictions to keep them as closely commensurate as possible to the problem that justifies the restrictions in the first place, the burden on property owners can be reduced and the potential constitutional obstacle more easily surmounted."). See, e.g., *Steel Hill Development, Inc. v. Sanbornton*, 469 F.2d 956 (1st Cir. 1972).

142. See Rodgers, *supra* note 104.

143. Sax, *supra* note 134, at 75-76; see Sax, *supra* note 105, at 169-71.



ception of takings has been extolled by influential writers,<sup>144</sup> and is turning up in Supreme Court discussion of the taking issue.<sup>145</sup> It is now part of the fair process regimen of takings doctrine to pay heed to disparate treatment where a few are required to bear burdens that should be spread more widely.

*d. Formulating a takings test: a search for official advantage*

Having measured the themes of Part I against the authorities of takings doctrine, we are now prepared to formulate a takings test. The biological property theme manifests itself in protection of a core interest against all legislative invasion as a matter of substantive due process. Its central idea is that a minimal entitlement is necessary for humans to grow and to prosper, and it uses biological ideas to mark the point beyond which people are being pushed "too far."

The biological and social functionary themes mark the limits of compensability by restricting justification for compensation to individual goals, singly or as a group. This leaves us with a takings test requiring payment whenever the government improves its position by taking over property. This takings test, call it a search for an official advantage, approximates the rule of government tort liability where damage ensues from direct confiscation or more subtle gain in official convenience.

The social functionary and common property themes of Part I are discernible in takings doctrine in the courts' endorsement of a broad governmental authority to defeat individual wealth expectations because society will be better off. The descriptive mistake of many takings tests, unfortunately, is to expect too much of partial definitions of this social property. The nuisance theory of taking, for example, is a perfectly good partial explanation of property loss recognizing a social qualification that can be revived when the occasion arises. Nuisance law usually presupposes overreaching, however, and its redistributive rationale is often one of correcting a wrong. Another type of social property is natural resource wealth, which is to be understood under the "common inheritance" theme as inviting redistributions not only to correct past injustices but also to recognize the legitimacy of others' claims.

We are left, then, with a circular definition of "social" property as a wealth expectation that may be redefined legislatively without compensation. It is true that individuals may carve holdings out of natural resources, even to the point of presumed invulnerability associated with

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144. See, e.g., J. ELY, *supra* note 34, at 97-98; B. ACKERMAN, *supra* note 33, at 51 n.22.

145. See, e.g., Penn. Cent. Transp. Co. v. City of New York, 438 U.S. 104, 133-34 (1978).

human property; the singular characteristic of natural resource wealth, however, apparent to our early ancestors and to philosophers alike, is that it is a gift resistant to the merit claims customarily made by humans intent upon securing their position against their fellows.

With this takings test in hand, we will now examine a variety of disputes involving resource usage over time. The Article continues the search for the four themes of Part I. The public trust doctrine affords useful insights into the procedural care expected to attend resource reallocations and reflects the idea of a reallocable social wealth in a resource commons. The reserved rights doctrine is helpful in defining social and human property as well as in illuminating the services of process protection. The law of waste addresses the crucial question of intergenerational equity in the use and consumption of natural resources; it provides a sensitive setting for evaluating the types of constraints upon present users associated with property perceived as a natural resource commons.

### *B. Temporal Nuisances: A Search for Further Validation*

#### *1. Public Trust Doctrine*

A strong version of sequential allocation is found in the state law of public trust, which affirms that some types of natural resources are held in trust by government for the benefit of the public.<sup>146</sup> This doctrine, while differing from state to state, demands of resource reallocation decisions fair procedures, judgments carefully justified, and results consistent with protection and perpetuation of the resource.<sup>147</sup> The classic expression is in the *Illinois Central* case,<sup>148</sup> involving the giveaway of the Chicago waterfront, where the reallocation of an important public resource under suspect circumstances was repudiated by a later legislature without payment of compensation. The public trust case law supplements our theory on matters of process protection and the "social" aspect of natural resource wealth.

#### *a. The process right*

The resources reached and the protections accorded by the public trust doctrine are in flux,<sup>149</sup> but there is no doubt that the process fair-

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146. W. RODGERS, *supra* note 56, at § 2.16; Johnson, *Public Trust Protection for Stream Flows and Lake Levels*, 14 U.C.D.L. REV. 233 (1980); Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970); Large, *This Land is Whose Land? Changing Concepts of Land as Property*, 1973 WIS. L. REV. 1039.

147. W. RODGERS, *supra* note 56, at § 2.16.

148. *Illinois Central R.R. v. Illinois*, 146 U.S. 387 (1892). *Illinois Central* is generally recognized as a case illustrating the "navigable servitude." Bartke, *Navigation Servitude and Just Compensation—Struggle for a Doctrine*, 48 ORE. L. REV. 1 (1968); Sax, *supra* note 146, at 473.

149. See, e.g., Dunning, *The Significance of California's Public Trust Easement for Cali-*

ness restrictions attending resource reallocations in the cases are flourishing. When a state government sets about to turn over publicly held resources to the judgment of private managers, the courts insist rigorously upon the process protections of disclosure, justification, and the opportunity to be heard.<sup>150</sup> There are close parallels between the public trust doctrine at the state level and the federal hard look doctrine of judicial review.<sup>151</sup> This means that much of the due process baggage of contemporary judicial review of agency actions (requiring findings, consideration of alternatives, close study, explanations of methodology) is carried over to public trust reallocation decisions.<sup>152</sup>

Hard look review ordinarily is value neutral in that any potential loser, whether exploiter or preserver, is extended the protection of reasoned decisionmaking.<sup>153</sup> While there is no reason to believe that all

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*California's Water Rights Law*, 14 U.C.D.L. REV. 357, 396-98 (1980) (identifying several water rights doctrines with a *de facto* consequence of diminishing consumptive use rights); Wilkinson, *The Public Trust Doctrine in Public Land Law*, 14 U.C.D.L. REV. 269 (1980).

150. See, e.g., *Boone v. Kingsbury*, 206 Cal. 148, 273 P. 797 (1928), *cert. denied*, 280 U.S. 517 (1929) (requiring carefully drafted legislative leasing scheme); *Gould v. Greylock Reservation Comm'n*, 350 Mass. 410, 215 N.E.2d 114 (1966) (requiring explicit legislative endorsement of a decision to reallocate a public park to a more restrictive private use); *United Plainsmen Ass'n v. North Dakota State Water Conservation Comm'n*, 247 N.W.2d 457 (N.D. 1976) (requiring study as a precondition to issuance of water withdrawal permits). Generally, alienation of tidelands is not prohibited, but courts insist upon demonstration of a legislative finding that such action is consistent with the purposes of the trust. Comment, *The Tideland Trust: Economic Currents in a Traditional Legal Doctrine*, 21 U.C.L.A. L. REV. 826, 830-31 (1974).

151. See W. RODGERS, *supra* note 56, at § 2.16.

152. On the hard look doctrine generally, see Rodgers, *supra* note 104, at 707-10.

153. *Id.* at 706-07; Wilkinson, *supra* note 149, at 310. The threshold question for process protection in due process cases is whether the claimant is about to be disappointed by the withdrawal of wealth. There is scant distinction, if the loss is evident, between strong entitlement and weak needs claims. Commentary on the Supreme Court's recent procedural due process jurisprudence stresses that the inquiry should focus upon whether the complaining party has been deprived of something of value. See Monaghan, "Of 'Liberty' and 'Property,'" 62 CORNELL L. REV. 405 (1977); Reich, *The New Property*, 73 YALE L.J. 749 (1964); Van Alstyne, *Cracks in "The New Property": Adjudicative Due Process in the Administrative State*, 62 CORNELL L. REV. 445 (1977). The Court nonetheless, chary of endorsing too much fair process, is inclined to look closely at the substantive interest asserted, refusing to extend due process protections to contract or property rights appropriately conditioned. See *O'Bannon v. Town Court Nursing Center*, 447 U.S. 506 (1980) (residents of a nursing home for the elderly have no right to a hearing on governmental revocation of home's authority to provide them with publicly financed nursing care although revocation would result in transfer of patients to a different home); *Bishop v. Wood*, 426 U.S. 341 (1976); *Board of Regents v. Roth*, 408 U.S. 564 (1972) (university teacher dismissed at end of one-year probationary period; held not entitled to a review or appeal of his dismissal). Cases such as *Roth* and *O'Bannon* are strong precedents for recognition of the conditional or provisional nature of property rights in natural resources asserted in this article. After all, if Roth's expectations about the security of his position as a teacher can be destroyed by reference to the small print in the University rules, why cannot the wealth expectations of a timber company be destroyed by a comparable title defect or overriding understanding about the "trust" nature of the holdings? Cf. *Schulenberg v. Harriman*, 88 U.S. (21 Wall.) 44 (1874) (reading narrowly reversion conditions for non-compliance with federal railroad land

types of potential losses must be attended by the same procedural agenda, there is reason to believe that any substantial disappointment must be justified procedurally. This means in public trust cases that process rights will not turn upon nice questions of whether the losses confronted are compensable takings.<sup>154</sup> Consequently, even losers of conditional wealth in the "commons" are protected procedurally, which is a welcome outcome. Fairness in decisionmaking can be spread more widely than fair shares of scarce goods.<sup>155</sup>

There is a strong idea, in some of the public trust cases, that control of the resource (by actual administration, close oversight, or otherwise) should remain in the hands of a public body.<sup>156</sup> Here is a component of contemporary process significance built around deterring delegation. The principal objections to broad delegations are procedural: standards are missing, and a lack of standards invites capricious and discriminatory administration and a misunderstanding of governing rules.<sup>157</sup>

### *b. Social limits in natural resource property*

Substantive as well as procedural constraints appear in public trust cases. It is plausible to read the public trust servitude as reaching all natural resources and subjecting them to a strongly protective use regime.<sup>158</sup> So read, the public trust doctrine, like the law of waste, includes a universal "good husbandry" constraint, which can be enforced without compensation for losses of value.<sup>159</sup> Public trust law is perhaps the strongest contemporary expression of the idea that the legal rights

grants); Comment, *The Obligation to Reforest Private Land Under the Washington Forest Practices Act*, 56 WASH. L. REV. 717 (1981). Conditional wealth arguments have considerable appeal in the context of wealth reallocations in a resource-limited world, but less so in the context of whether a potential candidate for a sacrificial contribution should be dealt with fairly (given notice, opportunity to be heard, and explanations) prior to a cutback of expectations.

154. The process rights set forth in *United Plainsmen Ass'n v. North Dakota State Water Conservation Comm'n*, 247 N.W.2d 457 (N.D. 1976), for example, do not depend upon the complaining party's ability to demonstrate a deprivation of vested rights by the export of water from North Dakota.

155. See Rodgers, *supra* note 49, at 227.

156. See, e.g., *Illinois Central R.R. v. Illinois*, 146 U.S. at 387; Sax, *supra* note 146 at 485-89, 508-09, 562.

157. See *Amalgamated Meat Cutters v. Connally*, 337 F. Supp. 737 (D.D.C. 1971) (Levanthal, J.).

158. See W. RODGERS, *supra* note 56, at § 2.16; Sax, *Liberating the Public Trust Doctrine from Its Historical Shackles*, 14 U.C.D.L. REV. 185, 188-89 (1980) (suggesting that the function of the doctrine is to protect against destabilizing change).

159. *Just v. Marinette County*, 56 Wis. 2d 7, 201 N.W.2d 761 (1972) is commonly cited for this proposition, despite the skeptical empirical analysis of Bryden, *A Phantom Doctrine: The Origins and Effects of Just v. Marinette County*, 1978 AM. BAR. FOUNDATION RESEARCH J. 397. See also *United States v. Twin City Power Co.*, 350 U.S. 222 (1956).

of nature and of future generations are enforceable against contemporary users.

Public trust law contains an insistent distributive theme, reminiscent of the philosophical support for a resource "commons,"<sup>160</sup> that the benefits of natural resource wealth should be disseminated to the public. The idea of public benefit alone, however, does not account for the public trust doctrine's strong anti-delegation tone,<sup>161</sup> insisting that the protection of public uses is *prima facie* incompatible with nonpublic management. Spreading benefits to the public is one thing, insisting upon public management is quite another. Presumably it is an empirical question to ask what combination of public and private management is compatible with getting the most out of the resource by the means desired.<sup>162</sup> The public management tilt in the case law, however, can be vindicated another way. One consequence of continuing public management of resource wealth is that no distribution ever would be permanent (i.e., through sale or grant) because reallocation by the manager, at a later time under different circumstances, would be possible. A recognition of a provisional "social" wealth derived from natural resources, subject to legislative redefinition, achieves a comparable purpose.<sup>163</sup>

Another interpretation of the anti-delegation theme of public trust

160. See *supra* Section I.C.

161. See *supra* note 156. The classical view, however, has not forbidden dispositions of public lands. Wilkinson, *supra* note 149, at 305.

162. See Stone, *Public Rights in Water Uses and Private Rights in Land Adjacent to Water*, in 1 WATER AND WATER RIGHTS 193-202 (R. Clark ed. 1967).

163. Historically, for understandable reasons considerable controversy has arisen over the question of whether legislative grants or contracts are binding in perpetuity against future legislatures. Cunningham & Kremer, *Vested Rights, Estoppel, and the Land Development Process*, 29 HASTINGS L.J. 625 (1978); Hagman, *Estoppel and Vesting in the Age of Multi-Land Use Permits*, 115 W.V.L. REV. 545 (1979); Hochman, *The Supreme Court and the Constitutionality of Retroactive Legislation*, 73 HARV. L. REV. 692 (1960); Merrill, *Application of the Obligation of Contract Clause to State Promises*, 80 U. PA. L. REV. 639, 665 (1932) (urging "that the power to make regulations for the general welfare, in all of its manifestations, is not a legitimate subject of contract"); *id.* at 662 (suggesting that the *Dartmouth College* case, *Dartmouth College v. Woodward*, 17 U.S. 518 (1819), may be obsolete); see *Pennsylvania Hospital v. Philadelphia*, 245 U.S. 20 (1918) (right of eminent domain may not be waived by contract); *Northwestern Fertilizing Co. v. Hyde Park*, 17 U.S. 659 (1876) (power to regulate pollution control not waived by municipal franchise); *cf.* *Charles River Bridge Co. v. Warren Bridge Co.*, 36 U.S. (11 Pet.) 419 (1837). *But see* *New Orleans Gas Co. v. Louisiana Light Co.*, 115 U.S. 650 (1885) (can withdraw fifty year exclusive franchise only by paying compensation); *Superior Water, Lt. & Power Co. v. Superior*, 263 U.S. 125 (1923) (an agreement by a city to purchase a water plant at a price to be determined by set means at the end of a fixed period excludes the right to acquire it by eminent domain).

A good test case would be for Congress to enact a statute declaring that each citizen has a "vested right" to ambient air quality adequate to protect health. Would this form of enactment effectively extend constitutional protection to environmental quality, permitting subsequent repeal only upon payment of compensation? If not, what distinguishes industrial property rights in, say, offshore oil resources? See *Union Oil Co. v. Morton*, 512 F.2d 743 (9th Cir. 1975).

law stresses the empirical (and perhaps ideological) judgment there presumed that unfettered private management of some types of resources is poorly suited to achieve two fundamental policy aims—the protection of future generations and the avoidance of spillover costs within a single generation.<sup>164</sup> Inter- and intragenerational friction-avoidance can be achieved also by allowing legislatures freedom to allocate in response to new values and empirical insight while denying them the power to delegate those decisions *in perpetuity*. Thus the anti-delegation theme of public trust law is consistent with a view of the state as a conflict-adjuster, not a wealth-accumulator. Public holdings are not supposed to be ends in themselves but only the means to assure fair distributions today and tomorrow.

Ultimately the anti-delegation tone of public trust law is not explicable in utilitarian terms of maximizing productivity over time. It represents instead a commitment to maintaining resource wealth in common over time, and maintaining it in renewable form. This is an absolutist idea, and it coincides with historical and philosophical perceptions of a resource commons perpetually open to satisfy the claims of this and coming generations.<sup>165</sup> Thus, just as some private wealth is immune from public confiscation,<sup>166</sup> the trust doctrine protects some public wealth from private confiscation.

## 2. *Reserved Rights Doctrine*

A second type of temporal resource conflict, far removed doctrinally but close in conception to the public trust cases, arises in the context of the federal law of reserved rights. These contests occur when the federal government fixes a regime of use rights in natural resources, with a competing group of users arriving later in time, often with the explicit approval of state regulators. Water and fishing rights allocations are prototypical.<sup>167</sup> While the facts are often complex, what happens in essence is that the federal government assigns “ownership” of the resource to Group A, then the state comes along to assign “ownership” rights in the same resource to Group B. The result is a Hobbesian arrangement of overlapping claims, which can be perceived as a zero-sum conflict between claimants. Quite clearly, some investment-

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164. Alexander, *Human Values and Economists' Values*, in HUMAN VALUES AND ECONOMIC POLICY (S. Hook ed. 1967); Fried, *Difficulties in the Economic Analysis of Rights*, in MARKETS AND MORALS 175 (G. Bermant, P. Brown, & G. Dworkin eds. 1977); Hobin, *Justice and Future Generations*, 6 PHILOS. & PUBLIC AFFAIRS 70 (1976).

165. See *supra* Section I.C.

166. See *supra* Section I.A.

167. See, e.g., *United States v. New Mexico*, 438 U.S. 696 (1978); *Cappaert v. United States*, 426 U.S. 128 (1976); *Winters v. United States*, 207 U.S. 564 (1908); *United States v. Winans*, 198 U.S. 371 (1905).

backed expectations are in for a disappointment and some government promises are about to be broken.

Federal reserved rights conflicts clarify further three dimensions of a comprehensive taking theory: the concept of provisional "social" wealth subject to uncompensated value reductions; process protections associated with reallocation decisions; and minimal "human" property rights immune from legislative divestiture.

*a. Provisional wealth*

Although federal reserved rights are at the heart of contemporary natural resource controversies throughout the western United States, the temporal structure of these disputes permits a simple doctrinal solution. With the federal government acting first and controlling the outcome under the Supremacy Clause,<sup>168</sup> the only serious question requires consultation of the legislative materials to determine whether the national authorities have made an allocation decision.<sup>169</sup> Affixation of the "servitude" imposed by the reservation of rights defeats expectation, reliance, and entitlement arguments, and the loser who can put the resource to a better use is free to persuade the rights holder of that fact. The *de facto* ousters at least potentially sanctioned by the law of federal reserved rights are enormous; for example, a good percentage of state water rights are subject to preexisting federal reservations that, if enforced, would effect vast transfers of wealth without transgressing taking limitations.<sup>170</sup>

Consider, by way of illustration, several of the Northwest Indian treaties, negotiated by the United States during territorial days of the 1850's, which secure the rights of several tribes to take fish at their usual and accustomed grounds and stations, "in common with" citizens of the territory.<sup>171</sup> Over the years, the tribes who fish in the rivermouths located at the terminals of ocean migration routes of the spawning salmon gradually fell victim to earlier appropriation by technologically superior nontreaty fishermen. The tribes' unfavorable geographical position, coupled with unusually discriminatory and hostile

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168. U.S. CONST. art. VI, cl. 2.

169. See, e.g., *United States v. New Mexico*, 438 U.S. 696, 705 (1978); *Cappaert v. United States*, 426 U.S. 128, 139 (1976); *Winters v. United States*, 207 U.S. 564, 575-76 (1908); *United States v. Winans*, 198 U.S. 371, 379 (1905).

170. Despite this potentiality, a noted water law scholar stresses that instances of actual divestiture of state-secured water rights are nearly nonexistent. Trelease, *Federal Reserved Water Rights Since PLLRC*, 54 DENVER L.J. 473 (1977). For an indication that non-Indian federal reserved rights also pose no great threat to state development decisions, see Trelease, *Uneasy Federalism—State Water Laws and National Water Uses*, 55 WASH. L. REV. 751 (1980).

171. *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 674 (1979). (The author served as counsel of record in this case.)

state law enforcement,<sup>172</sup> resulted in a severe reduction, often a complete cessation, of Indian fishing. Recent court decisions have rectified that imbalance to a degree, reallocating fishing opportunities and thus posing the issues of immediate interest here.<sup>173</sup>

In the first place, it is clear that no user of the resource may acquire wealth by destroying spawning fish necessary to assure renewal of the stocks.<sup>174</sup> Thus, conservation laws, destructive as they are of expectations and provisional wealth, are enforceable, taking claims to the contrary notwithstanding.<sup>175</sup> One interesting feature of the fishing culture is that restraints imposed for the benefits of future generations (conservation closures) seem to be accepted far more readily than restraints imposed for the benefit of another user group (allocation closures).<sup>176</sup> There are, of course, ethical differences between sacrificing for the future and for the present; perhaps fishermen are more likely to feel an obligation to extend a helping hand to the unborn than to the present generation, which is seen as capable of taking care of itself. For future generations, there is an ethic of protection, for the present, an ethic of competition. Sacrifices for the future also are undertaken by everybody (all people fishing are ordered to cease, although some may be hit harder than others), and thus lack the disparity of treatment so apparent in transfers of opportunity from one existing user group to another. Conceivably, then, it is more palatable ethically, and feasible politically, to shift resource usage to future generations through conservation requirements than to reallocate opportunities for the present.<sup>177</sup> More than one observer has been charged with loving fellow humans in the abstract while despising the people he knows.

With the future protected, and the costs of doing so imposed initially on existing user groups, further allocation issues are intragenerational. Under the reserved rights doctrine, compensation is not required for cutbacks imposed on nontreaty users for the benefit of tribal fishermen. Nontreaty appropriations, and investments built around them, were always subject to the preexisting federal "servitude" imposed by treaties.<sup>178</sup> These nontreaty appropriations constitute con-

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172. Some of the details are reported in *United States v. Washington*, 384 F. Supp. 312, 389-99 (W.D. Wash. 1974).

173. See, e.g., *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. at 686.

174. *Puyallup Tribe v. Dep't of Game*, 433 U.S. 165, 175-76 (1977) (*Puyallup III*).

175. *Puyallup Tribe v. Dep't of Game*, 391 U.S. 392, 398 (1968) (*Puyallup I*); *Dep't of Game v. Puyallup Tribe*, 414 U.S. 44, 48-49 (1973) (*Puyallup II*).

176. This opinion is based on experience as counsel to the Puyallup Tribe during several years of litigation in the Western Washington fishing cases.

177. Sacrifices for the future might be perceived to have a greater contributive impact, inviting reuse again and again. Such sacrifices also yield more problematical benefits because beneficiaries and their needs are unknown.

178. See *Winters v. United States*, 207 U.S. 564 (1908); *United States v. Winans*, 198



ditional or defeasible wealth in the clearest sense. Divestitures, however, could be called an expression of corrective justice only upon a severe misreading of expectations; nontreaty users who gained at the expense of the tribes did so with strong official endorsement,<sup>179</sup> and can hardly be characterized as wrongdoers.<sup>180</sup> Rather, the reallocation comes closer to being an example of distributive or contributive justice, withdrawing wealth because it is required to fulfill the needs of others.<sup>181</sup>

The treaty fishing cases offer insight on the upper limits as well as the lower limits of resource wealth accumulation. In the Northwest fishing cases, the Supreme Court approved an allocation formula dividing treaty and nontreaty shares equally,<sup>182</sup> so long as it was subject to downward adjustments in tribal opportunities not required to sustain "a moderate living."<sup>183</sup> The court wrote:

If, for example, a tribe should dwindle to just a few members, or if it should find other sources of support that lead it to abandon its fisheries, a 45% or 50% allocation of an entire run that passes through its customary fishing ground would be manifestly inappropriate because the livelihood of the tribe under those circumstances could not reasonably require an allotment of [a] large number of fish.<sup>184</sup>

This is an extraordinary observation on income distribution, and its implications should not be ignored. One interpretation<sup>185</sup> of this language is that property values in common resources, however firmly based in entitlement theories, may be redistributed without compensation whenever the wealth of the rights holders exceeds "moderate" levels. There is not even a requirement in this fishing formula that the

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U.S. 371 (1905). Thus, the restoration of previously assigned wealth is an example of rectification or even reparations. See B. BITTKER, *THE CASE FOR BLACK REPARATIONS* (1973); D. PHILLIPS, *EQUALITY, JUSTICE AND RECTIFICATION: AN EXPLORATION OF NORMATIVE SOCIOLOGY* 101-08 (1979).

179. *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 668-69 (1979).

180. The tribes' success in the Northwest treaty fishing litigation did not depend upon proof of knowledge or participation by nontreaty fishermen who benefitted from state actions restricting treaty fishing. See *id.* at 669 n.14.

181. See *id.* at 678-79:

Because the Indians had always exercised the right to meet their subsistence and commercial needs by taking fish from treaty area waters, they would be unlikely to perceive a "reservation" of that right as merely the chance, shared with millions of other citizens, occasionally to dip their nets into the territorial waters.

182. *Id.* at 685.

183. *Id.* at 686.

184. *Id.* at 687.

185. Another is that the scope of the right secured by the treaties is defined by moderate living needs and that no redistribution is presumed. The treaty, however, makes no mention of such a constraint on the rights it secures. In fact, according to the Court, "when the treaties were negotiated, neither party realized or intended that their agreement would determine whether, and if so how, a resource that had always been thought inexhaustible would be allocated . . . when it later became scarce." *Id.* at 669.

wealth transfers go from rich Indians to poor non-Indians. It is enough if the Indians become "too rich." Thus no compensation is to be expected for wealth losses attributable to reservations for future generations (under fishing conservation laws) or for reallocations for this generation trimming away extravagances unnecessary for a "moderate" living.<sup>186</sup>

Yet a policy of "moderate living," while coming as a surprise in the world of regulation, may have more credible expression in the progressive income tax laws. Acceptance of a "moderate living" standard above which exists a taxable excess offers a new way of looking at the taking issue. It suggests a theoretical support for uncompensated value reductions that includes not only corrective justice (one cannot fairly take what is previously committed to others) but also contributive justice (one cannot fairly keep more than is necessary for comfortable sustenance). The corrective justice underpinning turns upon the legitimacy of expectations, while the contributive justice rationale is satisfied by a showing that the loser can exist "moderately" well notwithstanding losses inflicted by the tax or regulation.<sup>187</sup>

We should not be surprised at this dual support for uncompensated value reductions in natural resources property expectations. Corrective and contributive justice are at the heart of the paradigms of just losses, earlier addressed.<sup>188</sup> Furthermore, Locke's proviso and the per-

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186. Not surprisingly, the Burger Court's aversion to excessive accumulations of resource wealth is highly selective, as two examples from the 1979-80 term illustrate. In *Andrus v. Shell Oil Co.*, 446 U.S. 657 (1980), the Court upheld Shell Oil's claims as vested and thus exempt from the leasing requirements of the Mineral Leasing Act. Imagine the reaction if the Court had embraced as the test of a vested right not the incidents of entitlement surrounding the company's oil shale claims but rather whether Shell's earnings exceeded the test of "moderate" wealth. In *Bryant v. Yellen*, 447 U.S. 352 (1980), the Court held that large farms had present perfected water rights under the Boulder Canyon Project Act and thus were immune from the acreage limitations of federal reclamation law. One wonders, had the Court detected rights "in common" to water resources in the Valley, whether it would have confidently reached the conclusion that the only water rights that vested under the Act were conditioned by a standard of "moderate living"—that is, were subject to the acreage limitations. This idea of disgusting wealth is hardly contagious.

187. The windfall profits tax upon rapidly inflating petroleum values is illustrative. The wealth holders' claims of merit are dubious, and their entitlement claims to a natural resource are subject to the "common" expectations of others. Rising prices strengthen users' claims of need. Progressive income taxes, however, are ordinarily justified by the declining marginal utility of the extra dollar in the hands of the wealthy. Presumably one would have to be very rich to assign no value to income above a certain level; for many years, the maximum federal tax rate on ordinary income was seventy percent. Justification of the confiscation of all income above "moderate" levels must rest upon other grounds. One possible ground is that one's needs (or entitlements or deserts) have been satisfied and the surplus is required for the satisfaction of others' needs. See D. MILLER, *SOCIAL JUSTICE* 148 (1976), commenting on the justice differences between a society where needs are first satisfied, with any surplus being distributed by national lottery, and a society in which everything goes into the lottery.

188. See *supra* section II.A.2.a.

ception of a natural resource commons are strong ideas conveying the sense of a ceiling above which exclusionary rights may not be perfected.<sup>189</sup>

*b. Process and minimal rights protection*

Another issue in the reserved rights fishing cases is the extent to which "takings" law protects the rights granted to Indians by the treaties. If, indeed, rights in "common" may be adjusted by the legislature either way without compensation,<sup>190</sup> then these treaty rights are severely compromised.<sup>191</sup> The illustrations discussed here have both process and substantive rights connotations.

One would suspect that sharp reallocations of fishing opportunities from the treaty minority into the hands of the nontreaty majority would run into close scrutiny in the courts under various rationales.<sup>192</sup> That in fact has happened. Under a fair process analysis courts have given short shrift to state practices that exclude Indians entirely in favor of non-Indian users,<sup>193</sup> impose "conservation" closures on treaty fishing alone,<sup>194</sup> or repeal the state laws of theft insofar as Indian fishing equipment is concerned.<sup>195</sup>

Are these ideas of process rectitude and equal treatment sufficient to protect Indians from unfair reallocation of the right to fish? A respected author has insisted, after all, that the point of the takings clause is to "spread the cost of operating the governmental apparatus throughout the society rather than imposing it upon some small segment of it."<sup>196</sup> The idea of spreading the costs of running the government makes most sense, however, in a context where the state is pursuing its own business, such as building highways or providing for its armies.<sup>197</sup> Where the government acts to adjust private rights, the

189. See *supra* notes 20-25 & accompanying text; *supra* Section I.C.

190. See Sax, *supra* note 105, at 153-55.

191. See *United States v. Winans*, 198 U.S. 371, 380-81 (1905):

[I]t was decided [below] that the Indians acquired no rights but what any inhabitant of the Territory or State would have. Indeed, acquired no rights but such as they would have without the treaty. This is certainly an impotent outcome to negotiations and a convention, which seemed to promise more and give the word of the Nation for more.

192. See, e.g., Gunther, *Foreword: In Search of Evolving Doctrine on a Changing Court: A Model for a Newer Equal Protection*, 86 HARV. L. REV. 1 (1972); Perry, *Modern Equal Protection: A Conceptualization and Appraisal*, 79 COLUM. L. REV. 1023 (1979); Simson, *A Method of Analyzing Discriminatory Effects Under the Equal Protection Clause*, 29 STAN. L. REV. 663 (1977); Wilkinson, *The Supreme Court, the Equal Protection Clause, and the Three Faces of Constitutional Equality*, 61 VA. L. REV. 945 (1975).

193. See *Dep't of Game v. Puyallup Tribe*, 414 U.S. 44 (1973) (*Puyallup II*).

194. *Id.*

195. See *United States v. Washington*, 384 F. Supp. 312, 418 (W.D. Wash. 1974) (requiring return of fishing gear seized in enforcement actions).

196. Sax, *supra* note 134, at 75-76; see Sax, *supra* note 105, at 169-71.

197. Sax, *supra* note 134, at 64-67. See also Stoebuck, *supra* note 88.

issue embraces not the resources needed to run a government but rather the resources needed to sustain a society. It is one thing to spread the costs of operating the government, and quite another to make amends for all disappointments occasioned by shifts of wealth among private parties.<sup>198</sup>

Equal protection is an especially poor guide for evaluating the lower limits of reallocations of Indian treaty fishing rights. Equal treatment of Indians negates the benefits of the treaties, as state advocates have pointed out for most of this century.<sup>199</sup> Predictably, courts have gone well beyond the acknowledgment of process rights and identified a substantive right to fish and support human needs in the commitments bound up in the treaties.<sup>200</sup> That is to say, the treaty tribes' right to take fish assures not only fair treatment but also full stomachs.<sup>201</sup> This fishing interest, call it a property right, is at the heart of the tribal members' cultural and physical subsistence. Whatever the content of this right, it does not appear to be honored by replacing it with a liability right permitting divestiture upon payment of dollar damages.<sup>202</sup>

Indian fishing rights also can be viewed as core property rights supported by the considerations of biological property theory.<sup>203</sup> Human property rights can be defined as entitlements necessary for

198. Understandably, therefore, absent a perceived impact on fundamental rights or politically weak minorities, courts have been quite tolerant of economic redistribution measures appearing as taxation, regulatory, or zoning decisions. *See, e.g.*, *Belle Terre v. Boraas*, 416 U.S. 1 (1974); *Agin v. Tiburon*, 447 U.S. 255, 262 (1980) (sustaining land use planning measure) ("Appellants . . . will share with other owners the benefits and burdens of the city's exercise of its police power").

199. *Compare* *United States v. Winans*, 198 U.S. 371, 380-81 (1905) *with* *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 673 n.20 (1979). *See also* *Johnson & Crystal, Indians and Equal Protection*, 54 WASH. L. REV. 587 (1979).

200. *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 679 (1979).

201. *See also* D. MILLER, *supra* note 187 (discussing justice theories of deserts, entitlements, and needs).

202. Indian reserved rights are often discussed in terms of a "needs" analysis, *see, e.g.*, *Arizona v. California*, 373 U.S. 546, 595-601 (1963), suggesting human property rights not subject to utilitarian override.

203. *See supra* Section I.A. The treaty fishing cases draw distinctions between treaty subsistence and commercial fishing. *See* *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 684-85 (1979) (dictum). We are here concerned not with the question of permissible uncompensated value reduction in the commercial right but rather with the issue of whether the subsistence right, and perhaps some part of the commercial right, should be revocable at all even with the payment of compensation. Proposals have been made to divest some Northwest tribes, upon payment of compensation, of all commercial rights to take anadromous steelhead trout, a popular sports fish. S. 874, 97th Cong. 1st Sess. (1981). These proposals largely would reallocate wealth from a small group of poor Indians to a large group of not-so-poor non-Indians. For the reasons stated in the text, it can be argued that a vote to confiscate treaty subsistence fishing is a denial of Indian rights and is unjust regardless of whether compensation is offered.

human survival or fulfillment.<sup>204</sup> Human property protects the individual against the demands of the social group, and it is not susceptible to utilitarian override.<sup>205</sup> Human property would include resources satisfying intrinsic human needs—health, abode, personal belongings and tools. Thus defined, it also would include Indian subsistence fishing.

### 3. *Law of Waste*

The law of waste imposes a duty on the occupants of land to refrain from impairing another's future interest in it. In examining this doctrine, we confront the sharing obligations implicit in the idea that many people over time hold natural resource wealth "in common."

The shaky empirical foundations of much legal theory is never more evident than when it is put to use on the issue of the obligation to share natural resources with those coming later. Economic analysis, tied as it is to dollar votes in existing markets, severely discounts the interests of the future.<sup>206</sup> Suggestions of limits to growth, with severe consequences for those not yet born,<sup>207</sup> are met by optimistic projections of technological change and a durable belief in human initiative.<sup>208</sup> Rawls recommends that the first generation pass along accumulated wealth plus some unspecified "saving."<sup>209</sup> This hollow advice has been subject to widely differing interpretations,<sup>210</sup> and it begs for empirical insights into why people share and whether they are inclined to set aside wealth for those coming later.<sup>211</sup> It assumes a growing pie akin to that posited by classical economic theory.

204. See J. FEINBERG, *THE NATURE AND VALUE OF RIGHTS, IN RIGHTS, JUSTICE, AND THE BOUNDS OF LIBERTY: ESSAYS IN SOCIAL PHILOSOPHY* 143 (1980). Cf. E. SCHUMACHER, *SMALL IS BEAUTIFUL* (1973); Katz, *Thomas Jefferson and the Right to Property in Revolutionary America*, 19 J. LAW & ECON. 467, 479-81 (1976).

205. See J. BUCHANAN, *THE LIMITS OF LIBERTY: BETWEEN ANARCHY AND LEVIATHAN* (1975); J. BUCHANAN & G. TULLOCK, *THE CALCULUS OF CONSENT* (1962).

206. See, e.g., T. PAGE, *CONSERVATION AND ECONOMIC EFFICIENCY* (1977); Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 U.C.L.A. L. REV. 323, 334 n.34 (1974). See also R. DUBOS, *A GOD WITHIN* 106 (1977).

207. D. MEADOWS et al., *THE LIMITS TO GROWTH* (1972); M. MESAROVIC & E. PESTEL, *MANKIND AT THE TURNING POINT* (1974). See also Coburn, *Pessimism and Morality*, in *PHILOSOPHY NOW* (K. & P. Struhl eds. 1975).

208. See W. BECKERMAN, *TWO CHEERS FOR THE AFFLUENT SOCIETY* (1975); G. GILDER, *WEALTH AND POVERTY* (1981); H. LANDSBERG, *Growth and Resources*, in NATIONAL ACADEMY OF SCIENCES, *MINERAL RESOURCES AND THE ENVIRONMENT* A31 (1975) (app. to Section I); Solow, *The Economics of Resources or Resources of Economics*, 64 AM. EC. REV. 1 (1974); Simon, *Resources, Population, Environment: An Oversupply of False Bad News*, 208 SCIENCE 1431 (1980).

209. J. RAWLS, *supra* note 3, at § 44; see *id.* at §§ 45, 46.

210. Compare G. HARDIN, *THE LIMITS OF ALTRUISM: AN ECOLOGIST'S VIEW OF SURVIVAL* 79 (1977) with B. ACKERMAN, *SOCIAL JUSTICE IN A LIBERAL STATE* (1980), J. PASSMORE, *MAN'S RESPONSIBILITY FOR NATURE* 78-80, 86-88 (1974) and Williams, *Running Out: The Problem of Exhaustible Resources*, 7 J. LEGAL STUDIES 165, 181 (1978).

211. See, e.g., Hamilton, *The Genetic Evolution of Social Behavior*, 7 J. THEORETICAL BIOLOGY 1 (1964); Trivers, *supra* note 64, at 35.

Perhaps the best illustrations of sequential conflict over natural resources are those involving present and future interests in the same parcel. These disputes are litigated commonly under the law of waste, which defines proper custody of a holding and use restrictions associated with it, to assure fulfillment of obligations to those coming later.<sup>212</sup> Not surprisingly, the standard of behavior is that of "reasonableness," which is the allocation language long associated with spatial nuisances.<sup>213</sup>

The important point for our purposes is that waste law, which addresses the obligatory sharing of a limited resource, necessarily restrains present users for the benefit of those coming later. Thus, sundry assaults against the long run productivity of the parcel, by loss of topsoil, destruction of watercourses, and elimination of vegetation, have been forbidden in waste litigation.<sup>214</sup> A standard of "good husbandry" is often invoked, sometimes even to forbid changes in land use (for example, from forestry to agriculture) that presage improved productivity in the short run.<sup>215</sup> While it would be inaccurate to say that the law of waste generally forbids consumptive use, such as mining, some consumptive uses are forbidden,<sup>216</sup> and those that proceed can do so only by accommodating the anticipated needs of later users.

The waste cases support recognition of a universal "good husbandry" use restriction on all natural resources.<sup>217</sup> The cases effect un-

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212. For an introduction, see W. RODGERS, *CASES AND MATERIALS ON ENERGY & NATURAL RESOURCES LAW* 345-64 (1979).

213. See, e.g., AMERICAN LAW INSTITUTE, *RESTATEMENT OF PROPERTY* § 139 (1936).

214. See, e.g., *United States v. Washington*, 520 F.2d 676 (9th Cir. 1975) (destruction of fishing opportunities) (dictum); *Berns Constr. Co. v. Highley*, 332 F.2d 240 (7th Cir. 1964) (removal of dirt and gravel); *Hickman v. Mulder*, 58 Cal. App. 3d 900, 130 Cal. Rptr. 304 (1976) (failure to preserve citrus trees and vines); *Chapel v. Hull*, 60 Mich. 167, 26 N.W. 874 (1886) (overtillage of farm); *Threatt v. Rushing*, 361 So. 2d 329 (Miss. 1978) (cutting of timber).

215. See, e.g., *Campion v. McLeod*, 108 Ga. App. 261, 132 S.E.2d 848 (1963); *Threatt v. Rushing*, 361 So. 2d 329 (Miss. 1978); see *Lee v. Weerda*, 124 Wash. 168, 213 P. 919 (1923) (distinguishing ill husbandry from waste).

216. See *United States v. Gear*, 44 U.S. 120 (1845) (new mine constitutes waste); *United States v. Washington*, 520 F.2d 676 (9th Cir. 1975) (destruction of fishing opportunities) (dictum); *Berns Constr. Co. v. Highley*, 332 F.2d 240 (7th Cir. 1964) (removal of dirt and gravel); *Hickman v. Mulder*, 58 Cal. App. 3d 900, 130 Cal. Rptr. 304 (1976) (failure to preserve citrus trees and vines); *Halifax Drainage Dist. v. Gleaton*, 137 Fla. 397, 188 So. 374 (1939) (dredging and removing marsh and dirt from shorelands); *Chapel v. Hull*, 60 Mich. 167, 26 N.W. 874 (1886) (overtillage of farm); *Threatt v. Rushing*, 361 So. 2d 329 (Miss. 1978) (cutting of timber).

Moreover, the waste cases are strongly protective of the life tenants' subsistence uses—for example, cutting timber for firewood or to make repairs. See, e.g., *Campion v. McLeod*, 108 Ga. App. 261, 132 S.E.2d 848 (1963); *Threatt v. Rushing*, *supra*; *Lee v. Weerda*, 124 Wash. 168, 213 P. 919 (1923) (distinguishing ill husbandry from waste). This confirms a nonutilitarian human property right protected by courts in resource allocation judgments.

217. N. GEORGESCU-ROEGEN, *ENERGY AND ECONOMIC MYTHS: INSTITUTIONAL AND ANALYTICAL ECONOMIC ESSAYS* (1976); J. RIVKIN, *ENTROPY: A NEW WORLD VIEW* (1980);

compensated income transfers from one generation to the next honored by law because an accidental circumstance (typically, the desire of a testator) creates common claims to a parcel of resources. Yet these occasional pockets of conflict in the law of real property or mortgage approach universal application. If the legislature is free to enforce the word of a testator long since dead, surely it can honor the needs of those not yet born; and if present resource users may be conscripted to contribute to the first cause, it is not apparent why they must be passed over as contributors to the second.

A biological explanation of law protecting future generations is not entirely satisfactory. People are inclined to discount the benefits of future resources, especially when under extreme duress.<sup>218</sup> At the same time, they have children and make sacrifices for them. A biological approximation of human behavior between related individuals is that resources will be used by the present generation if they can support more fitness now than they could later.<sup>219</sup> In zero-sum cases (where gains to one party are losses to another), this biological sharing rule would discourage extravagant consumption at the expense of later subsistence consumption. It would discourage destruction of renewable resources, absent a showing of strong necessity.<sup>220</sup> These results conform, coincidentally, to the use regimes suggested by the stronger aspirations of the law of waste and the public trust doctrine.<sup>221</sup>

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Daly, *supra* note 41; Daly, *The Steady-State Economy: Toward a Political Economy of Biophysical Equilibrium and Moral Growth*, in TOWARD A STEADY-STATE ECONOMY 149, 152 (1973).

218. See G. HARDIN, *supra* note 210, at 79, 128; LUMSDEN & WILSON, *supra* note 2, at 88.

219. See *supra* note 65; R. DAWKINS, *THE SELFISH GENE* ch. 5 (1976). See also N. TANNER, *ON BECOMING HUMAN* (1981) (stressing that the gathering innovation, largely a female initiative to protect the next generation, was a key evolutionary step for human beings). See also H. FISHER, *THE SEX CONTRACT: THE EVOLUTION OF HUMAN BEHAVIOR* (1982). For the appealing suggestion that group selection results in social conventions restricting population growth with consequent benefits for remote future generations, see V. WYNNE-EDWARDS, *ANIMAL DISPERSION IN RELATION TO SOCIAL BEHAVIOR* (1962), discussed critically in Irons, *Is Yomot Social Behavior Adaptive?*, in *SOCIOBIOLOGY: BEYOND NATURE/NURTURE?* 417 (G. Barlow & J. Silverberg eds. 1980) (AAAS Selected Symposium 35).

220. See, e.g., N. GEORGESCU-ROEGEN, *THE ENTROPY LAW AND THE ECONOMIC PROCESS* 21 (1971) ("any use of natural resources for nonvital needs means a smaller quantity of life in the future. If we understand well the problem, the best use of our iron resources is to produce plows or harrows as they are needed, not Rolls Royces, nor even agricultural tractors"); N. GEORGESCU-ROEGEN, *The Entropy Law and the Economic Problem*, in *ENERGY AND ECONOMIC MYTHS: INSTITUTIONAL AND ANALYTICAL ECONOMIC ESSAYS* 53, 59 (1976). As put by John Ruskin, "what one person has, another cannot have; and . . . every atom of substance, of whatever kind, used or consumed, is so much human life spent; which, if it issue in the saving present life, or gaining more, is well spent, but if not is either so much life prevented, or so much slain." *UNTO THIS LAST: FOUR ESSAYS ON THE FIRST PRINCIPLES OF POLITICAL ECONOMY* 96 (L. Hubenka ed. 1967).

221. While I have not investigated the question, my guess would be that the law of waste

Another line of biological argument in support of a duty to future generations stems from the nature of the expectations directed at a resource "commons."<sup>222</sup> The common property theme, and the modest aims of individual appropriation associated with it, arose out of the realities of a low-technology age. Sharing with future generations was a necessity, dictated not so much by moral imperative as by the lack of tools to do otherwise. Does a resource allocation based upon a long-standing *status quo* become a moral obligation to refrain if one party acquires the means to reallocate? It is sufficient to say, perhaps, that property is a conservative institution, and its theoretical plumage long has reflected the goal of protecting settled expectations.<sup>223</sup> Waste and public trust law protect property expectations that have arisen in large part because of people's historical inability to claim the commons.

#### CONCLUSION

This Article sets out to construct a takings theory borrowing from four prominent themes of property justification—biological and social functionary, common property, and process. This theory has been referred to as biological not because dark human impulses predetermine rules of law but rather because the rules that emerge are explicable in terms of a coherent view of human nature conforming to contemporary biological theory. There is no attempt here to elevate biology into an all-encompassing explanation of law although it is believed that biological explanations are too much neglected in human affairs where actors are motivated by strong biological concerns such as self-preservation or kin-protection.<sup>224</sup>

While loose terms always are disposed to fit predetermined molds, the fourfold theory offered here corresponds reasonably well with the doctrinal experiences used to test the theory. The five doctrines used for testing purposes (nuisance, takings, public trust, reserved rights, and waste) are but a small constellation in the universe of property law, even natural resource property law, but they are nonetheless important doctrines, and ones, moreover, having superficially little to do with each other. At least something can be said for a theory bringing forth connecting threads of similarity in rules of different origins.

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would be more likely to involve related individuals than would the law of public trust. It is conjectural, but interesting nonetheless, to suggest that the factor of relatedness might move the courts in waste cases closer to a regime of no significant deterioration for resource use. The situation is complicated in waste cases because the party creating the split estate often would be moved by considerations of kinship or friendship.

222. See *supra* Section I.C.

223. See Michelman, *supra* note 14.

224. See Beckstron, *Sociobiology and Intestate Wealth Transfers*, 76 NORTHWESTERN U.L. REV. 216 (1981); Rodgers, *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1 (1980).



Can this theory be applied to other subjects of property law? The property justifications from which the theory is derived are not the exclusive domain of natural resources. Perhaps, then, the powerful themes of biological service or process right would turn up in every conceivable property arrangement from copyright to homestead laws. Any line between mine, thine, and ours at least would invite a search for manifestations of the four themes identified here.

To a greater degree, however, the property justifications invoked here are peculiar to property rights in natural resources. The "common property" theme is the most obvious example, although the ideas of process right and biological justification (as in the case of the subsistence fisher or farmer) also are expressed with particular force in natural resource property contexts. All the doctrines invoked here to validate the theory are peculiar to the allocation of natural resources, so what we are left with is a natural resources property theory.

There appears little to distinguish the examples set forth here from many others in natural resources law. The same four theoretical themes should extend to allocation disputes concerning a wide variety of resources, both renewable and nonrenewable (fish and shellfish, air and water, timber, mineral and soil resources). It is expected that these theoretical themes would appear in a variety of doctrinal specialties (eminent domain, land use regulation, the interpretation of leases, the contract clause, water and oil and gas law), linking perhaps even domestic and international law of resource allocation.<sup>225</sup>

While a religiously-derived natural law can be said to have come and gone, there is something to be said for starting the inquiry into property rights with a perception of a person that approximates the one the law is supposed to serve. Bringing people back into property law suggests lines between the human property of mine and thine, paying close attention to what we are as people. It suggests a definition of social property, which serves the group side of our nature and conditions the individual claim with the cultural expectation. It points to a mode of process for distinguishing between permissible disappointments and impermissible frustrations, which we call injustice. It turns out that people are individuals and social beings, and that property serves their preferences in both capacities. That much of the work of the courts can be read to validate these distinctions proclaims a growing receptivity to this new natural law.

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225. See M'Gonigle, *The "Economizing" of Ecology: Why Big, Rare Whales Still Die*, 9 ECOLOGY L.Q. 120, 218 (1980).