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BUILDING THEORIES OF JUDICIAL REVIEW IN NATURAL RESOURCES LAW*

WILLIAM H. RODGERS, JR.

Legal theory is not held in high repute but there are extenuating circumstances. Legal theorists cannot describe with the impressive quantitative accuracy of, say, astronomers, but neither are we presented with a repetition of determining conditions that make such prediction possible. Nor is predictive weakness confined to the social sciences; if the facts change, the natural sciences are poor prognosticators, too. For confirmation, look no further than experiences with earthquake prediction (geological sciences) or weather modification (atmospheric sciences). And what is the predictive value of that greatest of biological theories, evolution, and its lynchpin, natural selection? Furthermore, social science ordinarily is content with description and an occasional prediction. The law is called upon not only to predict, using the best that science offers, but also to influence and direct future events. Legal theorists thus are obliged to take up the descriptive/predictive side of the coin as well as the normative; we are called upon to be both scientists and ethicists.¹

In the specialty of natural resources law, there is no reason to expect our tasks of description and prescription to be any easier. We deal, after all, with the allocation of scarce resources where there are winners and losers.² This leads us quickly into substantive justice theories based on entitlements, needs, and deserts and process justice theories extending to each loser his due. Justice theory is implemented through judicial review, and what courts do depends impor-

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1. One of the difficulties with any purely descriptive, or positive, theory of law is to account for what happens after the trend is fully disclosed. Assume, *arguendo*, that judges in common law tort cases have acted as if they were trying to promote economically efficient resource allocation. See Landes & Posner, *The Positive Theory of Tort Law*, 15 GA. L. REV. 851 (1981). What happens next? Courts will continue to hew to this line only if persuaded of the normative good sense of the positions heretofore unconsciously adhered to. One attempt to justify wealth maximization as an ethical value can be found in Posner, *Utilitarianism, Economics, and Legal Theory*, 8 J. LEGAL STUD. 103 (1979).

2. Many disciplines, economics included, claim as their domain the allocation of scarce resources. See LIMITS TO ACTION: THE ALLOCATION OF INDIVIDUAL BEHAVIOR (J. R. Staddon, ed., 1980), esp. ch. 7.

tantly upon behavioral assumptions about people, agencies of government, and empirical proof. The sources of these assumptions and evidence are often the sciences, and I would like to speculate a bit about how these sciences might influence the role of the courts. I will attempt to suggest lines of inquiry where descriptive and normative legal theories of natural resource allocation might draw upon insights from disciplines other than economics which has claimed such a prominent, and some would say disproportionate, role in contemporary legal scholarship.³

A. *Sociobiology*

Sociobiology is a science that draws upon the behavior of social species, especially humans, to gain insight into the rules that govern social interaction.⁴ Under this view somewhere in the human mind is a "stubborn core" of biological urgency, "and biological necessity, and biological *reason*, that culture cannot reach and that reserves the right, which sooner or later it will exercise, to judge the culture and resist and revise it."⁵ A sociobiological legal theory could be based upon human preferences expressed through nonmarket channels; and I, for one, have sympathy with the idea that nonmarket human preferences are presumptively as important as the dollar votes of economic theory.

Of course, when biology speaks, the law need not listen. Ultimately, society, through law, decides which aspects of human nature to cultivate or to subvert. At a minimum, a reliable science of human behavior offers empirical insight into whether a particular legal option goes with or against the grain of human nature. With much greater difficulty, a sociobiological ethical theory could be constructed around the idea that the law should tilt towards the biologi-

3. For recent criticisms of the use of economics in legal theory, see Kennedy, *Cost-Benefit Analysis of Entitlement Problems: A Critique*, 33 STANFORD L. REV. 387 (1981); Rodgers, *Benefits, Costs, and Risks: Oversight of Health and Environmental Decisionmaking*, 4 HARV. ENVTL. L. REV. 191 (1980); Sagoff, *Economic Theory and Environmental Law*, 79 MICH. L. REV. 1393 (1981); *Symposium on Efficiency As A Legal Concern*, 8 HOFSTRA L. REV. 485 (1980).

4. E. O. WILSON, *ON HUMAN NATURE* (1978); see A. ROSENBERG, *SOCIOBIOLOGY AND THE PREEMPTION OF SOCIAL SCIENCE* 160 (1980) (suggesting that sociobiological findings may "reveal a real restriction on possible social arrangements"). For a sociobiological interpretation of tort law, see W. Rodgers, *Negligence Reconsidered: The Role of Rationality in Tort Theory*, 54 S. CAL. L. REV. 1 (1980).

5. E. O. WILSON, *supra* note 4, at 80 (quoting LIONELL TRILLING, *BEYOND CULTURE*) (1979).

cal preferences of the species.⁶

By way of example, territoriality is a biological concept in which the resident animal defends his territory more vigorously than the intruder who attempts to usurp it, and as a result the first resident usually wins; in a special sense, the prior appropriator has a "moral advantage" over later trespassers.⁷ Descriptively, could it be said that prior appropriation doctrines throughout natural resources law reflect a protection of "small territories" as a way of honoring biological use and occupation? Here the legal entitlement follows closely the needs and deserts claims which, in part, are biologically justified. What predictions would a sociobiologically based legal theory make in cases of nuisance, waste, or reserved rights where competing uses trench heavily upon the "home base" of the first appropriator? It would predict a strong protection against utilitarian claims of the invader, and thus would offer support for absolutist "rights" legal theories presented recently as a counterpoise to economic analyses.⁸ In my view there is empirical evidence for absolutist human vetoes in these doctrines, and they can be read as validating positive rights theories.⁹

At a legislative level, policies as diverse as the Homestead Laws, the 160 acre limitation in the irrigation laws, and the health-based ambient air standards reflect legislative judgments about what people need to live, work, and thrive. They clearly reflect ideas of nonmarket preferences, needs, deserts, and ultimately a nonmarket allocation of scarce goods.¹⁰

B. *Anthropology and Cultural Choice*

Anthropologists "are impressed by the way traditional societies

6. For a discussion of attempts, some of them thoroughly discredited, to use biology in ethical theory, see A. Edell, *Attempts to Derive Definitive Moral Patterns From Biology*, in *THE SOCIOBIOLOGY DEBATE: READINGS ON ETHICS AND SCIENTIFIC ISSUES* (A. L. Caplan ed. 1978).

7. See E. O. WILSON, *supra* note 4 at 107.

8. See, e.g., R. DWORKIN, *TAKING RIGHTS SERIOUSLY* (1977); Michelman, *Norms and Normativity in the Economic Theory of Law*, 62 *MINN. L. REV.* 1015 (1978). A right can be defined as a legal entitlement dispensable only upon terms of the holder.

9. See Rodgers, *Bringing People Back: Toward a Biological Theory of Taking in Natural Resources Law*, 10 *ECOL. L. Q.* — (1982); *But see* Posner, *Utilitarianism, Economics, and Legal Theory*, 8 *J. LEGAL STUD.* 103, 109 (1979) ("The empirical evidence for a positive 'rights' theory of law is, at this writing, negligible . . .").

10. Compare the "crisis" component in the theory of legislative change developed in J. E. KRIER & E. URSIN, *POLLUTION AND POLICY* (1977). A sociobiological interpretation could be given to sporadic political uprisings characterizing pollution policy and especially to opposition to nuclear power.

resolve conflicts informally, using devices that both draw upon and uphold the continuities of social life. The preference is for modes of dispute settlement, such as mediation and arbitration, that have a chance of healing rather than rupturing social relations. And the preferred devices are close to the people."¹¹ Here, the theoretical premise might be a kind of minimal state. Society speaks, and sometimes the law should listen, by embracing the dispute resolution or resource allocation methods culturally preferred. Normatively, the case for a culturally derived law is strengthened to the extent interests outside of the culture (spillover victims, future generations, and politically impotent minorities) are not deemed to be adversely affected.¹² Much early mining and grazing law could be said to reflect culturally derived allocation preferences.¹³

Consider, in a somewhat different context, the widespread contemporary use of advisory committees which are important sources of cultural law in natural resources.¹⁴ A key question is whether the foxes are making up rules to govern fairness among foxes (staking out hunting grounds) or whether they are assigning supervisory rights over chickens. If the former, this sort of approach would support the view that the committee be only culturally "representative."¹⁵ If the latter, the conclusion would be that cultural in-groups

11. Selznick, *Jurisprudence and Social Policy: Aspirations and Perspectives*, 68 CALIF. L. REV. 206, 217 (1980); see Campbell, *The War Between the Words: Biological Versus Social Evolution and Some Related Issues*, AM. PSYCHOLOGIST, May, 1976, at 341.

12. Cf. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 YALE L.J. 1196 (1977). See also Battle, *Transportation Controls Under the Clean Air Act—An Experience in (Un)cooperative Federalism*, 15 LAND & WATER L. REV. 1 (1980).

13. See G. C. COGGINS & C. F. WILKINSON, FEDERAL PUBLIC LAND AND RESOURCES LAW, chs. 6, 8 (1981). For an interesting and effective argument that cow love in India, deemed preposterously wasteful by Western economic standards, in fact helps people survive in a low-energy ecosystem in which there is "little room for waste or indolence," see M. HARRIS, COWS, PIGS, WARS, AND WITCHES: THE RIDDLES OF CULTURE 30 (1974). For an interesting domestic example of judicial recognition of what I would call cultural law, see *State ex rel. Thornton v. Hay*, 254 Or. 584, 462 P.2d 671 (1969).

14. W. RODGERS, ENVIRONMENTAL LAW §§ 1.11, 1.12 (1977); Cardozo, *The Federal Advisory Committee Act in Operation*, 33 AD. L. REV. 1 (1981).

15. 5 U.S.C. app. 1, § 5(b)(2). See also M. OLSON, THE LOGIC OF COLLECTIVE ACTION (1962) (pointing out that increasing numbers of individuals and interests leads to what I would call cultural exclusion). On the perceived and demonstrated biases of in-group self-regulation affecting gene-splicing research, see S. L. REISS, *The Regulation of Recombinant DNA Research: A Critique*, in SCIENCE AND ETHICAL RESPONSIBILITY 187, 188-93 (S. A. Lakoff, ed., 1980). But there are strong pressures for in-group approval: "Where compliance is difficult to determine, regulation depends for its success on the support of those being regulated. A system would not be workable if researchers did not believe it was necessary or workable." *Id.* at 192-93.

should have nothing to say about the extent of the hurt inflicted upon spillover victims. On assumptions of this sort, empirical investigations probably would show advisory committees with the wrong memberships doing things in the wrong ways.

Indian law also illustrates issues of imposed cultural law which are of considerable interest to anthropologists.¹⁶ The culture, presumably, should be allowed to resolve allocation issues internal to it, and one could predict a skeptical judicial review if this does not happen.¹⁷ Cultural override is always fraught with increased friction, high transaction costs, and unforeseeable secondary effects. Thus, under this view, cultural override should be carefully justified by reference to external interests; otherwise, the cultural veto power (note the absolutist tones) should be honored.

Consider also the doctrines of burden on commerce and preemption which often arise in the context of resource grabs or resource saves, raising distinct issues of local or cultural preference. I have often wondered why resource lawyers did not approach the permissible "burden" (that combination of local policy choices compatible with national free trade objectives) as they might other allocation questions. Thus, if the political judgment in Missoula, Montana, is to ban the local shipment of radioactive wastes, the municipality by acting first at least demonstrates an intensity of preference the law sometimes honors. There is no burden on commerce yet, and under a prior appropriation approach a burden may not exist until jurisdiction seventeen or eighteen joins the bandwagon. The issues are not litigated this way, of course, and the question ordinarily asked is the gross hypothetical extent of the burden if all jurisdictions were inclined to act.¹⁸ The cost of this technique might be an unnecessary sacrifice of local option.

More disturbing is the tendency in burden of commerce and preemption litigation to leave out the federal agency that is presumably knowledgeable on the extent of friction between local and national policy options. In the Puget Sound Oil tanker litigation,¹⁹ con-

16. See *THE IMPOSITION OF LAW* (S. B. Burman, B. E. Harrell-Bond, eds., 1979).

17. *United States v. Washington*, 674 F.2d 42 (9th Cir. 1981) (applying "close scrutiny" to the question of whether tribal autonomy had been maintained for purposes of exercising fishing rights but finding that it had not).

18. It could be said that the Supreme Court provides implicit support for a prior appropriation theory of the commerce clause by sustaining regulatory experimentation upon records not suggesting an oppressive cumulative effect. See *Minnesota v. Clover Leaf Creamery Co.*, 449 U.S. 456, n.20 (1981).

19. *Ray v. Atlantic Richfield Co.*, 435 U.S. 151 (1978).

temporary patterns of hard look judicial review would have demanded that the Coast Guard explain whether it attempted to supplant local law, to what extent and why and how it weighed local preferences in the calculation. A theory that strives to respect cultural or local preference would require it. What we usually get in these cases, however, is a terribly abstract discussion of local preference interferences with free trade efficiency aims. We have not come close to exploring the role administrative agencies, the cultural experts, might play in eliminating friction in the burden on commerce and preemption decisions.

In preemption cases, it is arguable that an unspoken theory of legislation importantly influences a court's definition of local options. The prevailing view of legislation is that of sustained consensus over time, and this theory would predict a stable allocation of authority on a given subject. Another view,²⁰ which I share, is that legislation is better perceived as a temporary accommodation of interests which comes apart over time. The idea is to recognize limits on the dead hand of the past; call it a cultural revival. If this hypothesis was explored, and I know of no attempts to do so, it would be unlikely to yield a firm rate of decay of federal legislation. But the hypothesis could be tested, and it would predict that over time congressional policy judgments would be subject to redefinition by later executive, state and local initiatives and by subsequent national legislation. These contemporary policy moves would be sustained by doctrinal techniques such as findings of no preemption. The description of the resolving power of legislation over time could be represented by a curve that slopes downward and then evens off as the courts insist upon enforcing the core of even outdated legislation as the most responsible way to inspire a contemporary legislative judgment.²¹

C. *Decision Theory and Game Theory*

In many ways, natural resource law teachers use a tragedy of the commons or prisoner's dilemma analysis to explore conservation and allocation issues. These analyses point out that what is biologically or economically best for the individual is not necessarily best for society. The pie is enlarged by constraining the individuals who

20. Davies, Gilmore & Calabresi, *A Response to Statutory Obsolescence: The Non-Primacy of Statutes Act*, 4 VT. L. REV. 203 (1979); cf. Michelman, *Political Markets and Community Self-Determination: Competing Judicial Models of Local Government Legitimacy*, 53 IND. L.J. 145 (1978).

21. *E.g.*, *Wilderness Soc'y v. Morton*, 479 F.2d 842 (D.C. Cir. 1973), *cert. denied*, 411 U.S. 917 (1973).

select the pieces. Garrett Hardin is popular among legal academics because his prescription for the tragedy is "mutual coercion mutually agreed upon," that is, the law, which invites us to discuss actual and hypothetical allocation arrangements *ad infinitum*.²²

The analysis of the commons contains a wide variety of empirical and value questions of pertinence to legal outcomes. This includes what may be called the necessity of the individual override, the excusable nature of the personal losses that combine to expand the pie, the "invisible hand" aspects of remorseless events that may bring social consequences beyond the range of human planning, and the differences attending physical or economic definitions of the interactions producing a dispute "in commons." A partial list of related issues includes:

—Whether social acceptability of the constraint (and therefore the friction in enforcing it) varies depending upon the purpose of the restriction. As an observer of the Northwest fishing scene, I have long believed that fishermen are more inclined to tolerate conservation closures for the benefit of future generations than allocation closures for the benefit of other users. For one type of closure there is an ethic of conservation, for the other an ethic of competition. In game theory terms, the second but not necessarily the first, would be considered a zero-sum transfer.

—It is clear that much wealth expectation in a resource commons may be disappointed compatibly with notions of taking. Are all "commons" redefinable by legislatures without compensation?²³ If not, how are the core liability or property rights described?

—Contrast the process protections accorded losers outside the commons looking in with losers inside the commons looking out. This is another situation where the characterization of the expectation as a property right influences the process protection that is afforded.²⁴

—Reconcile the oft-recommended solution to the tragedy of the

22. Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968); see Ciriacy-Wantrup & Bishop, "Common Property" as a Concept in Natural Resources Policy, 15 *NAT. RESOURCES J.* 713 (1975).

23. Sax, *Takings, Private Property and Public Rights*, 81 *YALE L.J.* 149 (1971). For that matter, how is the "commons" defined? Do we have a conflict "in commons" if your retention of your cow damages me in any way, by envy or otherwise? If so, the legislative power to reallocate without compensation seems inadequately constrained. See Kennedy, *supra* note 3, at 398-407; Rodgers, *supra* note 9.

24. Compare *O'Bannon v. Town Court Nursing Center*, 447 U.S. 773 (1980) (residents of a nursing home have no process right to hearing on government revocation of home's authority) with *Andrus v. Shell Oil Corp.*, 446 U.S. 657 (1980) (recognizing substantive right to oil shale claims).

commons, assignment of private property rights, with the strong redistributive themes of property "in common" confirmed by the mild constraints of taking law in commons reallocations (above). Does this lead to private management with heavy taxation obligations?²⁵ This defeats the tragedy of the commons but satisfies distributive obligations implicit in the idea that some resource wealth is a gift of nature in which we all have a stake.

—Consider the implications of the Supreme Court's recent observation that fishing rights enjoyed "in common" may be reallocated to others if the wealth of the rights holder exceeds "moderate" levels.²⁶ Of interest here is the idea that contributive or distributive justice somehow should constrain wealth accumulations above a certain level. A legal perception of what is excessively rich is a contagion not significantly influencing Supreme Court opinions on the subject.

—Assume for the moment that some of the tougher resource commons disputes (fishing, acid rain, grazing, ground water) are effectively unmanageable because the law cannot stem the tide of economic self-interest and biological preference.²⁷ How might this failure in achieving the primary objectives affect agency allocation practice and change?²⁸ Are agencies inclined to preside over the extirpation of a resource caught up in the decline of the commons or do considerations of institutional self-interest dictate a fall-back strategy that at least slows down the decline?²⁹

—Consider how expansion of our physical understanding of interactions yielding costs and benefits will lead the law of "the commons." What has been called the interest representation theory of administrative law³⁰ has been spawned largely by technological infringements upon people quite distant. I assume that fluorocarbon manufacturer and skin cancer victim alike have a variety of strong

25. See Pearse, *Property Rights and the Regulation of Commercial Fisheries*, in *RESOURCE POLICY: INTERNATIONAL PERSPECTIVES* 185 (P. N. Nemetz ed. 1980) (the Institute for Research and Public Policy).

26. *Washington v. Washington State Commercial Passenger Fishing Vessel Ass'n*, 443 U.S. 658, 686-87 (1979).

27. *MANAGING THE COMMONS* (G. Hardin & J. Baden eds. 1977).

28. In particular, what are the implications for a theory of institutional change (e.g., sunset laws, government reorganizations, creation of new agencies, expansion and contraction of agency powers)?

29. See W. NISKANEN, JR., *BUREAUCRACY AND REPRESENTATIVE GOVERNMENT* (1971); J. SAX, *DEFENDING THE ENVIRONMENT* (1971).

30. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667 (1975).

process rights in agency decisions allocating waste absorption capacities of the ozone layer.

—Solving commons problems by the creation of private property has both efficiency and rights implications. The idea of transferable pollution rights has received rave reviews on efficiency grounds,³¹ but the power of exclusion by a large rights-holder seems to have generated little unfavorable comment. By contrast, the prospect of tribal veto power over nontribal development decisions under treaty provisions protecting “a right to take fish” is absolute in tone;³² efficiency attacks take the form of the desirability of repudiating the entitlement so that it can be placed in the hands of those who assign it a “higher” value or who can produce “more” with it.³³

Another interesting idea from game theory is the zero-sum transfer where A's gain is B's loss. There is considerable evidence in political and administrative decisionmaking that zero-sum allocation is decidedly taboo, for reasons easily intuited, and that “more is better” solutions without losers are widely preferred.³⁴ It can be anticipated that as allocation decisions approach zero-sum transfers, the sharper the conflicts, the greater the aggression, the higher the peacekeeping and friction-avoidance costs, and the more deeply felt the disappointment costs. Upon this empirical understanding, does it follow that judicial review is more aggressive, assuring a stronger process protection in subject areas that could be characterized as zero-sum transfers? Along these lines, I have argued that assumptions about how agencies decide (for example, by muddling through) are an important factor in the courts' perception of their review re-

31. Compare Comment, *Increment Allocation Under Prevention of Significant Deterioration: How to Decide Who Is Allowed to Pollute?*, 74 *Nw. U.L. REV.* 936 (1980); Note, *The EPA's Bubble Concept After Alabama Power*, 32 *STAN. L. REV.* 943 (1980) with Mandelker & Taub, *Constitutional Limitations on Emission Quotas As An Air Pollution Control Strategy*, 8 *ECOL. L. Q.* 269 (1979).

32. *United States v. Washington*, 506 F. Supp. 187, 206 (W.D. Wash. 1980).

33. On June 29, 1981, hearings were held in Seattle by the U.S. Senate Committee on Indian Affairs on S. 874, a so-called steelhead decommercialization bill which would effectively reallocate Indian commercial fishing rights to non-Indian sports fishermen. The bill would provide the losing tribes with reasonable compensation but it was nonetheless resisted bitterly as an involuntary divestiture of a treaty-secured property entitlement. At stake is that all important difference between a property right and a liability right. See Calabresi & Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 *HARV. L. REV.* 1089 (1972).

34. See, e.g., Ingram, Laney & McCain, *Water Scarcity and the Politics of Plenty in the Four Corners States*, 32 *W. POL. Q.* 298 (1979). See also Trelease, *Uneasy Federalism—State Water Laws and National Water Uses*, 55 *WASH. L. REV.* 751 (1980) (pointing out how virtually no reallocation has accompanied assertion of federal reserved water rights).

sponsibilities.³⁵ Muddling through is sharply scrutinized, and muddling A's expectation into B's pocket is intensively observed. Thus emerges the hard look doctrine, by now a well recognized phenomenon in contemporary administrative law.³⁶

D. *Philosophy and Economics*

By necessity, legal academics are in the perpetual presence of normative values and are called upon regularly to adjudge a particular outcome "right" or "wrong." This presupposes a baseline from which we measure compliance, and this baseline is accepted as the governing ethical arrangement. It seems inescapable that we are thus forced into a consideration of ethical theories. There are many candidates, and only some of these theories are derived from human preferences expressed biologically, culturally, or economically.

Moral philosophy may offer some guidance,³⁷ but hardly in the detail satisfactory for the particularized needs of the law. Philosophical theories like those of John Rawls, moreover, exude confidence in the power of human rationality to prescribe just outcomes; there is much to be said for the contrary view that many seemingly nonrational cultural practices reflect an unarticulated wisdom presumptively deserving respect.³⁸ Also, moral philosophy does not purport to be an empirical science, and for this lawyer at least, that stance gives the arguments a suspiciously hypothetical character. Rawls' fairminded soul, hiding behind the veil of ignorance, resembles nobody I ever knew, and in that respect is quite like the calculating rational person of economic theory. These twin caricatures are hardly the full measure of human nature, although legal theorists sometimes act as if

35. Rodgers, *Judicial Review of Risk Assessments: The Role of Decision Theory in Unscrambling the Benzene Decision*, 11 ENVTL. L. 301, 311 (1981); see Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393 (1981); Mashaw, *Conflict and Compromise Among Models of Administrative Justice*, 1981 DUKE L. J. 181. For a critical normative assessment of muddling through, see W. OPHULS, *ECOLOGY AND THE POLITICS OF SCARCITY* 191-97 (1977).

36. See, e.g., Delong, *Informal Rulemaking and the Integration of Law and Policy*, 65 VA. L. REV. 257 (1979); O'Reilly, *Deference Makes a Difference: A Study of Impacts of the Bumpers Judicial Review Amendment*, 49 U. CIN. L. REV. 739 (1980); Rodgers, *A Hard Look at Vermont Yankee: Environmental Law Under Close Scrutiny*, 67 GEO. L. J. 699 (1979).

37. See B. ACKERMAN, *SOCIAL JUSTICE IN THE LIBERAL STATE* (1980); Posner, *Lawyers as Philosophers: Ackerman and Others*, 1981 AM. B. FOUNDATION RESOURCES J. 231.

38. See F. A. HAYEK, 3 *LAW, LEGISLATION AND LIBERTY* 162-63 (1979) (One of our more important tasks is to discover the "significance of rules we never deliberately made"); Auerbach, *The Relation of Legal Systems to Social Change*, 1980 WIS. L. REV. 1227, 1236-37 (discussing the views of Montesquieu).

they were.

Let me use as an illustration the case of Mr. Bryznowski, the northern Minnesota farmer, who had the misfortune to lose one, perhaps two, head of livestock to a pack of hungry wolves.³⁹ Bryznowski then persuaded the Fish and Wildlife Service to assign a trapper, full time, to hang around his farm and repulse the advances of the hungry wolves. This conflict fits the classical nuisance pattern, and resource law teachers could be expected to turn to the popular economic analyses for suggested solutions. Coase points out that through exchange the parties can be expected to achieve the most efficient combination of wolf-raising and cow-rearing.⁴⁰ The idea of Bryznowski negotiating with a pack of wolves troubles me not at all. In fact, it might be easier to strike an understanding with wolves than the operators of the chemical plants, pulp mills, and smelters commonly invoked in Coasian analyses. Whatever may be said of wolves, they keep their word, by which I mean behavior and needs are predictable and consistent.

What is the least costly means of averting this wolf damage? Indulge me further by assuming that Bryznowski, with the aid of the Fish and Wildlife Service, can go forth and suppress or exterminate the invaders at a cost of \$400 a month; he can do nothing and accept the loss, randomly inflicted against his stock, of \$200 a month; or he can select his puniest cow, at a cost of \$100 per month, and stake it out in the woods as a bribe to the pack. This bribe turns out to be the efficient means of loss-avoidance. After all, in the causation-neutral world of economics the loss can be attributed as much to the tastiness of cows as to the hunger of wolves.

Will Bryznowski settle for the efficient outcome? Not likely under a psychological or biological model of human behavior which accepts people as they are, not as the reasonable economic beings they are supposed to be. Bryznowski, under this view, would pursue the absolutist line of complete defense because he perceives injustice in this random misfortune, or because his genes recall the days before the technology of firearms, or because he lives in a house of straw. In the reported case, Bryznowski not only adhered to the absolutist line but the Fish and Wildlife Service agreed with him. While there may be no absolute rights to work or to eat, the right to be free of wolves is decidedly nonutilitarian.

Nor would I expect Bryznowski to be any better as a philoso-

39. *Fund for Animals v. Andrus* (Minnesota Wolf Kill), 11 E.R.C. 2189 (1978).

40. Coase, *The Problem of Social Cost*, 3 J. LAW & ECON. 1 (1960).

pher than as an economist. How far would you get persuading him to retreat behind the Rawlsian veil of ignorance with one of the wolves to talk things over on the assumption that either one might emerge as farmer or wolf?⁴¹ It seems that any way the situation is hypothecized, Bryznowski's biological vote, and probably the cultural vote of his neighbors, is unlikely to be favorable to the wolves. In this case, I would be unwilling to accept the local biological and cultural preference, which is a reminder that the search for a governing ethic in law is ongoing and demanding. It is tempting to invoke the rights of wolves, or of people present and future who care about wolves, to condemn Bryznowski's conviction as prejudice and his neighbors' support as superstition. There is nothing central to his existence as a farmer in northern Minnesota that turns on recognition of a continuing right to exterminate wolves. Professors Coggins and Wilkinson would compensate Bryznowski for loss of the right to be free of wolves, pointing out that a payoff would be a tiny fraction of the cost of trapper protection.⁴² Wolf damage, in my opinion, is merely another form of just loss not unlike that inflicted by a wide variety of natural hazards.

With this much said, philosophy and economics can bring useful points of view to the legal analysis of resource conflicts. Most natural resource law teachers have had some trying, but perhaps not altogether fruitless, attempts to derive specific "just" results from the grand justice theories. For example:

—Have one of the contracting parties emerging from behind Rawls' veil of ignorance take the form of a penguin or a wolf or a

41. J. RAWLS, *A THEORY OF JUSTICE* (1971). Rawls' theory is an attempt to develop a political relationship and citizenship status is a condition for retreating behind the veil of ignorance. There is not much justice here for nonhuman species. See P. SINGER, *THE EXPANDING CIRCLE: ETHICS & SOCIOBIOLOGY* (1981). Professor Ackerman would deny citizenship status to anyone not passing minimal dialogic tests required for citizenship. B. ACKERMAN, *supra* note 37, at 71-72. But he puts a formidable case of an ape capable of challenging the legitimacy of the power relationship:

TRAINER: Hey! Where do you think you're going?

APE: Out of this cage.

TRAINER: Not if I have anything to say about it.

APE: Why *should* you have anything to say about it? I'm at least as good as you are, and I have my own purposes in life.

Id. at 74. I have had such a conversation with a duck, conducted in duck language of course. I complied with the demand to open the cage. Eventually we reached an accommodation under which the cage would be opened when it became too confining but closed in the interests of maintaining security. See also J. T. BONNER, *THE EVOLUTION OF CULTURE IN ANIMALS* (1980).

42. See G. C. COGGINS & C. F. WILKINSON, *FEDERAL PUBLIC LAND & RESOURCES LAW* 671 (1980).

member of a distant generation.⁴³

—Subject Nozick's entitlements, which depend upon a good pedigree ("justice in acquisition"),⁴⁴ to a few historical realities regarding desert lands, swamp lands, and railroad land grants.

—Ask if an ethics of wealth maximization⁴⁵ calls for compensating the slaveowner for the losses attributable to the emancipation proclamation.

—Consider the consequences for minority holdings and "inefficient" bundles of small property rights if the tendency of the common law is to favor "efficient" outcomes over time.⁴⁶

Usually judges and academics are willing to accept the legislative judgment as dictating the ethical necessities of a particular judicial decision. Even as so circumscribed, the task of deriving and defining the controlling legislative ethic is not easy. Courts are able to deal rather routinely with what I will call the remote boundary problems, staking out the administrative mandate in approximate terms. May cost factors be taken into account in defining ambient air standards?⁴⁷ Has Tellico Dam been exempted from the Endangered Species Act?⁴⁸ But to the extent courts are disinclined to define the legislative ethic and draw substantive lines, which happens often, they are deferring to the administrative choice and reducing the hard look doctrine solely to a process right. An example of default on close boundary issues, by a capable court, is *Commonwealth v. Andrus*,⁴⁹ the Georges Bank offshore oil leasing case. We are told quite confidently that the statutory scheme there involved neither assured nondegradation of the fish resource nor permitted its destruction⁵⁰ while the language of the opinion supports four or five possible standards between those extremes (including destruction of the re-

43. J. RAWLS, A THEORY OF JUSTICE §§ 44-46 (1971).

44. R. NOZICK, ANARCHY, STATE, AND UTOPIA (1974).

45. Posner, *supra* note 1.

46. Priest, *The Common Law Process and the Selection of Efficient Rules*, 6 J. LEGAL STUD. 65 (1977).

47. Compare Baram, *Cost Benefit Analysis: An Inadequate Basis for Health, Safety, and Environmental Regulatory Decisionmaking*, 8 ECOL. L. Q. 473 (1980) with Krier, *The Irrational National Air Quality Standards: Macro- and Micro-Mistakes*, 22 U.C.L.A. L. REV. 323 (1974). See also Rodgers, *Judicial Review of Risk Assessments: The Role of Decision Theory in Unscrambling the Benzene Decision*, 11 ENVTL. L. 301 (1981).

48. *Tennessee Valley Authority v. Hill*, 437 U.S. 153 (1978).

49. 594 F.2d 872 (1st Cir. 1979).

50. *Id.* at 889 ("the question is not whether the Secretary's task is to put the interest of fishing 'above' everything else, on the one hand, or whether, on the other, he is mindlessly to lease every square foot of seabottom at whatever risk to other resources.").

source if justified on a cost-benefit basis).⁵¹ While judicial opinions are subject to interpretation, this one repudiates Dworkin and Posner in the same breath; the consequence is that the agency is accorded considerable room to roam, constrained only by process protections for likely victims. Perhaps this close-boundary advice demands too much of the courts; vague statutes are not a new problem. But I have long believed that the best cure for vagueness is to send a statute back to Congress bearing an interpretation and not the stamp of uncertainty.

Finally, in the context of the ethical baseline, I will take up two of the prominent process issues of contemporary natural resources law—how much information is enough to permit an allocation decision (the problem of uncertainty), and the related question of how much process should be extended potential losers.⁵² On both of these issues fruitful lines of inquiry could be developed along conventional efficiency lines: one should conduct the study or hold the hearing only if the cost of the additional undertaking is less than the benefits in decisional accuracy to be derived from this extra process. Because I have a different ethical picture of the matter, I would suggest that these questions are not answered by efficiency considerations; nor should they be.

The problem of uncertainty, associated with speculative spillover effects, is a problem of estimating losers and the extent of the harm. The operative ethic is to discover and forewarn those subject to risk.⁵³ Exchange theory, assuming knowledgeable traders, has nothing to do with this. While lines are drawn (some information is "enough"), they are likely to embrace a nonutilitarian standard of "best practice" to describe the extent of the ethical study commitment. This is an assurance to the potential victims that they are not mere subjects of barter but rather people to whom every obligation of fair disclosure is owed. Whatever is said about NEPA, it is hardly rash to suggest that the degree of documentation there called for exceeds the efficiency "optimum." I suggest that it should, as the price of fairness to ourselves, future generations, and nonhuman residents of the planet.

51. *Id.* at 888-92.

52. See, e.g., Gelpe & Tarlock, *The Uses of Scientific Information in Environmental Decisionmaking*, 48 S. CAL. L. REV. 371 (1974); Mashaw, *The Management Side of Due Process*, 59 CORNELL L. REV. 772 (1974).

53. See E. F. MURPHY, *ENERGY AND ENVIRONMENTAL BALANCE* (1980). See also Ausness, *High-Level Radioactive Waste Management: The Nuclear Dilemma*, 1979 WIS. L. REV. 707, 756-58; Coburn, *Imposing Risks*, 62 PAC. PHIL. Q. 240 (1971).

The question of how much process is enough is prominently raised by the proliferation of one-stop siting or permitting proposals and the celebrated Energy Mobilization Board.⁵⁴ Obviously, process absolutists run into ever stronger utilitarian objections as hearings proliferate and the length of time needed for decision approaches the demonstrated lifespans of human beings and administration agencies. How much is enough? Here, the ethical question does not involve disclosure and battling the unknown as much as giving known or likely victims (at least those who believe they are victims) the opportunity to present their views and persuade decisionmakers to modify their ways. This is quintessentially a question of personal justice, not societal well being, and it requires us to give losers their due though society gets nothing tangible in return. Many of us have attended hearings that were demonstrably useless in adducing information of any pertinence whatsoever to the decision. Yet these same hearings may be neither psychologically nor legally useless.

Fair process is something, like currency, we can always produce more of. While too much of this good may cheapen this value over time and cross the line between fairness and obstructionism, it is well to remember that process is not subject to the iron rules of zero-sum restraint that nonrenewable resources are.⁵⁵ We can afford to be more generous with process fairness than with fair shares of scarce goods. I am convinced that the "correct" amount of process fairness is more likely to be derived from a personal ethic attentive to losers than from a balancing ethic attentive to hearing people out only to the extent the value of what they say exceeds the cost of the hearing.

E. Conclusion

In this paper, I have attempted to identify ideas, mostly from the natural sciences, which can be put to use in the construction of legal theory. While this sort of approach is not now widespread, I am optimistic about its usefulness. The law deals, after all, with the ordering of human behavior. Scientific insights into this behavior, whether examining motivations, preferences or otherwise, deal necessarily with the facts that determine whether law is effective law.

Scientific theories are important in another way. Legal scholars,

54. See Fisher, *Allocating Decisionmaking in the Field of Energy Resource Development: Some Questions and Suggestions*, 22 ARIZ. L. REV. 785 (1981); Guida & Solimine, *Congressional Power and the Federal System: A Constitutional Analysis of the Proposed Energy Mobilization Board*, 50 U. CIN. L. REV. 1 (1981).

55. J. RIVKIN, *ENTROPY: A NEW WORLD VIEW* (1980); L. C. THUROW, *THE ZERO-SUM SOCIETY* (1980).

especially teachers, are constantly searching for the metaphors that characterize and explain. Suggestive metaphors can grow into models, and they carry their own hypotheses which can be subjected to testing and further refinement.

In the past, the social sciences have been influenced by powerful ideas from the natural sciences. Evolution has been put to use in all sorts of things-will-get-better theories, and the entropy laws invoked to demonstrate that things will get worse. This cross-disciplinary use of theoretical models is hardly surprising when it is recognized that theory represents not pieces of reality but pictures of the world, not truth but patterns of thinking.

Theoretical ideas are transferable to a variety of contexts, pending proof of course that they do not belong there. The law, in its many expressions, offers a great deal of data which can be used to confirm or disprove these theoretical hypotheses. In the end, I must admit, this paper is a plea to multiply the metaphors of legal research. This advice is suggested by the inadequacies of the old metaphors but it is inspired by the allure of the new.