



Ways Not to Think About Plastic Trees*

Remember these things lost;
and under the vaulting roof of the cathedral
burn a candle to the memory.¹

Baudelaire's *Rêve Parisien* paints what is quite literally a still life—a dreamscape of a metallic city where groves of colonnades stand in the place of trees and, in the place of water, pools of lead.² More prosaic but no less unnerving was the recent decision by Los Angeles County officials to install more than 900 plastic trees and shrubs in concrete planters along the median strip of a major boulevard.³ The construction of a new box culvert, it seemed, had left only 11 to 18 inches of dirt on the strip, insufficient to sustain natural trees.⁴ County officials decided to experiment with artificial plants constructed of factory-made leaves and branches wired to plumbing pipes, covered with plastic and “planted” in aggregate rock coated with epoxy. Although a number of the trees were torn down by unknown vandals and further plantings were halted, the tale may not be over. For an article in *Science* suggested recently that, just as advertising can lead people to value wilderness and nature, so too it can “create plentiful substitutes.”⁵ “The demand for rare environments is . . . learned,” the *Science* article observes, and “conscious public choice can manipulate this learning so that the environments which people learn to use and want reflect environments that are likely to be available at low cost. . . . Much more can be done with plastic trees and the like to give most people the feeling that they are experiencing nature.”⁶

While so explicit an acknowledgment of the acceptability of artificial environments may be unusual, the attitude it expresses toward the natural order is far from uncommon. Increasingly, artificial objects and settings supplant those supplied by nature.

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Durable Astroturf replaces grass in football stadiums and around swimming pools. Guests at the Hyatt Regency Hotel in San Francisco walk among more than 100 natural trees growing in the twenty-story lobby but listen to recorded bird calls broadcast from speakers hidden in the tree branches. And Walt Disney World offers a multitude of visitors what one *Newsweek* writer described as "a programmed paradise."⁷

I do not focus on Astroturf and the plastic trees of Los Angeles as harbingers of our most urgent environmental problems. Although the long term prospects in this regard are probably more troublesome, I claim no imminent risk that we will too cleverly engineer ourselves into a synthetic hell. Quite apart from any such danger, I believe that such "nature surrogates" provide an illuminating metaphor through which to expose and criticize certain premises that underlie most current discussions of environmental thought, law, and policy.

While it might appear initially that nature surrogates would be antithetical to the ecological concern embodied in present environmental legislation and policy, a closer analysis leads to precisely the opposite conclusion. The perpetually green lawn and the plastic tree, far from representing the outcroppings of some inexplicable human perversion, are expressions of a view of nature fully consistent with the basic assumptions of present environmental policy. These assumptions, which are implicit in developing uses of policy analysis as well as in emerging institutional structures, make all environmental judgment turn on calculations of how well individual wants, discounted over time, are satisfied.

In this essay I seek to identify the roots and expose the inadequacies of this want-oriented perspective; I then tentatively outline the shape of an alternative foundation for environmental decision making and environmental law. The key to such an alternative foundation, I will argue, is to move beyond wants. I propose giving institutional expression to the perception that "nature exists for itself" by taking steps to recognize "rights" in natural objects, not as a way of broadening the class of wants to be aggregated by a utilitarian calculus, but rather as part of a structure for approaching a shared agreement about our responsibilities as persons—responsibilities to one another and to the world.

I. THE LIMITS OF ANALYTIC SOPHISTICATION: NATURE AND REASON IN THE SERVICE OF MAN

Despite occasional probes in less familiar directions, the emerging field of environmental law is being built on the basic platform of

analytic sophistication in the service of human need. Statutes and judicial decisions typically mandate "systematic" and "interdisciplinary" attempts to "insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic and technical considerations."⁸ Public interest challenges to decisions alleged to be environmentally unsound are diverted by the pressures of doctrine and tradition from claims about the value of nature as such into claims about interference with human use, even when the real point may be that a particular wilderness area, for example, should be "used" by no one.

A. Technical Capacities and Limitations

1. **Fragile Values.** From the start, the aspect of environmental policy analysis that has most concerned students of the matter has been the supposed difficulty of ever incorporating certain *kinds of values* into systematic analyses of environmental problems, whether in the service of legislators, of planning agencies, of litigators, of private enterprises, or of courts.^a Various described as fragile, intangible, or unquantifiable, these values have been widely thought to possess peculiar features making them intrinsically resistant to inclusion along with such allegedly "hard" concerns as technical feasibility and economic efficiency. In particular, those dimensions of a choice for which market prices do not exist have seemed to pose intractable obstacles to "objective measurement."

It does not take long to discover, however, that this emphasis on categorizing fragile values embodies a misleading formulation of the problem and an inadequate appreciation of the analytic capacities latent in the techniques under examination. To be sure, the aspirations of some policy analysts to an elusive "objectivity," the identity of their constituents, and the advocacy often expected of them by their clients, induce certain practitioners to overlook or understress a variety of values that might, in context, be characterized as "fragile." More specifically, insofar as analysis is intended to help a decision maker persuade others of the justifiability and wisdom of his choice, its usefulness in the absence of consensus as to

^aIn assessing the tendencies of contemporary thought with respect to analytic methods and their place in environmental policy, I am relying only in part upon the published literature. For my views on these matters have been shaped not only by such literature but also by the series of meetings and discussions sponsored by the American Academy of Arts and Sciences under the auspices of the National Science Foundation of which this collection and the companion volume are the result.

goals is predictably reduced whenever it does not at least appear to point "objectively" and unambiguously toward a particular alternative.

The users of policy-analytic techniques in advocacy situations are thus under constant pressure to reduce the many dimensions of each problem to some common measure in terms of which "objective" comparison seems possible—even when this means squeezing out "soft" but crucial information merely because it seems difficult to render commensurable with the "hard" data in the problem.⁹ These tendencies are aggravated by the institutional and legal contexts in which analytic techniques are ordinarily used. Such techniques tend to be deployed as tools only by the individual combatants in policy conflicts; thus the only values consistently served are those strongly held by persons motivated and able to seek a policy analyst's aid—a circumstance likely to exclude values too widely diffused over space, or too incrementally affected over time, to be strongly championed by any single client of a policy analyst; values associated primarily with persons not yet in being (future generations); and values not associated with persons at all (for example, the "rights" of plants or animals).

Having said all this, however, one must concede that there is nothing in the structure of the techniques themselves, or in the logical premises on which they rest, that inherently precludes their intelligent use by a public decision maker in the service of these "intangible," or otherwise "fuzzy," concerns.^b Despite what appears to be a widely held assumption to the contrary, all such concerns can in theory be incorporated in a rigorous analysis, either by using various market price or other numerical surrogates to value extra-market costs or benefits, or by the technique of "shadow pricing"—that is, qualitatively describing as best one can the contents of a constraint as intangible as natural beauty or procedural fairness or respect for future generations, and then calculating the tangible benefits that would have to be forgone if one were to insist that one's policy conform to the constraint described.

Thus, even in the relatively unsophisticated (by current standards) cost-benefit analyses performed to evaluate alternative levels of water quality improvement in the Delaware estuary, the enhanced swimming, fishing, and boating possibilities of a cleaner Delaware River were translated into dollar terms. The methods used in that translation were highly questionable in their ability to measure the

^bThis is not to say that the use of the techniques may not affect the values served by them. (This problem is explored in Part II A.)

economically relevant variables (that is, to measure how much prospective swimmers, fishermen, and boaters would willingly sacrifice before becoming indifferent between the enhanced opportunities caused by an improvement and the opportunities previously available to them),¹⁰ and it is true that those variables themselves could not measure the value of enhanced water quality to future generations, or to the aquatic life that inhabits the estuary.

But an observer who believes that such values also matter could describe their significance in any terms that seem appropriate, and the analyst could then calculate how costly it would be to raise the water quality to the level demanded by the observer's description. Whether the sacrifice was justified by the values invoked would then have to be determined by whichever individuals or groups were responsible for making the choice in question. That their decision would be a difficult one reflects not any intrinsic weakness of the analytic methodology as applied to nonmonetizable values, but rather the universal difficulty of choosing among incommensurables—a difficulty that can be obscured but never wholly eliminated by any method of decision making.

It should be added as a qualifying caveat, however, that the tools of analysis are currently too blunt to be of very great use in this endeavor or in the discourse that surrounds it. If the analytic disciplines are truly to clarify the relations within and among values so as to identify otherwise unnoticed inconsistencies, and to show that some perceived conflicts are in fact illusory by inventing policies from which groups with apparently conflicting interests can all benefit, then the analytic fields, and the scientific disciplines which support them, must sharpen both their capacity to ask and answer probing and imaginative "what if" questions, and their capacity to understand and describe in some detail what each of the nonmonetary values significantly involved in a choice really represents.

Organizations engaged in environmental policy analysis are rarely able today to discover or to articulate the underlying character of the ecological and esthetic concerns (many of them essentially symbolic) that play so major a role in environmental disputes, or to design the models that would be needed to facilitate a thorough search of even mildly novel alternatives. It may be, as Murray Gell-Mann has proposed,¹¹ that we must therefore develop a new group of professionals sensitive to the sorts of values and issues that analyses currently tend to slight—diversity, balance, esthetic quality, reversibility, the claims of the future—and adept at modeling policy impacts in terms of such values. In studying a particular environmental case, such professionals might translate each of the relevant values or

concerns into a parameterized constraint designed to show how costly the options for choice would be from the perspective of the value at issue. Thus, for example, a "distortion of natural landscape"¹² index might be studied to determine how slowly or rapidly the other costs associated with a project would rise if that index were constrained within lower and lower levels; and an "ecological diversity" index might be examined to ascertain what increments in various cost curves would result as one tightened the ecological constraint by forcing this index ever higher.

The curves generated by this sort of analysis will at times have a more complex structure than those typically assumed by analysts, especially those trained primarily in neoclassical economics. For example, most individuals would probably not trade breathing rights below a certain point for even limitless rights to pollute. And many persons—far from regarding such human capacities as eyesight, hearing, and physical mobility as all subject to continuous trade-offs to levels approaching zero—probably have preference orderings that display significant discontinuities, lexicalities,¹³ and nonzero thresholds, which an adequate analysis would be forced to consider.¹⁴

Among the most serious of the difficulties the analyst would face—and it is a difficulty that economic analyses of "rights" have invariably overlooked—is that being "assigned" a right on grounds essentially reducible to arguments from efficiency with respect to the relevant cost curves might well fail to satisfy peculiarly human needs that can be met only by a shared social and legal understanding that the right (e.g., a right to breathe or to see) belongs to the individual because the capacity it embodies is organically and historically a part of the person that he is and not for any purely contingent and essentially managerial reason.¹⁵

However difficult the investigation of such ordering structures might be, and however complex may be the general task of defining the relevant parameterized constraints and generating the associated curves, the effort to move analysis in such directions should at least prove illuminating. And even before anyone is very good at the task of attaching shadow prices to varying levels of constraints as elusive as ecological diversity, the *attempt* to attach them rather than simply incorporating such constraints in an all-or-nothing fashion should lead to better decision processes, even if not better outcomes. Whether or not new professions must be developed in order to perform this sort of task sensitively, it seems clear that treating the problem as an inherent incapacity of analysis to incorporate the intangible can only retard the needed development of these important abilities.

2. **Conflicting Goals.** A second common formulation of the limits of environmental analysis has centered on the alleged difficulty of systematically dissecting problems characterized by a multiplicity of partially or wholly conflicting goals. Analytic techniques can be of virtually no use, it has at times been suspected, outside the few situations (rarely encountered in the environmental field) where one is optimizing a single, well defined objective subject to agreed-upon constraints.¹⁶ It is true that many analytic methods prove most powerful in the single objective case and that various pressures tempt both analyst and client, however misleadingly, to reduce all the dimensions of a question to a common denominator (such as "net benefits," as in the case of the Delaware estuary analysis) or at least to smoothly exchangeable attributes. But the temptation is one that has at times been resisted. The existence of that temptation, while properly a source of caution in the application of analytic techniques to environmental problems, cannot warrant a conclusion that those techniques are useless, or even that they are invariably more dangerous than helpful.

The approach of displaying a multitude of perspectives, with a distinct objective function defined for each,^c has often been proposed—sometimes vaguely, but occasionally in a quite unambiguous and operational form.¹⁷ Such techniques make it possible at least to expose for intelligent debate the trade-offs involved in various alternatives, and sometimes even to suggest formerly unconsidered options that would "score" well in terms of all the perspectives under examination. If techniques of this sort are augmented by bureaucratic and organizational analyses that realistically take into account the milieu in which policies are in fact made and carried out, their predictive value—and hence, indirectly, their prescriptive value as well—may prove to be considerable in environmental controversies, particularly when we understand more thoroughly than at present the bureaucratic politics peculiar to organizations with environment related responsibilities and the behavioral dynamics of the situations they routinely confront.

3. **Means-Ends Fluidity.** Yet a third tentative hypothesis regarding the limits of analysis has been the possibility that, perhaps in

^cAn "objective function" is a rule that associates with each potential choice a single mathematically determined value by means of which the choice can be comparatively ranked with respect to a defined goal, objective, or attribute—such as total cost to a particular individual or group, or risk of death to another, or level of aesthetic enjoyment (however approximated) to still another.

environmental matters even more than others, most people lack clearly articulable ends and values at any given time and have only vague ideas about what they might regard as desirable or undesirable; such inchoate values are crystallized into distinct preferences or criteria of choice only through the concrete process of seeking means to attain them and gradually discovering what such means entail. There is no "spook . . . which posits values in advance."¹⁸

The fluid character of means-ends relationships has long been postulated, and I have elsewhere argued that it ordinarily describes the actual situation not only during the process of choice but in its implementation as well.¹⁹ Indeed, I would hypothesize that most of the crucial environmental choices confronting industrialized nations in the last third of the twentieth century will be choices that significantly shape and do not merely implement those nations' values with respect to nature and wilderness. Such choices will do more than generate a distribution of payoffs and penalties to the persons affected in terms of their preexisting yardsticks of cost and benefit. Choices of this type will also greatly alter the experiences available to those affected, the concomitant development of their preferences, attitudes, and cost-benefit conceptions over time, and hence their character as a society of persons interacting with one another and with the natural order.

The hypothesis of such means-ends fluidity may, however, say little more than that the choice and implementation of means have some "feedback" effects upon the chooser's ends. Indeed, the fluidity hypothesis seen in terms of feedback effects renders systematic analysis all the more valuable as a means of bringing ends to light, and all the more essential inasmuch as wholly intuitive approaches to decision might overlook the means-ends complexity that a more rigorous investigation could help to illuminate.

The need again is not for an abandonment of rigor and precision but rather for its enrichment—this time by encouraging closer study of the range of psychological and sociological mechanisms, including self-perception and cognitive dissonance, through which the ends held by individuals and groups are shaped by the questions they ask, the intentions they form, the processes of choice they adopt, and the choices they in fact make. Even the most sophisticated analyses of environmental issues have been oddly oblivious to this problem of variable ends and shifting values,^d in part no doubt because our

^dEven those studies such as Wildavsky's "Political Economy" (supra) that recognize that goals are not "given" but emerge in the process of analysis and choice, strangely ignore the dependence of ends on the means actually chosen and implemented and on the experiences that result.

understanding of value formation is so rudimentary. But failing altogether to take this sort of dependence into account can only result in solving an unintended problem while leaving unsolved the problem initially put—rather like firing at a moving target that is connected to the marksman's arm without paying any attention to the link between the two.

Having considered the most serious technical obstacles to "good" environmental analysis and planning, one is forced to conclude that none of these obstacles need prove insuperable. Each calls for further research in preparation for more sensitive analyses and both greater creativity and closer vigilance in whatever environmental analyses are in fact conducted.

B. Ideological Boundaries

A final obstacle remains. Policy analysts typically operate within a social, political, and intellectual tradition that regards the satisfaction of individual human wants as the only defensible measure of the good, a tradition that perceives the only legitimate task of reason to be that of consistently identifying and then serving individual appetite, preference, or desire. This tradition is echoed as well in environmental legislation, which protects nature not for its own sake but in order to preserve its potential value for man.²⁰

By treating individual human desire as the ultimate frame of reference, and by assuming that human goals and ends must be taken as externally "given" (whether physiologically or culturally or both) rather than generated by reason, environmental policy makes a value judgment of enormous complexity and significance. And, once that judgment has been made, any claim for the continued existence of threatened wilderness areas or endangered species must rest on the identification of human wants that would be jeopardized by a disputed development. As our capacity increases to satisfy those wants artificially, the claim becomes tenuous indeed.

Consider again the plastic trees planted along a freeway's median strip by Los Angeles county officials. If the most sophisticated application of the techniques of policy analysis could unearth no human want that would, after appropriate "education," be better served by natural trees, then the environmental inquiry would be at an end. The natural trees, more costly and vulnerable than those made of plastic, would offer no increment of satisfaction to justify the added effort of planting and maintaining them. To insist on the superiority of natural trees in the teeth of a convincing demonstration that plastic ones would equally well serve human desires may

seem irrational. Yet the tendency to balk at the result of the analysis remains. There is a suspicion that some crucial perspective has been omitted from consideration, that the conclusion is as much a product of myopia as of logic.

II. BEYOND HUMAN WANTS: A NEW RATIONALE FOR ENVIRONMENTAL POLICY

What has been omitted is, at base, an appreciation of an ancient and inescapable paradox: we can be truly free to pursue our individual ends only if we act out of obligation, the seeming antithesis of personal freedom. To be free is not simply to follow our ever-changing wants wherever they may lead. To be free is to choose what we shall want, what we shall value, and therefore what we shall be. But to make such choices without losing the thread of continuity that integrates us over time and imparts a sense of our wholeness in history, we must be able to reason about what to choose—to choose in terms of commitments we have made to bodies of principle that we perceive as external to our choices and by which we feel bound, bodies of principle that can define a coherent and integrative system even as they evolve with our changing selves.²¹

To deny the existence of such bodies of principle is fashionable, but it is not inevitable. However obvious, it is worth recalling that most of the great philosophical systems of our own past—those of Plato and Aristotle, of Aquinas and the Scholastics, of Hegel and the Idealists—were grounded in the view that the highest purpose of human reason is to evolve a comprehensive understanding of mankind's place in the universe, not merely to serve as a detector of consistency and causality and thus as an instrument for morally blind desire. "The emphasis," as Horkheimer reminds us, "was on ends rather than on means."²² It is only recently that the concept of reason as calculation without content became central in the West—that reason began to liquidate itself "as an agency of ethical, moral and religious insight."²³ Unless we are to remain in the shadow of that intellectual eclipse, we cannot simply assume that we must stand mute when confronting the ultimate question of whether we want our children, and their children's children, to live in—and enjoy—a plastic world.

The notion that nature in particular embodies values apart from its usefulness in serving man's desires is familiar even in the Western post-Enlightenment tradition. Kant, for example, taught that a propensity to exploit or destroy nonhuman and inanimate nature might violate a person's duty to himself.²⁴ Such utilitarian philoso-

phers as Bentham advanced a related view, perceiving human obligations as extending to all entities capable of experiencing pleasure and pain.²⁵ And the contemporary philosopher John Rawls, after restricting his own theory of justice to the human sphere, went on to assert that it is “[c]ertainly . . . wrong to be cruel to animals and the destruction of a whole species can be a great evil.”²⁶ Concluding that a correct conception of man’s relation to nature “would seem to depend upon a theory of the natural order and our place in it,” Rawls has exhorted metaphysics to work out a world view suited to this purpose, identifying and systematizing “the truths decisive for these questions.”²⁷

The task that Rawls thereby defined will not easily be accomplished, either as an intellectual matter or as an institutional one. From the perspective of a social order in which law has come to be justified either in purely formal, positivist terms (as the command of the recognized sovereign), or in terms of a projected tendency to maximize aggregate human satisfaction over time, or in terms of a contractarian conception of justice as fairness to other human beings, the elaboration of human obligations to nature is likely to appear idiosyncratic at best and incoherent at worst.

Although legislators and jurists might concede the appeal of an ecological or evolutionary theory that could suggest a conceptual basis for extrapolating beyond the perspective of human wants, they would undoubtedly resist efforts to incorporate any such extrapolation into a system of legal protection. The widely held view that law exists for the purpose of ordering individual wants in human societies, and for that purpose alone, may well prove an unassailable article of faith.

Given the obvious difficulty of progressing against the grain of such a faith, it seems appropriate to assess the importance of the task. How serious is the distortion occasioned by an entirely want-regarding vision? In precisely what ways—apart from the basic affront to freedom described earlier—is it troublesome to view nature solely in terms of potential for individual human satisfaction? In short, what’s wrong with plastic trees, if that’s what people really want?

**A. The Distortions Implicit in a
Want-Oriented Perspective**

Theoretically at least, policy analyses and legislative provisions can be so calibrated as to be sensitive to, and then to accommodate, whatever values individuals are capable of discerning. Yet it does not follow, simply because all values susceptible to human perception

may thus be formally "included" in our designs, that an institutional system or an analytic technique that relentlessly treats all such values as manifestations of individual human preference will prove satisfactory. To reach such a conclusion would require another premise: that the act of characterizing all values as expressions of such human preference or want will not affect their content or distort their perception. It is a premise that does not withstand scrutiny.

Saying that "nature" should be preserved only because of its beauty to its human beholders or its benefit to human users may risk burdening some natural places and phenomena with a peculiarly human insistence on attempted immortality: a canyon, like a person, may be entitled to a "natural" death. It may also risk exposing other places or creatures, no longer deemed lovely or productive, to a peculiarly human inclination to destroy once hallowed sources of disappointed expectation.²⁸ Moreover, the very process of treating all values as based on personal preferences results in a major shift of focus. Attention is no longer directed to the ostensible content of the value but rather to the fact that it is a more or less abstracted indicium of self-interest. Even if one ultimately chooses the same actions under such a shift of focus—something I have suggested is unlikely—one may well end with the feeling that one has chosen them not out of obligation or for their own sake, but because their opportunity cost in terms of one's range of personal desires was low enough, thereby distorting the meaning of the choice and of the actions chosen.

To offer a simple illustration, suppose a person feels an obligation to protect a wilderness area from strip mining. The initial perception of that obligation is likely to take the form of sympathy for the wildlife and vegetation that would be destroyed or displaced. Indeed, the perceived obligation may display at least the rudiments of an internal structure. Killing "higher" animal life may seem unjustifiable except for compelling reasons (e.g., to sustain, or to avert a direct threat to, human life); destroying plant life may seem improper if destruction can be avoided without "undue" cost. Certain categories of harm that might leave human civilization intact while threatening the global ecosystem as a whole—widespread radioactive contamination of the oceans, for instance—may seem wrong regardless of the strength of the countervailing human interest.

If the sense of obligation prompts the individual to undertake some concrete effort on behalf of the environment, such as making an adverse response to an environmental survey, initiating a suit to enjoin the strip mining, or advancing an argument in favor of preservation, a subtle transformation is likely to be occasioned by

the philosophical premises of the system in which the effort is undertaken. The richly if inarticulately felt obligation will be translated into the flatter but more precise terminology of human self-interest. It may be said that future generations will be deprived of contact with wildlife; that the esthetic satisfaction of certain individuals will be diminished; that other recreational areas will become overcrowded. Proponents of environmental protection will, at best, couch their disapproval of human mistreatment of nature in terms of man's ability to satisfy his own wants.

While the environmentalist may feel somewhat disingenuous in taking this approach, he is likely to regard it as justified by the demands of legal doctrine and the exigencies of political reality. What the environmentalist may not perceive is that, by couching his claim in terms of individual human wants and personal preferences, he may be helping to legitimate a system of discourse that so structures human thought and feeling as to erode, over the long run, the very sense of obligation that provided the initial impetus for his own protective efforts.

This metamorphosis of obligation into hedonistic self-interest and personal preference ironically echoes aspects of Mill's utilitarian theory. Mill argued that the sense of moral obligation was a subjective feeling developed through learning and association from the primary responses of pain aversion and pleasure maximization.²⁹ He discounted the possibility that obligation, when perceived as an accretion of such responses, might ultimately lose its compelling force and dissolve into unmitigated self-aggrandizement; in Mill's view, the impulse toward conformity and other social pressures would insulate ethical feelings from any such reductionist tendency.³⁰

However justifiable Mill's faith in the efficacy of communal reinforcement in the context of interpersonal obligation, such reinforcement clearly plays a less important role when the occasion of an ethical impulse is not a member of the human community but a natural object. Despite impassioned efforts by ecologists to suggest the contrary, the satisfactions of individual persons (and even of future human generations) are not invariably congruent with the interests of the natural order as a whole, even if such a congruence can be established as between individuals and the human communities in which they live. Indeed, individually or communally defined human wants may often be at odds with the primal ethical impulse—the sense of duty beyond self—that gives passion and conviction to many who see elements of the inviolable in nature. In this situation, communal reinforcement, far from impeding the

transformation of ethical obligation into a category of self-interest, may actually accelerate the process.

To return to our example, once obligation has been transformed into a mere matter of personal preference, the tendency is inevitable to compare the value of wilderness with the value of strip mined coal in terms of self-interest. From there it is but a short step to an even more blatantly reductionist approach: in order to insure that the comparison is "rational," the two values will almost certainly be translated into smoothly exchangeable units of satisfaction, such as dollars. While certain discontinuities may still be recognized—destruction of all wilderness areas may not be deemed worth even an infinite supply of coal—they will tend to be gradually eroded by the pressure toward analytic uniformity.

The translation of all values into individualistic, want-oriented terms thus creates two distortions. First, an inchoate sense of obligation toward natural objects is flattened into an aspect of self-interest; second, value discontinuities tend to be foreshortened. It is important to emphasize again that these distortions do not follow as a necessary result from the theoretical premises of policy analysis. Although Aaron Wildavsky suggested in a 1966 critique that cost-benefit techniques structurally presuppose the individualistic premise that only personal preferences matter,³¹ it is obviously possible to compute the costs of an activity in any terms one wishes or to impose whatever nonindividualistic or even nonhomocentric constraint is deemed important. There is nothing in the logic of analytic techniques (or, for that matter, the logic of interest identification that precedes legislative enactment) that limits the use of such methods to the tradition of liberal individualism in any of its diverse forms.

The distortions occur rather because the process of interest identification, as it is presently employed, interacts in a crucial way with the content of the interest being identified. The identification takes place in the context of a system of attitudes and assumptions that treat individual human want satisfaction as the only legitimate referent of policy analysis and choice. It is a system of attitudes and assumptions that begins by treating only human wants and needs as having moral significance and ends by collapsing such human interests into a mere aggregation of morally arbitrary individual desires and preferences.

These assumptions, and the desire for analytic clarity that accompanies them, together exert an enormous reductionist pressure on all values that would otherwise seem incommensurable with a calculus of individual human wants. Thus the distortion results not

from a logical flaw in the techniques of policy analysis but rather from what I have elsewhere described as the ideological bias of the system in which such analysis is imbedded, a system that has come to treat the individual human will and its wants as the center around which reason as calculation must revolve.

B. The Roots of Our Current Posture

No one should suppose that this bias is a shallow one or that it can readily be eliminated. Its roots lie deep within the western philosophical and theological tradition. It is important, therefore, to describe briefly certain aspects of this tradition even at the inevitable expense of simplification. The dominant religious consciousness of preindustrial western societies, representing the confluence and culmination of strands that began at points as diverse as the Near Eastern salvation faiths and early Greek monotheism, is the consciousness of transcendence.³² That consciousness characteristically perceives God as an other-worldly entity—one standing apart from, and above, the world. Genesis proclaims the sovereignty of God over the physical universe; it is but a small step to infer the dominion of man, as God's representative on earth, over all of life. In a seminal lecture delivered before the American Association for the Advancement of Science in 1966, Lynn White pointed to the Judaeo-Christian tradition of transcendence as the underlying basis for what he then perceived as our ecological crisis.³³ That thesis has been much criticized as overdrawn, but it deserves elaboration in the present context.

Any society whose dominant consciousness posits the radical dichotomy between God and world, between heaven and earth, and (in the individualized manifestations of these dualities) between soul and body, is apt to regard natural and social phenomena as entirely appropriate objects of human manipulation and will, at least insofar as humanity is viewed by that society as uniquely participating in the divine. So long as man is thought to stand apart from nature, and the universally divine in individual man apart from his more particular manifestation as a concrete social being, the manipulative stance toward the world of physical processes and social structures, expressed respectively through the media of "technology" and "public policy," is likely to prove invincible.³⁴ And, as Max Weber has argued, there exists a natural correspondence between manipulation as a mode of conduct and instrumental rationality—the rationality of matching means to ends—as a mode of thought.³⁵ If man is pilot of the lower orders, it is instrumental reason that charts his way.

The view that White's thesis was misguided rests on a facet of Judaeo-Christian theology whose centrality he failed to recognize. In *Summa Theologiae*, Aquinas argued that man excels all animals not by virtue of his power but rather by virtue of the faculty of reason through which he participates in the kingdom of heaven; White's account seemingly left no room within the Judaeo-Christian mainstream for a divinely inspired stewardship of the sort suggested by Aquinas and so eloquently realized in the thought of St. Francis. But, if this is its limitation, White's thesis becomes chillingly plausible in the period when the rise of science heralds the death of God. For once one accepts the Baconian creed that scientific understanding can only mean technological power over nature, one can no longer hope for inspiration from beyond;³⁶ once reason is no longer perceived as guided by the divine, it can no longer serve as master and must be relegated to the place of slave.³⁷ It is through this thoroughgoing secularization of transcendence that Hume's dictum—that "reason is, and ought only to be the slave of the passions"³⁸—is fully realized; for when God is absent, the "grand manipulator" must move the world not according to values divinely revealed but in accord with ends ultimately private to each person and empty of intrinsic significance because not derived through any dialogue beyond the self.

In a classic reply to Sartre's heroic effort to find authenticity in this very emptiness,³⁹ Heidegger saw in that existentialist stance only the haunting spectre of the human will willing itself in the void.⁴⁰ The age inaugurated for philosophy by Kant and carried to its relentless conclusion by Nietzsche—the age of human will as the center of reality—seemed to Heidegger to lack a center, a point of reference from which the works of the will might be assessed. So it is that instrumental rationality, the shadow in human thought of the manipulative pose inherent in transcendent consciousness, is reduced to the endless striving after ever-changing ends that has come to characterize much of contemporary life. So it is that progress becomes a frenzied caricature of itself, and that human nature, itself but a part of the natural order properly subject to human will, becomes subject to alteration without moral constraint as Yeats's vision becomes reality: the center will not hold.

It is to the secularization of transcendence that we may most instructively correspond the transition from Aquinas and the Scholastics to moral theorists in the tradition of contemporary liberal individualism. Treating the work of John Rawls as representative, one may observe that the basic structure of his contractarian argument—which seeks justice and just institutions in the arrangements

he claims rational persons would freely choose under a veil of ignorance as to the positions they will occupy in the world they are designing—presupposes an “individualistic conception according to which the best that can be wished for someone is the unimpeded pursuit of his own path, provided it does not interfere with the rights of others.”⁴¹ While this concept allows Rawls to elevate the sentiment of justice from its status in utilitarianism as a “socially useful illusion”⁴² to an antecedent principle of social behavior, it does not directly implicate man’s relation to nature. As Rawls admits, duties imposed on persons by the capacity of animals to experience pain and pleasure fall outside the ambit of any contractarian doctrine.⁴³

In Rawls’s system, the good is no longer to be derived from first principles by divinely inspired reason or by any rational faculty but is the contractual composite of arbitrary (even if comprehensible) values individually held and either biologically or socially shaped. As was implicit in Kant, reason must be silent when confronting the lonely task of commitment to the substantive ends and values themselves.

The structure of the Rawlsian argument thus corresponds closely to that of instrumental rationality; ends are exogenous, and the exclusive office of thought in the world is to ensure their maximum realization, with nature as raw material to be shaped to individual human purposes. Thus when Rawls posits that a correct conception of man’s relations to nature depends upon “a theory of the natural order and our place in it,”⁴⁴ he calls for a moral conception of ecological obligation that cannot be formulated within the tradition of his own thought. For the premises of secularized transcendence deny the existence of anything sacred in the world and reduce all thought to the combined operations of formal reason and instrumental prudence in the service of desire. The only entities that can “count” in a calculus of end-maximization, whether utilitarian or contractarian, are those entities that possess their own systems of ends or at least the capacity to experience pleasure and pain,⁴⁵ and nothing outside the private ends and pleasures of such beings can come to the rescue of a philosophy devoted solely to their pursuit.

Nor would it be enough, ultimately, to broaden the reach of such a philosophy by somehow “averaging in” the wants of all sentient beings and then including the “wants” that inanimate objects might be expected to have if they had wants at all. As one wry observer has asked, “Why wouldn’t Mineral King want to host a ski resort, after doing nothing for a billion years?”⁴⁶ If the endless emptiness of a want dominated conception is ever to be overcome, the need is to

move beyond wants—even *nonhuman wants*—as the only source of policy.

C. The Alternative of Immanence

How such a need might be met is not easily imagined. No supposed eastern ethic of nature's wholeness and of man's place can simply be "willed" into being, and none would be likely to prove helpful in hard cases even if it could be thus commandeered. Similarly, those strands of our own legal, intellectual, and religious heritage that once seemed to point the way toward reason as an agent of moral illumination now appear as dust, the task of reassembling them into a coherent and effective fabric seemingly beyond our grasp. Despairing of anything better—frightened with Pascal by "the eternal silence of these infinite spaces" but unable with him to embrace God—we may be tempted to accept a perfected form of formal and instrumental thought as marking the perimeter of legitimate aspiration. In so doing we may, as long as we have the courage, recognize the futility of the pursuit after intrinsically empty ends to which we are thereby consigned.

It is worth asking, however, whether such stoic resignation is an inescapable corollary of our contemporary situation. I would not presume to offer anything like a definitive answer, but I will advance a tentative hypothesis. Just as the disintegration of reason detected by Horkheimer⁴⁷ has its roots in a religious transformation, so the reintegration of reason and moral perception may be augured by the dawning of environmental awareness in contemporary law and culture.

Recall the observation that environmentalists often feel disingenuous when they seek to rationalize their position in terms of a want centered calculus, even one that gives more than the usual weight to the interests of future human generations, one that takes an unusually risk-averse posture in assessing available options, or one that talks in the language of nonhuman as well as human "wants." Such environmentalists "want to say something less egotistic and more emphatic, but the prevailing and sanctioned modes of explanation in our society are not quite ready for it."⁴⁸

Those modes of explanation are not *quite* ready, but it is hard not to observe a convergence of trends that suggests a growing sense in contemporary industrialized societies that there is in fact something sacred in the natural, a sense that Edward Shils has rightly argued can be wholly secular.⁴⁹ One sees such a notion, at the most romantic and mystical extreme, in the fond longing for an imagined past of an unmechanized, decentralized, nonhierarchical, antitechnological

community of man in nature. One sees essentially the same notion, at the opposite pole, in the idea (closely related to "natural law") that modern science itself, and the unfolding structural truths it reveals about the natural order and the human condition,⁵⁰ can somehow be the source of moral wisdom—the idea that existence, deeply and richly enough understood, might somehow yield normative insight.

There would be great danger, however, in transforming these fragments of what might be called "ecological" or "structural" awareness into the philosophical and legal scaffolds of an even braver new world. For the sanctification of nature or of "natural principles," even if achievable and even if effective in actually protecting natural systems,⁵¹ would simply return us to the religious tradition that preceded transcendence, the tradition in which the divine, far from an other-worldly essence, was immanent in all that is. It was the tradition of immanence that was exemplified by the pantheistic belief that all objects and places in the natural world possessed guardian spirits demanding propitiation as security against unspeakable harm.

To restore anything like pagan animism would be to risk sanctifying the present, with all its faults and inadequacies. Treating the existing order as sacred (or, in a secularized version of immanence, as immutable) might well relegate to permanent subjugation and deprivation those many who are not now among the privileged, freezing the social evolution of humanity into its contemporary mold. It would thus be as misguided to act on the premise that plastic trees are "bad" simply because they are "unnatural" as I have argued it would be mistaken to act as though there could be no objection to plastic trees so long as persons have come to like them. Unless evolving human consciousness and will are recognized as legitimate and indeed vital parts of the natural order, there can exist only sterility and paralysis, negating all possibility of critique and progress.

D. A Possible Synthesis

To be free, it seems, is to choose what we shall value. To feel coherence over time and community with others while experiencing freedom is to choose in terms of shared commitments to principles outside ourselves. But to make commitments without destroying freedom is to live by principles that are capable of evolution as we change in the process of pursuing them. If transcendence degenerates ultimately into choice without commitment to principle, and if immanence ultimately disintegrates into principles incapable of

change, what must be sought is a synthesis of immanence with transcendence—of sacred observer with grand manipulator.

Such a synthesis requires the sanctification neither of the present nor of progress but of *evolving processes of interaction and change*—processes of action and choice that are valued for themselves, for the conceptions of being that they embody, at the same time that they are valued as means to the progressive evolution of the conceptions, experiences, and ends that characterize the human community in nature at any given point in its history. As those conceptions, experiences, and ends evolve through the processes made possible by a legal and constitutional framework for choice, the framework itself—the society's idealized conception of how change should be structured—may be expected to change as well.

One might think of the evolving framework as a multidimensional spiral along which the society moves by successive stages, according to laws of motion which themselves undergo gradual transformation as the society's position on the spiral, and hence its character, changes. To avoid the spiral's premature closure upon any necessarily tentative set of ideals and expectations, the framework for choice must incorporate procedures for its own evolution. But the framework for choice must begin somewhere, and, like all beginnings, this one will seem, to some, to have come from no place. The only solace must be Wittgenstein's: "Giving grounds [must] come to an end sometime. But the end is not an ungrounded presupposition: It is an ungrounded way of acting."⁵²

The framework for choice to which I believe we should initially commit ourselves must have a double aspect. Although it must be selected in light of its likely consequences, it cannot be designed simply to assure that the journey will bring us to some preconceived destination. For no such destination is describable in advance, and in no event could we expect a purely instrumental strategy to liberate us from the grip of instrumentalism and manipulation in which we feel trapped. The "way of acting" to which we commit ourselves must therefore be a process valued in large part for its intrinsic qualities rather than for its likely results alone.

Such a conception of process as more than instrumental should not seem wholly alien. In many realms of human experience, process is intuitively and widely felt to matter in itself. Thus kicking a dog is seen as different from tripping over it; lynching an innocent victim is not thought to be the same as erroneously convicting a person after a fair trial; there are important respects in which the sound of music produced by a computer cannot be equated with the human enterprise of a living orchestra. In the environmental area in particular, given the absence

of any final system of ends that either could or should command assent, we should be capable of perceiving intrinsic significance—sanctity, if you will—in the very principles, however variable, according to which we orchestrate our relationships with one another and with the physical world of which we are a part.⁵³

But we do not begin wholly without a conception of the distant horizons toward which our processes should grope. Along those horizons, at the very least, one must imagine that change will remain forever possible, and that no single conception or species will perpetually dominate according to an iron rule. Partly because it seems plausible to believe that the processes we embrace must from the beginning prefigure something of that final vision if the vision itself is to be approximated in history, and partly because any other starting point would drastically and arbitrarily limit the directions in which the spiral might evolve, it follows that the processes with which we start should avoid a premise of human domination—or indeed a premise of the total subservience of any form of being to any other.

If the evolving processes we adopt are somehow to synthesize the ideals of immanence with those of transcendence, it follows also that those processes must embody a sense of reverence for whatever stands beyond human wants and their directly willed consequences, as well as a stance of criticism toward all that is given and a commitment to the conscious improvement of the world. Such a synthesis, it should be clear, must eventually cut across the received categories of “nature” and “culture,” for implicit in that classic dichotomy is a denial of any possible union between the immanent and the transcendent.

It should not be distressing that this is so, and that traditional conceptions of nature and of the natural will not suffice to capture the necessary objects of our respect and of our sense of obligation. At the most elementary level, after all, the impulse that is felt by many as awe and respect for a vast canyon or a spider’s web has much in common with the sense of sanctity felt by others as they stand before the structures at Stonehenge or the Cathedral at Chartres. What differentiates a silent wilderness or a breathtaking monument from a littered campground or a tornado-struck town cannot be summarized in any facile contrast between the works of “man” and those of “nature.” To recognize that humanity is a part of nature and the natural order a constituent part of humanity is to acknowledge that something deeper and more complex than the customary polarities must be articulated and experienced if the immanent and transcendent are somehow to be united. At that

crossroads, conceptions such as harmony, rootedness in history, connectedness with the future, all seem more pertinent than the ultimately conventional concept of "the natural."

Realizing the synthesis of immanence with transcendence in a conception of process that seeks to overcome the nature-culture dichotomy entails rejecting both simple preservationism or noninterventionism (the two are of course distinct) on the one hand, and manipulative exploitation of the world on the other. The result is consistent with the distinctly western tradition (albeit a distinctly minority tradition in the West) of regarding man as responsible for the perfection of an always incomplete natural order rather than either for its submissive acceptance or for its aggressive conquest.

Such a synthesis provides a fitting contrast both to the primitivist thesis that nature's claims are absolute—that man should do nothing to modify nature (however "nature" is to be defined apart from man) but should be content, at most, to serve as its steward—and to the despotic thesis that man's destiny is to dominate the world, using it however his purposes might dictate. And such a synthesis, finally, offers hope of confronting the paradox that the world beyond man can define his greatness rather than engulfing him in terror only if some dimension of that world remains forever beyond his grasp—that, once the world is seen as man's playground and ultimately his mirror, nothing remains outside himself against which to test his uniqueness or his strength. To give detailed structure and content to this half-way house of process—of *becoming* as the synthesis of accepting and subduing—is a massive task for politics as well as theory. Although it is a task whose precise requirements I am not prepared to describe, at least its beginnings can already be roughly outlined.

III. THE FIRST TURNS OF THE SPIRAL

Like Schiller's mechanics who dare not let the wheels run down while they repair "the living clockwork of the State,"⁵⁴ or Neurath's sailors who must rebuild their ship on the open sea without discerning its ideal design,⁵⁵ we are condemned to toil in the dimmest light as we feel our way toward the evolution of our conceptions and ideals of the natural order. But if, as we have concluded, the spiral that traces such evolution is to reject human domination over other modes of being, then at least its first turns seem within our grasp. At a minimum, we must begin to extricate our nature-regarding impulses from the conceptually oppressive sphere of human want satisfaction, by encouraging the elaboration of

perceived obligations to plant and animal life and to objects of beauty in terms that do not falsify such perceptions from the very beginning by insistent "reference to human interests."^e Thus environmental impact surveys and statements might make explicit reference to obligations felt toward nature. Resources might be devoted to improving our technical capacity to incorporate such felt obligations in policy analyses. And legislation might be enacted to permit the bringing of claims directly on behalf of natural objects without imposing the requirement that such claims be couched in terms of interference with human use.

A related proposal was recently advanced by Christopher Stone, who suggested the appointment of guardians or trustees for objects in the environment⁵⁶ as institutional embodiments of a perceived obligation to treat the world about us with respect, and as symbols of a recognition that persons are not the only entities in the world that can be thought to possess rights. Despite Kant's protest that "man . . . can have no duty to any being other than man,"⁵⁷ and despite insistence that, as a matter of "logic," only human beings can have "rights,"⁵⁸ the fact is that even our own legal system has long recognized entities other than individual human beings—churches, partnerships, corporations, unions, families, and occasionally even animals—as rightsholders for a wide variety of purposes.

Acceptance of the notion that some previously "rightless" entity enjoys legal protection is largely a matter of acculturation. Arguing for "rights" on behalf of nonhuman entities should be confused neither with proposing that their "wants" should be discerned and then included in the aggregating calculus of choice, nor with suggesting that certain nonhuman interests should have absolute priority over conflicting human claims. Recognizing rights in a previously rightless entity is entirely consistent with acknowledging circumstances in which such rights might be overridden (just as human rights may themselves come into conflict), but it is inconsistent with the unstructured perspective of simply maximizing a homogeneous entity called "total satisfaction."

It remains true that treating a class of entities as rightsholders is compatible with regarding their protected status as a mere juristic

^eJohn Passmore, "Removing the Rubbish," *Encounter*, April 1974, p. 19. Professor Passmore, it should be said, insists that any ethic elaborating man's relation to land and to the life it sustains *must* be justified by such reference to human interests. The dispute is merely semantic if "human interests" are defined so broadly as to encompass the "interest" in acting altruistically or otherwise fulfilling human obligations; it is anything but semantic if "human interests" are construed to include only the satisfaction of personal preferences.

convention. Thus, although American law has long accepted the independent juridical status of corporations, no one would suggest today that such entities are anything but legal constructs. No law prohibits the death or dismemberment of corporations on the basis of their intrinsic "right to life." No jurisprudence rationalizes the validity of corporate law in terms of "just" propitiation of the endogenous needs of corporate entities. It seems likely that most contemporary observers would view the independent legal status of environmental objects in essentially the same way that they view the concept of corporate existence. Affording legal rights to endangered species and threatened wilderness areas might thus be regarded as a convenient technique for concentrating congeries of otherwise diffuse esthetic and ecological concerns ultimately reducible to individual human interest—in other words, as a useful but quite transparent legal fiction.

Even if this were the most one could hope for, the concept of rights for natural objects would probably represent a valuable doctrinal innovation. Whatever unnecessary threat the "standing" requirement continues to pose to effective environmental action would be avoided. And procedural devices far less cumbersome than class actions would become available for challenging environmental abuses. But we might plausibly hope for more. At least so long as we remain within empathizing distance of the objects whose rights we seek to recognize at any given point in history, it seems reasonable to expect the acknowledgment of such rights to be regarded as more than fictitious. Thus, protecting cats and dogs from torture on the basis of their right to be free from pain and hence our obligation not to mistreat them seems less jarring conceptually today than does protecting a forest from clear-cutting on the theory that the threatened tress have an inherent "right to life."

It is not surprising that one of the few pieces of existing federal law aimed unambiguously at protecting nonhuman interests—the Federal Laboratory Animal Welfare Act—limits its protection to mammals, whose perceptions of pain and discomfort we presume to be similar to our own. In addition to supporting a general hypothesis that the claims of creatures close to man on the evolutionary scale are easier to assimilate into contemporary value systems than are the needs of our more distant relatives, the legislative history of the 1970 amendments to the Act also provides a graphic illustration of the process of anthropomorphic validation. The House committee report proclaims that the purpose of the legislation is to ensure that animals are "accorded the basic *creature comforts* of adequate housing, ample food and water, reasonable handling, *decent sanitation* . . . and

adequate veterinary care including the appropriate use of *pain*-killing drugs. . . .”⁵⁹

The statutory terms reveal an obvious transference of human values to the nonhuman rights holders: the words “comfort,” “decent sanitation,” and indeed “pain” refer to human experiences and perceptions. By incorporating such terms into legislation protecting animals, the draftsmen are equating the perceptions of animals with those of humans; the terminology subliminally reinforces our sympathy for the plight of mistreated animals by evoking images of human suffering. As a result, the propriety of legal protection on behalf of the animals themselves becomes more apparent. As the evolutionary distance between man and nonhuman rights holders increases, the difficulty of analogizing to human experiences mounts. Torturing a dog evokes a strong sympathetic response; dismembering a frog produces a less acute but still unambiguous image of pain; even pulling the wings off a fly may cause a sympathetic twinge; but who would flinch at exterminating a colony of protozoa?

When legal protection is sought for plant life, the obstacles to convincing analogy are greater still. Yet even here the prospects are not altogether hopeless. Humans share certain fundamental needs with plants. Humans and plants both require water, oxygen, and nutrition; both grow and reproduce; both die. Some research even suggests that plants exhibit electrical and chemical reactions functionally analogous to pain.⁶⁰ A set of basic reference points for analogizing plant requirements to human needs thus exists. And, once the bases for empathy are established, biologists and ecologists can obviously enrich our understanding of what “needs” exist for the other life forms with whom we have begun to feel new kinship.

What is crucial to recognize is that the human capacity for empathy and identification is not static; the very process of recognizing *rights* in those higher vertebrates with whom we can already empathize could well pave the way for still further extensions as we move upward along the spiral of moral evolution. It is not only the human liberation movements—involving first blacks, then women, and now children—that advance in waves of increased consciousness. The inner dynamic of every assault on domination is an ever broadening realization of reciprocity and identity. Viewed from a slightly different perspective, new possibilities for respect and new grounds for community elevate both master and slave simultaneously, reaffirming the truth that the oppressor is among the first to be liberated when he lifts the yoke, that freedom can be realized only in fidelity to obligation.

A passage in Faulkner's *Absalom, Absalom!* may hold the key: "Maybe happen is never once but like ripples maybe on water after the pebble sinks, the ripples moving on, spreading, the pool attached by a narrow umbilical water-cord to the next pool. . . ." ⁶¹ Yet there are some shores too remote for even these concentric circles to reach in the foreseeable future. When it is urged that legal protection be extended to nonliving entities like canyons and cathedrals—not for our sake alone but also for theirs, and not because of what they would "want" but because of our responsibility to them and thus to ourselves—it may be precisely such distant shores at which we are asked to gaze. Saint Francis of Assisi could embrace Brother Fire and Sister Water, but western societies in the last third of this century may be unable to entertain seriously the notion that a mountain or a seashore has intrinsic needs and can make independent moral claims upon our designs.

Still we can try. We can set aside resources and create public authorities for the specific purpose of preserving intact at least some major areas of real wilderness while we convert others into more Walt Disney Worlds and Coney Islands. The very process of treating some places with such respect may itself reveal and even create conceptual possibilities beyond our present capacities. If certain choices do not merely implement but in fact alter the value systems within which they are made, then choosing to accord nature a fraternal rather than an exploited role—even though the argument for so treating nature itself appeals ultimately to human interests, and even when the resulting institutions resolve in particular cases not to forego certain human opportunities "for nature's sake"—might well make us different persons from the manipulators and subjugators we are in danger of becoming.

CONCLUSION

I have described only a possible (I think a plausible) first turn along the spiral of process through which we might grope toward an evolving environmental ethic. I certainly do not claim that I have described an answer. Indeed, the first step has already exposed its own weakness in its obviously indeterminate character (it says very little about how to decide actual cases) and in its inability to deal adequately with the notion that nonliving nature exists for itself—its paradoxical (but seemingly unavoidable) reliance on selfishness to defend the independent value of altruism and on empathy to reveal the independent structure of obligation.

But it is at this juncture that the profound significance of devotion to process should become apparent, for the vision of process I have sought to sketch transcends the intermediate stances of consciousness achieved at discrete points along the spiral's path. Its insistence on the continuing reformulation and evolution of the principles distilled at each stage provides a way not only of bridging the gap between successive stages but also of energizing the journey through a commitment to overcome the inevitable inadequacies at each stage. Thus consciousness remains in a double stance: while vigorously living out the values implicit in our present stage of development, we remain aware of the fact that these values themselves pass through evolutionary stages whose unfolding we participate in and sanctify. All I have said, therefore, has been written rather more in the subjunctive than in the indicative.

Upon that cautionary note, it is appropriate to recall this essay's governing metaphor. The plastic trees of Los Angeles are tangible symbols of a view of nature that coincides with the currently myopic premises of environmental law and policy. The trees represent nature abstracted to pure categories of human interest: they provide shade, decoration, and the esthetic semblance of a natural environment. What's wrong with plastic trees? The question can be answered only tentatively (and there will no doubt be contexts in which the right answer is: "nothing's wrong"), but I have responded, in general, by expressing an ethical impulse toward nature which is irreducible to sophisticated self-interest or even to the question of what the trees "would wish" if they had wishes and could express them. It is an impulse we may well violate when we use "nature surrogates" to conceal the wounds we inflict on the natural order, thereby anesthetizing our aesthetic and ecological sensibilities.

In some circumstances, even the seemingly innocuous act of supplementing the inadequacies of nature with human artifacts—erecting plastic trees where the soil is too poor or shallow or the atmosphere too fouled to support real vegetation—may thus transgress the imperatives of an emerging environmental ethic. Much like black lawn boy statuary that once defaced too many suburban yards, plastic trees implicitly reduce the entities they portray to terms of serviceability, utility and adornment. And such caricatures in turn reinforce the belief that the depicted objects exist not for themselves but only to serve a universe of desires and needs.

What is required, I have argued, is a rejection of this philosophy, itself a legacy of an antiworldly, transcendent conception of the universe, but without a return to the immanent conception in which

the natural was worshipped and human consciousness excluded from the vital place I believe it must always occupy. If this essay's necessarily sketchy argument for a synthesis of the immanent with the transcendent has seemed to tilt toward immanence, it has done so largely in reaction to the almost obsessive devotion in our time to a secularized version of the transcendent, in which human will and instrumental reason have become the engine of a pilotless locomotive, hurtling through a terrain devoid of intrinsic value.

Shortly after World War II, Horkheimer asked us to imagine what a purely formal mode of reason in a valueless environment would ultimately mean:

We cannot maintain that the pleasure a man gets from a landscape . . . would last long if he were convinced *a priori* that the forms and colors he sees are just forms and colors, that all structures in which they play a role are purely subjective and have no relation whatsoever to any meaningful order or totality, that they simply and necessarily express nothing. . . . No walk through the landscape is necessary any longer; and thus the very concept of landscape as experienced by a pedestrian becomes meaningless and arbitrary. Landscape deteriorates altogether into landscaping.⁶²

What mind can resist despair at such a prospect? However paradoxical might be the appeal to individual human interest in an argument meant partly to criticize such appeals, who can fail to admit that the logic of self-interest leads finally not to human satisfaction but to the loss of humanity itself?

NOTES

1. David Brower, in *Time and the River Flowing*, by Francois Leydet, ed. by D. Brower (New York: Ballantine Books, 1968), p. 159 (writing of a cavern once called the Cathedral in the Desert, now submerged by Lake Powell).
2. Charles Baudelaire, "Rêve Parisien," in *Flowers of Evil* (New York: New Directions, 1955), p. 103.
3. See *Los Angeles Times*, Feb. 8, 1972, sec. 2, at 6, col. 2.
4. See *Los Angeles Times*, Feb. 22, 1972, sec. 2, at 1, col. 3.
5. Martin H. Krieger, "What's Wrong with Plastic Trees?" *Science* 179 (February 1973): 446, 451.
6. *Ibid.* at 451, 453.
7. Joseph Morgenstern, "What Hath Disney Wrought!" *Newsweek*, October 18, 1971, p. 38.

8. National Environmental Policy Act of 1969, secs. 102 (2) (A), 102 (2) (B), 42 U.S.C. Secs. 4332 (2) (A), 4332 (2) (B) (1970).
9. Cf. Laurence H. Tribe, "Trial by Mathematics: Precision and Ritual in the Legal Process," *Harvard Law Review*, vol. 84 (1971), pp. 1329, 1361-65, 1389-90.
10. See Bruce Ackerman, et al., *The Uncertain Search for Environmental Quality* (New York: The Free Press, 1974), pp. 101-46.
11. Conversation with author, in Santa Monica, Cal., Dec. 7, 1971.
12. See Ralph d'Arge, "Economic Policies, Environmental Problems and Land Use: A Discussion of Some Issues and Strategies in Research," July 25-August 5, 1972, p. 14 (background paper for NSF Conference on Research Needs in Planning Our Physical Environment, Boulder, Colo.).
13. See Peter C. Fishburn, "Lexicographic Orders, Utilities and Decision Rules: A Survey," August 1972 (unpublished).
14. See Laurence H. Tribe, "Policy Science: Analysis or Ideology?" *Philosophy and Public Affairs*, vol. 2 (1972), pp. 88-93. (hereinafter cited as "Policy Science"), in *Benefit-Cost and Policy Analysis 1972, An Aldine Annual on Forecasting, Decision-Making, and Evaluation*, ed. by W. Niskanen, A. Harberger, R. Haveman, R. Turvey & R. Zeckhauser (Chicago: Aldine Publishing Co., 1972), pp. 3-47.
15. *Ibid.* at 87 n. 54, 88-89 and n. 56; *idem.*, "Technology Assessment and the Fourth Discontinuity: The Limits of Instrumental Rationality," *Southern California Law Review* 46 (1973): 629-630 & n. 44 (hereinafter cited as "Technology Assessment").
16. See, e.g., Alice M. Rivlin, *Systematic Thinking for Social Action* (Washington, D.C.: Brookings Institution, 1971), p. 7.
17. See, e.g., Robert Dorfman and Henry D. Jacoby, "A Model of Public Decisions Illustrated by a Water Pollution Policy Problem," in *Public Expenditures and Policy Analysis*, ed. by R. Haveman & J. Margolis (Chicago: Markham Publishing Company, 1970).
18. Aaron Wildavsky, "The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting," *Public Administration Review* 26 (1966): 292, 308.
19. See Tribe, "Policy Science," pp. 99-100; *idem.*, "Technology Assessment," pp. 634-35, 642-50.
20. See National Environmental Policy Act of 1969 (NEPA), secs. 101 (b); 42 U.S.C. secs. 4331 (b) (1970).
21. See Tribe, "Technology Assessment," pp. 652-54. As I sought to show in "Technology Assessment," such reasoned commitments can be shaped only in communities of persons whose shared experiences and understandings facilitate a common groping toward communal ends. See also Robert Nisbet, *The Quest for Community* (London: Oxford University Press, 1953), pp. 229-232, 235-237, 241-247, 264-271, 276-279. This is so in part for contingent reasons—because it seems unlikely in this period of history that the search for ends can generate fruitful and convincing conclusions when pursued by isolated individuals—and in part as a matter of definition, because the wholeness that in fact seems

threatened by freedom in the choice of ends is wholeness among persons (community) as well as wholeness over time (continuity). See Tribe, "Technology Assessment," p. 651 n. 118.

22. Max Horkheimer, *Eclipse of Reason* (New York: The Seabury Press, 1947), p. 5.

23. *Ibid.* at 18.

24. Immanuel Kant, *The Metaphysical Principles of Virtue*, trans. by J. Ellington (New York: Bobbs-Merrill, 1964), secs. 16–17, pp. 105–106 (hereinafter cited as *Principles of Virtue*).

25. See Jeremy Bentham, *An Introduction to the Principles of Morals and Legislation* (Garden City, N.Y.: Doubleday, 1961), Ch. XVII, sec. 1, para. 4, p. 273 n. 330 (hereinafter cited as *Morals and Legislation*).

26. John Rawls, *A Theory of Justice* (Cambridge, Mass: The Belknap Press of Harvard University, 1971), p. 512.

27. *Ibid.*

28. For insight into these twin risks, I am indebted to Elizabeth Anne Socolow (personal letter, dated August 15, 1974).

29. See John Stuart Mill, *Utilitarianism* (Garden City, N.Y.: Doubleday Dolphin ed., 1961), pp. 433–434.

30. *Ibid.* at p. 434.

31. See Wildavsky, "Political Economy," pp. 294, 298.

32. See, e.g., Robert Bellah, "Transcendence in Contemporary Piety," in *Beyond Belief: Essays on Religion in a Post-Traditional World* (New York: Harper and Row, 1970), pp. 196–208.

33. See Lynn White, "The Historical Roots of Our Ecological Crisis," *Science* 155 (March 1967): 1203–1205, in *Machina Ex Deo: Essays in the Dynamism of Western Culture* (Cambridge, Mass.: MIT Press, 1968).

34. Some aspects of this thesis parallel the thought and writing of the Frankfurt School. See, generally, Martin Jay, *The Dialectical Imagination: A History of the Frankfurt School and the Institute of Social Research 1923–1950* (Boston: Little, Brown, 1973).

35. See, e.g., Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, trans. by T. Parsons (New York: Scribner's, 1958), pp. 26–7, 75–8, 155–74.

36. See William Leiss, *The Domination of Nature* (New York: G. Braziller, 1972), pp. 45–71.

37. See Roberto Mangabeira Unger, *Knowledge and Politics* (New York: The Free Press, 1975).

38. David Hume, *A Treatise of Human Nature* (Oxford: The Clarendon Press, 1958), bk. II, pt. 3, sec. iii.

39. Jean Paul Sartre, *Existentialism and Humanism*, trans. by P. Mairet (London: Methuen, 1948).

40. Martin Heidegger, *Uber Den Humanismus* (Frankfurt: V. Klosterman, 1949).

41. Thomas Nagel, "Rawls on Justice," *Philosophy Review*, vol. 82 (1973) pp. 220, 228.

42. John Rawls, *A Theory of Justice*, p. 28.

43. *Ibid.*, pp. 62, 137, 142–144.
44. *Ibid.*, p. 512.
45. Bentham, *Morals and Legislation*, ch. XVII, sec. 1, para. 4, p. 273 in 330.
46. Mark Sagoff, "On Preserving the Natural Environment," *Yale Law Journal* 84 (1974): 205, 222. See reply by Laurence Tribe, "From Environmental Foundations to Constitutional Structures: Learning from Nature's Future," *Yale Law Journal* 84 (1975): 545.
47. See Horkheimer, *Eclipse of Reason*, Ch. 1.
48. Christopher D. Stone, "Should Trees Have Standing?—Toward Legal Rights for Natural Objects," *Southern California Law Review* 45 (1972): 490 (hereinafter cited as "Should Trees Have Standing?").
49. Edward Shils, "The Sanctity of Life," *Encounter*, January 1967, pp. 39, 41, 42.
50. See, e.g., Howard Earl Gardner, *The Quest for Mind: Piaget, Lévi-Strauss, and the Structural Movement* (New York, Knopf, 1972).
51. For an argument that "the belief that nature is sacred can tell against attempts to preserve it," see John Passmore, *Man's Responsibility for Nature: Ecological Problems and Western Traditions* (New York: Scribner's, 1974), pp. 173–195.
52. Ludwig Wittgenstein, *On Certainty*, ed. by G.E.M. Anscombe and G. H. von Wright (New York: Harper and Row, 1969), Sec. 110.
53. This attribution of intrinsic significance to process cannot be achieved simply by injecting procedural variables into instrumental analyses. Apart from the complex circularity inherent in the fact that any analysis must become part of the process it has helped to shape, see Tribe, "Policy Science," p. 83, *idem.*; "Technology Assessment," p. 633 n. 54, any such strategy wrongly assumes that change can be achieved by thought alone and simultaneously forgets that process must remain in part the end and not simply the means.
54. Friedrich Schiller, *On the Aesthetic Education of Man*, trans. by R. Snell (New York: Frederick Ungar, 1965), p. 29.
55. Neurath, "Protokollsätze," *Erkenntnis*, vol. 3 (1932), pp. 204, 206.
56. See Stone, "Should Trees Have Standing?"
57. Kant, *Principles of Virtue*, sec. 16, p. 105.
58. Passmore, "Removing the Rubbish," p. 19.
59. H.R. Rep. No. 1651, 91st Cong., 2d sess. 2(1970) (emphasis added). For the 1970 amendments themselves, see Act of Dec. 24, 1970, pub. L. No. 91-579, 84 Stat. 1560.
60. See, e.g., Cleve Backster, "Evidence of a Primary Perception in Plant Life," *International Journal of Parapsychology*, vol. 10 (1968), p. 329.
61. William Faulkner, *Absalom, Absalom!* (New York: Random House, Vintage ed., 1972), p. 261.
62. Horkheimer, *Eclipse of Reason*, pp. 37–38.

