

Values Gone Wild

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Wilderness valued as mere resource for human-interest satisfaction is challenged in favor of wilderness as a productive source, in which humans have roots, but which also yields wild neighbors and aliens with intrinsic value. Wild value is storied achievement in an evolutionary ecosystem, with instrumental and intrinsic, organismic and systemic values intermeshed. Survival value is reconsidered in this light. Changing cultural appreciations of values in wilderness can transform and relativize our judgments about appropriate conduct there. A final valued element in wilderness is its idiographic historical particularity, and most surprising is the emergence of a novel morality when humans learn to let values go wild.

For the trip you are about to take I offer myself as a wilderness guide. Nowadays it is easier to get lost conceptually in wildlands than physically. A century ago the challenge was to know where you were geographically in a blank spot on the map, but today we are bewildered philosophically in what has long been mapped as a moral blank space. Despite our scientific and cultural taming of wilderness we still wander, confused over how to value it. Values run off our maps. In journeys there, 'value' changes its meaning, as does the word 'wild'. Travelers need pathfinding through strange places.

I. Valuing Our Sources and Resources

Before I can lead you into the deep wilderness of values, we will have to make our way past a misguided route. It may seem to keep us oriented to value wildlands as *resources*. With soil, timber, or game the meaning of 'resource' is clear enough. Humans tap into spontaneous nature, dam water, smelt ores, domesticate, manage, and harvest, redirecting natural courses to become resources. No longer wild, they come under our control. But when we try to speak of wilderness as a 'resource' the term soon goes kerflooey. Notice the oddity of this resource relationship, which will prove a key for unlocking anthropocentric presumptions about value.

A park ranger may interpret the Tetons as a scientific, recreational, or aesthetic resource, but by the time she calls it a philosophical or religious resource, the term is eating up everything, as if humans have no other operating modes *vis-à-vis* wilderness. Have her notice that resources come

in two kinds: the ordinary kind which are rearranged into artifacts, and the extraordinary, wild type which we impact as little as possible. The botanist in Cascade Canyon or the mountaineer atop the Grand Teton find both places important precisely as not consumed. Contrary to typical resource use, we visit wildness on its own terms and do not reform it to ours. The conceptually wild turn is when humans, ordinarily valuing resources of the kind they can make over, here value what they will not disturb lest they devalue it. Under the standard doctrine, we wanted potatoes but the fields grew worthless brush. We wanted logs dovetailed around us as a home, but the world gave only standing trees. We labored to make value. Under the revised claim, pure wilderness can be a good thing. These places change us, not we them.

Well, some will reply, nature offers some resources that take no redoing or consuming, only looking and enjoying. Most are commodities to be drawn upon, but others are amenities left as is. Perhaps this revision in the logic of 'resource' will solve our problem. Wilderness is important only as a resource in our society.

Wilderness is for people. This is a principle that bears restating. The preservation goals established for such areas are designed to provide values and benefits to society. . . . Wilderness is not set aside for the sake of its flora or fauna, but for people.¹

We must recognize various kinds of instrumental value. The commonest kind modifies natural courses, but an infrequent sort needs only to take natural things as they are. We capture wilderness instrumentally for human experience, though we never lay a hand on it and tread lightly afoot. So why is it not a resource?

Still, two deeper worries begin to loom. One is that the resource orientation is only a half truth and afterwards *logically* misguided. The other is that, taken for the whole truth, it is *ethically* misguided. Unfortunately, these troubles intertwine, because everything is defined in relation to us.

We can continue by noticing how the claim, 'Everything is a resource, really', parallels a more familiar claim, 'Everyone is selfish, really'. Here philosophers have better mapped how logical difficulties are ingrown with ethical ones. The egoist begins by citing how persons regularly pursue self-interest and then turns to apparent altruism. Mother Teresa has labored among the poor in Calcutta and Charles Lindbergh in later years turned to the defense of wildlife. But both received self-fulfillment from their efforts. The Marines who died on Iwo Jima had their families at stake, which it was in their enlightened self-interest to protect. The claim expands to digest all counter-evidence, redefining 'selfish' to embrace all conduct, reinterpreting motives or imagining hidden ones until it becomes a pre-

sumption brought to experience. Afterwards, there is no point in examining further cases. Willy-nilly, everything is twisted to fit the selfishness gestalt.

'Everything is a resource, really.' The argument cites how humans redirect nature to their benefit, and then turns to apparent nonresources. Nevada authorities labor to save the Devils Hole pupfish, which requires reduced water drawdown for ranching. Southwest developers agree not to build the Marble Canyon Dam, and members of the Wilderness Society contribute money to save wildernesses, some nearby which they expect to visit, and some Alaskan which they do not. But some humans are fascinated by the pupfish, run rafts down the Grand Canyon, visit the Indian Peaks, enjoy knowing the Alaskan wilds are there, and hope their children may visit them. SUPPORT WATCHABLE WILDLIFE! That slogan from the Oregon Department of Fish and Wildlife is a commendable step away from fish you catch and game you shoot, both to consume. But *watchable* wildlife is a resource for looking. In every case humans enter into some self-fulfilling relationship. What we want is high quality wilderness experience which improves human life.

Use of the word 'resource' gradually changes until nothing can be comprehended outside such a relationship, no matter if the paramount emotion becomes the appreciating of these realms for what they are in themselves. One ponders the pupfish, the Supai and Redwall strata in Marble Gorge, spends a lonesome weekend amidst glacier-cut scenery in the Indian Peaks, wondering if a grandchild might ever share such feelings on Alaskan slopes, steadily stretched out of local concerns to the age-long flows of life over time. But these are resource relationships! Logically, the claim has become trivial, redefining as resource whatever one 'takes in', whether food or scenery. Ethically, valuing has 'gone wild' in the haywire sense because it has become so nonnegotiable anthropocentric that we cannot let values go wild in any naturalistic sense.

What if a daughter should say to her mother, 'You know you are a resource, really', or a communicant, approaching the altar, were to think how the priest, in transforming bread and wine, was making better resources out of them? Before parents and the sacred, one is not so much looking to *resources* as to *sources*, seeking relationships in an elemental stream of being with transcending integrities. Our place in the natural world necessitates resource relationships, but there comes a point when we want to know how we belong in this world, not how it belongs to us. We want to get ourselves defined in relation to nature, not just to define nature in relation to us.

We Americans preserve our historical parks at Lexington or Appomattox to remember our origins, but we would be shortsighted not to set aside wilderness as the profoundest historical museum of all, a relic of how the

world was in 99.99 percent of past time, the crucible in which we were forged. A historical park is a place to recall our sources, our national story; but we need 'genesis parks' to recall our natural history. Wilderness is the first legacy, the grand parent, and offers dramatic contacts with ultimacies not found in town.

Why should it seem so logical to call even our wild natural sources a resource? To answer we must look for a still deeper presumption brought to experience: the conviction that value emerges with the satisfaction of human interest. Only positive human mental states have noninstrumental value. Take away our selection and feeling, and intrinsic value vanishes. If so, nature as the source of valued experiences must be only instrumental, and therefore a resource even if of an anomalous kind. But what if this too is logically misguided? In that case, to force everything into the all-purpose resource formula is only for those who have no better logical model for appreciating wild places. It sounds humane, yet it keeps alive a humanist illusion. But to overthrow the nature-as-mere-resource paradigm we will need a more comprehensive, nonanthropocentric theory of value.

The key idea we are following is of nature as a *source of values*, including our own. Nature is a generative process to which we want to relate ourselves and by this to find relationships to other creatures. Value includes far more than a simplistic human-interest satisfaction. Value is a multifaceted idea with structures which root in natural sources. Wilderness is valuationally complex, as it is scientifically complex. Tracking these components will require triangulation from three points, the notions of *roots*, *neighbors*, and *aliens*. After that, we will see whether there is any unifying systemic structure. Notice how value is indeed beginning to go wild. Extending beyond the reach of human domestication and experience, it begins to have a life of its own in spontaneous nature.

II. Valuing Roots, Neighbors, and Aliens

We can represent the logical paths ahead, both those of discovery and justification, as in Figure 1. We began with values all in the human orbit, and all outside valueless except as resources brought in instrumentally. But now values leave the human circle; they go wild. Our paths of discovery (the line arrows) follow value back into its roots, but these same evolutionary sources have generated wild neighbors and aliens in the planetary ecosystem we coinhabit. Paths stretch around toward these regions, zones we can also visit by crossing diffuse boundaries into territories shared with these neighbors and occupied by aliens. The theory and its implications

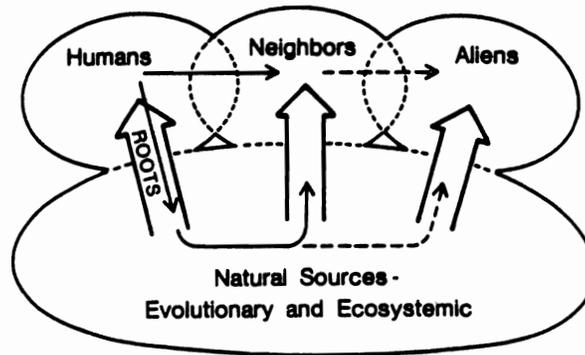


Figure 1

are suggested by an originating source area with three broad lines of production (the wide arrows).

On these paths leading progressively toward wilder territories, need we take any precautions about crossing illegitimately a forbidden boundary? For (some will warn) one cannot move from bare facts in nature to what is of value there, nor to what conduct persons ought to undertake, without committing the naturalistic fallacy. At this point I am going to say only that the signs posted which forbid trespassing this boundary are themselves cultural artifacts (deriving as they do from certain theories about ethics, about the moral neutrality of nature, value as human-interest satisfaction, etc.), and this guide recommends that we ignore (as wilderness travelers often do) the cultural prohibitions about where one can and cannot legitimately go. Let us undergo the wilderness experience firsthand, and only then think back whether we have made any logical mistakes or gone into territory we ought not to have visited in quest of value. I have proposed to lead you into wild experiences, and only in retrospect, not in prospect, can we intelligently argue about what has happened in passing from *is* to *ought*.

(1) Wildness is a place of *roots* in historical and ongoing senses. We stay oriented by thinking of a visit to the birthplace. Here historical value blends with that order of value we owe to parents. Value leaves culture to return to natal mysteries, to primitive archetypes. Wilderness is the incubating matrix which served as the production site of the human race. Stopping at a spring, I meet a salamander and am struck by its tiny finger-like feet. As I dip water, I notice in my hand the same digital pattern, in modified but unmistakably kindred form. I catch my reflection to compare facial patterns. How far back in geologic time must go that bilateral symmetry

of eyes, nose, mouth! Even now beneath my cerebrum lies a remnant reptilian brain, essential to my cognitive and emotional humanity.² So much of what we most radically value arose anciently in the spontaneous wild, but is presumed in the routine of culture.

Wildness does not merely lie behind, it remains the generating matrix. Laden with my pack, moving briskly along, I turn my thoughts to respiration. Present in every cell containing a respiratory chain – from microbes to humans – is an electron carrier called the cytochrome-c molecule that evolved over 1.5 billion years ago.³ Given that I plainly value respiration for myself, and that evolution has conserved this molecule since before plants and animals diverged, it seems some sort of wild type in value. If I become winded, my body is facing another problem. The citric acid cycle, which follows glycolysis in the processing of food molecules and is a more recently evolved skill, is not generating enough ATP for the demands of my skeletal muscle, and so my metabolism switches to make lactate rather than sending pyruvate into the citric acid cycle. The lactate leaks out of the muscle cells and is carried to the liver, which can process it.⁴ Short of oxygen and pushed for energy, my body reverts to a use of glycolysis first learned before there was atmospheric oxygen and since kept and modified for emergency situations.

Turning to the extrasomatic ecosystem, all flesh is grass, including my own, using 'grass' to refer to the photosynthetic base of the biomass. All flesh is wind, remembering its nitrogen and oxygen components; there would be no protein without the nitrogen fixers, no respiration without the oxygen releasers. Resting at an overlook, I may take in the greenness, autotrophs feeding the heterotrophs, which rot to nourish the autotrophs, and realize that when higher forms evolved, the lower were not all left behind. Many remain as essentials in an ecological web. They can do without my cultures, but I cannot do without their kind of world, which forms my pyramidal community. In wildness, one learns to value the compound units of integrated biological achievement.

Such sophisticated insights, reached in biochemistry laboratories and ecological field studies, reveal the extent to which wild values surround and lie within us. But although we may learn such things in an emotionally weak sense in our cultural educations, we are prone to undervalue them. The scientific insights (cytochrome-c, ATP, the liver shift, the photosynthetic base) help us to appreciate everyday experiences (energy needs, respiration), but the uneveryday experiences in wildness help us to appreciate these phenomena as larger than ourselves, natural givens which, as we now begin to see, we share with other forms of life. The trip into wildness gives visceral, intimate access to bodily experience in surrounding nature, unmediated by the protective cushions of culture. One travels *in medias*

res vividly and exuberantly, like a glider pilot hung buoyantly in the air, the person lofted up over a wild world. In that sense we do not keep wildness in conservative resource use. Rather we want a radical place to be.

In the wilderness I am reminded of what culture lulls me into forgetting, that I have natural roots. I value that learning experience. But more, I value the wilderness out of which I have historically come and continue to come ecologically. Recalling our genetic roots is a valuable experience, which wilderness forces. But the wilderness here is not serving merely as resource instrumental to our experience. It is being discovered as the crucial Source of what we now intrinsically value. With this recognition, we become unwilling to stop at making it instrumental merely; wildness itself is of *intrinsic* value as the generating source. It carries value when it produces experience now in its visitors, but it has carried values historically and ecologically to these visitors. Consciously enjoying these values is an advanced form of value, taking place in humans at levels unprecedented in the unvisited wilderness. But we are also recapturing and recapitulating value in flow before we arrived and which we have inherited.

Wildness is a living museum of our roots. The experiences humans have there are to be valued because we learn where we came from and who we are. But it is crude to say this only makes a resource out of wilderness, misguided by the belief that value can appear only in human experience. We are here realizing that nature is an originating *source* of value first, and only later and secondarily a *resource*. We are *experiencing roots*, and this experiencing is to be valued, but what the experiencing is *of* – these *wild generative roots* at work before humans arrived – has delivered to us much of value, processes the benefits of which are at work within us whether we are aware of them or not.

This sort of experience moves value outside of ourselves. It forces a redistribution and redefinition of value. Value is not just a human product. We realize this by learning how we humans, including much that we value in ourselves, are natural products, and are thereby alerted to look for other natural productions of value. Such nonhuman values, as we track them here, are first discovered in these roots, but the path does not end there. It leads secondly to wild neighbors and on beyond to paths more foreign and difficultly explored.

(2) Wildness is place of *neighbors* in a sense gone wild. This requires a sympathetic turning to value what does not stand directly in our lineage or underpinning, but is like enough ourselves that we are drawn by spillover to shared phenomena manifest in others. The principle of universalizability demands that I recognize corresponding values in fellow persons. But need this apply only with reciprocating moral agents? Growth in ethical sensitivity

has often required enlarging the circle of neighbors, and are there no neighbors in the wild? They are not moral agents; that is part of what their wildness means. But have they no values to consider? This great natural source (Fig. 1) which has generated us all continues to flow into others, not into humans alone. There is a great similarity between humans and other organisms, whether at experiential, psychological, or biological levels. If I value these qualities in myself, by parity of reasoning I should likewise value them when manifested in other organisms.

Animals take an interest in affairs which affect them. They hunt and flee, grow tired, thirsty, and hot. They seek shelter, play, wag tails, scratch, suffer injury, and lick their wounds. The salamander reacts first by freezing, then fleeing. In judging such actions, we must guard against the pathetic fallacy. A moose does not suffer winter cold as we do; perhaps the warbler is not glad when it sings. But we must not commit the humanistic fallacy of supposing no naturalistic analogues of what humans plainly value. We have every logical and psychological reason to posit degrees of kinship.

Endorphins – natural analogues of morphine – are produced by human brains upon injury and stress. These compounds buffer pain, are important for emotional stability, and are implicated in certain ‘good feelings’, like those involved in the euphoria of the wilderness experience under stress. They are found widely in the nervous systems of vertebrates – mammals, reptiles, amphibians, birds, fish – and in some invertebrates, for example, earthworms. The endorphin level in a frightened mouse rises.⁵ Additionally, mice have the neural receptors for Librium and Valium. The trip into wildness, we were saying, reawakens bodily experience. There is the climb, the heat, the cold; we need water, food, shelter. We think more about endurance and fatigue, sureness and fear, comfort and pain. Such experiences bring appreciation of our own natural endowments, but if they serve that end alone, we are too humanistic. Enjoying the tonic of wildness, feeling more alive without quite knowing why, endorphin levels rising, we ought to make value judgments in kinship with all embodied being, just because we are stripped to gutsy, animal elements.

This sense of kinship need not be restricted to shared subjectivity, for it can be somatic. Consider the development of muscle and fat, both outside the central nervous system. The university-educated mind tends to value brainpower and to devalue muscle and fat, but this opinion will be challenged in the wild. Brainpower follows and coevolves with muscle. The mind is useless unless it can act, while the power to move can be of value even when governed by mere instinct. Seen at the molecular level, the coordinated muscle cells with their interdigitating fibers, A-bands and I-bands, the myosin which splits ATP to drive push-pull contractions, are hardly less an evolutionary achievement than is the nervous system. Contact

with animal strength and grace, flight and fury, makes it difficult to maintain that the relevant senses of kinship here are only subjective.

Muscle cannot move without energy, and energy can be in short supply in winter. The fat cell evolves to store energy in compact form, and thus to power muscle months after energy intake. As night falls I begin to shiver, using muscle to generate heat. But some animals do not shiver. The brown fat cell, modified from the ordinary fat cell, is present in hibernators, seals, ground squirrels, bats, in the young of rabbits, cats, sheep, and newborn humans who cannot yet shiver. Brown adipose tissue appears late in evolution and forms a heating jacket which provides the capacity to survive the cold when in thermogenic response fats burn without forming ATP, thereby generating heat more efficiently.⁶ If I judge that muscle and fat have no value as unfelt spontaneous processes, I begin to wonder whether I am myopically biased toward sentience. Perhaps value judgments need to be made not merely on the basis of *sympathy* for sentient kin, but on the basis of what biologists call *sympatry*, shared organic origins.

Some will find it incoherent and nonsensical, wild in a logically wayward sense, to speak of objective value in embodied being, for (say they) there is no value without awareness. Nonneural animals may have sensory receptors, but these are mere stimulus response mechanisms. But why cannot values be located outside the nervous system? In fact, at the metabolic level we gain the fullest sense of shared biological powers. The marsh hawk and the ground squirrel are enemies because they are somatically kindred; it is the protein muscle and the fat in the squirrel which the hawk can use. One could label all this so much resource use, and then stipulate that values necessitate sentient awareness. Objective organic processes form roots, precursors of value, but valueless in themselves, becoming of value only when experience is superadded. But the more one studies organic bodies, the less evidently this is the most plausible route for mapping value. It starts with a psychological or hedonic result of the biological processes, values this experiential effect, and devalues the productive causes except in terms of a late conclusion, in which, subjectively, we happen to stand. It takes a derived thing as the only thing that really counts.

In one sense, the choice between broader, objective and more restricted, subjective accounts of value does not matter. Even if value is defined as interest satisfaction, it has here become nonhuman. Intrinsic value lies in worthwhile experiences, which wild animals sometimes have, although somatically we can speak only instrumentally of the power to produce such experiences. But specify that muscle and fat, food and hemoglobin have only instrumental value if you wish, they are still out there in the wildlands apart from human awareness, instrumental to experienced intrinsic values which take place irrespective of human visitors, although humans do not

enjoy any realization of this except as they visit. But in another sense, somatic achievements such as autotrophic, muscular, or energetic self-reliance introduce us to a more comprehensive notion of value. Value arises with organic problem-solving, perceived or not, a notion we must yet refine. An achievement of this sort has value of itself, being worthwhile as a significant adventure of life, although it will inevitably also be contributory to some further achievement. But we will be better prepared for this account after making our way through some yet wilder places.

(3) Wildness is a place where we encounter *aliens*. The previous triangulation points (roots and neighbors) unite us with wildness, but now we turn to loving differences, even to respecting otherness we cannot love. On the first and second nights backpacking, there is a restored sense of belonging, but by the third night the country becomes foreign. Man is not the measure of things. J. B. S. Haldane was asked by some theologians what he had learned about God from biology. He replied that God has 'an inordinate fondness for beetles'.⁷ Perhaps three-fourths of the known animals are insects, by some criteria the most successful form of life, and a disproportionate number are *Coleoptera*. God went wild making beetles. Evolution went wild in speciation. Some will stall here, but wild creatures can stretch us out of ourselves into the depth and breadth of being. We seek values which cannot be shared, altruistic encounters of the strangest kind.

Some may think it logically or psychologically impossible to value what we cannot share, but this underestimates the human genius for appreciation. Coyotes run in packs, parting and reassembling over hunting territories, with each pack having a home range. They maintain orientation and identify in-pack members and out-pack intruders with a system of scent posts, as well as with their howls. To a coyote a whiff of urine or scat contains much information about where he is and who passed that way, about mates and rivals, what to beware of and what is a waste of time. This is not a skill which I share or desire, but nevertheless one I admire. I can get a whiff of what coyote savvy must be like, since I distinguish some smells, and by inference and observation I go on to recognize and value ranges of experience I cannot fathom. All the coyote's senses are acute, and the 'complexity of its total communication system seems rivaled by only a few other mammals'.⁸ Human experience would be the poorer for ignoring or scorning what exceeds *our* powers of sentience.

Bacteria in swamps are not disturbed by gravity, being too small to be much under its influence, but they are buffeted about by Brownian motion, rather like dust particles in air. Some bacteria orient themselves by the capture of small bits of magnetite, which they organize end on end into a built-in compass, 500 angstroms long, used apparently not to tell north

from south but up from down.⁹ I too use a compass, though I do not suppose that it is like anything at all to be a lost bacterium, or that the bacteria know what they are doing. Yet the bacterium values the magnetite, the coyote the orienting scent post, as surely as I value the compass. The wilderness is full of cleverness that we do not understand, of signals that we do not hear, of values that go on over our heads. We abandon our prejudices about how things are, start from scratch, and learn new scales of what ought to be.

Almost like a coyote, a jumping spider will sight its quarry at a distance, run toward it, then crouch and creep imperceptibly forward until close enough to leap upon its victim. Is there 'anybody home' in this monster with eight eyes of differing focal lengths supplying wide angle and telescopic vision over color ranges perhaps including the ultraviolet? Even if we attach no subjectivity to spiderly being, is there no value in such a superbly efficient hunting unit? Its multiple eyes and legs are coordinated for alternative hunting strategies; it chooses routes to its prey, deciding on haste, stealth, and pounce, even anticipating where a fly will alight and starting its jump before the quarry has landed.¹⁰ A philosopher, *loving wisdom*, ought to be able to love the wisdom here, for the jumping spider is certainly good of its kind, but why not a good kind in its niche?

Our duty before wildness is ambiguous. In the beginning we respect the coyote, the spider, even the bacterium by grading how much they are kin, possessing in smaller amounts what we have a lot more of – biochemistry, mobility, complexity, information, skill, sentience, freedom, language, consciousness. But afterwards we find this demeaning, leading to pity because they took a form inferior to our own. We insult them by calling them static lines or dead ends in the evolutionary process. What we must rather learn is to respect their own integrity, nonhuman manifestations of what Aristotle would call *arete*, excellences in kind. Wild creatures are not nature at a suboptimal level. They are humble creatures, but they can also humble humans whose values have grown too proudly provincial.

Humans are nature's richest achievement but not nature's only achievement, and in unresolved tension with our lofty rank we have to judge that diversity in being is richer than would be a world with only humans. Even if by some wizardry one could, one ought not to kiss toads into men. Nature has done that over evolutionary time, but has also taken other twists in value. These creatures improve the world just by being there, and thus alien nature is a form of wealth. We can be exalted by those of low degree; we can exalt those of low degree.

Whatever is wary, as sentient or instinctive wildness is, has a value set of its own. So the salamander first froze and then fled at the spring. The wildness by which it escapes is objective evidence of value alien to my

own. But owning a value set is not merely a feature of the rapidly mobile. Every genetic set proclaims a life way, and thus makes an assertive claim over its surroundings. Every genetic set is a propositional set, a *normative* set, proposing what *ought* to be, beyond what *is*, on the basis of its encoded information. So it grows, reproduces, repairs its wounds, and resists death. Wildness, activity outside the scope of human concern, is not a sign of something valueless, but of foreign freedom, of spontaneous autonomy and self-maintenance.

These things are not merely to be valued *for me and my kind* (as resources), not even as goods *of my kind* (sharing sentience or fat cells), but as goods *of their kind*, as *good kinds* without consideration of their kinship. At our departure value was restricted to human affairs, and later shared with neighboring organisms. With still deeper penetration into wildness, value becomes alien. Yet the human genius is such that we can nonetheless manage to cross these thresholds (through science, imagination, wilderness adventure, ethical sensitivity) and glimpse these wildest values. Value attaches to experience but also to shared somatic skills. Value attaches even to the cleverness of alien forms. Value is sometimes anthropomorphic, but can be morphic in any formed integrity. *Value is storied achievement*. With this definition we reach a fundamental motif, which could be widely woven through culture and might be deployed even into inorganic realms, though we are tracing it here only organically. Even the inanimate planetary system is sometimes impelled, energized toward *created form*, storied developments, works of genius, and, in due course, toward the evolution of the genera and of sentient genius. Interest satisfaction is only a lately formed subset of this richer principle. Continuing our search, we must set individuals in their ecosystems and evaluate their evolutionary sources. Once again, the terrain we push through is wild and alien to the cultured mind.

III. Survival Value Revisited – Organic and Systemic Achievements

A formidable emotion before nature is a kind of horror at the anarchy and relentless struggle in a world which opposes either by its indifference or by its hostility. Once as a college youth I killed an opossum that seemed sluggish and then did an autopsy. He was infested with a hundred worms! Grisly and pitiful, he seemed a sign of the whole wilderness, hardly a place of roots, hardly neighborly, but too alien to value. Each is ringed about with competitors and limits, forced to do or die. Physical nature, from which are wrested the materials of life, is brute fact and brutally there,

caring naught and always threatening. Organic nature is savage; life preys on life. Perhaps we can reconcile ourselves to alien value in individuals. The opossum in its marsupial being is a good kind, even the worms defend their genetic sets and manifest biochemical skills. But the systemic source which they of necessity inhabit seems ugly, evil, wild. They do not live in a good place.

The wilderness contains only the thousandth part of creatures which sought to be, but rather became seeds eaten, young fallen to prey or disease. The Darwinian revolution has revealed that the governing principle is survival in a world thrown forward in chaotic contest, with much randomness and waste besides. The wilderness teems with its kinds but is a vast graveyard with a hundred species laid waste for one or two that survive. T. H. Huxley reacted that the values society most cherishes depend 'not on imitating the cosmic process, still less in running away from it, but in combating it'.¹¹ If so, can there be value in the wild holocaust, any reason for society to preserve or admire it?

Perhaps we will cry that there is only a survival value whose operation hurts too much for us to value it more. Everything is making a resource of something else, so far as it can, except when it is resisting being made a resource of. The jumping spider eats the fly, the worms the opossum, the coyote the ground squirrel, which eats the grass and its seeds, which grow in the rotting humus. The salamander is making a resource of the mosquito; the mosquito of me. Once again, everything is a resource, really. Only now, alas, the felicitous goodness in all this resourcing has gone bitter. Wildness is a gigantic food pyramid, and this sets value in a grim, deathbound jungle. All is a slaughterhouse, with life a miasma rising over the stench. Nothing of the compassion or morality which we value in culture is found there. Nothing is done for the benefit of another, much less for my human benefit, and all this is so remote from what society ideally should value. Nothing recognizes anything else's rights; each individual defends itself as an end in itself, and even in reproduction merely defends its own genes. Blind and ever urgent exploitation is nature's driving theme. Values seem utterly wild. Can we recover a positive orientation in such a negative picture?

The diagram we need now (Fig. 2) modifies our earlier sketch. Small circles (○) show intrinsic values, small arrows (↑) instrumental values, both as individual achievements. The three wide arrows represent what we call systemic achievement.

(1) The cutthroat portrait does not mean there are no valuers in the wild; it portrays too many claimants contesting scarce worth. Life is never self-contained but incessantly moves through its environment, ingesting and eliminating it. **Rocks attach no value to the environment, but coyotes**

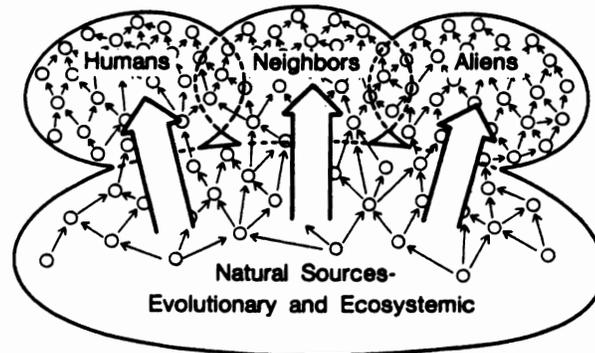


Figure 2

must eat. Where anything is being made a resource of, just this claiming of the environment as nutrient source and sink reveals valuational systems in interaction. Perhaps we can return to the resource notion, which at the start we had to get past, now finding it a key to the larger dynamics of the system.

The wilderness can seem a great scene of disorder, but it is also a great scene of the pumping out of disorder. Indeed, all this resourcefulness has to be so understood. Now a more astonishing mystery overpowers our earlier appall. Life struggles, but has achieved so much, pumped up out of the soil, persisting on by ever novel arrivals. The marvel is how dirt spontaneously assembled itself into Cambrian worms, later into Cretaceous opossums, and still later into wondering men. In the wild, things are degraded, followed by nature's orderly self-assembling of new creatures amidst this perpetual perishing. Earth slays her children, a seeming great disvalue, but bears an annual crop in their stead. This pro-life, generative impulse is at once the most valuable, the wildest, most startling miracle of all.

(2) To keep our bearings, we must locate individual lives on larger horizons, as goods of their kind in an ecosystem greater than they know. We can subsume struggle under the notion of a comprehensive situated fitness. Forms live on which more efficiently utilize food resources, take better care of their young, learn to form societies, fill niches not exploited by others. The survival of the fittest designs the ever more fit in their habitats. Each is for itself, but none is by itself; each is tested for optimal compliance in an intricately disciplined community. Every organism is an opportunist in the system, but without opportunity except in the ongoing system. The worms may not cripple their hosts too successfully, lest they

destroy themselves. But free-living forms are just as contextually situated. What survives is never mere individuals or species, but the system containing them. Each is against the others, but each locus of value is tied into a corporation where values are preserved even as they are exchanged. From that point of view, we see conversions of resources from one life stream to another – the anastomosing of life threads which weaves an ecosystem.

Now it becomes difficult to say whether anything vital is lost at all. What seems waste in the rabbit life stream is nutrient within the coyote stream, and even the rabbit population benefits by the ongoing selection over mutants. The surplus of offspring is cut back by premature death, but this cutback is executed unawares by the coyotes so as, on statistical average, to leave the smarter, faster, more fertile, efficient, and wary. The rabbits suffer for the coyotes, but not entirely; they collectively gain from their pains. The surplus of young permits both mutational advance and the synthesis of biotic materials with higher forms at the top of the pyramid. This produces further demands on coyotes, and the coevolutionary race goes on.

Seen this way, organisms inherit value not only in their genes but from their competitors, enemies, and prey. On the short scale, values may seem hopelessly relative and impossible to evaluate, but in the whole, for all the borrowing and spending, biomass and energy are transubstantiated and recycled so that wildness is a no-waste world, frugal in its economies. We begin to get a new picture painted over the old, although some of the old picture still shows through. Wildness seemed a great struggle, and so it is; but it is also a great flowing of opposites into each other. Wildness is a complex tapestry of values on the one side, though it can seem a jumble of values on the other. Comparatively, there is as much wasting of resources in culture, and the more advanced the culture the greater the waste. The checks and balances that pull conflict into ordered existence are as successful in nature as in culture.

(3) Over evolutionary time, these individual searches for advantages steadily yield systemic advancements. Wildness builds life up across perpetuated millennia. The cycling of values becomes the spiraling of stories. Once there were simple things, later complicated things. Fins become flippers, then feet, then fingers. Once there was no smelling, swimming, hiding, gambling, making mistakes, or outsmarting a competitor, but all these appear by trial and error. Through attempting and discarding, nature learns to build eyes, wings, photosynthesis, hemoglobin, muscles, fat, nerves, and brains.

Nothing knows what it is becoming, so much transcends the individual. The selective system must be capable of producing additional values,

beyond those entertained by any individual organism, because it has long done so. We get higher forms. Natural selection edits to leave those forms which are justified in at least a right-for-life sense, and perhaps partly in some increasing right-to-life sense. Wildness as a jungle of exploitation becomes a theater of adventure and improvisation. Some forms merely track through stable environments, but others grow more clever in the same, changing, or new environments. Some persons may call this the luck of wildness, but it seems rather a lust for more life, even a lure which elaborates ever higher values.

Nature treats any particular individual with a momentary life, but life is a propagating wave over time. Located in individuals, value is also consigned to a stream. Even species regularly come and go, typically over 50 million years. Some become extinct without issue, but over longstanding trends nature transforms others to increase the numbers of species present in each later epoch, as well as their richness. Even the few crashes and mass extinctions, though setbacks, have reset life's directions, as happened at the ends of the Permian and Cretaceous Periods. Retrenchments in the quantity of life were followed by explosive inventiveness in its quality. The mammals came into their own, triggered by wiping out the dinosaurs, even while reptiles and amphibians, and their descendants, the birds, remain important in our ecosystems. So I have at once to respect salamanders and to be glad nature sacrificed cold-blooded forms for hot-blooded developments beyond.

Wildness is an unquenchable, pro-life force in this respect, however groping, blind, and unmerciful it may otherwise seem. Survival value has its upstrokes, and we reach the paradox that out of seeming disorder order comes the more. There flows this great river of life, a strangely wild flowing because it flows as it were uphill, negentropically from nonbeing to being, from nonlife to objective life and on to subjective life. Nature is full of crooked, winding paths. Some are wayward lines; some prove routes to interesting places, and some are ascents to summits. Wildness is a place of new arrivals, as much as of survivals.

An individual's life is a defense of its value set, a concrete attempt at problem-solving, instantiating an intrinsic value. But an individual's death, by which such value collapses, is a contribution to values being defended by others who recycle its materials, energy, and information. Overall, the myriad individual passages through life and death upgrade the system. Value has to be something more, something opposed to what any individual actor likes or selects, since even struggle and death, which are never approved, are ingredients used instrumentally to produce still higher intrinsic values. Things good in themselves and of their kinds are not permitted to have such integrity alone, but are required to be good in their niche,

good corporately. This can seem in morally wild disregard for their individuality, treating each as a means to an end. But the whole system in turn generates more and higher individuality. Problem-solving is a function of the system too as it recycles, recovers from setbacks, speciates, increases sentience and complexity, pulls conflicts into harmony, and redeems life from an ever-pressing death. The systemic source interblends intrinsic and instrumental values.

As we earlier met it, value is what makes a favorable difference to an organism's life, whether microbes using compasses or humans enjoying their wilderness roots, no matter whether instrumentally or intrinsically conceived. But as we now enlarge it, value is what makes a favorable difference to an ecosystem, enriching it, making it more beautiful, diverse, harmonious, intricate. Here a disvalue to an individual may be a value in the system and will result in values carried to other individuals. Intrinsic value exists only as embedded in instrumental value. No organism is a mere instrument, for each has its integral intrinsic value. But it can also be sacrificed in behalf of another life course, when its intrinsic value collapses, becomes extrinsic, and is in part instrumentally transported to another organism. When we interpret this transfer between individuals systemically, the life stream flows up an ecological pyramid over evolutionary time. The incessant making use of resources unifies the intrinsic and instrumental distinctions (the small circles and arrows of Fig. 2) and the result is the broad arrows of storied achievement by the great wild Source. Value as storied achievement is a property alike of organisms and the evolutionary ecosystem. Against the standard view that value requires a *beholder*, we see how value requires only a *holder*, which can be an individual, but can be also the historic system which carries value to and through individuals.

There is nothing secondary about instrumental value. When resource use is found omnipresent in the system, it loses its sting. Although there is something wrong with making everything else a resource for humans, there is nothing wrong with something being an instrumental resource for others. We think that a person is narrow and selfish who cultivates intrinsic worth and withdraws from seeking any instrumental value in the community. A person's intrinsic worth – for example, creative ability – is not separable from the power to confer a benefit on others. Excellence does not consist in what a thing is merely for itself, but in what it is for others. This is true of persons, animals, and plants. Excellence is not a matter of encapsulated being, but of fittedness into a pervasive whole.

Like instrumental and intrinsic values, the *is* and the *is good* have evolved together, and are even now experienced together. The recommendation that one ought to value these events follows from a discovery of their

goodness in place, which is not so much by argument as by adventure which experiences their origins, structures, and environmental locations. We find value holders defending their values and fitted into the larger narratives of life. Natural *facts* of this kind are *storied doings* (Latin: *factum*, a deed) with their *value* (Latin: *valere*, to be worth) integral to their having managed to happen. In such a story every achievement is to be viewed both intrinsically and instrumentally.

A wilderness guide can only exhibit examples from nature and then ask what reasons remain for asserting that storied achievement is not of value. The reason traditionally so called is that value lies in (human-) interest satisfaction. But that now seems only a stipulation born of prejudice or shortsightedness. Interest satisfaction is one among other values, and this better theory retains all we want from the narrower predecessor. Approbation and pleasure are only later parts of the story, and storied achievement can take place using, in the absence of, in indifference to, and even in opposition to interest satisfaction. Wilderness first seems a chaos where nothing is given but everything is fought for. But afterwards we learn how in the struggle everything vital has been given. In one sense wilderness is the most *valuable* realm of all, the struggling womb *able* to generate all these adventures in *value*, whether involving roots, neighbors, or aliens. Thus the experienced wilderness traveler finds that the no trespassing signs posted between the *is* and the *ought* are nothing but cultural artifacts.

IV. Transvaluing Nature and Culture

The trip home is almost as unsettling as the trip out. The giddy, wild experience of valuing nature shed of culture has led us through alien values and threatened chaos, but we have transformed a negative evaluation into a positive one. When we now swing round to return to culture, we find that we have a shaky trip home, this time shifting from a positive to a more negative evaluation. Culture is a good thing, fulfilling our human-interest satisfaction, but how far has it occurred in blind insensitivity to the storied achievements in nature? Some of what we have imagined was cultured in the good sense has in fact been valuationally wild in a haywire sense.

A key axiom in our culture declares it good to master nature. For this we have managed even to revise our justifications so as to maintain the ethic over shifting worldviews. The dominion thesis can be monotheistic. Or it can be scientifically based. By the Darwinian creed, every species struggles to take over as much of Earth as it can, and humans evolve as dominants in the ecosystem. Huxley followed neither Genesis nor Darwin,

still he advised us to combat the cosmic process. Freud psychoanalyzed humans to judge that we form civilization to conquer a fearful nature, and Marx saw in nature a thesis for which culture was an antithesis, with nature to be humanized in a final synthesis as labor imposes value on a valueless nature. The American's manifest destiny was to tame the continent. Across changing theories about how nature *is* constituted, we have derived the same *ought* – cultural exploitation of the environment – because we kept the same value theory. But it is time to take stock of the anti-wild policy itself. Can values sometimes be pro-wild? Here changing canons of judgment erode what we think of our own behavior.

Only about 2 percent of the contiguous United States remains wilderness; 98 percent is farmed, grazed, timbered, hunted over, dwelt upon, paved, or otherwise possessed. Not to put the remaining wildlands to some use seems un-American. It is as though a football team were to carry the ball 98 yards and walk off the field, as though an evangelist were to convert 98 of the folk in a village and decide to leave the last two pagan. To have islands of wildness deliberately in a sea of culture seems to let values go wild, out of our disciplined control. Even small amounts left as valuable are anomalies which force us to rethink the major ethic. That is why calling everything a resource seems so comfortable logically and psychologically. It prevents cognitive dissonance. An *ad hoc* auxiliary hypothesis protects the main policy – conquest and reclamation – by accommodating a little wildness transformed into a cultural good. There is minimal challenge to the triumphant Americanism. Even the wilds carry values at and for our pleasure. Userless nature is useless nature.

But if we face the epistemic crisis, the main paradigm is being overthrown. When the wildness is almost conquered, we begin to awake to error in the mastery theory. Not all value is labored for, assigned, or realized at our coming. The anomalous 2 percent which we will to keep wild, and then realize to be valuable without our will, reveals that the theory of value which has governed our handling of the 98 percent is flawed, only an approximation over a certain range. Newton explained a high percentage of the observations of motion, especially at middle ranges, but could not handle an anomalous fraction of these. Einstein transcended and even falsified the old mechanics by showing that the classical theory was only approximate, on larger scales not corresponding to the world structures. In value theory, the human-interest satisfaction theory, with its corollary, the dominion thesis, works at a certain pragmatic home range, but it cannot handle wild values, and thereby stands revealed as incomplete if taken for the whole. The better theory relativizes what had seemed so absolute.

We can still give the conventional justifications, but we will be operating with a 'Newtonian' view, true only locally. We will not have the 'Einsteinian'

view until we can also give nonanthropocentric justifications for why we ought to have wilderness in our midst. Thereupon we find that our new perspective over the last 2 percent casts some shadows over what we have done to the 98 percent conquered. There has been some savagery – greed, insensitivity, lack of control and compassion – in the civilized state. We have preyed on the natural areas we have sacrificed, but (unlike the coyotes and the rabbits) without benefit to the sacrificed. We are parasites with this difference from the worms in the opossum: we had moral and conscious options for an evaluation of our roles, while they did not.

Let us perform a wild thought-experiment. What if the founding fathers by democratic resolution had resolved to set aside as natural wonders all major springs and caves, all natural lakes, summits, passes, gorges, water gaps, cascades, waterfalls, all headlands, capes, spits, and half the shorelines and offshore islands? What if they had preserved a natural beltway along each river and major stream? What if the Bill of Rights had included an article governing the biotic rights of species? What if we had zoned each county and state to preserve one-fifth of the land public and wild, to include all rare ecosystems and ample representatives of the prevailing habitats? America would have formed a saner, more sensitive culture. It would be a different kind of country.

Let us put beside that practices from which we are only now recovering. For most of our national life we used bison and passenger pigeons for target practice. For almost a century, the Park Service at Yosemite would build an enormous fire on the lip of Glacier Point at dusk. 'Indian Love Call' was played, and the fire pushed over the cliff to the ahs! of spectators. In the early 1960s I visited Yosemite to find the firefall stopped as an inappropriate activity. I had moral sense enough to agree, but a day later thought nothing of driving through a giant sequoia, stopping to let my wife take a photograph. I now see something of the Yahoo in myself for such zany comedy. There should be no more drive-through sequoias; they mutilate for whimsy a majestic living thing. We can rather learn why sequoias attain such age and size, or why this relict species has survived geological changes that destroyed its relatives.

In Yellowstone park officials long put soap into geysers to break the surface tension and time the eruptions conveniently for tourists. Old Faithful needed colored floodlights and background music between eruptions. Royal Gorge and Grandfather Mountain needed improvement, and so we built those touristy bridges that deface the gorge and the summit. Were what we did to Mount Rushmore and Stone Mountain good things? Or only grown-up versions of a little boy carving his initials on a maple tree? Reagan's and Eisenhower's faces carved on Yosemite's Half Dome would be a national disgrace. Colorado has 54 peaks over 14,000 feet, and we

have built highways to the summits of only two, Mount Evans and Pike's Peak. But that is quite enough. Summit roads disfigure the peaks and scar the tundra. They compromise the 'purple mountains' majesties' and easy access makes for inferior perceptions. Access roads and pleasuring activities should yield to some sense of natural norms to which we adapt our uses.

We fell into these cheap appreciations of our landscape because we had no sense of admiring respect for nature in itself, a legacy of the policy that nature even left in a rude state exists as our park and pleasuring grounds. So we mislocated the thrills, and could not see the sequoia and bison, the mountain community or the geyser basin as excellent achievements in spontaneous nature. Development has sometimes been a good thing; the theory of wild value need not contest that. It only insists that development take place with some sense of sacrifice to be argued against wild values. We should not unilaterally assault nature. Development against wildness plots on a curve of diminishing returns; it is a relative and not an absolute thing. You can have too much, and lose your bearings on a horizon of wild goods, the more valuable when they are threatened with extinction. The place where values go wild in the berserk sense is in a nation which, having destroyed 98 percent of its pristine wilderness, having paved more area than it has designated wilderness, can consider the remaining 2 percent and wonder if it has too much. The world's cultures have grown wild in a cancerous sense when, continuing on their present courses, they can destroy one tenth of Earth's species in a generation.

On the other hand, a modest moral maturing can be seen in those names which, over the years, we have attached to wild places. Besides lands for the 'Bureau of Reclamation', we formerly had only 'National Forests' and 'National Parks', work places and play places for multiple use and as pleasuring grounds. Later, we established 'Wildlife Refuges' and 'Sanctuaries', which, less evidently 'National', are places where bighorn sheep and pileated woodpeckers can have their own territories, not exclusively our property. More recently still, we have designated 'Wildernesses' and 'Natural Areas', and now the label 'National', though kept to designate federal administration, seems almost imperialistic. These are not really American places at all but enclaves with a sovereignty of their own 'where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain'.¹² These are realms where Americans value freedom so highly that we give even the wilderness the freedom to run itself. At least here, humans elect to leave wildness unclaimed. We need a new, strange kind of foreign policy, an almost self-contradictory wilderness management where what we really manage is those who visit it, so as to arrange for noninterference and compensate for interferences previously unmanaged.

Wildness is a bizarre place where our conventional values get roughed up. We learn the relativity and subjectivity of what in civilization can seem such basic rules. Wild nature doesn't know my frames of reference and can't in the slightest care about my deepest cultural norms. In wildness there is no time of day; it is not 10:00 a.m. Eastern Daylight Time, nor is it Tuesday or July. There are no board-feet, BTUs, meters, miles; the lines of latitude and longitude and elevation contours do not really exist. There is no English or German, no literature or conversation. The numbers and words are gone, and we know them for the cultural improvisations and mathematical overlays they are. One leaves money in the car and enters a different economy. There are no artifacts and labor is fleeting. There are no deeds, statutes, or police – this is what makes boundaries, regulations, and rangers so disruptive of the wilderness experience. In wildness there is neither capitalism nor socialism, neither democracy nor monarchy, science nor religion. There is no honesty, justice, mercy, or duty. There are no human resources, because, like targets or pests, these do not exist as such but only become so by awakened interest. We do not even term these places a wilderness except negatively, a place where humans are not.

So what, if anything, is positively of value there? There is light and dark, life and death. There is time almost everlasting and a genetic language two billion years old. There is energy and evolution inventing fertility and prowess, adaptation and improvisation, information and strategy, contest and compliance, display and flair. There is muscle and fat, nerve and sweat, law and form, structure and process, beauty and cleverness, harmony and sublimity, tragedy and glory. Wildness is the projective and selective system which spins the embracing story. Wildness is the primal ground, the prime mover, as nearly as we can approach such things in phenomenal experience. In this light, a test of a consummate culture is not whether it can consume all nature, but whether it is wise enough to choose its social values, let natural values stay wild, and appreciate nature as the generating source of storied achievements.

V. Distinctively Wild Values, Distinctively Human Valuing

Two final elements enrich the story, one emerging in spontaneous nature, one in culture, both distinctively yet differently wild.

Wildness is nature in what philosophers call idiographic form. Each wilderness is one of a kind, so we give it a proper name – the Rawahs, the Dismal Swamp. We climb Mount Ida or canoe on the Congaree River. Even when exploring some nameless canyon or camping at a spring, one

experiences a concrete locus never duplicated in idiosyncratic detail. In culture, there is but one Virginia and each Virginian has a proper name. The human differences include conscious self-affirmations and heritages for which nature provides little precedent. But nature first is never twice the same. Always in the understory there are distinctive landscape features – the Shenandoah Valley or the Chesapeake Bay – with which the Virginians interact, each with a unique genetic set. Before culture emerges, nature is already endlessly variable. This feature is crucial to what we mean by wildness.

Storied achievement is a unitary idea, but diffracts into plural lives and diverse communities. We do not want order at the expense of spontaneous variety, too much system and too little story. We want constancy with contingency. Just this final wildness, which might threaten to make nature chaotic and thus perhaps to upset storied achievement, proves rather to enhance it, adding excitement and novelty. What seems fortuitous is also fortunate and valuable. By making each location different, wildness makes a favorable difference. It makes each ecosystem historic, the more excellent because no two are alike. Wildness proves of further value just for everywhere making these differences.

If you have seen one mountain, or redwood, you have not seen them all. The sunbather at the shore sees all herring gulls as alike, but Niko Tinbergen found each gull different.

It is quite a thrill to discover that the birds you are studying are not simply specimens of the species *Larus argentatus* but that they are personal acquaintances. Somehow, the colony becomes much more interesting when you realize that it is composed of individuals that you know personally. Somehow, you feel, you are at home, you are taking part in their lives, and their adventures become part of your own life. It is difficult to explain this more fully, but I think everybody who has studied animal communities will understand how we felt.¹³

Tinbergen felt bound to recognize this individuality but could not incorporate it into ethological science.

Science gives us statistical nature, abstractly and theoretically modeled, but wilderness is historically particular. A scientific law never changes, a trend seldom changes, but wilderness ever changes. Our sciences are unable to predict or systematize this element. Each river or gull is a one-time event in the mixtures of forces, laws, and happenstance that shape its course. Sometimes this yields only a kaleidoscopic recombination of old materials. Much variation is an unfolding of causal chains too scrambled for us to follow. A rock loosened by frost heave thaws and rolls down a hillside just as a coyote is set to pounce on a ground squirrel. This distracts the predator, alerts the prey, and the squirrel escapes. All this is causal enough, but wild in the impingement of unrelated causal lines, so that we

can never write laws about these messy interactions and are repeatedly surprised by them. Beyond this, there is openness, option, and decision, as when a random mutation appears, or a moose confronted by a wolf decides not to run but to stand his ground. Genuine wildness with its empirical individuality at each native locus always escapes scientific specification.

Mere order has little story in it, but wildness makes an idiographic narrative out of what otherwise might be universal repetition and law, less storied achievements. After the laws have explained what they can, there is a residue of wildness. We value this detail, which is wild of the very laws it obeys. In that sense, the 'ideal' is not the uniform and predictable. More unbroken sameness would not be as valued as the wilder nature we in fact have, the more ideal because the more storied. A second natural place is never redundant, because never reducible to a first one; each is irreplaceable. No text that narrates one place fully describes another. The system which earlier might have seemed to swamp out individual integrity is now seen to resist being so systematized that uniqueness vanishes.

Physics and chemistry are thought to be about fundamental nature, but they ignore wildness – unless perhaps we see some beginnings in quantum randomness, fluid turbulence, vortex streaking, stochastic elements, margins of error, or probability patterns. As sciences of law and order, they bring nature under laboratory control, being relatively exact sciences because they denature nature of its accidental and historical eventfulness. More wildness begins to appear in geology; and in geomorphology or meteorology we reach an earthen system which has uniqueness in each Mount Saint Helens Explosion or Big Thompson Flood.

Biology is still more inexact because closer to wildness. Generalizations abound, but in textbooks which simplify what is going on in the field. Physics and chemistry have repeatedly made predictions out of their theories. Neptune and helium were predicted, then found. Relativity theory predicted time dilation, and quantum mechanics the neutrino. But biology has seldom been able to do this. The cellular structures – mitochondria, chromosomes, plasmids – were only found without advance expectation. Before a visit to Lake Baikal, no one could predict its flora and fauna; 1500 of its 2000 species are unique. The most telling lament against evolutionary theory is that it explains only in retrospect, and then stutters over why the birds invaded the skies when they did, or why only a few primates grew larger brains.

A physicist or chemist predicts that reactions known on Earth hold uniformly on Jupiter or Sirius, but an exobiologist would be foolish to do more than speculate what life must be like elsewhere, because elements of **historical uniqueness are much advanced over anything in the nonbio-**

logical sciences. One can progressively say less of what must happen until after things are already happening. Biologists find dependable biochemistries, phylogenies, and genetic dynamics. But they also know that wild nature is more and less than their models. Ecologists trace generalized food chains, mineral cycles, and plant successions, but also find a site-specific and situation-specific character which forces its best practitioners to say that the only thing they know for certain is that nothing is certain. Their models only approximate nature's robustness, because they leave out wildness.

Everyone has hiked into a place, topographic map in hand, to be surprised how different it was from anything expected. Maps and earlier experiences leave out the vicissitudes of this new locale. To go to nature guided by science manuals is to go in ignorance of its provincial integrity. The texts only describe bristlecone pines, not the gnarled sentinel where the Bierstadt trail breaks out on the tundra, only oak-hickory forests, not the floor of Linville Gorge. They describe foxes in their predator-prey relations, not the vixen at Brown's Lake which jumped higher than I expected and stole the food cache I had strung up. Wilderness areas are unique in that appreciating them, and the sorts of experiences which can be had in them, cannot be reduced to any of the established sciences. Wildness is to be valued both for its generating of idiosyncratic human experiences and in itself as generating ever varied topographic integrities and the singular stories which take place at such loci. Although we have often appealed to the sciences for insight into events of wild value, in the end there is in wildness a value which is uncaptured by science.

There is no narrative in a biology text, but a trip into wildness is always a story. One comes back with tales to tell. The storm broke when supper wasn't cooked. The whippoorwills sang so loud one couldn't sleep. The squirrel watched at the cliff missed its jump and fell to its death, and there were fourteen fairy slippers within an arm's reach a half mile east of Donner Pass. Last summer in the Mount Zirkel Wilderness I found a northern species of *Bryum*, which is disjunct 1300 miles south of any known station for that species.¹⁴ This element of surprise supplies adventure, and is part of values gone wild.

In closing, we turn to the human side. When our values go wild, there is the emergence of an utterly new kind of caring. The animal takes an interest in its own affairs, vitally interested in food or predator, valuing its life and kind with zeal, but unconcerned beyond. I do not entirely deny animal curiosity; nevertheless, only humans can take a sustained interest in sectors of the environment not their own. So Tinbergen studied gulls, Lindbergh defended wildlife, and you and I have taken this trip into the wildlands. For the first time, a form of life values something outside its

own niche, cares intensively or comprehensively beyond its own pragmatic sector.

A singular feature of human psychology and morality is how we can value wild things not for ourselves, but for what they are in themselves, estimating our own place in nature when so doing. Animal species, though out there in the wild, cannot appreciate wildness beyond their own territories. But humans can value wild roots, neighbors, and aliens independently of whether a particular phenomenon affects our survival, well-being, or convenience. Resource relationships are set aside, and we look at the world with moral judgment. Nor is this merely at the individual level, valuing kinds in themselves, but it is also at the global level, for we alone are able to see past the atomistic struggles into the production of value in the evolutionary ecosystem. We do not have survival value revisited, but survival value transcended. We have a novel arrival indeed. We reach an almost supernatural altruism, unprecedented on the planet.

Humans are disjoined from nature not merely because we form cultures and dramatically rebuild our environment. We are still more unnatural creatures when we post boundaries for our cultures and designate wildernesses which we resolve not to rebuild. At this point, I do want to grade the human excellence over the other creatures. On the one hand, this human evaluation of the world expresses itself as a late-coming consequence of, rather than claiming itself as an exemption to, a value-generating creativity inherent in nature. On the other hand, this human excellence is exceptional. Nature takes a wild turn, an idiographic and historic one in ethical achievement. The story comes to a head in humans, although the story is vastly more than its heading in humans. Persons count, but not so much that nothing else counts; and persons count for more when they can count something else.

It is not surprising that humans should come to care for their own kin and kind, for, astonishing as is the emergence of morality, sympathy can be shown to have survival value. It is not surprising that humans care instrumentally for wildlands. Novel as is the coming of mind, to calculate one's interests in the natural system makes simple good sense. But all these ways of valuing which we can plausibly unfold by extensions from spontaneous nature are entirely superseded when we meet this creature who can value at a distance. In a final paradox, when we humans recognize values outside ourselves, we realize within the subtlest value of all. Valuing wildness does not bring any dehumanizing of ourselves or reversion to beastly levels. On the contrary, it results in our further spiritualizing. We become nobler spirits, encompassing the wild other for itself and in the whole, not humanistically. Nature surpasses herself to generate the most exceptional novelty yet. We praise the productive source, and praise the

values found instrumentally and intrinsically among the myriad natural kinds. We cannot produce ourselves and must value the system which has. But the systemic source cannot reflectively evaluate what it has produced; only we can. In humans, an evolutionary ecosystem becomes conscious of itself.

Before wildness I realize that I have yet more valuational work to do. I become surprisingly more human and also enjoy being surprisingly wild myself. If we humans can rightly learn to value wildness, that will be a still more sophisticated storied achievement.

NOTES

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- 2 Paul D. MacLean, 'The Triune Brain, Emotion, and Scientific Bias', in Francis O. Schmitt (Ed.), *The Neurosciences Second Study Program*, Rockefeller University Press, New York 1970, pp. 336–49.
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- 4 *Ibid.*, pp. 373–4.
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