

In the Belly of the Beast

Technology, Nature, and the Human Prospect

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CHAPTER 1

The Deceiving Virtues of Technology

In this chapter I wish to take a long view of technology — a very long view.¹ It begins with Odysseus and his beleaguered companions penned up in the cave of Polyphemus, the great, one-eyed, Cyclopean giant, offspring of Poseidon. Polyphemus had already twice brained a couple of the men by smashing their heads against the earth, then devouring them whole for a day's meal.

Odysseus, of course, was desperate and, as he later told the story, "I was left there, devising evil in the deep of my heart, if in any way I might take vengeance on him, and Athena grant me glory."² So he hit upon a plan. Finding a huge beam in the cave, he and his companions sharpened it, hardened the point in the fire, and hid it beneath one of the dung heaps littering the place. When Polyphemus returned from pasturing his flocks, and after he had dined on a third pair of the companions, Odysseus offered him a wondrously potent wine the Greeks had brought with them. The Cyclops drank without reserve, draining three bowls and then falling into a drunken stupor. But before passing out, he asked Odysseus for his name, and the warrior answered, "Nobody is my name, Nobody do they call me."

As the giant then lay senseless, dribbling wine and bits of human flesh from his gullet, Odysseus and his comrades heated the end of the beam in the coals of the fire and then, throwing all their weight onto it, thrust it into the eye of Polyphemus. Roaring mightily, the blinded Cyclops extracted the beam from his bloodied eye, groped to remove the huge stone blocking the mouth of the cave, and bellowed his outrage to the other Cyclopes living nearby. But when they came and asked who was causing his distress, his answer that "Nobody" was the culprit left them perplexed. "If nobody is tormenting you, then you must be ill. Pray to Poseidon for deliverance." And so they left him to his troubles.

At this, said Odysseus, "my heart laughed within me that my name and cunning device had so beguiled" the Cyclops. Danger remained, however. Polyphemus stationed himself at the cave mouth to make sure no man escaped. So again Odysseus devised a plan. He used willow branches to tie his men beneath the bellies of the giant's huge sheep. Polyphemus, feeling only the backs of the sheep as they filed out of the cave to pasture, failed to note the deception.

The escape, it appeared, was made good. But the Greek captain's bravado would yet endanger the lives of all his comrades. As they silently fled to their ship and plied their oars to distance themselves from the frightful abode of the Cyclops, Odysseus was loath to remain an anonymous "Nobody." In his pride, he could not resist the temptation to call ashore to Polyphemus, taunting him and naming himself the author of the successful strategem: "O Cyclops," he shouted, "Odysseus, the sacker of cities, blinded thine eye."

Infuriated, Polyphemus broke off a huge piece of a mountain and hurled it in the direction of the taunt, nearly demolishing the ship. Then he prayed to his father, Poseidon, asking

that Odysseus should endure many trials and that all the company, if not Odysseus himself, should perish before arriving home. Poseidon honored the prayer; Odysseus alone, after long wandering and many sufferings, returned to his beloved Ithaca.

Devices of the Mind

Now, jumping ahead to our own day, I'd like you to think for a moment of the various words we use to designate technological products. You will notice that a number of these words have a curious double aspect: they, or their cognate forms, can refer either to external objects we make, or to certain inner activities of the maker. A "device," for example, can be an objective, invented *thing*, but it can also be some sort of scheming or contriving of the mind, as when a defendant uses every device he can think of to escape the charges against him. The word "contrivance" shows the same two-sidedness, embracing both mechanical appliances and the carefully devised plans and schemes we concoct in thought. As for "mechanisms" and "machines," we produce them as visible objects out there in the world even as we conceal our own machinations within ourselves. Likewise, an "artifice" is a manufactured device, or else it is trickery, ingenuity, or inventiveness. "Craft" can refer to manual dexterity in making things and to a ship or aircraft, but a "crafty" person is adept at deceiving others.

This odd association between technology and deceit occurs not only in our own language, but even more so in Homer's Greek, where it is much harder to separate the inner and outer meanings, and the deceit often reads like an admired virtue. The Greek *techne*, from which our own word "technology" derives, meant "craft, skill, cunning, art, or

device” — all referring without discrimination to what we would call either an objective construction or a subjective capacity or maneuver. *Techne* was what enabled the lame craftsman god, Hephaestus, to trap his wife, Aphrodite, in a promiscuous alliance with warlike Ares. He accomplished the feat by draping over his bed a wondrously forged snare whose invisible bonds were finer than a spider’s silken threads. The unsuspecting couple blundered straightway into the trap. As the other gods gathered around the now artless couple so artfully imprisoned, a gale of unquenchable laughter celebrated the guile of Hephaestus. “Lame though he is,” they declared, “he has caught Ares by craft (*techne*).” Here *techne* refers indistinguishably to the blacksmith’s sly trickery and his skillful materialization of the trick at his forge.

Likewise, the Greek *mechane*, the source of our “machine,” “mechanism,” and “machination,” designates with equal ease a machine or engine of war, on the one hand, or a contrivance, trick, or cunning wile, on the other. The celebrated ruse of the Trojan Horse was said to be a *mechane*, and it was admired at least as much for the devious and unexpected turn of mind behind its invention as for the considerable achievement of its physical construction.

The Man of Many Devices

We come back, then, to Odysseus, the trickster par excellence, introduced in the first line of the *Odyssey* as “crafty-shift” — a man of many turnings, or devices. One of his standard epithets is *polumechanos* — “much-contriving, full of devices, ever-ready.” It was he, in fact, who conceived the Trojan Horse, one of the earliest and most successfully deceitful engines of war. Listen to how Athena compliments Odysseus:

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Only a master thief, a real con artist,
Could match your tricks — even a god
Might come up short. You wily bastard,
You cunning, elusive, habitual liar!

(transl. Stanley Lombardo)

These traits, as any psychologist will point out, are closely associated with the birth of the self-conscious individual. The ability to harbor secrets — the discovery and preservation of a private place within oneself where one can concoct schemes, deceive others, contrive plans, invent devices — is an inescapable part of every child's growing up. The child is at first transparent to those around him, with no distinct boundaries. If he is to stand apart from the world as an individual, he must enter a place of his own, a private place from which he can learn to manipulate the world through his own devisings.

Granted, such manipulative powers may be exercised for ill as well as good, and the Greeks sometimes appear to us remarkably casual about the distinction. But, in any case, the gaining of such multivalent power is inseparable from growing up; to give people greater capacity for good is also to give them greater capacity for evil. In what follows, it is the conscious *capacity* that I will speak of as having been necessary for our development, not its employment in a negative or destructive manner.

What I want to suggest is that, to begin with, technology was a prime instrument for the historical birth of the individual self. And the *Odyssey* is almost a kind of technical manual for this birth — for the coming home, the coming to himself, of the individual. When you realize this, you begin to appreciate how the “My name is Nobody” story, which seems so childish and implausible to us, might have entranced

Homer's audiences through one telling after another. You can imagine them wondering at Odysseus' presence of mind, his self-possession, his ability to wrest for himself a private, inner vantage point, which he could then shift at will in order to conceal his intentions from others — something no one lacking a well-developed ego, or self, can pull off. And they doubtless wondered also at his self-control, as when he refused his immediate warrior's impulse to respond in kind to the Cyclops' aggressions — an impulse that would have proven disastrous. Instead he pulled back, stood apart within himself, and devised a trick. In re-living Odysseus' machinations, the hearers were invited into that place within themselves where they, too, might discover the possibilities of invention and craft. It requires a separate, individual self to calculate a deceit.

The classicist, George Dimock, has remarked that Homer makes us feel Odysseus' yearning for home as "a yearning for definition." The episode with Polyphemus is symbolic of the entire journey. In the dark, womb-like cave, Odysseus is as yet Nobody. Homer intimates childbirth by speaking of Polyphemus "travailing with pains" as his captive is about to escape the cave. Only upon being delivered into freedom, as we have seen, can Odysseus declare who he is, proclaiming his true name (Dimock 1990, pp. 15, 111). Further, every birth of the new entails a loss — a destruction of the old — and the thrusting of the sharpened beam into the great Cyclopean eye suggests the power of the focused, penetrating, individual intellect in overcoming an older, perhaps more innocent and unified vision of the world (Holdrege 2001).

To grow up is to explore a wider world, and Dimock points out that, first and last, Odysseus "got into trouble with Polyphemus because he showed nautical enterprise and the

spirit of discovery” — not because of recklessness or impiety. “In Homer’s world, not to sail the sea is finally unthinkable.” Perhaps we could say, at great risk of shallowness: in those days, to set sail was to embark upon the information highway. There were risks, but they were risks essential to human development. Homer certainly does not downplay the risks. Having been warned of the fatally entrancing song of the Sirens, Odysseus plugged his sailors’ ears with wax, but not his own. Instead, he had the others lash him to the ship’s mast, sternly instructing them not to loose him no matter how violent his begging. And so he heard those ravishing voices calling him to destruction. His desire was inflamed, and he pleaded for release, but his men only bound him tighter.

You may wonder what the Sirens offered so irresistibly. It was to celebrate in song the great sufferings and achievements of Odysseus and his followers, and to bestow upon them what we might be tempted to call the “gift of global information.” In the Sirens’ own words:

Never yet has any man rowed past this isle in his black ship
until he has heard the sweet voice from our lips.
Nay, he has joy of it and goes his way a wiser man.
For we know all the toils that in wide Troy
the Argives and Trojans endured through the will of the gods,
and we know all things that come to pass upon the fruitful
earth.

“We know all things.” The rotting bones of those who had heeded this overpowering invitation to universal knowledge lay in heaps upon the shores of the isle of the Sirens. Only the well-calculated balance of Odysseus’ *techne* — only the developing self-awareness with which he countered the excessive

and deceitful offer — enabled him to survive the temptation. As Dimock observes about Odysseus lashed to the mast:

Could a more powerful example of the resisted impulse be imagined...? Odysseus has chosen to feel the temptation and be thwarted rather than not to feel it at all.

Here we see the perfect balance between the open-hearted embrace of life with all its challenges, and artful resistance to the ambitions of hubris. The temptation of knowledge leads only to those rotting bones unless it is countered by the kind of self-possession that enables us to resist our own impulses. The external gifts of *techne* come, in the end, only through the strengthening of the *techne* of our own consciousness. When you look today at the mesmerized preoccupation with the sweetly sung promises of salvation through digital information, you realize that our own culture honors the Sirens far more than it does the healthy respect for risk, the self-discipline, and the inner cunning of Odysseus, man of many devices.

Balance and Separation

If my first point, then, was that technology can serve as midwife to the birth of the individual, the second is that this midwifery requires a well-calculated balance between the challenges we take on and our self-possession, our wide-awake, conscious resourcefulness. This sensible calculation is part of what it means to be grown up, notwithstanding the widespread, if impossibly foolish, notion today that whatever *can* be attempted *ought* to be attempted.

There's a third point here. The Cyclopes, unlike Odysseus, lived in a kind of state of nature, and they spurned all advanced

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technologies. Never faring upon the open sea, they refused voyages of discovery. Odysseus describes them this way:

To the land of the Cyclopes, violent, innocent of laws,
we came; leaving it all to the gods
they put hand to no planting or plowing;
their food grows unsown and uncultivated,
wheat, barley, vines which produce
grapes for their wine; Zeus' rain makes it grow for them.

....

For the Cyclopes have no red-cheeked ships,
no craftsmen among them, who could build
ships with their rowing benches, all that is needful
to reach the towns of the rest of the world as is common —
that men cross the sea in their ships to meet one another;
craftsmen would have built them handsome buildings
as well.

(transl. George Dimock)

If “nature is good to the Cyclopes,” observes Dimock, it is “not because they are virtuous. Rather, the kindness of nature has deprived them of the stimulus to develop human institutions.” To venture out — to separate themselves from the womb of nature — would have brought risk and pain, but it could also have brought self-development. Technology, I would add, is an instrument, a kind of lever, for this necessary detachment of the individual self from a nurturing surround that otherwise can become stifling, as when an infant remains too long in the womb.

My third point, then, is this: technology assists the birth of the individual in part by separating him from the natural world. To begin with, this separation, this loss of paradise, reconstitutes

the world as an alien, threatening place, continually encroaching upon the safe habitations fortified by human *techne*.

Reckoning with the Scoundrel

Before considering our own predicament in this historical light, I would like to make one matter fully explicit. To admire Odysseus for his self-arousal is not to deny that he was, in many ways and by our lights, a scoundrel. On their way home after the fall of Troy, he and his men sacked the city of Ismarus simply because it was there. Likewise, as Helen Luke reminds us, they came to the land of the Cyclopes seeking plunder, so it is hard to blame Polyphemus for responding in the same spirit. The Cyclopes themselves were a pastoral folk who kept peaceably to themselves, and the crude Polyphemus was able to speak quite tenderly to his sheep (Luke 1987, pp. 13-15; but compare Dimock 1990, pp. 110-15).

Nothing requires us to repress our own judgments about Odysseus' behavior. But it is always problematic when such judgments are not tempered by a sense for historical and individual development. None of us would like to be judged solely by what we have been, as opposed to what we are becoming. And all human becoming is marked by certain tragic necessities, partly reflecting the progress of the race to date.

This is clear enough when we look at the developing child. "Blessed are the little children" — profoundly true, for they have a wonderful openness to everything that is noble, beautiful, healing. But children have also been characterized as beastly little devils, casually inflicting horrible pain upon each other. This, too, has its truth. The point is that neither judgment makes a lot of sense when taken in the way we would assess the well-developed character of a fully self-conscious

adult. The child is only on the way to becoming an adult self, and much of what we see in his early years is less the expression of the individual to come than it is the raw material — both noble and diabolical — from which the individual must eventually shape himself.

Reversals

During the past several hundred years of scientific and technological revolution, we have indeed been shaping ourselves and “growing up.” This is why, if you look at technology and society today only through the lens of my argument so far, you will be badly misled. After all, nearly three millennia — most of recorded history — lies between Homer’s day and our own. Things have changed. What we see, in fact, almost looks like a reversal.

There is, to begin with, the “inversion” of nature and culture that philosopher Albert Borgmann talks about. Early technological man carved out his civilized enclosures as hard-won, vulnerable enclaves, protected places within an enveloping wilderness full of ravening beasts and natural catastrophes. We, by contrast, live within a thoroughly technologized and domesticated landscape where it is the remaining enclaves of wildness that appear painfully delicate and vulnerable (Borgmann 1984, pp. 190 ff.). Today, if we would set bounds to the wild and lawless, it is the ravening beast of technology we must restrain. If nature still threatens us, the threat is that it will finally and disastrously succumb to our aggressions.

A second reversal is closely related to this. You will recall that the *Odyssey* opens with its shipwrecked hero on the isle of Ogygia, where the beautiful goddess, Kalypso, has kept him

as her consort for seven years while urging him to marry her. She would have made him a god and given him a good life, free of care. The name “Kalypso,” of course, means “the Concealer,” and her offer of an endless paradise would in effect have kept Odysseus unborn and nameless, concealed within an immortal cocoon. But he chose instead to pursue the painful path to his own home so as to realize his mortal destiny as a man.

The contrivings and devisings of *techné*, as we have seen, served Odysseus well in his striving toward self-realization and escape from anonymity. But now note the reversal: as Neil Postman has famously elaborated in *Amusing Ourselves to Death* and other works, today it is technology that cocoons us and promises us endless entertainment, distraction, and freedom from cares. There is scarcely a need to elaborate this point for you. Just watch the advertisements on television for half an hour.

I remarked earlier that when Odysseus set sail on his perilous journey over the high seas, he was, in a sense, embarking upon the information highway of his day. But I added that the comparison might be a shallow one. Why shallow?

Well, look at the differences. Odysseus’ journey was a continual risking of life and happiness. It was a journey of horrific loss as well as gain, so that preventing the ultimate loss required every ounce of strength, every bit of cunning he could muster, every crafty art he could set against the temptation to abandon his mission and therefore also himself. He wrestled not only with the foolishness of his companions and the armed might of his opponents, but also with the enticements and hostilities of the gods and the despair of the shades in Hades. Faced with the Sirens’ promise of boundless knowledge, he could not simply lean back and choose among the knowledge-management

systems offered by high-*techne* solution providers. Any lapse of will or attention on his part, any succumbing to temptation, would have been fatal.

When, by contrast, I venture onto the information highway today, I put almost nothing of myself on the line. I know, we hear much talk about transformation — about the coming Great Singularity, the Omega Point, the emergence of a new global consciousness. But, to judge from this talk, we need only wire things up and the transformation will occur — automatically. Complexity theorist Ralph Abraham says that “when you increase the connectivity, new intelligence emerges.” Our hope, he adds, is for “a global increase in the collective intelligence of the human species ... a quantum leap in consciousness.” And computer designer Danny Hillis tells us that “now evolution takes place in microseconds.... We’re taking off.... There’s something coming after us, and I imagine it is something wonderful.”

Call this, if you will, “Evolution for Dummies” or “Plug-and-Play Evolution” — just add connections and — presto! — a quantum leap in consciousness. What easy excitements we revel in! But our excitement is not for the potentials of our own growth; what we anticipate, rather, is our sudden rapture by the god of technology. No blood and sweat for us, no inner work, no nearly hopeless perils of the hero’s quest. If, through our own folly, we face the end of the natural world, no problem: we will be spared the Tribulation because technology, in a singular saltation, will translate us into altogether new and better conditions of life.

Victory of the Contrivance

Personally, I see a rather different promise in all the machinery of the digital age. The *techne* we invest in outward

machinery always gains its character and meaning from the *techne* of our inner devisings. What we objectify in the hard stuff of the world must, after all, first be *conceived*. Look at the technologies heralded by people like Abraham and Hillis, and you will notice that the conceiving has a distinctive and limited character. We have invested only certain automatic, mechanical, and computational aspects of our intelligence in the equipment of the digital age, and it is these aspects of ourselves that are in turn reinforced by the external apparatus. In other words, you see here what engineers will insist on calling a “positive feedback loop,” a loop almost guaranteeing one-sidedness in our intelligent functioning. This one-sidedness is nicely pictured in the lameness of Hephaestus, the craftsman god.

All this can be summarized by saying, “technology is our hope if we can accept it as our enemy, but as our friend, it will destroy us.” *Of course* technology threatens us, and *of course* it calls for a certain resistance on our part, since it expresses our dominant tendencies, our prevailing lameness or one-sidedness. The only way we can become entire, whole, and healthy is to struggle against whatever reinforces our existing imbalance. Our primary task is to discover the potentials within ourselves that are *not* merely mechanical, *not* merely automatic, *not* reducible to computation. And the machine is a gift to us precisely because the peril in its siding with our one-sidedness forces us to strengthen the opposite side — at least it does if we recognize the peril and accept its challenge.

Unfortunately, there does not seem to be much recognition yet. In fact, in many quarters there is nothing but an exhilarated embrace of one-sidedness. Where, for the Greeks, *techne* always had two complementary but never completely separable aspects — the increasingly self-aware inner originating and the outer result — our technology has become so much

gadgetry and wiring and abstract protocols and transistors in one physical state or another. We have forgotten the crafty inner origin and essence of the *techne* that once served our ancestors so well.

And so we reconceive the interior space within which Odysseus hatched his plots and secured his name, telling ourselves that it is merely filled with mindless brain mechanisms, more gadgets exactly like the external ones we are so adept at making. In other words, the *techne* that devises is being co-opted by its own devices. Odysseus was on his way to being a true contriver; we seem content to be mere contrivances.

Compare Homer's man of many devices with Silicon Valley's man of many gadgets, and you will immediately recognize a reversal of emphasis within *techne*. Where the individual's consciousness of self once became more vivid through the experience of his own capacity to objectify his inner contrivings in the outer world, today the objects as such have engulfed us, threatening the originating self with oblivion.

Rousing Ourselves

All this suggests to me that if we are to escape the smothering technological cocoon, our *techne* today must, in a sense, be directed against itself. Our trickery must be aimed at overcoming the constraints imposed by our previous tricks. What we must outwit is our own glib, technical wit.

Or, putting it a little differently: we are engaged in a continual conversation between what you might call the frozen *techne* already embodied in the vast array of our external devices, and the conscious, living *techne* we can summon from within ourselves in the current moment. It is always disastrous for the future of the self when we abdicate the living half of this

conversation, as when we yield ourselves uncritically to what we consider the purely objective promise of technology.

In Odysseus' day, *techne* was a conscious resourcefulness that had scarcely begun to project itself into the material apparatus of life. What apparatus existed was an enticement for further creative expression of the nascent human self. While the technology of the Greeks may seem hopelessly primitive to us, it is worth remembering that the balanced awakening heralded by Homer culminated in a flowering of thought and art that many believe has never been surpassed for profundity or beauty anywhere on earth.

Today, that balance seems a thing of the past. The powers of our minds crystallize almost immediately, and before we are aware of them, into gadgetry, without any mediating, self-possessed reflection, so that we live within a kind of crystal palace that is sometimes hard to distinguish from a prison. The question is no longer whether we can use the enticement of clever devices as a means to summon the energies of dawning selfhood; rather, it is whether we can preserve what live energies we once had, in the face of the deadening effect of the now inert cleverness bound into the ubiquitous external machinery of our existence.

This machinery, this inert cleverness, is the greatest threat to our future. We require all our highest powers of contriving to overcome our contrivances. In the end, the contriving — not the contrivance — is the only thing that counts. There is a law of human development traditionally stated this way:

Whoever has, to him shall be given, and he shall have an abundance; but whoever does not have, even what he has shall be taken away from him.

(Matt. 13:12)

It is a hard saying because it makes no sense in regard to our external possessions, where it would be pure injustice. But when you realize that it is a natural law of our inner life, the meaning becomes clear: we either grow and develop, reaping inner riches upon inner riches, or else we lose whatever we started with. For the self is a conscious power of originating; there are no external gains for the self, and there is no remaining in one place. We cannot *be* static selves; the only life available to us consists of self-realizings or self-abdicatings.

When Odysseus' heart laughed within him at the success of his cunning device in beguiling the Cyclops, he was rejoicing first of all in the developing awareness of his inner capacities as a centered and conscious self. He reveled in his devices because they arose from an intensifying experience of his own powers, not because he saw in them a wholly independent promise.

Our crisis today is a crisis of conviction about the primacy of our conscious powers of devising. What Odysseus was gaining, we are at risk of giving up through a radical displacement of the devising self by its own devices. This is not because of any necessity, but because the devising self has hesitated, become unsure of itself. And at this moment of crisis, the Cyclopes in their might and the Sirens with their enticements confront us from every screen, every newspaper, magazine, and billboard, every mechanism for social transaction, persuading us that we are powerless to affect the technological future and inviting us to dull the pain of consciousness and responsibility by partaking of the delights and wonders that await us.

The image of the semi-comatose, automatically responding figure in front of a screen is the image of the self extinguishing itself — and in some ways I suppose it recalls the image of Odysseus in the dark cave of the one-eyed Cyclops. We are

being asked to become Nobodies again — not as a ruse devised by our awakening selves, but as a denial of ourselves. Nevertheless, the invitation toward self-dissolution is always at the same time an opportunity to seize ourselves at a higher level than ever before, just as Odysseus did in the cave. Everything depends upon our response. Odysseus managed to rouse himself. Our own choice is not yet clear.

Notes

1. This chapter contains the edited text of an invited address I gave at the Cognitive Technology 2001 conference at the University of Warwick in England, held August 6 - 9, 2001.
2. Quotations are from the A. T. Murray translation (Harvard Loeb edition, 1919), unless otherwise indicated. I have changed “Noman” to “Nobody” in the text that follows.

CHAPTER 2

Hold a Blossom to the Light

This chapter contains reflections occasioned by the book, One River: Explorations and Discoveries in the Amazon Rain Forest, by Wade Davis (New York: Simon and Schuster, 1996).

While traveling through the Ecuadorian Amazon as an ethnobotanist, Wade Davis spent some time with the Waorani, known earlier as the Auca Indians. Among the last peoples of the Amazon to be contacted by outsiders, the Auca had made headlines around the world when, in January, 1956, they speared and killed five American missionaries — this despite the missionaries' practice of dropping gifts from an airplane before their disastrous attempt at personal contact. The incident was only one in a series of unfortunate exchanges between the Auca and those who intruded upon their territory. According to Davis, "as late as 1957 there had never been a peaceful contact between the Auca and the outside world."

A couple of decades later, during his stay with the Waorani, Davis accompanied a young warrior named Tomo on a hunting excursion. Highly skilled with a blowgun, Tomo had already, at the age of five, been able to blow a dart through a hanging fruit at thirty paces. As an adult, he could "drive a dart clear through a squirrel at forty feet, knock a hummingbird out of the air, and hit a monkey in the canopy 120 feet above the forest floor."

After selecting a short blowgun (just over six feet long), Tomo led Davis and a companion into the jungle. As Davis tells the story, suddenly

Tomo froze, dropped into an attack crouch, and slipped away from us, moving silently and steadily through a thicket of heliconia until stopping at the base of an enormous tree sixty feet from the trail. In a single gesture he had withdrawn a dart, notched its tip, deftly spun the kapok fiber around the base, and placed it in the mouth of the blowgun that now hovered motionless above his head. His cheeks suddenly puffed out with tremendous pressure, which was released in an instant. A moment later he was lunging through the vegetation, laughing and shouting. By the time we caught up, he held a rufous mot mot in his hand. The bird was still alive. Tomo had managed to reach it before the poison took effect. He dropped the frightened creature into his basket and placed the dart conspicuously in the notch of a tree so that all would know an animal had been taken.

The use of the blowgun is a highly developed art. The Waorani routinely poison the tips of their darts with potent toxins they extract from plants. They notch the darts using the razor-sharp teeth of a piranha jaw, thereby ensuring that the poisonous tip will break off in the flesh of the prey even if the rest of the dart is swatted away. As for the gun itself, its volume is less than a tenth the capacity of the lungs, so “it is not force but control that counts, judging the distance to the prey, the angle of ascent, the proper trajectory.” Up to a point, a longer blowgun produces a higher velocity in the dart, but beyond that point resistance in the gun takes over. “Finding that perfect balance, the right length, is what they’re always looking for.”

On Reading One's Environment

The skills involved in Tomo's hunting success were those many of us in a more technological culture might envy. But for Tomo himself the envy seemed to run in the opposite direction. "Though a gifted hunter with a dart, Tomo confessed that he, like most Waorani, preferred shotguns."

An odd preference, you might think, considering that most of the shotguns available to the Waorani were "miserable weapons: single-shot breechloaders cursed with weak firing springs that rarely lasted a year." A small box of shells cost what three blowguns did — the equivalent of a week's work (if work was to be had). A four-day journey was required simply to make the purchase. Once obtained, the shotgun might be useful for large terrestrial animals at close range (assuming it didn't misfire), "but for birds and monkeys and anything that lived in the canopy, the blowgun was by far the superior weapon." So what was the appeal of the shotgun?

The Waorani affection for shotguns had little to do with efficiency. It was the intrinsic attraction of the object itself, the clicking mechanisms, the polished stock, the power of the explosion. As one Waorani hunter explained, "It makes such a beautiful noise."

In this regard, are we not all Waorani? It's just that, as we tire of one shiny object, we need another — preferably a more "sophisticated" one, or at least a different one. Walk into any high-tech emporium, from Radio Shack to The Sharper Image, and (if you are at all like me) you will experience on every hand "the intrinsic attraction of the object itself" — exactly the sort of attraction that makes a Waorani hunter prefer a shotgun with its cool clicking mechanisms to the blowgun that has become such an intimate and accustomed part of himself.

This suggests what I think is largely true: the history of technology is a history of walking away from ourselves. We abandon old skills and ways of being. This is not in itself a bad thing. Every individual's life is an endless journey from what he has been to what he is becoming. We are continually leaving ourselves behind, and necessarily so. That's what it means to grow. It is the same with cultures.

The problem, it seems to me, lies in a profound shift of emphasis — a shift that was *not* necessary. The issue here, however, is difficult to grasp within an already technologized culture.

In mastering the blowgun, Tomo learned stealth and many physical skills. He learned great care, whether in preparing his poisons or notching his dart or avoiding what we like to call “collateral damage.” He learned patience and well-focused attention. But above all, he learned to read his environment through a resonant inner connection with it: only by understanding the ways of the forest, the character and likely movements of his prey, the meanings carried upon the ceaseless symphony of sounds enlivening the jungle — only so could he find success in the hunt using a weapon such as the blowgun.

The crucial point (it will emerge more clearly in what follows) is that Tomo's reading of his environment was thoroughly qualitative. He had to understand *what it was like* to be a certain animal. He needed to recognize the characteristic gestures of its movement — and, indeed, of all its behaviors — to know it from the inside, so to speak. The decisive detail for a particular hunt, whatever it turned out to be, was very likely available to Tomo without reflection or calculation, because it was implicit in the larger, expressive pattern that he grasped as a unified whole. Such “inner resonance” with one's surroundings is profound, subtle, and revelatory, a prerequisite (though not the only prerequisite) for any full understanding of the world.

The shift of emphasis I am concerned about is the sacrifice of this qualitative attention to one's environment in favor of a strictly analytical and technical understanding. It's the difference between having information *about* someone, on the one hand, and *knowing* him, on the other. Knowing gives us a power of direct recognition; we can be more fully open to the expressive qualities of the person or thing — which also means being open to those same qualities in ourselves. We overcome, in the moment of knowing, the barrier between self and other. To experience the quality of a thing is necessarily to *experience* it, to find its shape and movement and significance reproduced within ourselves. This is what I mean by “resonance.”

The Powers of Recognition

The ability to read nature in this qualitative sense, to know its phenomena from the inside, is not restricted to primitive cultures. While we may not know how to reconcile this ability with the canonized procedures of science, we do often recognize it as a mark of scientific genius. The primary subject of Davis' book, the legendary Harvard ethnobotanist, Richard Evans Schultes, exemplified this sort of genius.

Schultes stood apart in his field. As Davis relates it, “even the most highly trained botanists are humbled by the immense diversity of the Amazonian forests”:

Confronted with the unknown, they collect specimens and do their best to identify a plant to family or genus. Only later, in the comfort of the herbarium and invariably with the assistance of a colleague specializing in that particular group of plants, will they figure out the species and obtain a complete determination.

With Schultes, who collected more than 25,000 plants in Columbia between 1941 and 1953, and who was the first to record entire genera previously unknown to science, along with hundreds of species, it was different. “He possessed what scientists call the taxonomic eye” — an immediate ability to detect significant variation within an overall pattern. He occasionally demonstrated his powers of attention to such variation in striking ways:

He was once in a small plane that took off from a dirt runway, brushed against the canopy of the forest, and very nearly crashed. A colleague who was with him recalled years later that throughout the entire episode Schultes had sat calmly by a window, oblivious to the screams of the terrified passengers. It turned out that he had spotted a tree, a new species of *Cecropia*, and had scarcely noticed the crisis.

What all this meant, Davis comments, is that Schultes

could resolve botanical problems in the moment, write descriptions in the field, realign species and genera just by holding a blossom to the light. In the entire history of Amazonian botany, only a handful of scientists have possessed this talent.

“... just by holding a blossom to the light.” This is the essence of qualitative knowledge. It’s the difference between going laboriously through a set of analytical keys to identify a plant or, based on direct and intimate familiarity with the plant world, immediately *recognizing* the distinctive character of the plant and its relations to other plants. In order to appreciate what this means, think of how you would identify a face in a crowd when all you had was a list of discrete features, and

compare that to recognizing an old friend. The recognition is instantaneous, or nearly so, a single act drawing on the qualities of an entire image, without analysis. And in that image you may read a great deal about the kind of experience your friend has just been through and how he is relating to those around him.

We in fact exercise such powers of recognition all the time; without them there would be no science. Yet a science that long ago disavowed any concern with the qualities of things has steadily pushed our acts of recognition to the periphery. Mention these mundane, daily human performances in certain scientific contexts and you will soon hear the muttered epithet, “mystical.” Our technologies, with their emphasis on automatically transferable information, persistently train us in the disregard of subtle qualities. The steps in identifying a plant analytically via a key are easily taught through a program. What Schultes learned to see when he held a flower to the light is not. The program yields clean, unambiguous, yes-or-no answers — and little else. The kind of understanding Schultes employed when studying a blossom enabled him to re-imagine and re-organize the relations upon which programmatic keys are based.

Puzzling Knowledge

The tribes of the Amazon present numerous riddles that are surely related to the difference between a qualitative and analytic understanding. There is a plant called *yagé* whose bark contains the beta-carbolines, harmine and harmaline. By combining *yagé* with various other plants, the shamans of the northwest Amazon long ago learned to concoct potent psychoactive drinks. Investigating two of the auxiliary plants employed in these concoctions, Schultes noted that they contained tryptamines, “powerful psychoactive compounds

[writes Davis] that when smoked or snuffed induce a very rapid, intense intoxication of short duration marked by astonishing visual imagery." (Neither Schultes nor Davis was loath to verify such effects for himself.)

The problem is that, taken orally (the Indians drank these potions), the tryptamines have no effect; they are denatured by an enzyme in the human gut. But, as it turns out, the beta-carbolines in *yagé* inhibit exactly this enzyme. So when *yagé* is combined with one of the admixture plants, the combination produces dramatic hallucinogenic effects.

What astonished Schultes was less the raw effect of the drugs — by this time, after all, he was becoming accustomed to having his consciousness awash in color — than the underlying intellectual question that the elaboration of these complex preparations posed. The Amazonian flora contains literally tens of thousands of species. How had the Indians learned to identify and combine in this sophisticated manner these morphologically dissimilar plants that possessed such unique and complementary chemical properties? The standard scientific explanation was trial and error — a reasonable term that may well account for certain innovations — but at another level, as Schultes came to realize on spending more time in the forest, it is a euphemism which disguises the fact that ethnobotanists have very little idea how Indians originally made their discoveries.

The problem with trial and error is that the elaboration of the preparations often involves procedures that are either exceedingly complex or yield products of little or no obvious value. *Yagé* is an inedible, nondescript liana that seldom flowers. True, its bark is bitter, often a clue to medicinal properties, but it is no more so than a hundred other forest vines. An infusion of the bark causes vomiting and severe diarrhea, conditions that would discourage further experimentation. Yet not only did the Indians persist but they became so adept

at manipulating the various ingredients that individual shamans developed dozens of recipes, each yielding potions of various strengths and nuances to be used for special ceremonial and ritual purposes.

Another example was the preparation of dart poison, known as “curare”:

The bark is rasped and placed in a funnel-shaped leaf suspended between two spears. Cold water is percolated through, and the drippings collect in a ceramic pot. The dark fluid is slowly heated and brought to a frothy boil, then cooled and later reheated until a thick viscous scum gradually forms on the surface. This scum is removed and applied to the tips of darts or arrows, which are then carefully dried over the fire. The procedure itself is mundane. What is unusual is that one can drink the poison without being harmed. To be effective it must enter the blood. The realization on the part of the Indians that this orally inactive substance, derived from a small number of forest plants, could kill when administered into the muscle was profound and, like so many of their discoveries, difficult to explain by the concept of trial and error alone.

Perhaps the trial-and-error hypothesis simply reflects a long habit of ignoring the knowledge potentials of an attention to the qualities of our environment. Such attention on the Indians’ part could be quite remarkable. They recognized many different kinds of *yagé* plants, all of which, so far as Schultes could tell, were referable to a single species. The distinguishing criteria made no sense botanically, and yet “the Indians could readily differentiate their varieties on sight, even from a considerable distance in the forest. What’s more,

individuals from different tribes, separated by large expanses of forest, identified these same varieties with amazing consistency.”

Much the same was true of *yoco*, a caffeine-containing stimulant. Schultes collected fourteen different types by the Indians’ reckoning, “not one of which could be determined based on the rules of his own science.” Schultes, as Davis reports it, was learning that

in unveiling the indigenous knowledge, his task was not merely to identify new sources of wealth but rather to understand a new vision of life itself, a profoundly different way of living in a forest.

Seeking a New Balance

It is a long way from the mechanics of information processing to the pursuit of a new vision — a new *manner* of seeing. But what I am suggesting is that we urgently need to combine this pursuit of a new, qualitative manner of seeing with our more technical ambitions if we are to counter the unhealthy one-sidedness of the latter. The meeting of the two different ways of knowing proves undeniably fruitful, even in strictly scientific terms. Look at what has been gained through the contact of botany and medicine with native plant wisdom. To take just one example: curare, the dart poison, led western medicine to d-tubocurarine, a potent muscle relaxant. When administered during surgery, it greatly reduced the required levels of anesthesia. D-tubocurarine, Davis notes, “ended up saving far more human lives than curare had ever taken.” More broadly, native wisdom has presented us with sounder images of the whole organism in its relation to health and disease:

For the Waorani, as for many indigenous peoples, good or bad health results not from the presence or absence of

pathogens alone but from the proper or improper balance of the individual. Health is harmony, a coherent state of equilibrium between the physical and spiritual components of the individual. Sickness is disruption, imbalance, and the manifestation of malevolent forces in the flesh.

Slowly, sometimes reluctantly, our own medicine has been coming to terms with this awareness that illness and health are matters of harmony, balance, equilibrium. The projection of our fears upon “deadly” microorganisms as the sole and uncontested causes of disease will eventually be recognized as a latter-day echo of our ancestors’ preoccupation with evil spirits. When, by contrast, we turn toward the organism as a whole, we will have to reckon with the fact that its harmony or disharmony cannot be read from instruments. True diagnosis requires nothing less than the kind of highly developed scientific art and qualitative vision that Schultes demonstrated with his plants.

Not many seem to recognize that in the age of digital technologies, our ability to read the qualities of our surroundings, detecting what is toxic and what is healing in them, what is in balance and what is out of balance, is even more crucial than it was for Tomo. It is also more difficult: the reading requires a greater, more self-conscious effort on our part precisely because our machines seem to make the effort irrelevant and futile. And yet the penalty for neglecting our responsibility is that the inhuman inertia of the machines will dictate our future.

It is not easy, after all, to read a collection of people sitting in front of monitors. Tomo, we can imagine, might need to make a quick, accurate assessment as to whether a group of warriors encountered in the forest was a peaceful hunting expedition or a raiding party. But how are we to gauge the friendliness of that roomful of programmers or data-entry clerks? Are they preying

upon the larger society, or serving it? Are they working for the next Enron, or moving in a very different direction? Yet we *must* learn to read these things. The fact is that our social future will be determined by the human qualities of the activities being mediated through hundreds of millions of programmed devices, and by our ability consciously to resonate with and thereby to recognize these qualities.

Unfortunately, the devices themselves serve primarily to conceal — and in some ways to nullify — the qualitative dimensions of our activities. This is why, in a typical computer-based work group, the art of communication and openness to the other tends to give way to the mere manipulation of technical information. The scheduling of activities is tightly programmed. The budgeting and allocation of resources fall more or less automatically out of a spreadsheet. But the question remains: what do these databases and programs and numbers *mean* for the workers involved, for the surrounding community, for the global economy? What do we *want* them to mean — or do our wants matter any longer?

To read the significance of our activities rather than being lulled by the blank expressions of our machines — this is the skill and art demanded of us today. The skill and art are hardly new, however; it's just that our fascination with the technical aspects of our jobs encourages a much too narrow focus. Yet it is not that difficult, amid all the email exchange and programmed organization, to make an occasional inquiry of one's neighbor in the next cubicle: "How are you doing?" "How do you feel about your work?" "Do you think the product we're working on will help to heal our society or instead debilitate it?"

If what all the employees in a large corporation actually sensed, qualitatively, about their own work and the company's endeavors were a matter of common inquiry and group reflection, could the business avoid going through a revolutionary transformation? Could it any longer be the same business? If,

as a society, we cultivated anything like Tomo's attentive openness to the expressive qualities of his environment, surely the transformation I refer to would be commonplace rather than revolutionary. And the sudden surprise of an Enron would be next to impossible.

But why bother when the *program* seems to be the only real work? When the next email and next report and next milestone demand attention, and the software can be trusted to "take care" of the larger issues of coordination? Our own functioning becomes comfortingly undemanding on the qualitative and expressive level, with all the challenges reduced to merely technical ones. But if the qualitative and expressive level is where we discover both the noxious and healing properties of our environment, it is also where we discover the meaning of our work and the ethical nuances of our relations with each other. It is no surprise when, having replaced this level with the programmatic automatisms of information processing, we find organizations running badly off the tracks.

The Thrill of Cutting Down Trees

None of this is to say that we could get by in today's world without the newer technologies. But it is to say that we cannot get by without recognizing the disciplines we must work ever harder to develop in order to invest the ubiquitous programming with our own purposes. And we also need to realize when our preoccupation with technology is just plain fickle.

In 1975, when the flood of goods from outside was threatening the Waorani way of life, the local missionaries tried to stem the tide. But when they restricted the flow of radios, T-shirts, sunglasses, and baseball hats, the Waorani simply expanded their contacts with nearby oil exploration camps and tourists. Going so far as to clear an airstrip at one location, "they

invented rituals, imitated the activities of an oil camp, and sang songs to the helicopters, with the hope that they would unleash a rain of gifts.”

Eventually the missionaries realized the hopelessness of the situation. One of them, Jim Yost, remarked to Davis,

As romantics we idealize a past we never experienced and deny those who knew that past from changing. We forget perhaps the most disturbing lesson of anthropology. As Levi-Strauss said, “The people for whom the term cultural relativism was invented, have rejected it.” (p. 290)

The “cultural relativism” Levi-Strauss was referring to includes the notion that every culture has its own distinctive values worth preserving. Surely it does. Yet it is also true that the members of the culture itself may prefer change over becoming museum exhibits. We can hardly preserve them against their will, whether by dictating their values to them or artificially isolating them.

Davis hones the issue to a fine sharpness when he quotes Yost as saying,

Nothing thrills the Waorani more than killing game and cutting down big trees. It’s what so many people don’t understand who haven’t lived in the forest. You don’t have to conserve what you don’t have the power to destroy. Harming the forest is an impossible concept for them.

When Davis interjects, “They don’t know what it means to destroy,” Yost goes on:

They have no capacity to understand. In a world of such abundance, the word “scarcity” has no meaning. It’s

what makes them most vulnerable. It's the same with their culture. When you've lived in complete isolation, how can you understand what it means to lose a culture? It's not until it is almost gone and when people become educated that they realize what's being lost. By then the attractions of the new way are overpowering, and the only people who want the old ways are the ones who never lived it.

You can easily imagine that a similar sense of the indestructible abundance of natural resources must have seized the early European settlers of the American West. And in a rather different way, the inexhaustible supply of computing power now invites the impoverishment of our cultural mores and institutions through their transfer to the shallow and much-too-automatic pathways of silicon.

Historically, there appears to be an element of tragedy in all this. We stumble along in ignorance and, by the time we realize the subtle ways our actions have caught up with us, the damage and loss are already irrevocable.

But one function of tragedy is to shock us into wakefulness. With this wakefulness comes a new ability to stand back and look at ourselves critically in the very moment of acting. And this in turn brings greater moral responsibility. Surely by the time of the settling of the American West there was much less innocence in the relations between settler and environment than there was for the Waorani. And it would be hard to excuse as innocent at all the widespread narcosis evident in the way we have yielded so passively to mass media and digital technologies today, allowing them to cut us off from vital openness toward the full-fleshed qualities of our human and natural contexts. We, after all, have as examples the Waorani and many other cultures, not to mention a reasonably objective knowledge of our own history. The Waorani had none of this.

Don't Bemoan the Loss of Old Skills

All growth has a tragic element. Something is lost. Catastrophe is a prime agent of maturation. Unwelcome as it may sound, the Waorani had no choice but to “grow up.” What enables one to say this is that *every* culture has no choice but to grow up. Our own fascination with digital technologies is no less naive, and no less a blind toying with cultural catastrophe, than was the Waorani fascination with shotguns and radios. The difference between us and the Waorani of several decades ago is that, given our history with such things, we ought to know better.

On one way of viewing this history, it confronts us with a succession of tools giving us an opportunity to develop an ever-expanding array of skills and capacities. Increasingly, however, the peculiar challenge of our tools is that they invite us to ignore the matter of skills and capacities. Disastrously, they are advertised as *labor-saving* devices, and the main selling point lies in what we no longer need to do, not in the new skills we must develop if we truly want to *master* the new tools.

Bemoaning the loss of old skills is probably not the most productive way to criticize the new technologies. The greater need is to recognize that, precisely *because* of the labor-saving capabilities of our high-tech tools, the art of mastery demands greater skills and more arduous discipline than ever before. Think of the retail clerk, nearly all of whose former responsibilities in engaging the customer and providing feedback for the operation of the business are now taken over by computers. This clerk is as fully detached from an earlier set of skills as was Tomo with a shotgun in his hands. So we have a choice: simply to accept that the human being in this case is now little more than a “dumb assistant” to “intelligent machinery,” or else to tackle the huge task of re-visioning employees’ jobs, and the business itself, along more humane lines. The challenge in

all this — if we accept it — puts us into continual tension with the machines surrounding us. It is a tension that Tomo could scarcely have noted with his blowgun.

But if we do accept the challenge, then I'm convinced we will not really find ourselves abandoning the older skills — not, at least, in the sense that counts. A qualitative and sensitive openness to our environment today — the kind of openness where we move beyond technical information about people and things to a qualitative *meeting* with them, learning to recognize their characteristic expressions and gestures, learning what it is like to be in that other place, what are the poisonous and the curative elements in our surroundings — this is not so much a negation of Tomo's skills as an extension of them. And in cultivating these skills we will find not only that our relations to the technologized world become healthier, but so also our relations to the natural world that sustains us.¹

Notes

1. The commentary in this chapter is focused upon a relatively few pages of Wade Davis' large, sprawling work. The book primarily concerns Schultes and his many years of travel throughout the Amazon basin — and also the later travels of the author and another student of Schultes, Tim Plowman. There's a great deal about the numerous psychotropic plants used by the natives (Schultes, with his unparalleled knowledge of these plants, garnered some notoriety during the psychedelic revolution in this country), about the critical quest for rubber by the Allies during World War II (in which Schultes played a central role), and about the culture of the native Americans and their grievous mistreatment by the colonists. All in all a highly stimulating book, well written and worth reading.

CHAPTER 3

Toward an Ecological Conversation

The chickadee was oblivious to its surroundings and seemed almost machine-like, if enfeebled, in its single-minded concentration: take a seed, deliver a few futile pecks, then drop it; take a seed, peck-peck-peck, drop it; take a seed. . . . The little bird, with its unsightly, disheveled feathers, almost never managed to break open the shell before losing its talons' clumsy grip on the seed. I walked up to its feeder perch from behind and gently tweaked its tail feathers. It didn't notice.

My gesture was, I suppose, an insult, although I felt only pity for this creature — pity for the hopeless obsession driving it in its weakened state. There were several sick chickadees at my feeder that winter a few years ago, and I began to learn why some people view feeding stations themselves as an insult to nature. A feeder draws a dense, "unnatural" population of birds to a small area. This not only encourages the spread of disease, but also evokes behavioral patterns one might never see in a less artificial habitat.

And if feeders are problematic, what was I to think of my own habit of sitting outside for long periods and feeding birds from my hands? Especially during the coldest winter weather and heavy snowfalls, I sometimes found myself mobbed by a contentious crowd, which at different times included not only chickadees but also titmice, red- and white-breasted

nuthatches, hairy woodpeckers, goldfinches, juncos, blue jays, cardinals, various sparrows, and a red-bellied woodpecker. To my great delight, several of the less wary species would perch on shoulders, shoes, knees, and hat, as well as hands.

But by what right do I encourage tameness in creatures of the wild? The classic issue here has to do with how we should assess our impacts upon nature. Two views, if we drive them to schematic extremes for purposes of argument, conveniently frame the debate:

On one side, with an eye to the devastation of ecosystems worldwide, we can simply try to rid nature of all human influence. The sole ideal is pristine, untouched wilderness. The human being, viewed as a kind of disease organism within the biosphere, should be quarantined as far as possible. Call this “radical preservationism.”

On the other side, impressed by our society’s growing technical sophistication, we can urge the virtues of scientific management to counter the various ongoing threats to nature. Higher-yielding, genetically engineered vegetables, fruits, grains, livestock, fish, and trees — intensively monocropped and cultivated with industrial precision — can, we’re told, supply human needs on reduced acreages, with less environmental impact. Cloning technologies may save endangered species or even bring back extinct ones. Clever chemical experimentation upon the atmosphere could change the dynamic of global warming or ozone depletion.

Managerial strategies more appealing to many environmentalists include re-introduction of locally extinct species, collaring of wild animals for tracking and study, controlled predation by humans, and widespread use of bird nesting boxes — practices that have aided in the recovery of some threatened species, even if their lives now must follow altered patterns.

The problem with scientific management, founded as it is on the hope of successful prediction and control, is that complex

natural systems have proven notoriously unpredictable and uncontrollable. Ecologists, writes Jack Turner in *The Abstract Wild*, keep “hanging on to the hope of better computer models and more information.” But their hope is forlorn:

The “preservation as management” tradition that began with [Aldo] Leopold is finished because there is little reason to trust the experts to make intelligent long-range decisions about nature. . . . If an ecosystem can’t be known or controlled with scientific data, then why don’t we simply can all the talk of ecosystem health and integrity and admit, honestly, that it’s just public policy, not science?

“The limits of our knowledge,” he adds, “should define the limits of our practice.” We should refuse to mess with wilderness for the same reason we should refuse, beyond certain limits, to mess with the atom or the structure of DNA. “*We are not that wise, nor can we be*” (Turner 1996, pp. 122-24).

Turner’s critique of the ideal of scientific management is not unlike my own. But, as is usually the case with pitched battles between opposing camps, the real solution to the dispute between radical preservationists and scientific managers requires us to escape the assumptions common to both. Why, after all, does Turner agree with his opponents that acceptable “messing” with ecosystems would have to be grounded in successful prediction and control?

Once we make this assumption, of course, we are likely either to embrace such calculated control as a natural extension of our technical reach, or else reject it as impossible. And yet, when I sit with the chickadees, messing with their habitat, it does not feel like an exercise in prediction and control. My aim is to get to know the birds, and to understand them. Maybe this makes a difference.

It is certainly true, in one sense or another, that “the limits of our knowledge should define the limits of our practice.” But we need to define the sense carefully. By what practice can we extend our knowledge, if we may never act without already possessing perfect knowledge?

Our inescapable ignorance mandates great caution — a fact our society has been reluctant to accept. Yet we cannot absolutize any principle of caution. The physician who construes the precept, “First, do no harm,” as an unambiguous and definitive rule can no longer act at all, because only perfect prediction and control could guarantee the absence of harm. Those of us who urge precaution must not bow before the technological idols we are trying to smash. We can never perfectly know the consequences of our actions because we are *not* dealing with machines. We are called to live between knowledge and ignorance, and it is as dangerous to make ignorance the excuse for radical inaction as it is to found action upon the boast of perfect knowledge.

There is an alternative to the ideal of prediction and control. It helps, in approaching it, to recognize the common ground beneath scientific managers and those who see all human “intrusion” as pernicious. Both camps regard nature as a world in which the human being cannot meaningfully participate. To the advocate of pristine wilderness untouched by human hands, nature presents itself as an inviolable and largely unknowable Other; to the would-be manager, nature is a collection of objects so disensouled and unrelated to us that we can take them as a mere challenge for our technological inventiveness. Both stances deprive us of any profound *engagement* with the world that nurtured us.

My own hope for the future lies in a third way. Perhaps we have missed this hope because it is too close to us. Each of us participates in at least one domain where we grant the autonomy and infinite worth of the Other while also acting boldly

to affect and sometimes even rearrange the welfare of the Other. I mean the domain of human relations.

We do not view the sovereign individuality and inscrutability of our fellows as a reason to do nothing that affects them. But neither do we view them as mere objects for a technology of control.

How *do* we deal with them? We engage them in conversation.

We Converse to Become Ourselves

I would like to think that what all of us, preservationists and managers alike, are really trying to understand is how to conduct an ecological conversation. We cannot predict or control the exact course of a conversation, nor do we feel any such need — not, at least, if we are looking for a *good* conversation. Revelations and surprises lend our exchanges much of their savor. We don't want predictability; we want respect, meaning, and coherence. A satisfying conversation is neither rigidly programmed nor chaotic; somewhere between perfect order and total surprise we look for a creative tension, a progressive and mutual deepening of insight, a sense that we are getting somewhere worthwhile.

The movement is essential. This is why we find no conclusive resting place in Aldo Leopold's famous dictum. "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (1970, p. 262).

Integrity and beauty, yes. But in what sense stability? Nature, like us, exists — preserves its integrity — only through continual self-transformation. Mere preservation would freeze all existence in an unnatural stasis, denying the creative destruction, the urge toward self-transcendence, at the world's heart. Scientific management, on the other hand, reduces evolutionary change to arbitrariness by failing to

respect the independent character of the Other, through which all integral change arises.

Turner, applying Leopold's rule to the past, is driven to suggest that "the last ten thousand years of history is simply evil" (1996, p. 35). He is, in context, defending the importance of moral judgment and passion. By all means, let us have moral indignation where it is due — and, heaven knows, plenty of it *is* due. But a ten thousand-year history was *simply* evil? This is what happens when you absolutize a principle of stability and leave conversation and change out of the picture. The antidote to Turner's stance here (a stance he himself continually rises above) is to consider what it might mean to engage nature in respectful conversation. One can venture a few reasonably straightforward observations.

In any conversation it is, in the first place, perfectly natural to remedy one's ignorance by putting *cautious* questions to the Other. Every experimental gardening technique, every new industrial process, every different kind of bird feeder is a question put to nature. And, precisely because of the ignorance we are trying to remedy, there is always the possibility that the question itself will prove indelicate or otherwise an occasion for trouble. (My bird feeder was the wrong kind, conducive to the spread of disease. And you can quite reasonably argue that I should have investigated the issues and risks more thoroughly before installing my first feeder.)

In a respectful conversation such lapses are continually being committed and assimilated, becoming the foundation for a deeper, because more knowledgeable, respect. The very fact that we recognize ourselves as putting questions to nature rather than asserting brash control encourages us to anticipate the possible responses of the Other before we act, and to be considerate of the actual response, adjusting ourselves to it, when it comes.

This already touches on a second point: in a conversation we are always compensating for past inadequacies. As every student of language knows, a later word can modify the meaning of earlier words. The past can in this sense be altered and redeemed. We all know the bitter experience of words blurted out unwisely and irretrievably, but we also know the healing effects of confession and penance.

This in turn points us to a crucial third truth. At any given stage of a conversation, there is never a single right or wrong response. We can legitimately take a conversation in any number of healthy directions, each with different shades of meaning and significance.

Moreover, coming up with my response is not a matter of choosing among a range of alternatives already there, already defined by the current state of the exchange. My responsibility is creative; what alternatives exist depends in part on what new alternatives I can bring into being. Gandhi engendered possibilities for nonviolent resistance that were not widely known before his time, and the developers of solar panels gave us new ways to heat our homes. If we have any “fixed” obligation, it is the obligation not to remain fixed but freely to transcend ourselves.

All conversation, then, is inventive, continually escaping its previous bounds. Unfortunately, our modern consciousness wants to hypostatize nature — to grasp clearly and unambiguously what this “thing” is so that we can preserve it. But the notorious difficulties in defining what nature is — what we need to preserve — are no accident. There is no such thing as a nature wholly independent of our various acts to preserve (or destroy) it. You cannot define any ecological context over against one of its creatures — least of all over against the human being. If it is true that the creature becomes what it is only by virtue of the context, it is also true that the context becomes what it is only by virtue of the creature.

This can be a hard truth for environmental activists to accept, campaigning as we usually are to save “it,” whatever “it” may be. In conversational terms, the Other does not exist independently of the conversation. We cannot seek to preserve “it,” because there is no “it” there; we can only seek to preserve the integrity and coherence of the conversation through which both it and we are continually transforming ourselves. Hypostatization is always an insult because it removes the Other from the conversation, making an object of it and denying the living, shape-changing, conversing power within it.

Finally, conversation is always particularizing. I cannot converse with an abstraction or stereotype,” a “democrat” or “republican,” an “industrialist” or an “activist,” or, for that matter, a “preservationist” or a “scientific manager.” I can converse only with a specific individual, who puts his own falsifying twist upon every label I apply. Likewise, I cannot converse with a “wetland” or “threatened species.” I may indeed *think about* such abstractions, but this thinking is not a conversation, just as my discoursing upon children is not a conversation with my son.

Permission and Responsibility

How, then, shall we act? There will be many rules of thumb, useful in different circumstances. But I’m convinced that, under pressure of intense application, they will all converge upon the most frightful, because most exalted, principle of all. It’s a principle voiced, albeit with more than a little trepidation, by my colleague at The Nature Institute, Craig Holdrege:

You can do anything as long as you take responsibility for it.

Frightful? Yes. The first thing to strike most hearers will be that impossibly permissive *anything*. What environmentalist would dare speak these words at a convention of American industrialists?

But hold on a minute. How could this principle sound so irresponsibly permissive when its whole point is to frame permission in terms of responsibility? Apparently, the idea of responsibility doesn't carry that much gravity for us — and isn't this precisely because we are less accustomed to think of nature in the context of responsible conversation than of technological manipulation? Must we yield in this to the mindset of the managers?

If we do take our responsibility seriously, then we have to live with it. It means that a great deal depends on us — which also means that a great power of abuse rests on us. Holdrege's formulation gives us exactly what any sound principle must give us: the possibility of a catastrophic misreading in either of two opposite directions. We can accept the permission without the responsibility, or we can view the responsibility as denying us the permission. Both misreadings pronounce disaster. The only way to get at any balanced rule of behavior, any principle of organic wholeness, is to enter into conversation with it, preventing its diverse movements from running off in opposite directions, but allowing them to weave their dynamic and tensive unity through our own flexible thinking.

"You can do anything if you take responsibility for it." An ill-intentioned one-sidedness can certainly make of this a mere permission without responsibility. But, then, too, as we have seen, taking on the burden of responsibility without the permission ("First, do no harm — never, under any circumstance; do not even risk it") renders us catatonic.

Permission and responsibility must be allowed to play into each other. When we deny permission by being too assiduous in erecting barriers against irresponsibility, we are also erecting

barriers against the exercise of responsibility. The first sin of the ecological thinker is to forget that there are no rigid opposites. There is no growth without decay, and no decay without growth. So, too, there is no opportunity for responsible behavior without the risk of irresponsible behavior.

“But doesn’t all this leave us dangerously rudderless, drifting on relativistic seas? Surely we need more than a general appeal to responsibility! How can we responsibly direct ourselves without an understanding of the world and without the guidelines provided by such an understanding?”

Yes, understanding is the key. We need the guidelines it can bring. But these must never be allowed to freeze our conversation. This is evident enough in all human intercourse. However profound my understanding of the other person, I must remain open to the possibilities of his (and my) further development — possibilities that our very conversation may serve. This doesn’t, in healthy experience, produce disorientation or vertigo, a fact that testifies to a principle of dynamic (not static) integrity, an organic unity, as the foundation of our lives.

Such a principle, above all else, is what we must seek as we try to understand the world around us. The Nature Institute where I work sits amid the pastures of a biodynamic farm. The cows in these pastures have not been de-horned — a point of principle among biodynamic farmers. Recently I asked Holdrege whether he thought one could responsibly de-horn cows, a nearly universal practice in American agriculture.

“How does de-horning look from the cow’s perspective? That’s the first thing you have to ask,” he replied. When you observe the ruminants, he went on, you see that they all lack upper incisors, and they all possess horns or antlers, a four-chambered stomach, and cloven hooves.

If you look carefully at the animals, you begin to sense the significance of these linked elements even before you

fully understand the relation between them. They seem to imply each other. Do you understand the nature of the implication? So here already an obligation presses upon you if you want to de-horn cattle: you must investigate how the horns relate to the entire organism.

Given his own observations of the cow (Holdrege 1997) and given his discussions with farmers who have noted the different behavior of cows with and without horns — and given also the lack of any compelling reason for de-horning when the cows are raised in a healthy manner — Holdrege's own conclusion is: "Unusual situations aside, I don't see how we can responsibly de-horn cows."

Strange as this stance may seem outside a respectful, conversational context, it is a conclusion that remains natural to us at some half-submerged level of understanding. What artist would represent cattle without horns? (Picture the famous Wall Street bull, de-horned!) The horns, we dimly sense, belong to these animals.

What the ecological conversation requires of us is to raise this dim sense, as best we can, to clear understanding. The question of what *belongs* to an animal or a plant or a habitat is precisely the question of wholeness and integrity. It is a question foreign and inaccessible to conventional thinking simply because we long ago quit asking it. We had to have quit asking it when we began feeding animal remains to herbivores such as cows, and when we began raising chickens, with their beaks cut off, in telephone book-sized spaces.

Most dramatically, we had to have quit asking it by the time genetic engineers, borrowing from the philosophy of the assembly line, began treating organisms as arbitrary collections of interchangeable mechanisms. There is no conversing with a random assemblage of parts. So it is hardly surprising, even if morally debilitating, that the engineer is not required

to live alongside the organisms whose destiny he casually scrambles. He is engaged, not in a conversation, but a mad, free-associating soliloquy.

Approaching Mystery

Our refusal of the ecological conversation arises on two sides. We can, in the first place, abandon the conversation on the assumption that whatever speaks through the Other is wholly mysterious and beyond our ken. This all too easily becomes a positive embrace of ignorance.

I do not see how anyone can look with genuine openness at the surrounding world without a sense of mystery on every hand. Reverence toward this mystery is the prerequisite for all wise understanding. But “mysterious” does not mean “unapproachable.” After thirty-two years of marriage my wife remains a mystery to me — in some ways a deepening mystery. Yet she and I can still converse meaningfully, and every year we get to know each other better.

There is no such thing as absolute mystery. Nearly everything is unknown to us, but nothing is unknowable *in principle*. Nothing we could want to know refuses our conversational approach. A radically unknowable mystery would be completely invisible to us — so we couldn’t recognize it as unknowable.

Moreover, the world itself is shouting the necessity of conversation at us. Our responsibility to avoid destroying the earth cannot be disentangled from our responsibility to sustain the earth. We cannot heal a landscape without a positive vision for what the landscape might become — which can only be something it has never been before. There is no escaping the expressive consequences of our lives.

Our first conversational task may be to acknowledge mystery, but when you have prodded and provoked that mystery

into threatening the whole planet with calamity, you had better hope you can muster a few meaningful words in response, if only words of apology. And you had better seek at least enough understanding of what you have prodded and provoked to begin redirecting your steps in a more positive direction.

But claiming incomprehension of the speech of the Other is not the only way to stifle the ecological conversation. We can, from the side of conventional science, deny the existence of any speech to be understood. We can say, "There is no one there, no coherent unity in nature and its creatures of the sort one could speak with. Nature has no interior."

But this will not do either. To begin with, we ourselves belong to nature, and we certainly communicate with one another. So already we can hardly claim that nature lacks a speaking interior. (How easy it is to ignore this most salient of all salient facts!) Then, too, we have always communicated in diverse ways with various higher animals. If we have construed this as a monologue rather than a conversation, it is not because these animals offer us no response, but only because we prefer to ignore it.

But beyond this, whenever we assume the organic unity of *anything*, we necessarily appeal to an immaterial "something" that informs its parts, which otherwise remain a mere disconnected aggregate. You may refer to this something as spirit, archetype, idea, essence, the nature of the thing, its being, the "cowness of the cow," or whatever. (Some of these terms work much better than others.) But without an interior and generative aspect — without something that speaks through the organism as a whole, something of which all the parts are a qualitative expression — you have no organism and no governing unity to talk about, let alone to converse with.

Remember: the science that denies an interior to nature is the same science that was finally driven by its own logic (for

example, in behaviorism) to deny the interior in man — a *reductio ad absurdum* if ever there was one. The same oversight accounts for both denials — namely, the neglect of qualities, which are the bearers of expression in both the world and the human being. Where there is genuine qualitative expression, something is expressing itself.

In his study of the sloth (1999), Holdrege remarks that “every detail of the animal speaks ‘sloth.’” Of course, you cannot force anyone to see the unity of the sloth — to see what speaks with a single voice (against standard evolutionary logic) through all the details — because you cannot force anyone to attend in a disciplined way to the qualitative substance of the world. But this much needs saying: a science that long ago decided to have nothing to do with qualities is not in a good position to tell those who do attend to qualities what they may or may not discover. (The stance of some churchmen toward Galileo’s telescope comes to mind.)

What those who *are* receptive to the world’s qualities consistently discover is a conversational partner.

Where Does the Wild Live?

To foreclose on the possibility of ecological conversation, whether due to reticence in the presence of the mystery of the Other or simple denial of both mystery and Other, is to give up on the problem of nature’s integrity and our responsibility. It is to forget that we ourselves stand within nature, bringing, like every creature, our own contributions to the ecology of the whole. Most distinctively, we bring the potentials of conscious understanding and the burden of moral responsibility. Can it be merely incidental that nature has begun to realize these potentials and to place this burden here, now, upon us?

Raymond Dasmann sees wilderness areas as a refuge for “that last wild thing, the free human spirit” (quoted in Nash

2001, p. 262). The phrase is striking in its truth. But one needs to add that the human spirit is not merely one wild thing among others. It is, or can become, the spirit of every wild thing. It is where the animating spirit of every wild thing can be known, where it can rise to consciousness, where its interior speaking can re-sound under conditions of full self-awareness.

This is true only because, while we live *in* our environment, we are not wholly *of* it. We can detach ourselves from our surroundings and view them objectively. This is not a bad thing. What is disastrous is our failure to crown this achievement with the selfless, loving conversation that it makes possible. Only in encountering an Other separate from myself can I learn to love. The chickadee does not love its environment because it is — much more fully than we — an expression of its environment.

The willfulness and waywardness — the wildness — that has enabled us to stand apart and “conquer” nature is also what enables us to give nature a voice. The miracle of selflessness through which a human being today can begin learning to “speak for the environment” — a remarkable thing! — is the other face of our power to destroy the environment. So we now find ourselves actors in a grave and compelling drama rooted in the conflicting tendencies of our own nature, with the earth itself hanging in the balance. Given the undeniable facts of the situation, it would be rash to deny that this drama both expresses and places at risk the *telos* of the entire evolution of earth. But to accept the role we have been thrust into, and to sense our nearly hopeless inadequacy, is at the same time to open ourselves to the wisdom that would speak through us.

We do as much damage by denying our profound responsibilities toward nature as by directly abusing them. If you charge me with anthropocentrism, I accept the label, though on my own terms. If there is one creature that may not

healthily scorn anthropocentrism, surely it is *anthropos*. How should we act, if not from our own center and from the deepest truth of our own being? But it is exactly this truth that opens us to the Other. We are the place within nature where willing openness to the Other becomes the necessary foundation of our own life.

The classicist, Bruno Snell, somewhere remarked that to experience a rock anthropomorphically is also to experience ourselves petromorphically — to discover what is rock-like within ourselves. It is the kind of discovery we have been making, aided by nature and the genius of language, for thousands of years. It is how we have come to know what we are — and what we are is (to use some old language) a microcosm of the macrocosm. Historically, we have drawn our consciousness of ourselves from the surrounding world, which is also to say that this world has awakened, or begun to awaken, within us (Barfield 1965; Barfield 1977).

In general, my observations of nature will prove valuable to the degree I can, for example, balance my tendency to experience the chickadee anthropomorphically with an ability to experience myself “chickamorphically.” In the moment of true understanding, those two experiences become one, reflecting the fact that my own interior and the world’s interior are, in the end, one interior.

The well-intentioned exhortation to replace anthropocentrism with biocentrism, if pushed very far, becomes a curious contradiction. It appeals to the uniquely human — the detachment from our environment that allows us to try to see things from the Other’s point of view — in order to deny any special place for humans within nature. We are asked to make a philosophical and moral principle of the idea that we do not differ decisively from other orders of life — but this formulation of principle is itself surely one decisive thing we cannot ask of those other orders.

Toward an Ecological Conversation

There is no disgrace in referring to the “uniquely human.” If we do not seek to understand every organism’s unique way of being in the world, we exclude it from the ecological conversation. To exclude ourselves in this way reduces our words to gibberish, because we do not speak from our own center.

But nothing here implies that humans possess greater “moral worth” (whatever that might mean) than other living things. What distinguishes us is not our moral worth, but the fact that we bear the burden of moral responsibility. That this burden has risen to consciousness at one particular locus within nature is surely significant for the destiny of nature! When Jack Turner suggested that the last ten thousand years of human history may have been “simply evil,” he ignored the worthy historical gift enabling him to pronounce such a judgment. How can we downplay our special gift of knowledge and responsibility without fatal consequences for the world?

Toward Creative Responsibility

We create “by the law in which we’re made” (Tolkien 1947). Our own creative speech is one, or potentially one, with the creative speech of nature that first uttered us. (How could it be otherwise?) This suggests that our relation to every wild thing is intimate indeed. We speak from the same source. We cannot know ourselves — cannot acquaint ourselves with the potentials of our own speaking — except by learning how those potentials have already found expression in the stunning diversity of nature.

Every created thing images some aspect of ourselves, an aspect we can discover and vivify only through understanding. The destruction of a habitat and its inhabitants truly is a loss of part of ourselves, a kind of amnesia. Wendell Berry is right to ask, “How much can a mind diminish its culture, its community and its geography — how much topsoil, how

many species can it lose — and still be a mind?” (Berry 2001, p. 50). As Gary Snyder puts it, “The nature in the mind is being logged and burned off” (quoted in Nash 2001, p. 263).

When Thoreau told us, “In wildness is the preservation of the world” (1947), the wildness he referred to was at least in part *our* wildness. If humankind fails to embrace with its sympathies and understanding — which is to say, within our own being — every wild thing, then both we and the world will to that extent be diminished. This is true even if our refusal goes no further than the withdrawal from conversation.

Our failure to reckon adequately with the wild Other is as much a feature of human social relations as of our relations with nature, and as much a feature of our treatment of domesticated landscapes as of wilderness areas. In its Otherness, the factory-farmed hog is no less a challenge to our sympathies and understanding than the salmon, the commonplace chickadee no less than the grizzly bear. We do not excel in the art of conversation. If the grizzly is absent from the distant mountains, perhaps it is partly because we have lost sight of, or even denigrated, the wild spirit in the chickadee outside our doors.

If we really believed in the saving grace of wildness, we would not automatically discount habitats bearing the marks of human engagement. We would not look down upon the farmer whose love is the Other he meets in the soil and whose struggle is to draw out, in wisdom, the richness and productive potential of his farm habitat. Nor, thrilling to the discovery of a cougar track in the high Rockies, would we disparage the cultivated European landscape which, at its best, serves a far greater diversity of wild things than the primeval northern forest.

The point is not to pronounce any landscape good or bad, but to ask after the integrity of the conversation it represents. None of us would want to see the entire world reduced to someone’s notion of a garden, but neither would we want to

see a world where no humans tended reverently to their surroundings (Suchantke 2001). We should not set the creativity of the true gardener against the creativity at work in our oversight of the Denali wilderness. They are two very different conversations, and both ought to be — can be — worthy expressions of the wild spirit.

A Word Unasked For

In late winter or early spring the chickadee flock frequenting my feeder begins to break up as the birds pair off for mating. Only two (with their offspring) will occupy a given territory, and during summer those few may rarely visit a feeder; there are too many superior delicacies around.

A few summers ago I decided not to maintain a feeder and, because of other preoccupations, scarcely noticed any chickadees on the property. They were the furthest thing from my mind when, on a warm August day at a time of extraordinary personal distress, I happened to be standing outside in a small clearing. There was no brush or other bird cover immediately at hand. Suddenly a chickadee came out of nowhere and alighted on the fence railing four or five paces in front of me. Standing still, I watched for several seconds as it regarded me with an apparently intense interest. Then, instead of veering away as I expected, it flew with its soft, stutter-step flight straight toward me, dipping characteristically a few inches in front of my nose before rising as if to land on my bald pate. But, with a slight hesitation, it seemed to have second thoughts (there's not much of a perch up there), and passed on behind me. This unlooked-for gesture from a "long-lost friend" — a moment of mutual recognition recalling an earlier conversation — touched me deeply. In the flush of affection I felt for the creature granting me this unexpected interview, I found an easing of my

pain. Its life was so free, so far removed from my own problems, yet it was so precious...

"That's very nice, but do you really glorify this encounter as part of a meaningful conversation? And do you believe the chickadee was responding to your inner condition at the time?"

Well, hardly. I am serious — and I include myself in the rearmost rank — when I say we have scarcely learned to converse with nature (or, for that matter, with each other). But, nevertheless, one can at least glimpse the beginnings of conversation here.

The very first — and perhaps the most important — conversational step we can take may be to acknowledge how we have so far *failed* to assume a respectful conversational stance. For example, how much of my activity in feeding the birds by hand is driven by my self-centered pleasure in their attentions, rather than by selfless interest in who they are and what they need? To ask such a question is already to have shifted from manipulator to listener.

But, no, I would not claim that the chickadee on the fence railing was sympathizing with my troubles. Of course, because of my ignorance, and because the chickadee is a speaking presence, I cannot say absolutely that it was not, at some level of its being, responding to my inner condition, or that it was not the agent of some sort of Jungian "synchronicity." But I am skeptical, and such things are in any case wholly beyond my knowledge. So I leave them alone.

What I do know is that the chickadee was, in an obvious and unproblematic sense, *responding to me* in its, expressive, chickadee-like manner. And this manner was partly familiar to me because I have paid attention to the chickadees in my neighborhood. The behavior, even if unexpected, was not altogether strange to me. I could say, "Yes, if a chickadee were to gesture in my direction, that is how it might do it; it was just like a chickadee" — and in saying this I could bring to

mind much about the chickadee's way of speaking itself into the world. This in turn gives me something to respond to, something to respect, something to make a proper place for both in the world and in myself.

And, yes, maybe even something to invite in certain directions through attentive, reverential conversation. I do still occasionally feed the birds from my hands. This is a behavior they would never engage in if there were no humans in the world, but I have yet to see that it in any way diminishes them. I am more inclined to think the opposite. Chickadees are known to have a great curiosity about other creatures, along with a particular affinity for humans, and giving a few of them a little room to explore this affinity does not seem such a bad thing.

There are, of course, appropriate limits. Personally, I draw the line when the chickadees try to use my mustache as nesting material.

CHAPTER 4

Love and Detachment

In *The Spell of the Sensuous*, ecologist and philosopher David Abram movingly calls us to “return to our senses.” He worries that our growing disconnection from the sense-perceptible earth that nurtured us can lead only to disaster both for the earth and for ourselves.

In May 2002, I attended a symposium centered upon Abram’s work. Entitled “Conversing with the Intelligence in Nature,” the three-day conversation explored the reasons for our alienation from the natural world, and the requirements for a healthier relation to it. The venue for the gathering was Columbia University Teachers College.¹

In a paper submitted to the gathering, Abram cited the “host of divergent and weirdly discontinuous worlds” vying for our attention today. Leaving aside religious “otherworldliness,” there is the physicist’s “impossibly small world of gluons and mesons and quarks”; the astronomer’s infinitely vast world of galaxies; the neurologist’s electro-chemical domain of brain-cell interactions underlying our psychological life; the geneticist’s complexly coded universe of DNA, believed to explain so many of our traits and propensities; and the “steadily ramifying labyrinth” of cyberspace, where we grow ever more accustomed to endless sequences of disembodied transactions. In each of these realms we inhabit elaborate

thought constructions with precious few connections enabling us to navigate meaningfully from one world to another.

Expecting further proliferation of these distinct and only vaguely related worlds, Abram asks “whether the human mind can maintain its coherence while engaged in such a plural and discontinuous array, or *disarray*, of cognitive worlds. And if so, how?” The key to integrating our various realms of thought and experience, he is convinced — the only possible *common ground* for this thought and experience — is given by the earth itself:

Only by remembering ourselves to the sensuous earth, only by recalling ourselves to this bodily land that we share with the other creatures, and rediscovering this place afresh, do we have a chance of integrating the multiple and divergent worlds that currently vie for our attentions. Only by rooting ourselves here — only by recovering our ageless solidarity with this breathing world, feeling the fur on our flesh, drinking the rain and listening close to the wind as it whirls through the city streets — only thus do we have a chance of learning to balance and to navigate among the multiple worlds that now claim our attention.

Abram’s concerns sparked an extraordinarily lively and many-faceted conversation, one thread of which had to do with whether he adequately acknowledges the role of thinking as one of the means by which we raise the world to understanding and connect ourselves to it. Partly in response to this issue, I submitted to the group the reflections found below.

Among the other participants was Jon Young, whose remarkable tracking and wilderness skills have impressed thousands of students at the Wilderness Awareness School, which he founded. Jon is currently working with major museums

around the country to teach young people the “language of birds.” The understanding he conveys can strike students with the force of a cognitive revolution, awakening them to the fact that the bird sounds and behaviors they witness every day tell a detailed story about what is going on in the larger neighborhood. For many of these students, this is their first inkling that the natural world has any kind of a story to tell relevant to their own lives.

Symptoms

The Dutch phenomenological historian, Jan Hendrik van den Berg, writes about our estrangement from the world this way:

Many of the people who, on their traditional trip to the Alps, ecstatically gaze at the snow on the mountain tops and at the azure of the transparent distance, do so out of a sense of duty.... they are simulating an emotion which they do not actually feel. It is simply not permissible to sigh at the vision of the great views and to wonder, for everyone to hear, whether it was really worth the trouble. And yet the question would be fully justified; all one has to do is see the sweating and sunburned crowd, after it has streamed out of the train or the bus, plunge with resignation into the recommended beauty of the landscape to know that for a great many the trouble is greater than the enjoyment. (van den Berg 1975)

Surely the passengers on the bus want to appreciate nature. They may even feel guilty for their flat response. Gazing at the impressive sights, they know they *should* be moved by what confronts them, perhaps moved to tears, but their eyes remain dry. Can they help it if they draw only a blank? Despite their

yearning, nothing specific and concrete speaks to them from the landscape.

I identify with those sightseers. I, too, draw mostly a blank. Isn't it the case that most of us today scarcely experience the natural world? Which is to say: isn't it the case that we cannot render the world phenomenal for ourselves, that we cannot bring it to manifestation? Its speaking, its expressing, is what the world *is*, and if we cannot interpret the speaking, cannot comprehend the expressing, then nature's presence is an absence for us.

A second symptom. Jon Young tells how his students, after extensive, life-changing immersion in nature, typically run into a brick wall of misunderstanding from family, friends, and surrounding culture. The conflict can be psychologically devastating, and has two sides: the larger culture fails to see the value of the student's experience; and the student, despite the richness of his new experience, has few means to confront the massive conceptual investments of a society plunging heedlessly forward in its disconnection from nature.

Perhaps those Native Americans who faced the European invasion would understand something about the dismay and confusion of Jon's students. In fact, we can take the worldwide capitulation of indigenous cultures before the Western onslaught as a third symptom. The symptom, repeated so frequently and catastrophically, testifies not only to the corrosive force of Western culture, but also to an inadequacy in the overwhelmed indigenous cultures — an inadequacy in the straightforward sense that these cultures met a historical challenge they could not contend with.

Here I'm thinking primarily of the traditional cultures that have failed to resist the blandishments of Hollywood, the temptations of money and power, and the attractions of slick consumer goods — not those cultures that "had no chance" because of the sheer force of external violence brought against

them. Of course, it's true that there's a kind of violence in all forms of cultural aggression. But it's also true that even where the overt violence was crushing, a lesson of inadequacy remains — a lesson for *us*. Nearly all of us — certainly if we are likely to read words such as these — stand to one degree or another *within* the offending culture. We find ourselves willing or unwilling participants in it, and the problem of an adequate, healing response to the hubris of power, which may have been an impossible problem for the Native Americans, remains the decisive and inescapable problem for us today. This is now true regardless of which culture we identify with. Either we find the nearly impossible, adequate response to mindless consumerism and accumulating technological power, or there is no hope

I don't think it will do to say, "If we can just immerse enough young people in nature, our pathologies will eventually heal themselves." Such immersion may be a prerequisite for healing, but by itself it is insufficient, for our alien habits of thought run deep. We are scarcely aware of them, and therefore we are not wholly free with respect to them. Take any group of students who have spent years reconnecting with nature, and you will find that nearly all of them are still bound by unexamined ways of thinking about cause and effect, mechanism and organism, part and whole, self and other. When, for example, they look at chromosomes and genetic data banks, they will almost inevitably think about these more in the manner of the genetic engineer than in the spirit of the native American. "Getting close to nature" does not by itself enable us to transform and redeem the language of molecular genetics.

One of the most inspiring things at our symposium was Jon's instruction about the ways of birds. I personally hope to follow at least some of the path he laid out. Yet we do need to acknowledge that university and industrial research laboratories

will not empty out and close up shop simply because we've managed to fulfill the dream of 50 million people listening to the language of birds. It's true that one can hardly imagine any single thing that would have a more powerful, transforming effect upon society. But it's also true that there remains a logic, a body of thought, a momentum of thinking represented by our foundational cognitive enterprises that cannot be challenged except by reckoning with it in its own terms. We must be able to walk into those laboratories, take up the language of cause, mechanism, and all the rest, and learn to shape-shift this language into a speech revealing a fuller reality.

The Need for a Change of Mind

Clearly, in order to grasp a fuller reality, we must turn toward whatever meets us in nature, attend to it, value it. But this is not all, for we might still find ourselves in the position of those sightseeing tourists. Even after we turn toward the Other, we will not recognize its speech and gesture unless we have also enlarged our conceptual resources.

If today we mainly draw a blank when we look at nature, it is because we cannot see what we cannot name, and we have few names left that are adequate to the life of nature.

This is where I find David Abram's work so inspiring. He helps us to recover a language for experiencing nature's depths. At the same time, his impressive scholarship and his many years of travel and anthropological investigation remind us that what things mean — what their true names are — is not given to us automatically in the very act of encounter. A lot of hard work is required of us. Meaning may have been simply "given" to our ancestors, but today — for most of us anyway — getting at meaning requires a disciplined inner activity. Meaning does not come ready-made from "out there"; we must summon it also from "in here" in

response to what meets us as Other. What once was nature speaking us into existence must now become — and clearly *has* become, at least in part — our speaking nature into existence. This burden of human responsibility has been nature's own intention, the culmination of her own speaking.

There is in all this a profound change of mind — in fact, a change directly related to the reversals mentioned in chapter 1. Nature has become increasingly vulnerable, dependent upon our creative support. Where our original connection with her was given within nature herself, our reconnection will occur only at our own initiative.

This change of mind is required not only of cultures that have been cut off from nature. If we ask how the remaining indigenous peoples could become more sturdy and resilient in the face of cultural aggression from outside, one answer might be: they must take conscious hold of the sources, the riches, of their own culture, raising these to full conceptual clarity — which is, to some extent, to objectify these riches and therefore to gain a certain freedom and independence with respect to them. It is to possess them rather than be possessed by them. Then, *choosing* what to hold onto, these peoples can organically evolve their cultural heritage according to its own inherent potentials, rather than allow it to be bulldozed by an alien cultural imperialism.

The obvious retort here is that the detachment and objectification enabling this conscious choosing are alien to most indigenous peoples — and much of the wisdom we value in their cultures is related to this fact. So the necessity I'm pointing at is indeed radical — but then, so is the fate of being overwhelmed by a globalized aggression. The fact is that no culture can survive today except by transcending itself. Simply *being* is no longer an option, if it ever was. The task of preserving a culture already implies change. This should hardly surprise us, for all life sustains itself through a continual becoming.

All this points us toward a broad movement, an evolution, of human consciousness. And we should not become so one-sided as to forget the essential contributions that Western civilization has made to this evolution.

Consciousness and Detachment

Today, I believe, all healthy movement toward the future must be founded increasingly upon conscious clarity and choice. A native wisdom that remains merely what it was cannot survive in the modern world. A degree of separation from nature — the separation that makes conscious choice possible — lies in our destiny. There is no escaping the necessity for an inner activity that originates within ourselves, in freedom from all natural compulsions. This is the reversal, or shift in directionality: where once it may have been enough for us to be moved by the natural world, now we bear some of the responsibility for the future movement and evolution of that world. This in turn requires that we stand outside as well as within it. To move in perfect unison with our environment was, in a sense, to be moved *by* the environment, just as to speak in perfect unison with our environment was for the environment to speak through us. There is harmony in this, but no freedom.

Many today seek to rediscover a harmonious life within nature, but the harmony cannot be purely of this old sort. For the seeking itself, along with all the political and deliberative processes supporting it, bespeaks a historically recent burden of choice and freedom. We must not allow ourselves simply to be moved by our environment. This would be disastrous, if only because there is now so much ill-health out there. We can usefully seek healing only by consciously choosing *how* we will heal, and through this choosing we inevitably bring something new and creative to nature. The very choice to reject much that our species has done in the past already separates us from

nature in the old sense; this choice can only take place across that aesthetic distance, and within that reflective space, opened up by our temporary alienation from nature.

If, as aliens aboard the planetary tourist bus, we find ourselves pitifully locked up within ourselves, perhaps we are being pressed, in part, toward an *inward* search — a search for those powers in nature that once moved us, once spoke through us from without, but that now must be consciously exercised as our own powers. Not *merely* our own, but our own as in “you now bear a special responsibility for nature’s becoming; nature seeks to realize itself in part through your conscious activity.”

I believe we *can* recover a harmony with nature, but it will be a harmony with a new directionality. Our relating to nature will be a moral, artistic, and scientific venture, consciously embraced and undertaken at our own initiative. We will have to *take ourselves in hand* in a deliberate fashion.

Nothing I have said argues against our unity with nature, although it does point toward a change in the nature of this unity. An organic unity becomes more profound as the parts woven into and weaving the unity gain their own distinctive, individual character. In Coleridge’s terms: an organic unity becomes most profound when the parts have the greatest interdependence while at the same time they “have themselves most the character of wholes” (Coleridge 1848, pp. 44-45). Think of the highly developed organs of the mammal — heart, lungs, liver — each with its own distinct, integral character, and yet each thoroughly integrated into the larger whole. The part’s own relative wholeness makes possible its union with the larger whole on entirely new and more complex levels.

Similarly, the man and woman who can live most independently of each other can also form the deepest, most integral bond of marriage. The marriage now becomes a creative

venture freely entered into — and can be all the higher for this fact. If we have found ourselves with a new independence from nature, it is so that we can begin to *love* her, be re-united with her, in a way that only a certain distance allows. Our ability to destroy nature is the unavoidable flip side of our opportunity to enter into a new and higher sort of unity with her. So we cannot be content simply to bemoan the various cultural conditions that prepare the way for ecological destruction. They also prepare the way for a higher responsibility. We can love deeply only those things we have the power to hurt deeply.

Centered in Our Humanity, Embracing the World

It is common among those urging a healthy respect for nature to react against every sign of anthropocentrism. I hope, however, that the foregoing suggests why we cannot reject *all* anthropocentrism as unhealthy. Yes, we should recognize how human ways of thinking can destroy the biosphere. But this is already to grant the decisive importance of our ways of thinking. Our task is to gain, among other things, a sounder thinking, a truer thinking, and to bring this responsibly to bear upon the earth.

Every species has its distinctive place within the natural order, and we have ours. Why should we not speak of it? How can we urge earth-responsibility upon our fellows without granting them the full gravity of their responsibility? If the raccoon must be true to its own nature — if it must be raccoon-centric — then surely *we* must be properly anthropocentric and true to our nature.

Really, how could we possibly escape, or even desire to escape, our own nature? Wouldn't the desire itself be an expression of our nature? Even when we ask people (quite properly) to transcend a narrowly anthropocentric view of

the world, we thereby appeal to one of our most distinctively *human* capacities — our ability (born of our detachment from the world) to assume different points of view.

Every species helps to create and define its environment while also being defined by its environment. Part of what makes us human is our growing ability to *understand* our impacts upon the environment, which in turn lays a weight of choice and responsibility upon us. We cannot exercise this responsibility without certain inner resources, including acuity of insight, adequacy of conceptual repertoire, purity of heart, and resolve of will.

What this means is that the nature-awareness we talk about cultivating must be double-sided. It must be turned lovingly inward as well as outward. We must attend to the manifestations of our inner life with all the subtlety and powers of distinguishing that we bring to the external world. Only in this way can we develop the inner resources adequate to meet the external world and comprehend its evolutionary potentials.

All this may seem hopelessly self-preoccupied when the urgent task is to save the earth from ignoble destruction. But listen to those words: “to save the earth from destruction.” Isn’t this already a heroic, almost god-like task? Our powers to destroy, and therefore also to remedy, look more and more like earth’s primal shaping powers. Here’s how Bill McKibben puts it:

We are no longer able to think of ourselves as a species tossed about by larger forces — now we *are* those larger forces.... In the past decade a great windstorm and an epic ice storm have passed through here, leveling thousands of square miles of forest. By the old ways of reckoning, these were not disasters, just extreme incidences of the powerful forces that made this place. But now

who knows what mixture of “nature” and of “us” they embody? Who knows what they mean? (McKibben 1999)

We have no choice but to begin learning what they mean. In many domains, from nuclear engineering to medicine, from genetic engineering to the fight against environmental degradation, we find ultimate responsibilities being thrust upon us willy-nilly. It is hardly a time to belittle those who must somehow find a means to begin rising to these responsibilities. It makes no sense to denigrate the humans from whom you ask world-shaping behavior. We need sources of exaltation, sources of selfless inspiration, fully as much as we need to deflate egocentric hubris. An appeal to what is highest in us is always the best way — perhaps it is the only effective way — to combat what is lowest in us.

I have come to appreciate the value of always trying to look at things from opposite vantage points. And so I seek to recognize not only the crimes committed against nature by my own culture, but also the essential strengths it brings for the future. Failure is often the essential preparation for success. It is no accident that many of the promising developments for preserving the health of indigenous cultures — for example, programs to introduce appropriate, small-scale technologies — have received their impetus and technical basis from Westerners who developed a love for the cultures at risk. Helena Norberg-Hodge and her marvelous work in Ladakh come to mind (Norberg-Hodge 1992). Such individuals pursue their work only because, thanks to their powers of detachment, they can stand outside their own culture, recognize its tyrannical aspects, and value what they find in an altogether different culture. This ability will more and more be demanded of *all* people in all cultures. And it is a gift arising in good part from the history of the West.

We must accept our needful things wherever we find them. We urgently need the wisdom of traditional cultures, a wisdom rapidly disappearing from earth. But we will fail in preserving this wisdom if we scorn the gifts that happened to come down to us through a culture whose whole purpose was, it sometimes seems, to destroy tradition — but also to free us from the tyranny of tradition. Today, we can preserve a tradition only by standing with one part of ourselves outside it — and, by that very act, modifying it. It is this detached yet responsible part of ourselves I have been trying to fortify with these remarks.

Notes

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