

Seeing Nature

*Deliberate Encounters
with the Visible
World*

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FROM

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The Downward Spiral

*S*IT IN THE FLOWER-FILLED FIELDS of spring, contented. A marsh hawk glides low over the cattails. Meadowlarks flute from the fenceposts. The swoops of swallows contour the slopes. Grasses colonize the healing gullies. I feel part of a world growing toward unimaginable possibilities. Its loveliness is the accumulative result of life's work over thousands of millions of years. How beautiful life would be if we knew that our grandchildren will live within an even lovelier world with opportunities to nourish possibilities that we cannot even imagine.

Yet when I look beyond these fields I see acres of land disappearing under pavement in the space of a few months. I hear the roar of a freeway even though it is more than a mile away. The freeway throbs day after day, pausing only for Easter morning and Christmas. Thick smog often fills the air. A steady stream of giant garbage trucks grind up the hill behind me to the county dump. The dump is full, but nobody wants a new dump located in his community, so the current landfill grows higher. Across the valley, two military bases sprawl. Convoys of helicopters pass back and forth overhead. Jets blast into the sky, turn, and roar out toward the ocean.

When I journey out of the city, I see gradients of urbanization extending out toward the wild lands. Malls cover the fields. Asphalt storm drains divert the rain, flushing the gift of fresh water back to the sea. Steep-walled gullies grow on overgrazed land. We have deforested the mountains. Seven hundred miles away, we are strip-mining the mesa next to my cliff dwellings for coal to power the lights of city. Gradients of harvesting separate the lands of Gaia's upward spirals from the

growing cities. Increasingly, we are surrounded by land that we are draining of its possibilities. No longer can we easily see land in which life creates possibilities. This makes it easy for our urban culture to make a mistake similar to my own with the sand fleas. We assume that it is in the nature of the land to run down.

These gradients of harvesting that surround us remind me of the beaver that were so abundant in the Rocky Mountains two hundred years ago. Geological evidence now reveals how strongly the beaver altered the flow of water and the deposition of soil throughout the mountains and the adjoining prairies. Their dams held together a vast, highly productive hydrologic region. The first Europeans into this region were the mountain men, beaver trappers. They virtually eliminated beaver from this region. Unrepaired dams in trapped-out ponds washed away and the whole hydrologic region unraveled within a few years. The first settlers saw an area already spiraling down and so never realized that it could spiral upward. We who came later never saw how it could be. We lost contact with the ways of Gaia.

Our connection with the land dwindles to a marketing system that provides energy, materials, and food for a price. For most of us, the flow of money seems essential for the sustaining of life. This can lead us to forage for the highest financial rates of return. Unfortunately, if high rate of return becomes the only consideration, then it becomes easy to invest in ventures that cut and run. Though such an approach is profitable for only a little while, the money can then be shifted to another similar venture. Strategies focused exclusively on high rates of return, if successful, will produce high rates of return. Those successfully pursuing such strategies will acquire wealth faster than everybody else. They can use this wealth to increase their cultural power enough to allow them to apply the same strategy to exploit other resources.

It is easy to start on the path of taking too much because the rewards are immediate and any sacrifices seem anonymous and inconsequential. The more we harvest, the more we think we will have. Unfortunately, this is true only in the short run. The living things we harvest are more than just resources for us. They also do Gaia's work. They maintain balances that sustain the environment. If we harvest too much, relative balances shift and the environment begins to slip. Soil erosion increases. Flash floods hit areas downstream of clear-cutting or asphalting. Salmon runs decline. Aquifers decline. The chemical composition of our atmosphere changes.

These diminishing possibilities are warnings. However, if a culture has lost touch with life's power to increase possibilities, then the slipping away of possibilities can tempt people to "get it while the getting is good," to "get it before it is too late," because "if I don't get it, someone else will." We are tempted to act like the people I met who were picking blackberries before they were ripe. The berries were bitterly tart, but if the people waited until the berries were ripe, somebody else might pick the berries first. Now nobody gets to taste a ripe blackberry.

Such behavior creates a spiral. A world that is diminishing in possibilities increasingly appears to justify trying to get enough before it is too late. People who take more than they give are seen as smart; their behavior is imitated. More people try to harvest more than they need. Tragically, the depletion of the Earth seems to justify the very behaviors that are depleting the Earth.

I am saddened by this strategy of building ourselves up by taking too much from the world, because the Second Law of Thermodynamics guarantees that it will run the world down. Maintaining our position with this strategy grows more and more difficult. Contaminated water requires increasingly complex purification processes. Energy exploration requires more energy as the search moves into deeper water and colder lands. Declining aquifers require wells to be drilled deeper and more energy to pump the water up. Fishing nets are made bigger and bigger and require bigger boats to deploy them. Maintaining our position requires increasingly more resources, which makes it ever harder to maintain our position. Fear, doubts, and anxiety consume more personal energy.

As this tragic spiral grows visible, one might consider relinquishing the deteriorating path and returning to the work of the upward path. Yet this choice is difficult if one has internalized "not having to work" as a measure of success. The satisfaction of the upward path's work seems bland compared to the binge of consumption. It is easier to hope the binge can be maintained until after one's own comfortable death. I still remember from my National Park days how many elderly visitors made remarks to the effect of "Well, I'm glad I got to have the good life. The world's a mess but I guess that's your problem to solve."

As the world runs down, it becomes harder to see how the world can "run up." Children growing up in neighborhoods where streams flow in fenced, concrete channels never get to see or play with the way that streams and bordering plants create changes in one another. Children in cities look up into the street-light illuminated sky and see only the widely

scattered first and second magnitude stars and feel less wonder. As the miracle of this Earth becomes less known, the Earth's majesty becomes less capable of nourishing hope and inspiring restraint on our actions. Motivation sinks from "a higher calling" to "the bottom line."

We have been given the ability to participate consciously in the creation of unimagined possibilities. But this downward spiral cuts us off from our inheritance. As resources diminish, more of the greater system must be harvested. As the areas of harvest expand, they draw closer to the areas of benefit. As the discrepancy between the two areas increases, maintaining the border between them requires more energy. Neighborhoods are built with walls and gates. People increasingly think in terms of "us" versus "them." However, each expansion of the harvest area requires sacrificing some segment of the "us" group. Third World countries are pressed to convert the subsistence land of their people to export-producing plantations for their economy. Some members of Congress try to prohibit the listing of any more endangered species. Corporations restructure and lay off workers and mid-level managers. Who will be next? Bonds of friendship and trust are sacrificed as the "us" group gradually consumes itself.



When I look beyond my field, I see strawberry fields being harvested cheaply, thanks to people living on the other side of the nearby Mexican border—a sharp boundary that the Border Patrol works hard to maintain with roadblocks and vans. I see sunlight-reflecting concrete laid over sunlight-absorbing pastures. I see throbbing helicopter convoys exhaust petroleum as they practice defending "our" sources of petroleum. I sense a dismal downward spiral within my culture. And yet I am aware that others see a golden future. They point to what I see as accumulations of wealth on the group level. Where they see great opportunity and promise, I see a time lag between two levels of resource flow moving in diametrically opposite directions. How do we communicate between the perspectives of the two different levels in order to agree on what is happening?

The Earth can "run up," can accumulate possibilities. I know it can because I have helped the grass colonize the gullies. We can help the soil grow and raise the Earth. But fleets of huge earthmovers scrape away the soil and massive rollers squash the asphalt flat. The power of

billions of dollars drives them on. The city is growing so fast and with such momentum that it is painfully clear that these fields will be "developed" within the next few years. (Though ten years after writing this paragraph, the fields are still there.) Whatever possibilities my work has created for life will be covered with asphalt. The swallows will return one spring and find their fields paved. Office buildings and apartments will evict the mustards, blackbirds, and burrowing owls. I want to protect these lives, to nourish them as they have nourished me, but I have only a shovel.

The overwhelming momentum of that downward spiral often crushes my spirit. Reports of population growth, ecological destruction, and economic pressures make my efforts seem idealistically naive. The times are too desperate; the acts of individuals are too insignificant to make a difference. It's easy to lose hope and sink into routines.

Reversing the Spiral

BUT DOWNWARD SPIRALS can be reversed; I've seen it happen in the fields. Reversing a spiral requires work, but it is possible. Each time I walk in the lands of Gaia, her beautiful, upward spirals rekindle my hope. Each time I watch grass growing in a channel or see soil rising over rocks, I seem to hear Gaia whisper:

Begin the work even though you cannot see the path by which this work can lead to your goal. Do not block your power with your current understanding. Evolution is the process by which the impossible becomes possible through small, accumulating changes.

Concentrate on the direction, not the size of the change. Begin the work with actions that seem tinier than necessary but that are small enough to maintain. The rate of change is slow at first, but do not prematurely judge your efforts. Change happens through spirals; the work grows upon itself. As little changes accumulate, they will reinforce one another and make larger changes possible. Gradually, balances will shift. Enemies that block the way will become allies that lead the way. Where and how this happens cannot be predicted.

You do not work alone. Billions of other living things are doing the work. You are part of an invisible power. As it grows, the erosive power will fade. Begin the work.

This strategy helped me accomplish more in the fields than I thought possible. Can an individual use this strategy to help reverse a culture's downward spiral? Can an individual do more than I usually assume? These questions haunt me with possibilities, so I try to look at my culture as if it were an eroding drainage.

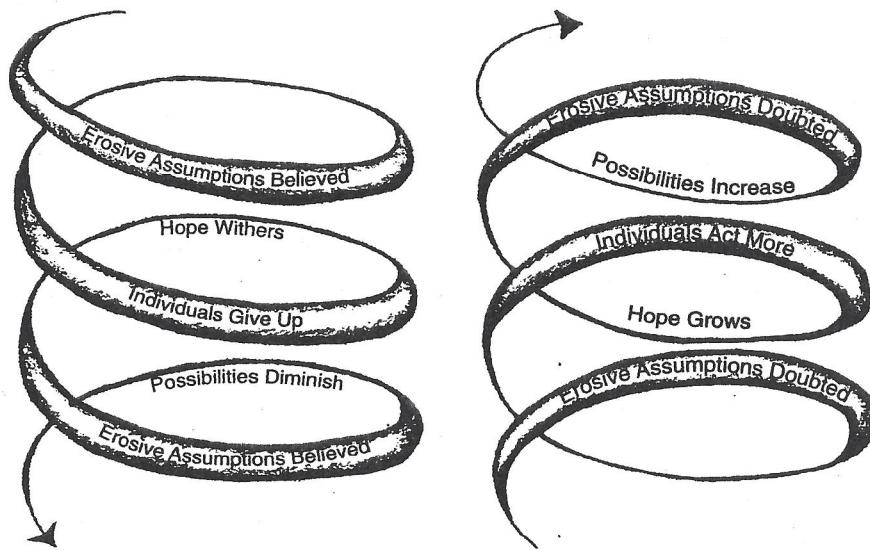
As I observe my culture, the image that I encounter over and over again is "convergence." People flow away from rural areas and converge upon the cities. Shoppers flow away from small local stores and converge upon a few, large, national chain stores and fast food franchises. A global agriculture that once spread its nourishing energy over thousands of edible, genetically diverse plant species now converges its efforts upon a few genetic strains of a few crops. The power to lend money converges onto a few, multi-national banks. The power to present images of the world converges upon a few networks and news magazines. Taxes converge upon distant bureaucracies. I fear that as cultural power converges, like run-off, it achieves erosive proportions despite the best intentions of all through whom it flows.

These convergences remind me of eroding gullies and, like gullies, they inspire in me the same impatient desire for enough power to oppose the power flowing within them. The fields, however, have taught me not to try to oppose the power entrenched within gullies. A better strategy is to go upstream until I find a place where shifting a relative balance is within my power. Tiny shifts up there will create opportunities for other shifts. But where is "upstream" within my culture?

I explore an analogy. In a drainage, upstream is where water flows from. Following this flow to its source leads me to where raindrops first touch the ground. There the rain's power is diffused among a billion raindrops. Some of the raindrops soak in to nourish life; others run off and converge into the power of erosion. The relative balance between these two directions determines the health of the drainage.

In a culture, upstream is where the power of action flows from. Following this power to its source leads me to individuals. There the power of action is diffused among a thousand tiny daily choices. Some actions nourish an upward spiral; others flow away toward erosion. The relative balance between these two directions determines the health of a culture and its environment.

When I explore the headwaters of my culture for causes of erosion, I come upon many widespread assumptions: morality is relative; salary



The downward spiral of cultural erosion can reverse to become an upward spiral of cultural healing.

defines a work's worth; all the world is resources for our use; the world is doomed to run down so I might as well "get it before it is too late"; an individual cannot do anything to reverse our downward spiral, so why try. These assumptions cause our personal power to flow away toward cynicism, despair, maintenance of the status quo, thoughtless consumption. As this creative power flows away, people's spirits wither like plants on the terraces above the arroyo.

Shifting those assumptions would help our personal power soak in to nourish hope and inspire individual actions that might help reverse the downward spiral. Helping shift those assumptions feels like something within my personal power. How should I go about it? The fields have taught me to offer new paths rather than simply oppose current paths, and that a series of small divergences is more effective than one large divergence. So I have written this book as a series of tiny divergences, offered to lead you onto new paths of seeing the shadow-rise, watching birds land, noticing grass-clipping dams in street gutters.

Just as my series of little sod divergences reinforced one another and made larger shifts possible, so I hope these little stories will reinforce one

another and help you see an environment sustained by life and a world full of flows, balances, and opportunities for shifting those balances. I hope that seeing those opportunities will inspire hope and actions. I hope that this book came to you as a gift and that you pass it on as a gift, so that the giving helps develop and reinforce the networks that bind us into something larger and stronger than we usually realize.

When we see only ourselves, the power within any single action can feel so trivial, especially at first when our actions are tentative. Anything I attempt seems so feeble and apparently has no effect, so why bother? I might as well give up hope and return to routines.

Each action, when seen in isolation, appears as frail as a grass stem buffeted by the prairie wind. The same paradox that hides the wind-absorbing power of the prairie grass or makes invisible the power of Gaia also makes invisible the cultural power of individual actions. This paradox of invisible power can paralyze me psychologically if I am not prepared for it.

However, the smallness that makes individual actions seem insignificant is the very thing that gives them power. Small changes cannot be resisted. Attempts at large changes create large resisting forces but small changes can relentlessly accumulate into significance. Each tiny choice is a tiny source of power.

We are like a prairie whose billion grasses collectively contain the power to slow the run-off, wedge away the wind, and create fertile, rain-absorbing soil. Our individual actions can help Gaia grow. As Gaia grows more visible, more people can see her and feel her invitation to participate consciously in the creation of unknown possibilities. As more people accept this invitation, their nourishing actions will help Gaia grow increasingly visible to still others.

A downward spiral of resignation and apathy can reverse to an upward spiral of invitation and participation. The assumption that "the world is doomed to run down" can shift to the assumption "I can help the world rise toward greater possibilities." The boundary between "us" and "them" can dissolve into a kinship with life. Dreams can grow rather than hopes fade. What can we make possible? Gaia invites us to explore and find out.