

ATTRACTIONS AROUND MOUNT ST.HELENS

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Nearly two decades after the great eruption of May, 1980, a slow, remarkable regrowth of flora as well as a massive human involvement feed back to me old questions about the ecological order and our place in it. “A mountain bounces back,” I read; Mt. St. Helens has struggled “to be born again.” That’s not it, I think; but I am moved by the reappearance of plants and trees and animals and fish at Mt. St. Helens – the symbiotic reaching out of fungus filaments to the roots of plants deep beneath the volcanic ash, the herd of Roosevelt’s elk returning to feed on grass sprouting from the earth of an apparently unwelcoming ashy, silica-infused but now media-hyped “miraculous mudslide.” This blast equal to 2500 Hiroshimas the *environment* generated, not us. But what is the environment? I search the abstracts of some of the more than five hundred vineyard-laboring, exact, and specialized field studies that have provided “an excellent baseline for tracking ecosystem reassembly” here. I puzzle the human significance, if any, and will make a few field notes of my own to locate among these phenomenal events the voice and place of my species too. I take for granted here that the human organism finds itself in an ecology humanly social and political with all that that, from Plato to Bateson and Schumacher and the Bureau of Land Management, tries to comprehend; but I wander here in a specifically volcanic wilderness and in the presence of the psyche.

Well, it’s obvious, isn’t it? Our habit of hands on, hands off, participation. We manage abundance north of here on the Olympic Peninsula – fish, seals, oysters, the prized gonads of the sea urchin’s orange insides I once ate raw diving in Ajaccio harbor, the mossy festooned branches and giant raised roots of Ho Rainforest trees. In southeast Arizona the BLM moves cattle away from the damaged San Pedro River and the green kingfisher comes back with hundreds of other bird species. We like to think we make things happen ... what we do to our natural surroundings is what we want to do for ourselves. Our vacationing curiosity, the awe and knowledge we visit upon an “environment” speaks of our imagined connection with it, “the” environment: hands and feet, skin and eyes, lungs and days, our real bodily feelings even and especially in a desolation as great as the Mount St. Helens National Monument.

We weigh our absence too. Absence from ourselves which is possible out here absorbed by what we see. Death absence as well – dissolution; and, somewhere in my thinking, dissolution of any idea we ever had. Outdoors and away from towns and cities, this environment – where is it, this system we cultivate, apart from visible effects in action? Where is it *inside*? Sloppy question.

On May 18, 1980, Mt. St. Helens erupted – as many scientists after two months of seismic and more visible signs, tremors, plumes, and a huge lobe growing out of the north side ready to burst, had predicted it would. A young field geologist, David Johnston, had ingratiated himself with the media. He could speak clearly and vividly giving daily updates in April and May. Finally he gave a most specific prediction of what would happen if the volcano blew while they were all standing right there on that ridge. His words were recalled very soon afterward, when it did happen, for Johnston was camped on that ridge and as far as anyone knows he was atomized by the initial blast of silica wind. One with the environment. More like nothing. Leaving work records and information, however, if nothing on the ridge; and perhaps his ideas in the memories

of others or impressions of him.

The eruption blew off 1300 feet of the volcano's cone on the south side, but 3000 feet on the north. Because the volcano's main vent was on the northwest slope, much of the blast was lateral: a huge lobe at Goat Rocks that had been growing there five feet a day for upwards of a month when it burst expelled a 200 MPH, incineratingly hot gale bearing clouds of knife-like mineral particles and pouring out a cataclysmic mudslide. The area of devastation around what the Klickitat Indians call Fire Mountain was pretty complete on the north side segment. Observers likened the blast to a nuclear explosion. Of course they did. A billion board feet of lumber destroyed. Mudslides thirty feet deep burying areas around Spirit Lake, which is virtually at the foot of the mountain's northwest slope, and raising its level drastically. A "moonscape" of "otherworldly shapes and smells," the journalist tosses off, ignoring how "otherworldly" virtually denies what he is saying – if it was ever clear to begin with. The magma smell of mineral rubble – for that was what St. Helens was built on from previous eruptions: pumice, pyroclastic debris, gray fine-grained andesite lava, dark, glassy dacite dome material. In less than a day 21 million yards of debris were transported down to the Columbia channel, enough to fill 500 miles of dumptrucks and in fact cause a ship to ground out.

Where did the venus slipper go? Where is the rattlesnake orchid? Will they ever come back? I wonder as I emerge from our tent of family sleep and personal dream. My six-year-old son has got hold of the safety matches and is trying to restart last night's campfire.

The seventy-odd human deaths dedicated to the volcano that day dissolve without sublimity in multidimensional distance and the mess of the lakes and the rivers. And cautionary predictions probably not much heeded (like shadows) of what could happen to Seattle, if one of the really big Cascade cones blew. For young and misbehaving as we are told St. Helens is, a hundred miles to the south as the helicopter flies there's no guarantee that vastly huger and of course much older Rainier forty or so miles north of St. Helens (maybe the next stop on your trip) won't erupt again after let's see how many centuries. Would residents of Seattle evacuate?

In minutes trees were knocked down over an area of a hundred and fifty square miles. In the immediate zone arrays of gray blowdown trunks arranged like iron filings in the directions of that killing changing wind cover the slopes and look less like logs than an alternative cover or wrapping laid down in sweeping floats of hatchmarks at various angles. The Weyerhaeuser Company, big somewhat self-congratulatory outfit with signs everywhere, picked up some of the pieces. Obscurity Lake a dense chemical green against the crammed cinereal slopes. Biggest eruption ever in this country. Well, in recent times..St. Helens blows about every century. I've got a backpack full of information, great stuff to talk about in the car.

Immediately after the blast the mountain "was clothed in a concealing mantle of clouds, embarrassed with her smoldering, broken form," the papers said; but the Air National Guard got in there for a radar picture, St. Helens had gone from fifth to thirtieth among peaks in

Washington, maybe not high enough to build glaciers now. People had pride in it. Once the Fujiama of America.

Americans, Europeans, Asians here at the first of three visitors centers we will stop at; children and grownups examining the excellent displays of the geology, the devastation, the history of this strato-composite volcano. And watching the movie. Outside on the terrace, my son wants to look through the telescope, I get out my change, the mountain is visible twenty miles away. Its celebrity. Its distance, more. I mean, that it is, you know, there. Don't lose sight of it. It's always there. Keep away. (The Klickitat Indian tradition has always kept them at a prudent distance from the volcano.) If through the pay telescopes the first afternoon we observe a celebrity mountain, some of us know how a volcano actually works. You wish that it would "do something," a snow-and-ash-sloped and majestically damaged eminence with a vast crater out of sight; smoke a bit, explode a bit. I'm moved competitively and harshly by the power-inhabited mountain starting again slowly now these years to grow toward its extremely limited purposes and occasional moments of mammoth effectiveness. Whereas once three miles from my observation point at Cape Kennedy more than twenty years ago I was moved by the Saturn rocket in its gantry but for the men and the Moon. Yet the mountain and the rocket draw together as if they have a thing in common. Which is the question, which the answer? Both in me.

Willow and cottonwood have come back where there are underground springs; and elk and deer have come back to browse on them, which in turn has encouraged growth. I am a fool to waste consciousness wondering why growth so moves us. I had better say, "me." What the area and the mountain have most curiously "done" for years now is what most marks the scientists' reports of studies at Mt. St. Helens since the eruption of 1980. What the earth has done and (we like to think reciprocally) what *we* have done. It is new growth out of the ashes and mineral-grained mudslides the research reports correctly measure.

My family – we are tourists and campers. Travel is in our heads as well as all this. We're together.

The Pacific plate is forced under the much heavier American continental plate, this subduction generating heat and pressure enough to melt the Pacific crust and form a pool of magma, which rises through any available vent. Longterm project, yes; but hard to see any special purpose in this: too slow, too big, too awful.

Will the coral root come back? Will we? "National Monument" not as big as "National Park." Suggests a monument.

The dream I woke from too soon this morning might as well have been light filtering through the blue tent bringing a sound of someone outside, the dream didn't end. Who was it likened dreams to parthenogenesis? Sometimes you ask and the question stops your memory, but now I remember it was Samuel Butler.

Pocket gophers that actually survived the blast under large deposits of ash – a volcanic winter – helped the revegetation process. Almost all birds in the subalpine zone were killed instantly by the eruption; bird populations vary now with plant variety – Pine Creek was much affected

because coniferous trees went down and with them seeds. Twenty lakes in the blast zone felt it in their chemistry, but microbial activity brought them back within the first two years. You find particular beetle species depending on the particular “blast event” at that site: pyroclastic debris site dominated by ground beetles and tiger beetles. (Our family knows that ground beetles hide during the day; is that how they survived? Tiger beetles hard to catch, sometimes green iridescent backs like a Tlingit mask; they will bite you, a child once told me.) The news and the research reports carry a similar reassurance: is it that living things have come back? Or that here is knowledge? Tourist campers share this motive with the experts. We want to help.

Government set aside 110,000 acres for field studies – a bonanza for science. Fair enough, we say. Silviculture. Soils. Climatology. Insects. Jobs go on and on. My wife has been reluctant to welcome aphids to her rooftop garden in New York City; they are ravaging pests and bring disease, they make your leaves curl up. The females that appear in the spring and release a clear watery fluid called honey dew from their anuses that attracts ants reproduce all by themselves. Two investigators at Mt. St. Helens shortly after the eruption observe, on the other hand, that host plants thrived on the interaction of aphids and their ant predators and that, as protein sources increase in the area, ant-aphid relation will become increasingly “mutualistic.” Subtle balances changing. What is the observer in this balance, this system that hardly knows what the observer is thinking? “How does a barren landscape fill up with species?” these investigators ask as they watch “the colonization of an ecological ‘tabula rasa’ [sic]” on the north side of Mt. St. Helens (for their admirably antlike work is largely watching). “Colonize” is a pet word. It suggests settlement, it suggests improvement or power, even civilization. Elk and aphid colonizers.

The tent is a lamp where I stand in the darkness listening to my wife and son argue about the sleeping bags and laugh. Is this the first night or the second night around St. Helens? “Living together” – the root of “symbiosis.” Understandably root-related to “economy.” I want to be alone separate from nature to see what it is. Maybe I am without knowing it. “Ecology” comes from Greek for “house.” My philosopher friend in New York (who *is* Greek) suggests “ecumenical” (from “the whole world,” “the inhabited world,” and “house”). A house everything can come into, a house with and without walls. Reality like rivers that take you somewhere pouring into your house to furnish it nicely. Why not just stay there?

We are heading toward Windy Ridge. It is attracting us, I see. The closest you can get to the volcano unless you have a professional permit. To go back-country tramping or up the mountain, the surfaces of its slopes bound snow to ash, ash to snow. Our boy is too small for that hike, and disinclined. He is reckless and brave, though, and I imagine him drawn toward it someday. Toward what?

A grizzled, athletic Ranger geologist who visited the lip of the volcano just yesterday leads us along a paved path at the second visitor center we visit. We are closer to the volcano today, on the west side. We are just below the ridge where “David” dissolved. Our guide explains the different kinds of tree trunk survival forms and he points down the slope to a small, slender red

alder – the tree that came back first of all the trees in the immediate blowdown zone. We sentimentalize the tree, we are some of us moved. It is a very hot August afternoon and my boy wants to get out of here. That red alder had a purpose. I take the lead in asking some sort of intelligent question of the Ranger.

The science of the relationship between organisms and their environment. Science has purposes. Up on the Olympic Peninsula where it's lush and green – rich rainforest and beaches and subalpine – an environmental paradise among national parks – goats that had been introduced were eating whole communities of endangered wild flowers. An experimental live-capture plan including field vasectomies for some goats and shipping 400 elsewhere to become hunting stock ended up unsuccessful even at a cost of a thousand dollars a goat. Where are we in the balance? Do we tip it?

We have to drive way around in order to get on the road to Windy Ridge tomorrow. Miles and miles. We pass through a town where you can take the helicopter and get “whirled” over the volcano, look right down into its “maw,” crater walls thousands of feet high. A sign says, “It doesn't get more exciting than this.” The phrasing “As low as \$69 a person,” makes you wonder what you would get for that. I remember (I have in mind) a photo of a tiny chopper sliding in above the St. Helens crater; also the account of the pilot a thousand feet above the mountain when it blew, the rim fibrillating like a sea – then the Cessna racing away pursued by dark cloud, almost not making it. Multiply the Hiroshima bomb by 2500 they say? Safety in numbers. What do these asterisks I have fallen into mean for the environment of the page, these field notes, this statement?

Matches. My son knows there was a box in the glove compartment as well as several boxes in with the groceries. Fire. My wife bends and anchors the struts into a tense dome and hangs the tent; now we have an inside and an outside. She has the reality of that tent in her mind. My son and I fight over the building of the fire. Who gets the matches, I want him to grow up disciplined and uninhibited. He has taken the car keys.

A big grainy black and white Research Station photo I have of the ruined north face of the volcano includes like neat little windows in the landscape at the bottom four small rectangular inset photo close-ups of scientists working. It is the mind focusing amid the vastness and the question of what will happen now.

Farm crops across the west damaged “irretrievably.” A million and a half wild animals dead as a result of the eruption – elk, deer, mountain goats, bear, cougar, bald eagle. The philosopher friend I was talking over this ecology business with in New York suggested that growth is easier to think about in biology than in geology. Rock. But I am told that crystals grow like societies of

organisms.

In the car I sense another theme reaching for words or clarity in the ecology of my understanding with its encroaching environments needing instant response or to be left alone. I understand that according to one of the ancients I have objects in my mind, I might have volcano, alder, boy, crystal in my mind. Their reality anyhow. They would be too big and hard to *really* crowd in there, even if in blinding motion, I think, unlike the contents of a book's argument which could occupy me and change my mood, mind, and behavior toward others, my wife, my son, my friend – (in *slow* motion often); or toward a rock I step up onto. They have Evening Grosbeaks here in Washington. I saw the flash of rich yellow. Does the same energy exist in bird as in smoke coming up from fumaroles in the mudslide for days after the eruption? – and in the magma inside Mt.St. Helens' dome chambers? And in blue-green algae in hot springs in the volcano area? Aristotle identified a principle that forms this flow of energy. The soul always has energy, I am reminded. Light lets me see that yellow. Telos: ends – purposes. What purposes, though? We like to think energy is everywhere. Or I do. To tap it. Even in words. *Its* words. Matter takes different forms, Aristotle I think says, but is organized by soul, where energy always is. I speak of this from the *Physics* as if my struggle to get it clear makes it fact.

My son hears me speak of Weyerhaeuser generosity as having a dollar sign attached to it. How much dollars? He asks. Millions, I say. Infinity? We are going to hit Windy Ridge the late morning of the third day. What is the environment, I ask my wife, who turns down the radio music. "Well, now ..." her tone cautionary: her view synoptic, wide, she might well know what I am trying to mean.

Windy Ridge would have done you in just like that, May 18, 1980. It cures me of teleology almost. Get to the top is as far as I can plan. Scale takes over. Its illusions. The crater is enormously close and distantly enormous. A southwest texture or grandeur of longtime indifference in the high, arcuate shape that is, however, gouged out and ruined on this northwest side. (Sorry, Washington!) Fifty or a hundred steep steps haul you up to the ridge, the mountain at your back and then you turn at the top. Across the huge hump of gritty eminence on the left a slope of ruined gray timber like a sea, on the right far down the green waters of Spirit matted with gray tree trunks jammed by the hundreds waiting dead in the water for some Charonic Bunyan to come scoop them up.

Human purposes you can imagine. The people whose remains if there are any lie below the new bottom of the raised lake. They elected to stay. It was their home, the lodge proprietor Harry Truman in his eighties, who said he really didn't think the mountain would blow. Farmers lost big in Washington. A Yakima cannery bottled the ash and sold it for its trace elements. Agronomists found the ash to be like low-grade fertilizer.

The Hopi picked their forbidding mesas because it would be nearly impossible to live on them. Without help. Without the ceremonies.

Are we part of this environment and not part of it? Is it in us and we around it (our nature), and

this is our apartness from it, doers, fertilizers, civil engineer tunnel builders, gardeners, watchers?

A Sno-Kist spokesman said, “If it weren’t for ancient eruptions of this nature, we wouldn’t have the outstanding quality of soil and fruit we have.”

Why do we go for growth? Is it life against death or only against the death that doesn’t lead anywhere? The Klickitat suggested that the Mount St. Helens eruption was vengeance from the Great Spirit because flood waters from a new dam had disturbed their burial grounds. “Environmentalists” said the mountain was getting even for clear-cut lumbering.

The lobe growing day by day until it bursts isn’t the growth we mean – (Why isn’t it?) – any more than the internal dome’s non-stable material routinely pushing out, over time collapsing, and pushing out again so they call it a whale-back (like a whale breaching). And if like forest fires in Yellowstone the burst on the north face here leads to growth, those Yellowstone fires (though natural) are more like a farmer burning his field. and the lateral eruption here stands so distant from the so-called “climax forest” we’re told will grow here a hundred years from now, that teleology seems forced. Though the myriad modest fosterings and wind seedings and bendings and inclinings and reachings and worm digestings belie that vast geologic slowness – and the 200 kinds of stream insect communities to be found in three of the creeks. Growth is purpose is growth? If it be said that we didn’t *need* this eruption, the answer comes that the tectonic imbalances between Pacific and North American plates have ...

We grow used to deleting longterm cosmic purpose from our thinking about Nature. Quite the way some religionists accept it either as totally separate from empirical science or instead of that chronicle of false hypothesis. The paleontologist and historian of science Stephen Jay Gould argues for random, non-hierarchical, and anti-teleological evolution. He makes the case most notably in *Wonderful Life*, his account of how fossils of tiny animals from 530 million years ago found in the Burgess shale in the Canadian Rockies were misunderstood by their discoverer and then rediscovered and studied again a generation and more later with astonishing results. From these, and incidentally disposing of “the survival of the fittest” as a tautology, Gould concludes that we are an overwhelmingly improbable and fragile result of the evolutionary process and thus curiously free. To replay the tape, as he is fond of saying, would almost certainly not give homo sapiens a second chance, and very possibly not consciousness either.

I happen to think he is right. Or I will go quite a way with him while remaining an eschatological agnostic. For I am intuitively drawn by the powerful inclinations of that consciousness or imagination, reflexive and self-loopingly tendentious as its insights or hunches or systems of thought may be.

In this century the Field regions of influence invisible but demonstrable in physics have been adapted to biological thinking about development. These so-called “morphogenetic fields,” are thought by some biologists to exist “within and around organisms” and to “[contain]... a nested hierarchy of fields within fields – organ fields, tissue fields, cell fields.” Like potential, these fields “attract developing systems to the ends, goals, or representations contained within themselves” (as the distinguished English biologist Rupert Sheldrake explains in *The Rebirth of*

Nature). Indeed, as if attractors in the basins of attraction of non-linear dynamics drew the organism toward itself – even toward collective or generic memory.

For the holism of Sheldrake these mysterious processes point toward a living cosmos and -- at least as I read him – therefore a central or numinous teleology. Less grandly, the fields make a powerful image of growth process and the quasi-purposeful inclinations we see in nature and in ourselves. Proust speaks of transcribing the text already existing somewhere in him, though this is not the only way he speaks of creation.

Not knowing, we may fall vaguely forward into notions of alternation: Expansion, contraction, pressure, release. Rhythms reciprocal, endless, as far as we would know, in star-making, thermodynamics, a Bartok quartet, intimate tensions between persons. And at all levels and reaches of life and the galaxies we may like to think. An inclination genetically given in us, perhaps, an impulse embryonically mysterious and half-forgotten. Yet perhaps partly able to inspire work that seems far more important than any speculation as to what depths it came from. In 1994 there appeared a most ambitious book, *Craters, Cosmos, and Chronicles* in which the geophysicist Herbert Shaw attempts no less than to connect the record of meteorites hitting Earth since the pre-Cambrian, with the interior dynamics of Earth itself. That is to say that the precise global swaths charted for these impacts are not random but a pattern of interactions to be associated with what Shaw calls Celestial Reference Frame – on the Celestial Sphere, and associated with among other forces the “attractors” of non-linear dynamics. Written with style and great clarity, dauntingly cross-disciplinary, Shaw’s book argues manifold connections or resonances between rhythmic and reciprocal motions of the cosmos – the flux of space objects, mass extinctions – and all the fundamental dynamic processes in Earth’s mantle, above and below it, magnetic fields, the tides – and volcanoes, for cratering and volcanism are now unquestionably parts of the same process. He infers not only three great clusters of craters positioned according to the Earth’s axis and Equator, but orbiting Natural Earth Satellites [sic] periodically released in feedback response to a chaotic overload. That is to say that meteorites across the millions of years do not hit the earth at random. This scarcely touches the richness and scope of the discussion, which extends to weather, viral disease, neurophysiology and language, and (of longtime and current interest to me), acoustics.

Proceeding from a reflexive, feedback-looping, self-organizing-Incompleteness view of how the cosmos works at all scales down to the most minute (and self-similar) environments, Shaw’s argument turns upon the attractors and in particular the “strange attractors” in non-linear dynamics to envision environments extending among so many other places to studies of ash-flow-forming volcanic magma chambers and by implication consciousness itself.

An attractor is a locus in physical or imaginary space, spaces of equations or bodies, functions or organisms or fictions, toward which things are attracted. Transient or intermittent, an attractor is “the field of attraction as well as the things by which it is recognized as an object.” Neither magnet nor iron filings are quite the attractor but “mimic the form of the attractor field.”

And the so-called *strange* attractors are chaotic; their systems continue to fluctuate, they don’t (I hear my words feeding back to me like somebody else’s, which they may well be) they don’t “settle down.” The “coupled oscillators” were never a closed system, and the attractors are envisioned as the partly unpredictable loci of growth stages.

I am asking for it, a novelist who has often had to hope that risking being over my head to breathe something else was more like being in a “transition between phase-locked and chaotic regimes” a Between state of Observation and Being where I might be able to live, see, and show

what my hunches have told me is really going on. I mean particularly in relations between men and women – but as they act now like Shaw’s CRF “coupled oscillators” on the great moving stages rolling and rocked by molten materials and apparently random voids in patterns often bespoken by the most minute twists and whorls self-similar to larger-scale events in a relation much more than metaphorical. Do I hear it somewhere? Around a locus, say a strange attractor (that may hold far more information than is seen until it is called upon) some part of the “system orients itself as it attempts to move into a set of balanced states, not a single state ...” (Shaw)

Near us on the barren overlook at Windy Ridge, we hear someone considerably older than my son ask, “Why did it blow up?” I murmur, “It didn’t know what it was doing.” My son shoves me. It was time, I think. Gray tree trunks pointing nowhere fallen across the hills to left and right. On the mountain itself, a very low timberline. You know it’s a volcano.

My environment multiplies in me and was always multiple. Thus it answers the self-reflecting processes outside me that I know anything about and others that I might find out about and will doubtless explore before I know. Between eruptions we forget where we are.