## 9.1 Aldo Leopold on the Life of Earth

If we're going to assess the role of contemporary technologies in a fulfilling life, a good place to start is with the life of the earth, the greater life in which our lives are nested, since that's where we all live and draw sustenance from, and also what's being damaged by our technological activity. (I trust that by now we're getting used to considering things in their broader context.) The previous chapter considered the growing and flowing of *physis* in Western thinking, along with classical Chinese understandings of Heaven and Earth. Now we turn to more modern thinkers, and consider how the introduction of new technologies affects the flow of the earth's life.

That phenomenon has been powerfully invoked by Henry David Thoreau as 'great central life'.

The earth is not a mere fragment of dead history, stratum upon stratum like the leaves of a book, to be studied by geologists and antiquaries chiefly, but living poetry like the leaves of a tree, which precede flowers and fruit—not a fossil earth, but a living earth; compared with whose great central life all animal and vegetable life is merely parasitic.<sup>1</sup>

It's as if Thoreau were elaborating Daoist ideas, after learning some Confucian notions from his mentor Emerson. 'Men nowhere,' Thoreau writes, 'east or west, yet live a *natural* life, round which the vine clings, and which the elm willingly shadows.' Now *there*'s a challenge, beautifully characterised: open up to the clinging vines and shadowing trees, literally as well as metaphorically. Human beings need to be '*naturalized*', Thoreau insists, 'on the soil of the earth'.<sup>2</sup>

And for that we need to go deeper—'to go within one fold of this which we appear to know so well.' And what do we learn from getting into this fold? 'There is only necessary a moment's sanity and sound senses, to teach us that there is a nature behind the ordinary.' And how do we gain access to this hidden nature? By way of 'a steep and sudden transition ... from a narrow and comparatively partial, common-sense view of things, to an infinitely expanded and liberating one.' Here we're opening out, as if following the Stoics and Epicureans, expanding our perspectives toward the whole of the natural world.

Thoreau was a keen observer of nature and a competent botanist, but it was a century before his idea of the earth's great central life was articulated scientifically. For all its magnificent achievements, Western science didn't

develop a science of ecology—one that studies organisms or species always in their environmental context—until the eighteenth century. Modern ecosystem science tries to understand the life of the earth by tracking flows of energy through 'food webs' and ecosystems from the perspectives of biology, organic chemistry, and other natural sciences.

One of the great pioneers was the American ecologist Aldo Leopold, who was an expert in forestry and a scientist of wildlife, an eloquent essayist and also something of a philosopher. His account of natural ecosystems presents nature as *physis*, and could almost have been written by a Chinese philosopher of *qi* energies. 'Land is not merely soil; it is a fountain of energy flowing through a circuit of soils, plants, and animals. Food chains are the living channels which conduct energy upward; death and decay return it to the soil.' The eventual sink for the energy fountain is the ocean, and the gradual 'net loss by downhill wash' is counteracted over the long term through volcanic and tectonic activity that raises the earth up again into the beginning of a new down-cycle.<sup>4</sup>

Leopold outlines the structures of the energy flow through the image of a dynamic 'biotic pyramid'—a pyramid because the number of living things at each level is greatest at the bottom and decreases toward the apex.

Plants absorb energy from the sun. This energy flows through a circuit called the biota, which may be represented by a pyramid consisting of layers. The bottom layer is the soil. A plant layer rests on the soil, an insect layer on the plants, a bird and rodent layer on the insects, and so on up through various animal groups to the apex layer, which consists of the larger carnivores.

Thanks to the close interconnections between the various parts of the system, changes on one layer elicit changes elsewhere, and in the course of evolution the circuits gradually lengthen and the energy flows become more complex. But when humans come on the scene, they increase the scale and rate and direction of change through the use of technology: 'Man's invention of tools has enabled him to make changes of unprecedented violence, rapidity, and scope.'5

Leopold also characterises the biotic pyramid in economic terms, as 'a sustained circuit, like a slowly augmented revolving fund of life', and warns that much of our agriculture 'makes overdrafts on the soil'. In the longer term these 'derange the channels of flow or deplete storage'. Marx pointed out long ago that the urbanisation encouraged by capitalism was already 'disturbing the metabolic interaction between man and the earth, by preventing the return to the soil of its constituent elements consumed by man in the form of food and clothing'. In this way capitalist conditions of production 'hinder the operation of the eternal natural condition for the lasting fertility of the soil.'6

In general, Leopold argues, human violence perpetrated on the natural world threatens 'the integrity, stability, and beauty of the biotic community', and the denser the human population the more violence it inflicts, and the greater the eventual 'penalties' in the form of a 'reduced carrying capacity' of the land we live on and from. We can deplete the soil through monoculture and application of fertilisers, as we've done all over the globe, for only so long—until eventually we reach a limit where the system breaks down and the earth becomes barren. The restoration of fertile soil is a slow process that takes centuries. The lesson of ecology is that there are limits to the carrying capacity of the earth's soil: 'All gains from density are subject to a law of diminishing returns.'

Aldo Leopold became an ecologist because of his love for the natural world, and contact with nature is indispensable for anyone who thinks a philosophy of 'living according to nature' makes sense. He agrees with the common consensus that it's 'a good thing for people to get back to nature', not least because of the pleasure we derive from it. The pleasures vary from person to person (the hunter, the botanist, the hiker, etc.) and Leopold accordingly distinguishes several components in what he calls 'the recreational process'. 8 The most basic is the 'trophy' component, as embodied in, for example

the physical objects that the outdoorsman may seek, find, capture, and carry away ... and the symbols or tokens of achievement such as heads, hides, photographs, and specimens. ... The trophy is a certificate. It attests that its owner has been somewhere and done something.

As a founder of the science of wildlife management, Leopold was well aware of the damage that trophy-oriented recreation can do to the natural environment, and the dilution of the whole process through 'artificialized management'.

In order to protect hatchery-raised stream-released trout from their natural predators, you deploy the latest hunting technology to kill whatever birds and otters you need to. This leads to widespread changes in the relevant ecosystems, not all of which can be predicted—or reversed when discovered to be detrimental overall. And when you shoot wolves so that people will have deer to hunt, you allow the deer (at least until *they* get shot) to decimate the local vegetation—again damaging the ecology of the whole area.<sup>9</sup>

Leopold regards 'indirect' trophies such as the photograph as relatively harmless: 'Broadly speaking, a piece of scenery snapped by a dozen tourist cameras daily is not physically impaired thereby, nor does any other resource suffer when the rate increases to a hundred'. You might say the same of the activities of our contemporary pursuers of trophies as

certificates—'the owner has been somewhere and done something'—the Instagrammers. Yet what is the impact of all those smartphone snapshooters *driving* to their destinations? And the carbon emissions from users who take 'capturing and sharing the *world's* moments' seriously enough to fly all over it in search of the most like-worthy ones. If you go in for simply contemplating the world at your leisure rather than frantically capturing its moments, you don't have to travel as much—which saves a lot of money and time as well as GHG emissions.

This belongs in the 'higher grades' of outdoor recreation, what Leopold calls 'perception' and 'husbandry', the latter being realised 'when some art of management is applied to land by some person of perception.' By perception he means 'perception of the natural processes by which the land and the living things upon it have achieved their characteristic forms (evolution) and by which they maintain their existence (ecology).' The great thing about this practice is that—as long as you do the perceiving close to home—'it entails no consumption and no dilution of any resource'.<sup>10</sup>

What is more, or less, the larger patterns of what we might call aesthetic perception are perceptible at a smaller scale:

Like all real treasures of the mind, perception can be split into infinitely small fractions without losing its quality. The weeds in a city lot convey the same lesson as the redwoods; the farmer may see in his cow-pasture what may not be vouchsafed to the scientist adventuring in the South Seas.

And if the city offers not only weed-filled lots but also parks with grass and trees and ponds and flowers, these lessons and the pleasures that accompany contemplation of natural things will be free of charge, and a welcome refuge from the commercial environment.

But let's not look down on recreation as trophy-hunting, since so many people—hunters, fishers, jet-skiing Instagrammers—enjoy it. Here's Leopold again:

The trophy-hunter is the caveman reborn. Trophy-hunting is the prerogative of youth, racial or individual, and nothing to apologize for. The disquieting thing in the modern picture is the trophy-hunter who never grows up, in whom the capacity for isolation, perception, and husbandry is undeveloped, or perhaps lost. He is the motorized ant who swarms the continents before learning to see his own back yard, who consumes but never creates outdoor satisfactions.

This is the drawback of letting the consumerist mentality drive our interactions with nature: it encourages enjoyment in taking and consuming. The problem with 'the trophy-recreationist' is that 'to enjoy he must possess, invade, appropriate'. A special trait of the American recreationist, it may be fair to say.

In fact the Daoists would say we needn't even go as far as our own back yard or local park—as the *Laozi* says, with only some exaggeration:

Not to go beyond your doors to know the world;

Not to peer not outside your window to know the way of heaven.

The farther you go, the less you know.<sup>11</sup>

If some people who travel all the time are trying to escape from themselves, the Daoists would say that they're also overlooking the riches of experience that are accessible at home, or close to it.

If our schools provided ecological and aesthetic education, more people could grow up from the trophy-hunting stage, with its dependence on invasive technology, and come to enjoy the pleasures of 'perception and husbandry'. There are economic as well as psycho-social reasons for promoting such initiatives, insofar as trophy-hunting is becoming unsustainable. Leopold concludes with this important contrast: 'the rudimentary grades of outdoor recreation consume their resource-base; the higher grades, at least to a degree, create their own satisfactions with little or no attrition of land or life.'<sup>12</sup>

The trophy hunting form of recreation is emblematic of our broader engagement with the natural world through extractive technologies. The Faustian project of conquering the earth by way of artifice is headed for failure, a severe case of hubris. Blind faith in technology to save us from our fate is based on delusion. As William Ophuls explains:

Technological man has neither abolished natural scarcity nor transcended natural limits. He has merely arranged matters so that the effects of his exploitation of nature are felt by others. Other species, other places, other people, other generations suffer the consequences of the intensified ecological imperialism of the modern age. <sup>13</sup>

## Notes

- Henry David Thoreau, Walden: or, Life in the Woods, 'Spring', \*\*\* 568.
- Thoreau, A Week on the Concord and Merrimack Rivers, 'Friday', in Henry David Thoreau (The Library of America, 1985), 307. A few decades later Nietzsche, a kindred spirit in several ways, issued a similar challenge: 'When shall we have completely de-divinized nature! When can we start to naturalize ourselves with pure nature, new-found and newly redeemed!' (The Joyful Science 109)
- <sup>3</sup> Thoreau, 'A Week', 310-14.
- <sup>4</sup> Aldo Leopold, 'The Land Ethic', in *A Sand County Almanac: And Sketches Here and There* (New York: Oxford University Press, 1968), 182-83\*. See also J. Baird Callicott, ed., *Companion to* A Sand County Almanac: *Interpretive and Critical Essays* (Madison: University of Wisconsin Press, 1987), and J. Baird Callicott, *In Defense of the Land Ethic: Essays in Environmental Philosophy* (Albany: SUNY Press, 1989).
- <sup>5</sup> Leopold, 'Land Ethic', 182-84.
- <sup>6</sup> Marx, Capital: A Critique of Political Economy (Penguin) 1: 637.
- Leopold, 'Land Ethic', Sand County, 189, 184-86. George Monbiot has written a powerful piece of the insanity of out chronic mistreatment of the soil on which our lives depend: '\*Soil as support going fast' \*.
- <sup>8</sup> Leopold, 'Conservation Esthetic', Sand County, 143, 145.
- Leopold, 'Conservation Esthetic', 145-46, and 'Thinking Like a Mountain', Sand County, 114-17; Zhuangzi 10 (65).
- <sup>10</sup> Leopold, 'Conservation Esthetic', Sand County, 145-50.
- <sup>11</sup> Laozi 47.
- <sup>12</sup> Leopold, 'Conservation Esthetic', 149-51.
- Ophuls, Plato's Revenge, 30.