silence' reveals our natural goodwill—to ourselves. And philosophic and scientific tinkering can put our full humanity at the service of a larger awakening when the 'agent' is goodwill itself.

FORTY-EIGHT

... reforestation is gradually returning the [Sudbury] area landscape to its natural state. Using both surface and underground greenhouses, Inco grows some 250-000 seedlings each year for reforestation purposes. —Inco [Mines] website, 2008

The Earth is the cradle of mankind, but one can't stay in their cradle forever. —Konstantin Ziolkovsky

This is how a human being can change: there's a worm addicted to eating grape leaves. Suddenly, he wakes up, call it grace, whatever, something wakes him, and he's no longer a worm. He's the entire vineyard, and the orchard too, the fruit, the trunks, a growing wisdom and joy that doesn't need to devour. —Rumi, The Worm's Waking[1]

Henry David Thoreau is not named in my title, but his influence runs deep in this vision of mankind's *Extremophile Choice*, for it's a philosophy of Humans and Nature that depends upon a realization of his early "perfect summer life" ethos, and also upon the new science he later helped to establish. Thoreau was a founder too, like Darwin and Dogen, and his quiet presence here is equal to these others because, while he maintained his pre-Darwinian viewpoint that set Man between the gods and nature, his later commitment to exploring Darwin's "entangled bank" set in motion, in a practical way, the study of the interactions that determine the abundance and distribution of species that is today's science of ecology.[2] His life and character personified an ethos that transcends racial identity and animal hunger, but furthermore, he appreciated that it's not the un-guessable train of evolutionary mutation, or of sketchy human thought, that reveals the *substantial* meaning of being human in the Natural world. Only ecology can tell us what species are, right now,

in relation to one another; thus Thoreau's first ecological project, studying the consequences to a forest when pine cones are acted on by a squirrel's unvarying teeth and inclinations,[3] eventually leads us to wonder if tool-elaborating humans literally occupy a 'last niche', meaning we have no ecological future *in* Nature.

Thoreau's powerful intuition of human nature as "a strong and beautiful bug" gnawing its way out of mankind's "festive board" appears on the front page of this section. Written near the end of his well-known prose work, *Walden*, it stands in semi-mystical counterpoise to his lesser known scientific work on biological nature, and serves as a masterfully drawn object lesson for this explicit warning he gives earlier:

> *It is a ridiculous demand which England and America make, that you shall speak so that they can understand you. Neither men nor toad-stools grow so.*[4]

Some ideas are hard to understand because we're not ready to hear them, like McLuhan's message of inherently subversive media that seems to have landed on ears deaf to its implications for the earliest media of all: stone-headed spears, fur-coats and log canoes.[5] But I hope after all my talk, if not of toad-stools then of 'two trees', we are now ready for the full message: our relationship to Nature will not change through moral persuasion alone, because non-material change comes about willy-nilly in a changing material world. This means, if we want to bring courage and maturity to our 'environmental' choices, we must know what we have become, in substance, to evo-ecology.

Even as the first material extensions of human bodies were beginning to bring about changes in our non-material humanity, the disruption of Nature's biological materials was already underway. This is the latest story being pieced together from the fossil record by paleoecologists,[6] but it's difficult to make sense of this new *Homo sapiens* vs Nature evidence from inside the environmentalist box. To begin with, we need to understand that the 'wilderness' we see today is a vast illusion perpetrated by living human memories limited to our animal life-cycles. That we are subject to a "shifting

baseline syndrome",[7] that haunts the dreams of all serious conservationists, is the theme of a very thoughtful book, *The Once and Future World*, written in 2013 by Canadian Journalist J. B. MacKinnon. It turns out the giant elms that overhung my boyhood rafting river, the memory of which will die with my generation, might have been all there was left of another "lost world", for the area had been logged a century and a half earlier for its even taller ship-mast grade white pines, and then the bird's-eye maple and tan-bark hemlock (I counted the growth rings on some of those dead elm spires to be well over 160 years when we were cleaning up the devastation of that alien fungus). In the wake of the loggers, the farmers came (literally, for boats came before sleighs and wagons to the shores of Georgian Bay, and in fact the fisheries were reduced before the forests), and they opened up space for the proliferation of edge species—aspen and birch, red maple, and white ash—establishing a new normal for my time. And looking further back, it was in those early logging days (*my* forgotten time) that Thoreau's pines were seeded on land that was cleared even earlier of its primeval forest, and emptied of large fierce animals.

So now, to understand what Walden Pond and the world its people called Turtle Island looked like when the first Europeans arrived, we must take *two hundred* generational steps back into the forgetting. Most people have heard that North America was once the home of strange beasts: mammoths and mastodons, armadillo-like animals the size of cars, two-ton ground sloths, and strange looking antelopes. There were camels, wild horses and wild oxen, and giant llamas, moose, elk, beavers, boars, birds, and beetles. And of course there were also the up-sized bears, dire wolves, and sabre-tooth cats that could prey on this 'megafauna'. Less well known is that the diversity reached a peak only fifteen thousand years ago as the glaciers melted and the climate stabilized at the end of the last ice age. And then it began to disappear. As MacKinnon explains: "Scientists have debated the cause of the mass extinction for decades, but evidence increasingly points to the spread of humans around the globe at a time of intensive climate change. Go to any corner of the planet, and the moment that *Homo*

sapiens first shows up in that place will be roughly the time that many of its large species begin to fall toward the void of extinction. Africa is the exception, where megafauna such as elephants, giraffes, lions and hippopotamuses evolved alongside people. Otherwise, the pattern holds."[8] But let's return now to the first Europeans to settle near Walden Pond: According to Charles C. Mann (author of *1491*), the famous flocks of now extinct passenger pigeons were "pathological".[9] And University of Utah wildlife biologist Charles Kay believes that the massive buffalo migrations, the teeming salmon runs, and the lucrative beaver fur trade that typified North American abundance—and *followed* the arrival of Europeans—were "artificial".[10] It turns out the first environmental effect that Europeans had on America was to kill off its indigenous peoples with European diseases, and therefore it was the *absence* of aboriginal human hunting pressure that allowed their 'natural resources' to run wild.

The most alarming aspect of this human 'success' story for me is that, from the human point of view, I don't really need to be using these qualifying inverted commas. You see, each generation *does* become comfortable with the alterations of the last. When Europeans first arrived on Easter Island, the poster child for human-caused ecological disaster, it seems they really did not, as a people-depend-on-nature environmentalist might suppose, find a miserable and malnourished human population. The descendants of those early Polynesian tree-destroyers were quite numerous and happy, thank you, and heartily feeding on roasted rats and chickens that they had introduced, and on the produce from rock gardens cleverly designed to deliver nutrients and protect young plants from the harsh weather of a treeless island.[11] A chilling scene, I'm sure, if we could see from that lost forest's ghostly point of view.

So what would we see, from Nature's 'point of view', back in the time before one imaginative species escaped from its gene-regulating grasp? We may never know, because all we have left now are the mineralized bones and stems of this lost world, and a handful of old sailor's stories about landfall on a "lost island". And as

for these stories, it must be said to begin with that such natural refuges are really quite young in geological time, and since uncharted islands must be distant and small, the startling diversity reported is (as the theory of island biogeography predicts) only found around less isle-ated offshore reefs. History, says MacKinnon, "is filled with accounts of briny waters that had rarely if ever before seen men. It's remarkable, then, that these reports describe a world beyond our current understanding."[12] Indeed just twelve years ago the ecological situation at Kingman Reef, most isolated of the Line Islands north-west of Easter Island, was described as a 'reverse pyramid'. According to MacKinnon "an estimated 85 percent of the biomass was accounted for by sharks and other top predators. This defied belief."[13] It's not supposed to work this way. There's *supposed* to be more biological material at the bottom of a food chain than higher up; at least that's what we see wherever humans have disrupted the composition and abundance of Nature. When we manage Nature it becomes *our* system, and it is illusion to think we can re-enter Nature's system and "take our share".

To understand sharing in Nature we only need to consider the wolf: here is an apex predator that eats a hundred times its weight in prey during its lifetime and, seemingly, gives nothing back but a little bit of buzzard food. But in fact, the trick that Natural regulation depends on is that every one of those living feasts, like the wolf itself, is engaged in a ballet of inter-action that optimizes ecosystem diversity and stability. We can *never* do this. Everything about us exempts us from this response-ability. We take the fittest stag, not the unfit (how would we measure wild fitness anyway, except in terms of a forest's own evolving rules of play?); we grow crops that suit us, but they can't survive on their own in the long run (evolution is a *very* long run); and increasingly, in all our interactions with wild Nature our personal survival is not *at stake*. We are un-Natural, and we turn evolving ecosystems into 'productive' (i.e. less diverse) farm-systems.

It is very important to understand the reason why those Kingman divers, when they entered the waters of that pre-human reef, described it as "a landscape of fear."[14] It turns out it was biological

turnover that upset the pyramid: large predators reproduce and grow slowly while their smaller prey do things the other way around, and this aggressive cropping strikes a balance in the end where both diversity and biomass are "far richer than on 'normal' reefs affected by fishing, pollution and other human influences".[15]

If you think about it, this is the way human cultures work too: intolerant systems (like the communism of the former Soviet Union) collapse because popular, or ideologically cult-ivated, concepts get lazy and simplistic if they're not 'cropped' by the continuous and fundamental questioning of 'free-range' thinkers. And of course any system can become ideological when greed, fear, and intolerance take charge. It's clear that the so called sharks on Wall Street can't be relied on to trim the ideological fat, nor the little entrepreneurial fish feeding on their left-overs, because predators of ideas are needed, and to be an apex predator you have to go after big prey—like capitalism. Of course, if you're watching this idea-feeding-frenzy from the distance of a meditating 'host', fear doesn't become a problem: these sharks are all in your mind, and accommodation is always possible—as long as you haven't killed off your aggressive critical faculties and, in consequence, allowed little thoughts to become one-dimensional pests.

This is where a small difference I have with MacKinnon's view might turn into a big fish that can provoke more vigorous debate. He champions my ecological sensibilities in almost every way; at one point, speaking of "other species" in the collective, MacKinnon even says: "they are a form of imagination. They are the genius of life arrayed against an always uncertain future, and to allow that brilliance to wane out of negligence is to passively embrace the death of our own minds."[16] No illusions about the planet as a super-organism here: ontogeny and phylogeny are never confused. In fact, if not for the small difference I alluded to, I wouldn't feel the need to write a book at all, knowing that others can express such thoughts much better than I can. But I must question Mr. MacKinnon's assumption in his last chapter where he reveals himself to be an environmentalist, and not yet bold enough (by my thinking) to

call himself an extremophile (even 'unfinished') when he writes: "But we have been attempting to make an impossible world, in which humans are separable from the rest of life."[17] He's right of course, in a metaphysical sense, but in a material world it might be more useful to flip this truism on its head, for then it better fits not only the ecological, but the sociological evidence.

That MacKinnon's "ecological human", who can "love the return of the wild as a formidable presence in our lives", might actually be "enough … to act as [the world's] guardian",[18] is perhaps an even more Quixotic hope than the small difference I propose. This is because if, as he also says, the "global majority who live in cities, whose families may have been urban for generations now" are indeed "part of the great forgetting", then given the Easter Island scenario this means they do not in fact, as he further supposes, feel themselves to be "temporary visitors with no place that is truly home and no traditions in the places they find themselves".[19] Rather, like those very human Polynesians, we will probably find a way to thrive happily, as extremophiles, whether we deliberately plan it that way or not. The problem is really this: If we want any of Nature's Intelligence left by then, the "majority who live in cities" will not only have to *pay* for ambitious rewilding projects, but must observe exceptional consumer restraint as well; and so they too, like "the ecological human", will need a believable vision of their future. Maybe all Nature needs from us right now is an unfinished realization of our Extremophile Choice? (A small difference from environmentalism.) Especially when the real "impossible world" is the one where a global majority heeds the call for stewardship of a truly forgotten "Lost Island".[20]

Thoreau's toad stool model of discovery suits the needs of my own bug better than the easier practice of re-arranging ideological utensils around an environmentalist table just so we can appear fastidious when consuming the "natural resources" served up in our ecological-slave-master's kitchen. We don't solve hopeless problems by reaching out for more hopes, but by recognizing what we don't need to reach for at all. Deep in human nature we've always

felt the pull of desert landscapes, whether of rocks and sand, ice and snow, or horizon to horizon asterisms in the night; and, more recently, we find a "take only pictures, leave only footprints" ethic coming to the fore with a proliferation of hiking trails and national parks. This elfin side of human nature is distinctly un-Natural. However, to the extent that our transition is unfinished, it is 'natural' that our understanding is subject to animal need and intellectual timidity, so even though I'm not suggesting our extremophile future can arrive all at once, I'm saying we must look for it on the horizon. There may well be levitating cars and bio-synthetic filet mignon before this vision is fully realized, but until we understand that this is our future, we will continue to hurt ourselves, and hurt the Natural world, with our ideological and territorial passions.

Perhaps our future can be seen, peeking through the sentiment, in this verse from E. B. Browning's "A Seaside Walk":

> *O solemn-beating heart of Nature! I have knowledge that thou art bound unto man's by cords he cannot sever; and, what time they are slackened by him ever, so to attest his own supernal part, still runneth thy vibration fast and strong the slackened cord along.*[21]

The attitude recommended by many pre-Darwinian poets of nature, like Browning and Thoreau who wrote in a time ripe for Darwin's "grand view of life" but not yet confused by his apparent demotion of "man's supernal part", still serves the extremophile (the real ecological human) very well. And so, "The astonished family of man" aside, I hope my personal "bug" has emerged, for you anyway, as a more familiar creature than it might have had I spoke only "so they can understand". I hope you can now see our blind, outpaced, and overburdened 'tree of life' as a living intelligence that deserves our gratitude and respect. And I hope also that we ourselves, as the lately freeloading 'parasite', will at last pick up the evolutionary baton that's been handed to us. What it means to be human in the Natural world is surely not just more gorging at the festive table as self-proclaimed stewards. Surely a creator must commit to play a more supernal part?

FORTY-NINE

There is something in this [experimental path] which reminds us of the obstinate adherence of Columbus to his notion of the necessary existence of the New World; and ... may serve to teach us reliance on those general analogies and parallels between great branches of science by which one strongly reminds us of another, though no direct connection appears. — John Herschel[1]

Our psychological conventions are powerful tools, and so long as we practise seeing them, or let us say, fully sensing them, for the tentative re-presentations they truly are, and keep them as appropriate and up-to-date as possible; and so long in particular as we keep testing our too-easily 'picked' fruit of moral-ism continuously against our silent and open posture of moral being; then they won't command and betray us, but they will make us more human.

As Shunryu Suzuki, first Western teacher in the lineage of Dogen, reminds us: "Enlightenment is not some good feeling or some particular state of mind. The state of mind that exists when you sit in the right posture is, itself, enlightenment."[2] And as the scientific heirs of Bacon and Darwin might say: "it's only when our dreams are carefully disentangled from our instincts and conditioning that we can safely, and competently, evolve the new political and technological species of human culture". But where these antipodal lineages meet, we see also that human intelligence itself is a heavily overlaid animal response-ability, that's trying to keep its authentic poise, while recapitulating, and at the same time extricating itself from, evolution's body-bound and habit-driven "entangled bank".

Looking back on our protracted analogy between Natural and human-natural selection, I am still willing to say there are really no new ideas presented here, if only because the supposed novelty of our ideas is what distracts us from the greater project of bringing newness to our old and decrepit ones. Or to ones that are even now taking shape just below our readiness to see them. For instance, my ideas about Man's relationship to Nature may be new only in the metamorphic sense that they bring to the surface human tendencies

to 'adaptive extremophilia' that are already well under way. What other animal just visits wilderness, bringing its food and shelter in with it and taking its non-biodegradable waste back out again—taking only pictures and leaving only footprints? It was not always this way of course, but certainly it's a trend that seems to be growing along with our expanding reach for 'completion'. Indeed, what other animal even wants non-biodegradable accessories? And what other mammal risks its life and foregoes its natural habitat and economy just for the sake of going where no Natural mammal belongs? Anyone who has read Apsley Cherry-Garrard's account of Captain Robert Scott's first scientific expedition to the South Pole (Amundson got there first only by treating it as a sporting event), will have a good picture of what an open minded community of extremophile human beings is capable. Even in their last days, with their bodies giving up the last of life's heat, Scott's crew shared their wealth (the last precious fuel to make tea with friends); his notebook defended the value of continued Antarctic exploration; and his sledge held geological specimens[3]—enough to feed the 'apex predators' of natural philosophy back home for years to come in their busy trimming of the scientific tree of knowledge.

The test of a true paradigm shift is not that old ideas get entirely replaced by new ones, but that all the things we thought we knew now look different. Perhaps such a profound change can be initiated simply by decluttering our focus, so we begin to see the outline of a more integrative figure haunting our claustrophobically rearranging ideas. If so, then the expansiveness of a good metaphor can reveal what our self-serving conventions hide. At least this was my intent when I made behaviour, overt and covert, the framework for animal intelligence and cultural evolution; and indeed, I think this has allowed us to move ahead on several fronts.

First of all, to avoid being brushed with the determinist stain of "just behaviourism", we had to account for the obvious originality of human minds, and so Darwin was naturally drawn into the project. Darwin, who had to account for the creativity of the organic world (equally obvious), gave us a model that inadvertently allows us to see the ramification of knowledge (the speci-fication

and proliferation of covert behavioural thought-habits), as a global 'phylogenic' process. Thus, with human-natural selection, the two trees metaphor came fully committed into our newly emerging picture. But then Dogen was also needed, and not just for one, but for two reasons: first, to assure us that we can, through practice based on a long tradition of bodymind meditation, look directly into our personal 'trees of knowledge' and see if there are in fact credible parallels to the tree of life; and second, to upset our claustrophobic 'thinking about thinking'. With Dogen, consciousness at its undifferentiated root becomes Primordial Awareness: the intimate Way of all-connecting Mind manifesting what we call, for operational convenience, our conceptual 'world'. And this is what finally made the two trees a productive metaphor, rather than, as required by the current paradigm, just another handy way to *contrast* natural mechanism vs conscious intelligence.

One of the more serendipitous consequences of limiting our anatomy of human intelligence to behaviour is that, by regarding language simply as a meta-behaviour needed to organize more directly functional behaviours, we can now explain the mystery of undisturbed yet overly-diversified ecosystems ('cheating' Gause's Law even without the geographic isolation of species) in terms of speci-fication by sexual selection: a meta-evolution now comparable to language. With the Amazonian evidence and a language-like model for 'pro-active' species coordination, we have a more compelling reason to treat evolving ecosystems as fellow intelligence.

But the consequences for our understanding of *human* nature, when we use our expanded view of Darwinian selection to model thought's overt-covert behavioural framework, are perhaps more revealing yet. Many of the afflictions of human nature can be separated into two categories: first, our creativity too-easily gets stuck in ideology, and second, our animal passions betray us. When we review the literature regarding the first affliction, we find traditions in both Eastern and Western psychology that blame what seems to be a human difficulty in distinguishing between thought and actuality (or in Buddhist terms, between mental construction and Reality). So what is the corresponding case for the gene-defined tree

of life? Well, 'gene-defined' is really only one-third of the story isn't it? Weismann's legacy, when we bring it up to date, tells us what we have is essentially a genepool 'design space' reiterating a supply of various but fixed mortal organisms to advance the seamlessly evolving Reality of natural selection. But to make the global accommodation of all this evo-ecology irreversible, the design phase is conveniently distinguished, as undifferentiated non-somatic DNA, from the body's epigenetically expressed protein chemistry. And we can't say this about the generative phase hosted by our globally selective cultural Reality can we? For our covert behavioural 'model space' is merely an attenuation, coordinated by a symbolic displacement, of our overt behaviours.

The second category of affliction, wherein our Natural passions betray our supra-Natural strategy, with its 'unregulated' technological powers, might also have an origin that can be better understood, and dealt with, by referring again to our two trees metaphor as aligned by a strictly behavioural focus. On top of everything else, the simple expedient of viewing all animal intelligence as having an overt-covert behavioural framework allows us to approach the question of human origins, and the ecological meaning of technology, from a new direction. If our object is to tell the human story in the context of other species, and if animals in general are organic structures that can 'behave', and have evolved from a common pattern of muscles in motion (with many animal skill-sets even 'more evolved' than ours in certain directions), then we have to face the consequences of our unique situation: we alone are the inventors of behaving body-mind extensions. Darwin's passing comments on the relative invariability of natural as compared with domesticated instincts, and his abstruse arguments concerning structural vs functional change—of marginal interest in the old paradigm—are very important in this new configuration, for they reveal an overlooked 'conformity imperative': natural selection, for a geological moment, favoured what I have called body-insubordinate behaviour (or inapposite curiosity), but if ecosystems must ultimately favour their own stability, then Natural selection can't favour such curiosity beyond a certain point. After

this point imagination will be a liability—and if it isn't, if a new evolutionary story has begun, *this story* will cease to have a place in *that story*.

This is quite a list of propositions arising from the simple trick of making thought 'behavioural phylogeny', and when we see such consilience of applications in an architectural design we know we've got ourselves a 'natural' accommodation. However, designing the house we live in is easier than changing the minds who live here, and I don't expect the many honest souls, who are focused on living and cautious of philosophy, to accept a new vision of their future on the weight of argument alone. Rather, if we truly understand the reality that, for most of us, most of the time, the 'tree of knowledge' keeps close to its root until it has the *means* to fulfil its branching, then it will only be necessary to convince a few dreamers who are in a position to implement material projects—for their non-invasive buildings, appliances, and infrastructures of themselves will show their worth to the minds that make use of them.

But are my arguments even good enough for those few like-minded gadget-heads—who must still be nuts and bolts critical? I admit it might look as though I've been strategically shielding myself from criticism at times (not only when I've repeated Buddhist and neuroscientific[4] warnings about the globally self-constructing nature of belief itself, but also when I claim that this extremophile perspective must excite a natural resistance, being at odds with our most cherished beliefs about ourselves), but this was not my intention. Like any other 'world view' this one will never be robust, or useful, until it provokes an equally long list of propositions against it. So let me start this examination off at the top by saying that 'paradigm shift' is a phrase much overused to describe any relatively far-reaching advance in our fast-paced, but largely superficial, Information Age. And so perhaps I only use it from a sense of desperate need, in what I also perceive to be an ecologically sick, but perhaps unfinished, Age of Darwin.

A more practical objection can be raised, no doubt, against applying an 'extremophile' solution to a world population already

starving from lack of productive farm land, for it has been leveled before against projects for rewilding arbitrarily limited areas of the planet, and this is: the mere scope of the enterprise seems to defy the limits of common sense! However, in regards to rewilding at least, if the 'mutual intelligence' approach is accepted, it *becomes* common sense that the ecological engineering involved might entail less micro-managing than we would anticipate under the old paradigm. That is: we can't "manage" intelligence at all, but it can manage itself if only we return the key items we've "stolen". Perhaps if we just re-introduce the megafauna, as Michael Soulé and Reed Noss proposed in 1998,[5] the details will take care of themselves? Of course, it's just the biggest animals that need the largest unobstructed ranges, and so it's the *cultural* engineering that again becomes the biggest challenge. And of course, further down the road, even to 'visit' a megafauna-quickened ecosystem might be a scary prospect for human beings: both mindfulness and battery technology will have to be vastly improved before the average camper will be able to taser a charging bison, let alone an elephant! But if our extremophile future camper keeps in mind how the ever-present danger from these aggressive Natural ecosystem engineers[6] pales in comparison to the ever-present danger from the *human* demons she must control—demons her 'non-species' has in fact unleashed in the past—then perhaps she will be glad after all to have this reminder (and this vigilance) to quicken *her* once again.

FIFTY

The Great Way is not difficult; just avoid picking and choosing.
—from the Hsin Hsin Ming[1]

On the other hand:

My own history tells me that our poetical natures will be harder to convince than our gadget-loving natures when I claim that the human species (if we're a species at all) must choose the strategy of an adaptive extremophile—however unfinished at the moment. As a student, in the 'back to the land' seventies, I was pretty much

sold on the need for human beings to live symbiotically with natural ecosystems, and I thought then that the only illusion we humans had to see through was our perilous attachment to, and indeed our identification with, lifeless mechanism. I still think it's a problem of course, and I have speculated about this in essay **38**, but my investigations into a behaviourally framed phenomenology lead inexorably to the 'two trees' analogy, and to a different conclusion. So let our poetical natures beware: sentimentality and mysticism are just as ready to grasp onto conceptual categories as science is, and indeed, we seem to grasp at what Tibetan lama Chogyam Trungpa called "spiritual materialism" all the more urgently when we disdain the urge to question; for it's scientific curiosity that upsets the tidiness of accepted knowledge just as, during silent meditation, our non-judgemental *interest* restores the faculty of immediate Knowing. Becoming 'enlightened' is not enough: in essay **44** I reasserted McLuhan's message that the balance of the human sensorium can be skewed by its media, and in essay **47** I urged that our gadget-loving natures must be wholly set aside, or wholly embraced, moment to moment.

It's not 'right effort' that we become enlightened only to arrive beyond 'the phenomenal world of this and that'. Our teachers and poets tell us that when we see through our conditioned natures we experience "oneness", but at this point a good teacher will also warn us that we are now in danger of wanting to spend all our time in the bliss of satori—that we haven't examined our deepest conditioning, a need for comfort, and must take care to stay engaged, to stay fully human, if only to alleviate the suffering of others. Certainly the freedom from obsessing in the headspace of an 'inventor' brings a peace and a sense of connectedness that we might not want to disturb again by engaging in heavy analytical thinking—especially by dwelling on distinctions in generativity itself, such as I am recommending. But how can we ethically avoid the call of human enterprise? Is it really 'right thinking' to stay in retreat?

Unfortunately, like other more disturbing animal passions, the pull of monasticism has profound biological support: we have simply to look a little deeper, and *here* we might find a stubborn

animal expectation, Naturally-selected for a life with inhumanly stable requirements, that assures us "there is nothing new under the sun". From what I've seen, whether you're a pious believer or an enlightened heathen, the perfection of this liberation can only be realized by adopting the life of a monk who, moment to moment, relies on Kierkegaard's promise: "if only the task is established, then much is already gained".[2] But the task of a technological animal, at least when it's reached our advanced stage, is *not* established is it? We might like to think it is, but there's always room for questions with answers that don't depend on moral superiority alone. Established tasks are a behaviourally 'ontogenic' animal expectation, but once we know technology's behaviourally 'phylogenic' freedom, then "far be it for us to help to circulate the lying reports, that little by little it becomes easier on the narrow way … it becomes harder and harder." The hardness of being human in the Natural world isn't just that insight is bottomless, and its application endless (Kierkegaard's meaning here[3]), but that we must *know when* to retreat and *know when* to engage. We ride the waves of our competing supra-Natural (and 'sticky') human impulses as we always have, but also, we must learn "the marriage of form and spirit", so we can ride without losing our balance. And ahead we see a fuller liberation yet: our original liberation from Nature's body-behaviour conformity imperative, our mindfulness-insight freedom from mental suffering, and a liberation from ecological guilt so that 'right innovation' (do we have a nine-fold path now?) becomes possible. Such is the final liberation for an immortal creative mind that's fleetingly responsible for, but not attached to, the body of an ontogenic organism.

So, except for this extra challenge of a sticky 'barrier' against confusion, the human task is more like the eons-long enterprise of biological evolution. When we look on the right scale, the tree of life is nothing like the life cycles of its creatures, and its task is *not* so idyllic as the life of a monk with his established duties; for Nature is neither a parent nor a child, but, like our technological

'species', it is an untaught innovator. Even before Darwin, Søren Kierkegaard expressed the difficulty of the human task this way:

> *The adult is indeed authoritative, he is to be his own master. But it is the Lord and Master who will assign the task, as the parents and superiors do with respect to the child; hence the adult is at one and the same time master and servant; the one who is to command and the one who must obey are one and the same. That the one commanding and the one obeying are one and the same is undeniably a difficult relationship …*[4]

After Darwin we are not even this sure "who will assign the task". For it turns out Natural selection, "the Lord and Master" who brought our world into being willy-nilly, cannot tell us what to do with it. Kierkegaard concluded that an adult, who is to be his own master, must follow the "way of affliction", so as not to "demoralize his energy". And perhaps this advice will be seen as prescient after all for an animal living off the fat of the land without any Natural regulation whatsoever—just his inconsistently rationalizing conscience. So what, if our innovations come much faster than Nature's? If this makes us 'inherently untrustworthy', it's in a way that we can now embrace and take responsibility for. And indeed it can even be argued that, if our most frightful social problems, whether they be self-centred crimes or nationalistic wars, are seen as arising from a loss of faith in our own freebooting species, and from territoriality over 'natural resources' that we must learn to step away from anyway, then shouldering our extremophile responsibility will move us forward on the social front as well as the environmental. With this in mind, I will revisit *The Once and Future World* one last time, for I value MacKinnon as an 'apex predator' to keep me on my toes when I confront the contemporary thought ecosystem regarding Man's relation to Nature.

Near the end of his last chapter, "The Lost Island", we find MacKinnon offering us "A few words about hubris."[5] I confess it's not what I expected from someone trying (against his own doubts perhaps?) to toe the environmentalist line; for he writes only about the past failures of those who assumed they knew how to correct,

through the introduction or extirpation of species, the damage done to island ecologies. That is, he warns us about the hubris of *meddling*. Then he offers this hope in the last paragraph: "They lacked the collective intelligence and technologies of the globe's several thousand cultures, not to mention supercomputers capable of performing nearly twenty quadrillion calculations per second, and they had no one who could build on their successes or support them through their failures."[6] What surprised me most was that this rightly alarmed environmentalist didn't take the opportunity, in a last chapter on hubris, to drive home his earlier point about the folly of "attempting to make an impossible world, in which humans are separable from the rest of life".[7] For, which is the greater hubris: assuming we are equal to, or assuming we are beyond, the task of managing Nature? Does the folly of the last go without saying? But then, why would an environmentalist, committed to a symbiotic coexistence with Nature, focus his final remarks on what should be, at least for an environmentalist, a residual worry: that even positive interference can be harmful? I still say there's a little extremophile bug ready to chew its way out of every human being. And I submit that this alone can divert us, and in so doing save us, from the confusing and destructive animal hope that our newly acquired technological intelligence might both take part in, and yet not be defined by, evo-ecological intelligence.

The unconditioned root of all intelligence cannot despair, and the fundamentally moralizing task that the pre-Darwinians wisely set out for us as the "way of affliction" is more favourable than ever for a tool-maker that shoulders its adaptive extremophile responsibilities. The non-material 'humanity' of this LAST Niche is said to be our most godly possession, but it too is something we *took* even while we were taking our first material steps outside that genetically ordered garden of form-fitted creatures—though perhaps we should say it's a gift from a less earthly Host, to keep only as long as we understand the sacrifice, and the constant faith, it represents. Along with our greater creative agility, along with these hard-won cultural heirlooms bequeathed by our Promethean ancestors in the

story of "reinventing evolution", we have the advantage of Nature's untaught, multi-phase pattern to light The Way. Yes, the human non-species *does* have another intelligence to consult, not human, but not alien either; and if we listen to what it is saying, we might finally understand that our technology is meant to free us, and Nature too, from our unsustainable dependency on resources that have been evolved to efficiently sustain only eco-evolutionary flourishing. Would this not at least make our task, our endless choosing, less picky and quarrelsome? Let's be thankful for that, and respectful, as we look beyond our most cherished conventions, and far beyond our outmoded impulses selected long ago by Nature. And let us be guided by Nature's example to look in stillness, and by Nature's unconfused 'moral' authenticity to direct our ambitions at the younger and away from the older 'evolution'. In other words, rather than pretend we have a future within an authentically Natural world, a precarious future based on a self-serving and continuously jiggered sustainability, let us aim instead for a self-stabilizing 'containability'. Then, perhaps, *H. adaptus extremophilus* might finally spread its technological wings as one fledgling spirit, and fly—as only it can and as fast as it can—beyond its befouled and sprawling nest in the Tree of Life.