

An eco-ethics for the end of the Anthropocene

Finding ethical and sustainable paths through
consumerism, disposability and planned obsolescence

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Part I: A storm is blowing in from Paradise

A Klee painting named 'Angelus Novus' shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe which keeps piling wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing in from Paradise; it has got caught in his wings with such a violence that the angel can no longer close them. The storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress. Walter Benjamin. On the Concept of History IX.

From where we stand, two decades into the 21st century - in the closing act of the Anthropocene we might say - like Klee's angel, we gaze back at the detritus of 250 years of industrialism, colonialism and commodity capitalism. If we look ahead, we survey the prospect of climate catastrophes and calamities already well described – a sweltering planet, a great extinction, tipping points, dying oceans, wars over water in some places, battles against water in others, fires and storms like those in the book of revelations. The mild (if somewhat dreary) climate of northern Europe is becoming increasingly tumultuous. New York experiences monsoons. Rivers dry up, others flood. The forests of Western USA and Canada, Siberia,

Australia and Amazonia erupt into fiery conflagrations, and less obviously, oceans acidify, coral reefs die and fish populations plummet.

The awareness of impending existential climate crisis is, at long last, suddenly (and perhaps not too late) growing. Any thinking person feels the need to be part of a force for change – political, social, technological and environmental. Any thinking person recognises the urgent need for change, but few are ready to willingly embrace deprivations (5000lb electric cars are still cars). The bald fact is that we in western culture are as addicted to fossil fuels as a junkie is to heroin. It is sobering to reflect that any middle-class westerner has at their disposal, more energy than any king or emperor of the pre-industrial world, and remember that *homo petroleus* is a new species, and use of fossil fuels is a blip on the timeline of humanity.

It is relatively easy to evoke sympathy for turtles snagged in plastic, not so easy for leeches and mites, not to mention viruses. Likewise for grand forests or coral reefs, but not so much for saltmarshes or sewage treatment systems. So it is a testament to rising consciousness that the *waste-stream* is a topic of renewed awareness, *lifecycle planning* and ‘carbon footprint’ have become familiar terms. Fast food, *fast fashion* and *single-use plastics* have come under scrutiny. Food waste, of all things, has become a political issue. Markets, apparently, will cynically work any societal trend for profit. Greenwashed appliances and home and body products capitalise sustainability.¹ ‘Recycling’ itself, has been exposed as a sham. It puts what should have been a governmental or corporate responsibility onto the shoulders of consumers. And while we dutifully clean and sort our recycling – it ends up in the landfill. What little recycling does occur, consumes energy and new toxic materials, liberating potent greenhouse gases all along the production chain. The idea of *sustainability* has attained a new urgency, but *sustainability*, like so many overused catchphrases, is ripe for critique. The phenomenon of *repair cafés* attests to new interest in notions of (and the actual doing of) maintenance and repair. So how should one conduct oneself in one’s daily life, in order to avoid hypocrisy? What kinds of activities ought one engage, and which eschew?

To make things more awkward, ethical behavior and effective action are different things. As the short film ‘Forget shorter showers’ forcefully argues, change at the personal level will not reconfigure the practices of the main culprits of climate crime – industries, corporations and states (*Forget Shorter Showers* 2015). The beginnings of global government, the League of Nations then the United Nations, were catalysed by the horror of a ‘world’ war or two. But the climate crisis seems so diffuse, and the immediacy of local social, economic and political issues,

¹ Perhaps the most absurd example I’ve seen is a benchtop blender for food waste – all shiny new white plastic with electric motors. Why? Some willful confusion of maceration with composting.

not to mention simple profit, push the larger crisis into the background. It may take a more dramatic disaster to galvanise nations into concerted action.

Russell Hoban published *Riddley Walker* in 1980, at the height of the terrible fear of nuclear conflagration (miraculously (that time) we escaped the nuclear annihilation that had so many of my generation living in nihilistic dread) (Hoban 1980). The novel is set in southern England a century or two after nuclear apocalypse. Human culture has regressed to iron age condition, the radioactive bogs are dredged for C20th iron detritus – bits of buildings, railways, factories. The scenario that Hoban laid out may as well depict human life in a post-Anthropocene world, adapted to a new post climate-crisis normal.

In what follows I first lay out some global and historical scenarios and address a range of ethical issues arising. I then attempt to connect this global with the local and personal by zooming-in, in the process becoming autoethnographic and somewhat confessional.

Part II: Swimming in the global waste-stream

“Some of these buildings are over 20 years old”

Steve Martin (as Harris Telemacher) in *L A Story* (1991)

The consumer commodity economy is predicated on *repurchasing* – an industrial and marketing behemoth oriented towards continuous manufacture and continuous (re)consumption. This is most obvious in the case of tangible commodities and software but even food production (agribusiness) has embraced this logic with new generations of pesticides and GMO crops. In a system of commodity capitalism, industrially mass-produced artifacts and rapidly changing technologies, *improvement* implies *obsolescence*. Products have designed-in use-by dates. These dates are defined by technological change and materials lifetimes, the bald-faced market manipulation we call *fashion* - this year's model is just somehow sexier. (Planned obsolescence need not imply irreparability, nor unrecyclability, but it usually does).

It is important to recognize that, like industrial capitalism and the growth economy itself, this system is neither old nor permanent. This system has no future, or if it has a future, we have no future. But turning the giant ship of the global economy will necessarily take time. Any proposed reorientation will have deep ramifications on the economics of corporations and states. The reconfiguration of cities and lifestyles to carbon-neutrality will be a slow process. Likewise, movement away from a mindset that ownership of a commodity is inherently short term and transitory – from 10 minutes in the case of single use plastic packaging to 10 years for

cars (with clothing and techno-widgets in the middle). We might break down varieties of obsolescence into the following (overlapping and related) categories.

Technological ‘progress’

Devices, tools, appliances become obsolete due to technological ‘progress’. Even if you could find a dial phone, there’s nowhere to plug it in anymore. We fully expect that there will be no (new) internal combustion cars in 20 years. In period of technological ‘revolution’ systems rapidly become obsolete – we have been in such a state with computing for 30 years or more. One would not attempt to use a 20-year old desk-top computer. Unavoidable in the first decades of the computer era, these changes are now self-perpetuating and sometimes frivolous. Bloated code demands faster processors and more memory. We do not need yet another style of USB plug. As often as not, ‘this year’s model’ is dressed-up with fashionable shapes and colors in while little has changed ‘under the hood’. Desires for such are generated by marketing strategies. The perpetrators of this nonsense should be called out as the environmental criminals they are. As nuclear electricity was once touted as ‘too cheap to meter’ we have become accustomed to the assumption that Moore’s law will extend indefinitely. Some things are less susceptible to such obsolescence: paper is paper, bricks are bricks, knives and forks remain knives and forks. In old-world cities, people commonly live in houses and walk on roads (and send their waste down sewers) built hundreds of years ago. They do not, of course, use computers or drive cars built hundreds of years ago.

(Fast) fashion

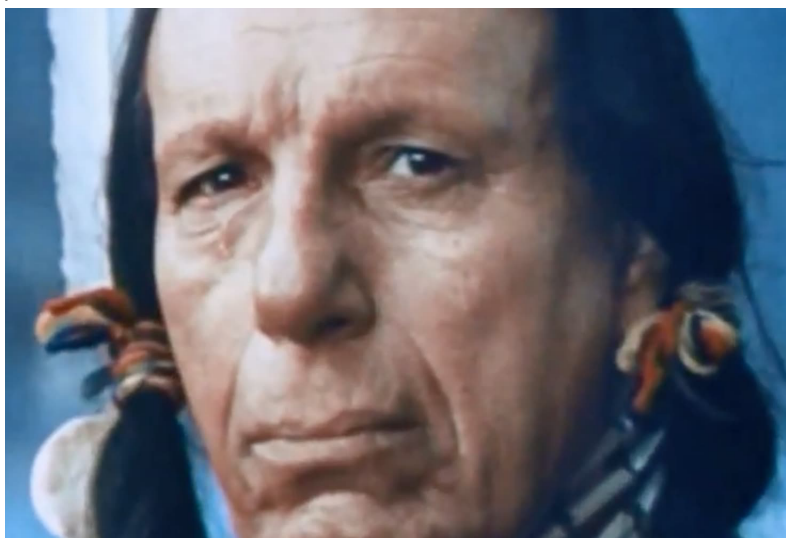
Tastes in clothing, architecture, cars and appliances have been manipulated by marketing for a century or more. Many (most?) consumer commodities are constructed to have an intentionally short cultural relevance or desirability. Internet niche marketing and sophisticated digitally coordinated manufacturing has moved the process into a hyper-rapid temporal space (ur example Shein), creating environmental outrages like the mountains of unsold fast fashion in the Atacama desert, mostly of toxin exuding synthetics (Duong 2021). This fashion churn drives unsustainable production of a number of ways - the expected short cultural lifespan of such goods predicts the use of cheaper materials that wear out or break quickly – the fashion-conscious will not wear last year’s sneakers anyway. If you make a good pair of shoes, I will buy one pair in maybe 10 years. If you make shoes that fall apart, and cannot be fixed, I will be forced to buy a new pair every year. You will get my money 10 times. Who can argue with that? Certainly not the bosses of industry nor the Nike stockholder nor the planners of national economies.

Designed to break

In the contemporary consumer commodity system, things are built to break, thus requiring (regular) repurchase, and resist both repair and recycling. An entire branch of the discipline of materials science is dedicated to making things break on-time - designing manufactured materials with a designed-in lifespan, that are engineered to decompose at a certain age – and seldom into earth-friendly detritus. Accurately timed to fall apart in accordance with calculated buying power of the customers for that product. The plastic parts that comprise semi-structural parts in your car crumble, fracture and decompose into toxic dust in 10 years (give or take for ambient UV). Tires, hoses, wiring insulation, door handles, upholstery, rearview mirrors, window seals, ‘disposable’ air and oil filters - when those materials begin to lose their structural integrity, there is no fixing them. Composite and synthetic materials are cynically designed to fail, to fail with reliability and precision, at a particular age, not unlike the replicants in *Bladerunner* (or indeed, like all living things). It sounds like a scheme devised by a malevolent cosmic force, and in a way it is.

Simple ‘disposability’: packaging and SUP

Seen as a *convenience* half a century ago, disposable packaging and ‘single use plastic’ food containers (Styrofoam, etc.) have become a global environmental disaster. There are things that are necessarily consumables – my food and the energy I use to cook it, the water I drink. But my coffee cup? Why should I buy a new cup with every cup of coffee, just to discard it when the coffee is gone? This is a kind of consensual socio-economic insanity. In a classic case of corporate cynicism, the resulting ‘litter crisis’ of the 1960s was responded to with faux ‘public interest’ ads that put the burden of cleaning up ‘litter’ on the consumer (the famous crying Indian ads).



The ‘crying Indian. Image from Summers 2019

People all over the world use and have used ‘disposable’ food containers – in Oceania, banana leaves, in Mexico, lightly fired terracotta – but crucially, these materials bio-decompose. The

litter crisis was a result of packing that did not decompose, utilized as components in cost cutting delivery strategies.

Irreparable: There is no unscrambling some eggs.

No-one repairs a microprocessor - there is no fixing such things – there is just throwing away a faulty component and replacing it with a manufactured replacement. Repair in such contexts amounts to pointing a diagnostic tool at the system then ordering the replacement component by the serial number in the internet-linked database.² Encapsulation of subcomponents prohibits repair. The cocktail of materials makes them virtually impossible to recycle and reclaim. Even in the case of the humble sneaker, the sophistication of manufacturing processes, the bonding of materials, makes them irreparable and unrecyclable. Biodegradability may be a sustainability *virtue*, but planned and engineered chemical degradation is decidedly not. Petrochemically derived synthetic materials are particularly egregious. The global plastics crisis - nonbiodegradability, and the impossibility or nonviability of recycling - has resulted in the global ubiquity of microplastics and recognition of dire health impacts for individual organisms, species and entire ecosystems.

Composite materials, combined with planned obsolescence, make a mockery of pretenses to recycling, and also of pretenses to maintenance. There is no way, or no economical way, to tease-out and sort those molecules back into their categories, even, to use John Haugeland's felicitous phrase, with 'God's own microsurgery'. Such diabolical composites are everywhere. They enter the waste-stream and are inherently unrecyclable, because they are composites, at some level: combinations of metals and plastics in microelectronics, combinations of paper and plastic like the humble milk carton, laminations of different plastics as in the 'disposable' plastic water bottle, or the fiber mixtures in a poly-cotton shirt.

Growth and degrowth

The *economy* as we know it, is predicated on repeated consumption, of the same things, or the new model, over and over again. *Buy it today, buy it again tomorrow*. 70% of the US economy is consumer consumption, much of that, driven by 'fashion' deployed as a driver of consumption, or of goods that wear out with no potential for repair. Incessant production, incessant consumption of resources and power, incessant creation of waste: this is the engine of the economy - an economy constructed around the assumption of continuous, repeated consumption of the same thing. If we bought only what we needed, bought things that did not wear out or become obsolete, current local, national and global economies would crash. To abandon disposable products and inbuilt obsolescence, to abandon consumerism, would destroy the economy as we know it. Yet to continue on this path is to ensure environmental

² In november2021, Apple reversed its policy that opening an iphone voided warranty, and is allowing owner repair. But this 'repair' is limited to replacing a defective component.

destruction. This puts us in an awkward position. The global commodity economy itself resists 'maintenance' - some things are so broken that there is no fixing them. So-how to turn that ship around, while minimizing collateral damage?

Part III – Bricolage aesthetics: Maintenance, Repair, and *Salvage*

Maintenance is a vague word, like sustainability. What should be sustained? What is ethically unsustainable? What constitutes maintenance: the replacement of a broken widget with a new one? The application of yet another coating of floor-polish or paint? If the continued homeostatic functioning of a system depends on a throughput of resources that enter the waste-stream as a problem, is that system sustainable? Viewed this way, a commodity system, like an animal, has a metabolism. But unlike the cowpat, the diesel particulates or the used toner cartridge are not input resources for another (biological) system. 'Externalities' be damned – in a closed system, there are no externalities. What we choose *not* to maintain is an ethical decision. Choosing to manufacture the unmaintainable is an egregious ethical error.

In order to clarify the concept of maintenance, we might position the term with respect to related terminology. Polishing shoes, sewing on a button, sharpening the kitchen knives, repainting the window frames, pruning the fruit trees and grapevines, backing up the hard-drive, pumping the tires on the bicycle and oiling the chain: these are typical maintenance tasks. The transition from maintenance to repair usually involves replacement or addition. When the tire has a puncture, we add something (a patch) to make it usable again. Another distinction between maintenance and repair, in my view, is that maintenance implies stasis – to bring the artifact back to as-new condition, as closely as possible, to erase wear - as often as not, these days, with OEM replacement parts purchased online via a part number.



Kettle repaired (by the author) with a piece of rosemary wood that had grown in his garden, bound with marline. Photo S.Penny.

At the end of repair that is furthest from maintenance, the work has more creativity to it – improvisation and bricolage. Re-creation might not be an overly pretentious descriptor. Restoration is something else again: a fetishised, obsessive maintenance tinged with nostalgia. What happens when something is irreparable? A less aware person will send whatever it is to the waste-stream, a more aware will *repurpose* – if we must buy yogurt, we can at least use the plastic containers for something. On the other hand, we see well intentioned but sometimes ghastly sustainability toxic folk art. I never liked the inside-out car tires as plant-pots. Some well-meaning but misguided souls ardently craft plastic waste into nasty handcrafted tchotchkes - plastic soda bottles as plant pots and so on - as if gilding such trash with folksy aesthetic somehow redeems it from being the poison it remains: no silk purses from sow's ears.

A more extreme repurposing is *salvage*. I built a shed from a neighbor's discarded fence palings. The bottoms were rotted, but trimming produced a stack of usable lumber. The offcuts become firewood or mulch, that is, of course, if the materials are organic. Beyond repurposing, salvage and reuse is the territory of the scavengers, gleaners, lowly rag and bone men, scrap metal merchants, trash-sorters, and dumpster divers, but *recycling* as an industrial process is problematic. The percentage of plastic recycled is 5%, recently downrated from the pitiful 9% estimate previously put about. The remanufacture implied in recycling is ecologically fallacious

– the energy and material consumption of recycling is itself unsustainable. Recycling is also problematic because, in cases where it is possible or economically viable, it involves injection of new, toxic, materials- plasticisers and the like. The processes involved in recycling the other materials we purport to recycle – aluminium, paper, plastics, steel - are barely economically viable, due in part to high labor costs but also huge inputs of materials and energy. And what of appliances – the refrigerator, the car, the office chair, the computer printer, the phone, the sneaker: all diabolical cocktails that defy demanufacture, or create toxic waste.

Salvage eco-ethics

Beyond, or beside, an ethics of maintenance, is an ethics of repair, and beside those, an eco-ethical responsibility to salvage. *Salvage eco-ethics* is intentionally parsimonious, in the sense that it is always conscious of economizing energy and material resource use. Self-evidently, in any sustainable world, making things once, to last, is the way to go. If they break, they can be repaired. If they come to the end of their useful life, their parts are salvaged and repurposed. The ecological ethics of this work has been obscured by the obscene energy consumption of the fossil-fuel driven orgy of commodity economics. Why would anyone straighten a used nail when nails are so cheap? But nails are not cheap by any real accounting. Iron ore is mined on one continent with giant trucks and high explosives, shipped across vast oceans in diesel power mega-ships, smelted and refined and manufactured in factories with giant furnaces, then shipped again. No, eco-ethics demands that I repair and reuse that nail if I can.

Likewise glass: I know how much fuel it takes to turn broken glass into new bottles. I had a friend who was a craft glassblower, he had to work for 3 months to save enough money to buy enough gas to fire his kiln and lehr for one work session.³ It took 10-12 hours firing the kiln, burners roaring, to melt a few kilos of glass, so hot it glowed like the sun. Having brought the glass to working temperature, he had to work non-stop for 36 hours. Working such a dangerous material while sleep deprived was always a fraught proposition. Then he would sleep while the red-hot glass objects underwent controlled cooling (annealing) for days (or they would explode).

When I was a child, we got our milk in bottles. Not so long before, the milkman had a horse-drawn cart. The horse knew to walk slowly along the street, keeping pace with the milkman as he went back and forth from cart to doorstep (who needs self-driving cars?). When the milkman left the milk, he would take our empty milk bottles. At the dairy they would be washed and refilled. How many bottles can you sterilize with the energy it takes to remake a bottle out of crushed glass? Thousands?

³ A Lehr is an annealing kiln where blown glass objects are slowly cooled, with constant but slowly reducing heating.

Part V: An autobiographical intermezzo

When I was about 12 years old, I had an epiphany regarding the finiteness of the planet: *you can't throw anything away*. This must have been about 1967, before the iconic 'blue marble' images of our planet from space that jump-started the environmental movement and adorned the cover of the *Whole Earth Catalog*. Who knows how this idea popped into the psyche of a boy in suburban Sydney in the 1960s? Did some person, some book, put it in my head? I don't think so - more likely to have been a Daffy Duck cartoon, I don't know. A few years later, as a teenager, I would wander the rocks of the estuary near where I lived and find tangles of fishing line, which I would take home and painstakingly untangle. I never used the line, I wasn't that interested in fishing. On a backpacking trip as a young man, I spent several days in the yard of the hostel I was staying in, tidying accumulated garden detritus into organised categories – rocks, dead leaves, branches, bits of junk. I'm still not sure why I did it. I thought myself an artist at the time - I may have thought it was a kind of artwork.

At art school I gravitated towards sculpture – there was a workshop and tools. They built things in wood and steel that didn't fall down! I had found my people. I had the great good fortune to become a student, in the true sense, of one Owen Broughton: sculptor, foundrymaster, anthropologist, tool collector. The profundity of his influence upon me has only grown with time. He had a seemingly infinite knowledge of tools, making and artisanal practices, and manufacture. He had been Henry Moore's foundry foreman, responsible for successfully pouring elephantine bronze castings. He could tell you how the Romans cast the bronze soles of centurion's sandals, how in India they quarry granite with driftwood, how Australian colonialists surveyed land on horseback. He had a collection of barbed wire, meticulously set in an album of hardboard pages 3ft high. If you bothered to ask, he could tell you how, when and where each sample was made, on what kinds of machines. I learned toolmaking at the forge from him. We annealed old files and reworked them into chisels and drawknives – a rusty file is still a useful billet of carbon tool steel, after all.

Throughout my career as a sculptor, I consistently *upcycled* materials, decades before the term was coined. I scavenged scrap-metal yards and came away on my bicycle with useful materials and treasures -memorably on one occasion, towing a 20' bundle of aluminium tubing along heavily trafficked roads. I raided county dumps in the hills for tree trimmings that would be fashioned into finely articulated structures. I made paper out of dryer lint and dust vacuumed from the floor – the very definition of waste. Was this an expression of the psychic scars of a deprived childhood? - quite possibly. As a child, without mentor or father figure to guide me, I cobbled together rudimentary vehicles from bits of wood and tin can and wheels scavenged from old prams, and proceeded to careen down dangerous slopes, narrowly avoiding culverts,

cars and serious injury. Little boys can get themselves into no end of trouble. And have I embroidered an ecological and theoretical justification upon and around that impoverishment? – quite probably.

Be that as it may, as long as I can recall, the work of repair has had a presence in my psyche as a *responsibility*. The discarding, of almost anything, is difficult, because everything, presumably, has a use. The yard of my current house was arid when I found it. Organic matter has never left the property – even the coffee-grounds and used paper towels are not ‘trash’ – they are valuable resources for the compost heap. Everything has value, is used, and is transformed. What was a few years ago, sandy dirt, now has inches of mulch and a thriving soil microbiome – a bustling ecosystem of bugs and worms and spiders. Worms are turning up in places they never were before. Lizards and hummingbirds snap at the fruit-flies rising off the compost heap. It is a humble triumph. My bath drains into the garden, where the trees enjoy the phosphates in the organic soaps I use (Higgins, no date). I have less guilt about water use because I know the water I bathe in positively contributes to the plants I grow (and what doesn’t, percolates down into the depleted aquifer). The trees provide fruit containing some of that water, transformed into nutritious juices, which I then consume, and I contribute my urine back to the soil. The trees, while photosynthesising, provide shade, keep the soil cooler, reducing surface evaporation. I am, I suppose, a naïve permaculturist – aspiring to a condition in which there is no waste. The neighbours haul out giant trashcans every week, filled. Effigies to the cult of the waste-stream. Ours are always almost empty. Yet we are compelled to discard some things – mostly toxic things or plastic things, that have no use to any organism.

Shoes and socks

Now I worry about old socks, worn at the heel or toe. Socks made from sophisticated polymers derived from the residues of fossil forests, dispersing festoons of toxic microfibers. What am I going to do with them? I cannot throw them away because it will contribute to the forever waste of the 95% of all manufactured plastic, now discarded, dispersed in the waste-stream that now encompasses the entire planet. But my sock cost \$1. With the best will in the world, it may take months before I darn it. So it sits, not usable but not waste, taunting me by its poisonous existence. It can’t be recycled, at least not without the consumption of more energy (probably more fossil fuels) and not without the addition of more toxic chemicals. I can’t burn them – god forbid! They won’t rot in the compost heap – no known creature will feed on them. They are microscopically immortal. Their parts will divide to invisibility, but they will continue to invade bodies and wreak metabolic havoc. So must I keep these socks, and plan to one day, darn them? But who darns socks when you can buy a new pair for a dollar? These damned colorful plastic socks with the fashionable logo – dragged across giant oceans in giant iron ships burning bunker fuel at 100s of gallons per hour, belching toxic fumes – that I bought because they were

a bargain. What a bargain! I will wear them around my neck, like a dead albatross, forever, to remind us of our sin as a culture, of making things that are foreign to the earth: a betrayal of the planet and our responsibility to it.

And these shoes, all these shoes, bonded in some diabolical autoclave, that cannot be repaired. Believe me I've tried, but glue and stitching and rivets just don't jive with industrial vulcanization or plastics that are designed to fall apart. I have a pair of work-boots, with good solid soles with plenty of tread left. They have well-made leather uppers, with good eyelets and durable laces. But between the upper and the sole is a layer of what was some kind of foam that has decomposed to sticky goo. There's no fixing that. And there is no obvious pathway to making the boot usable again. 85% good and solid, 15% total crap. Irreparable. An eco-ethical disaster. What am I to do with them, all these footwear amputees, casualties of a war of price-cutting and market share? The sad fact is that, even with my library of tools and encyclopedic skills, I cannot fix them, as much as I feel the responsibility to try.

Part V: Doing salvage ethics

This part is written from the standpoint of decades of hands-on making. The knowledges or 'literacies' I draw upon are not, in the first instance, scholarly or academic. They are my extensive experience in metal fabrication, robotics, boatbuilding, home renovation, precision machining, sailing and gardening. I know what it takes to (design and) make a machine that works, a structure that stays up, a hull that withstands often violent natural forces. I know the qualities of iron and steel, of timbers hard and soft, of the vitreous, rock and concrete, plastics and composite materials. I know how to put them together, with fasteners and adhesives and molten metals, and how to take them apart again, with blowtorch, wrench, saw or sledgehammer. I know the kinds of concentration involved in such work, and the fatigue of the body, the calluses on the hands, the regular superficial wounds: cuts and scrapes and bruises, splinters of metal and glass and wood: know-how, and pragmatic, artisanal know-that (quite different from the scholarly know-that).

Life in the workshop – repair, bricolage, improvisation.

Pursuing salvage ethics implies the possession of (or at least access to) - and intimate relationship with - tools and materials, and development of relevant skills and experience. Such a path is not for everyone. Some people are just disinclined, some are intimidated, some resist the accumulation of the necessary stuff. It has its psychic rewards, not simply assuaging of guilt, but, on good days, a success experience confers a sense of creative competence.

Suffice to say that I consider material detritus that most people would toss without a thought. I straighten used nails I pull from wood, I'll recut a thread on a burred bolt. The usefulness of a

used paint-can or milk carton does not escape me, nor scraps of wood, down to tiny pieces - woodscraps are always useful. Ditto string and cordage and rope: when you need a small piece, why cut a big piece? In my line of work, there's no telling what will come in handy, that scrap of wood may be just the thing to raise up a workpiece to level, or support a piece under the drill, mix the paint or spread the glue. After which use, it might be even more useful, or find another use. And if they're no good for that -they're still firewood. And the sawdust – mulch of course. The broken drill bit– a precision hardened shaft of specific diameter. Even if the appliance is trash, there are fasteners and hose clamps and a switch to scavenge.

I fix things. Someone called me a 'machine whisperer'. I do have a fondness for tools and for restoring tools, not in some fetishistic collector way, but to bring them back to a good usable state. A friend once picked up a hammer in my shop. Its handle, cracked near the head, I'd bound with copper sheet and bronze wire. That's love, he said. I guess he was right. I do feel a responsibility to make things better. Especially things that have originally been built with care and have perhaps, seen hard use or abuse. I do not feel a compulsion to lavish care on a damaged Ikea flatpack bookshelf. That material cannot be repaired. But a chair that has in it parts that were identifiably once part of a tree, perhaps some joinery made with skill and care – that deserves respect.

Taxonomy, organisation and sorting in the shop.

Stocktaking is a kind of maintenance, with a view to some envisioned future – it's important to know what you've got, what you might need to get more of, so you don't run out at a crucial moment in a project. You need to know where it is when you need it. Its not useful if you can't find it or have forgotten you have it. Its amazing how quickly you forget - and there's little more frustrating than poking about trying to find that thing, or tool, you know you've got it, somewhere. Worse when you can't find it and, God forbid, buy one, only to find it a week or so later. There is always order, and there is always what looks like clutter and chaos – the things in the process of sorting, and the things waiting – a standing reserve of other people's trash. The salvaged whatever's – a pair of hinges, an electric motor, a sheet of glass – have to be stored, in the right place in this demented Wunderkammer. Like any library or warehouse, the system of organisation has to have a certain logic to it and a certain granularity, and it has to be remembered. It is too contingent and fluid to be exhaustively notated, so part of the work is regular reinforcement of memory. This occurs organically in the regular working and ferreting around – so *that's* where I put that collection of scraps of piano-wire - and sometimes in processes of stocktaking and rationalization.

How well sorted is sorted? – must every screw be identified, labelled and stored in a knowable place? No, that would be going too far. But everything in a big pile: that would be useless. To

sort is to define categories at a pragmatic level of detail. That is part of the work. Then each individual item requires some consideration - which category is for it? Or do the categories have to be altered? There is a Borgesian impossibility to the task. The organization of animals in the *Celestial Emporium of Benevolent Knowledge* related by Jorge Luis Borges is a wry epistemological joke. It divides all animals into these categories:

Those that belong to the emperor

Embalmed ones

Those that are trained

Sucking pigs

Mermaids (or Sirens)

Fabulous ones

Stray dogs

Those that are included in this classification

Those that tremble as if they were mad

Innumerable ones

Those drawn with a very fine camel hair brush

Et cetera

Those that have just broken the flower vase

Those that, at a distance, resemble flies (Borges 1942)

Sorting things in the shop is like this, because things are like and unlike each other in an infinite number of ways. The work of decision-making no doubt outweighs the value of the object. This is a problem, I am wasting my time, but I cannot throw it away. So I am yoked to this labor, not Sisyphisean, but obsessive and of dubious value. What is it that against my better judgement, persuades me that this is good work that needs to be done? What dues am I paying? And to whom?

Pathological Maintenance

About a year ago I went to an estate sale to buy an old machine lathe. I found the remains of the shop of a man who, for 30 years or more, had built model boats. Not my thing really, grown men making small scale models of boats they might have known or simply fantasised about as kids. But I could read his backyard shop. In its disarray was the history of a life dedicated to a craft. Arrayed and scattered all about, customised tools, scraps of careful drawings, hand-made cardboard patterns, jars and little drawers of parts - a catalog and chronicle of a life and a working process. Each little thing, down to the scars on the edge of the workbench, spoke of purposive practice. I saw the little scraps, the offcuts saved, and (mostly) I knew why. I knew why they'd been kept and what they might come in handy for. I made an offer and bought it all. All that junk. Ostensibly because I knew that amongst it all might be parts for the lathe that might be otherwise unobtainable. But there was, I recognized at the time, a little mania, or at

least compulsion, at work. I drove away feeling simultaneously that I had a treasure trove in the back of the truck, doubting my own sanity and dreading the task I had now committed myself to. Then, for over a year, sporadically, I sorted and categorised thousands of small fasteners.

I am, by a combination of intention, accident and predilection, the custodian, the archivist, of an eccentric, encyclopedic collection of diverse fasteners. My fetishism is not that of the 'collector', looking for that elusive magazine edition or a "mint", NIB, Barbie doll, or the missing piece to complete the set of whatever. Neither is it the lure of the nostalgic novelty – the old tin toy or the bakelite comb. I'm sure I could write a long and boring book just describing their variety, as an entomologist would describe beetles – a taxonomy of threads and head shapes, exotic, special purpose and common.

As a student, I roomed with a friend in his deceased grandfathers' suburban house. At the bottom of the garden was a shed, untouched more or less, since the old man demised. The great depression left its mark on that generation – the shed was cluttered, full of stuff, much of it filed in labelled reused useful drawer-shaped boxes: bits of old leather for shoe repair, parts for garden hoses. A dusting of fine dust covered it all. My friend maintained it as a kind of museum for the old man. At the time I found it quirky and anachronistic. Now I have become that man.

Some people organize dead beetles and butterflies, some organize postage stamps or coins. I organize nuts and bolts – ostensibly for utility, not so much in the interests of science or history. To say that my collecting is utilitarian and motivated by an ecological ethics is only half of the story. I have a deep interest in the way material fit together, and the way forms can be coordinated in movement. An interest in the taxonomy of, and topologies of, mechanism, especially ingeniously simple ones: did you know you can use a coil spring to constrain a shaft to rotate in only one direction? This collection is a library of mechanical ideas.

John Haugeland once boasted that he had more nuts and bolts than any other philosopher. The remark endeared him to me, but philosopher though he was, in the world of nuts and bolts, he was a child paddling in the shallows. Wordsworth found infinity in a grain of sand – there is infinite variety in nuts and bolts: the thread size and type, the length, the material, the kind of head. Eleanor Rosch's 'principles of categorisation' apply, but there are always 'boundary objects' (Rosch 1988) ⁴. The Celestial Emporium of Benevolent Knowledge (so admired by Michel Foucault), is described in Borge's short essay on John Wilkins (the Baroque ur-taxonomist). Borges observes "there is no description of the universe that isn't arbitrary and

⁴ See also Bowker, GC & Star, SL 1999. *Sorting things out: classification and its consequences*, MIT Press, Cambridge.

conjectural for a simple reason: we don't know what the universe is". This organisation is a kind of Goedelian game where contingencies undermine, and exceptions crumble, the fortifications of logical structures. There are threaded shafts that are not quite bolts, but bear a family resemblance. This taxonomical task is fascinating precisely because it seems to exceed nomenclature. *The order of these things remains resident in the relationships between the things themselves, and not in some symbolic descriptive order by which they are described.*

The mild psychosis of the bricoleur

The mania is practical. It begins, usually, with a thought: 'that could be useful for...', that broken chair, or piece of junk. I have way too many things I've collected with the thought 'that could be useful for...' or 'with a little work I could fix that'. I look at the lace-hooks on the pair of old hiking boots whose soles were somehow defective and cannot be repaired: I could reuse those lace-hooks, they are good lace-hooks. And so begins a design and planning process – how to detach them without breaking them, how to reattach them, what special tools would be needed – salvage ethics at work. Once this thought process is underway, the planning about how to dismantle, clean and sort begins – the tools and materials are marshalled, first mentally, then physically – the rasp or the file or the wire brush, the sandpaper or the steel wool or the abrasive pad, the pry bar, the chisel, and several mallets and hammers...so it goes. The process depends on a pre-existing, more or less encyclopedic array of tools for working different materials, at different scales, from the size of a coin to the size of a house.

I found myself regretting that I'd thrown away a nasty old plastic toilet brush, that must have cost almost nothing new. Another nasty short-lifespan, mass-produced plastic object- made to wear out and be tossed and replaced with an equally diabolical piece of crap a year or two later – not SUP in the usual sense, but in geological time its all the same. But my regret was different – the handle was conical, finely tapered from about 3cm to about 1.5. A very handy object when you need to connect, say, slightly different diameters of hose. So who would want that? Only someone who does that sort of thing from time to time, like me. (These machine-made commodities are paradoxical – they are worthless, but inhere an extraordinary level of precision that would have been regarded as miraculous barely a century ago).

It is an open question whether this work is a blessing or a curse. On the one hand – there is something deeply satisfying about making some broken thing – whatever it is, a sapling with a broken stem, a rusty tool, a worn piece of clothing – whole again, or at least servicable. So there is some self-care in this. On the other, there is a compulsion about it that at times seems unbalanced – oh, if only, sometimes I could just throw something away. How I dream of being so oblivious that I could simply dump the old printer in the trash. How I wish I believed that recycling actually worked. But I know too much. I wear my inability to throw away like some

penitent. Its not that I want to save it, but its not useless, that tshirt with a hole or two. That old sneaker – if it goes in landfill it will be there...forever? How can I be responsible for that? I once knew a guy who could not throw away newspapers. His house was stacked with piles of broadsheet – it is amazing the floor supported its weight. I only keep things that are useful. But unfortunately everything has a use. Its just a question of whether you have the knowledge to ‘see’, and if you have the skills and the tools. And the time and inclination. It is my misfortune to have all five. I was bemoaning my condition recently and some well-meaning type said – you’re an artist – you could make junk sculpture. I responded, with wry self-reflection, that this was not possible because nothing is ‘junk’.

Reading Katie Kilroy-Marac on collectors and hoarders, I am heartened that (contrary to some suspicions) I do not appear to possess Hoarding Disorder, as clinically defined (2018, pp. 20-38). Yet the obsessions of the collector, to which the hoarder is negatively compared, seem similarly dubious, especially in light of the socio-historical perspective elucidated by Bennett (1988, p. 73, quoted in Kilroy-Marac, *ibid*) who delineates an exhibitionary complex: “...*history and natural science museums, dioramas and panoramas, national and, later, international exhibitions, arcades and department stores – which served as linked sites for the development and circulation of new disciplines (history, biology, art history, anthropology) and their discursive formations (the past, evolution, aesthetics, man) as well as for the development of new technologies of vision.*” In this juxtaposition of hoarder and collector, a third, possibly equally pathological category – the *purger* – goes un(re)marked. While, superficially, embodying the virtue of tidiness, the purger presumes the viability of the waste-stream, takes for granted the huge hidden industry of disposal, which literally sweeps our trash ‘under the rug’, bulldozing a skin of soil over vast toxic landfills. Immersed in commodity capitalism as a fish is in water, we inevitably position ourselves, intentionally or unintentionally, in relation to the obscene accumulation of things and stuff that characterizes our culture. I read that an Amazonian community identified only 300 different kinds of cultural things – baskets, cutting tools, bows and arrows and so on. We have 300 in every room, and thousands more in the garage, the car, the supermarket, the workplace... Arrayed in this way, the conditions of the hoarder, the collector, the purger, bear an uncanny but perhaps unsurprising similarity to the array of eating disorders. The lesson in both cases is the same: to tread lightly on the earth, and to tread lightly on oneself as well: too much and too little are both undesirable.

Conclusion

I’ve traced an argument from the global to the personal, describing the way I have come to conduct and position myself, with respect to social, biological and technological aspects of my world, according to my understanding of commodity economics and the environmental and climate crises that confront us. I am mindful (as noted) that some of this might be, or might

simultaneously be, rhetorical justification for irrational behavior. This story is one example of an 'ethical and sustainable path' - there are many others, no doubt.

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