MOBILIS IN MOBILE: GUIDING PRINCIPLES FOR THE ANTHROPOCENE
Werkexemplaar

Dirk Sijmons, 25th of March 2020

Waking up in the Anthropocene

In 2000 climate scientists Paul Crutzen and Eugene Stoermer made the observation that humankind had become a global force[1]. The far-reaching influence of humans had been recognized earlier[2] but, in an original contribution, Crutzen and Stoermer observed that human impact on the Earth—understood as a total functioning single integrated system[3], or Earth System—had reached the level of system-wide disruption. We not only influence the climate, but also disrupt geochemical cycles: the sediment flows of rivers dammed for electricity production, the changing acidity of the oceans, landcover dramatically altered by reclamation for agriculture and urbanization. We are eroding biodiversity to such an extent that specialists are talking about the sixth mass extinction. This represents a rupture with earlier views in which the growing influence was seen as gradual and thought to be restricted to ecosystems or landscape scales. Crutzen and Stoermer suggested that the time had come to recognize the emergence of the 'Anthropocene' as a new geological era, a split from the Holocene, generally recognized until then as the current geological epoch and as having begun after the last glacial period approximately 12,000 years ago. Mixed reception to that new term engendered fierce debates, providing a glimpse of the far-reaching practical and philosophical implications of proclaiming this 'Age of Mankind'. Reactions ranged from how an 'age of mankind' would be the summit of hubris, to it just being another metaphor for the environmentalists to raise the level of alarm. It is true of course that the environmental movement has a track record when it comes to attempts to reach the public at large to make them aware of the state of the environment with gripping titles, evocative infographics and metaphors like 'planetary boundaries', 'limits to growth', and 'sixth mass extinction wave', etcetera.

So, what did change with proclaiming the Anthropocene? What didn't change? Let's start with a book that for many people for the first time took environmentalism to a global scale: *Man's Role in Changing the Face of the Earth*. It contains the proceedings of an international conference at Princeton University in 1955. Some 150 scientists like urban sociologist Lewis Mumford and theologists like Teilhard de Chardin made contributions. If we look at the table of contents, one observes that all the present day themes were already there in the mid-fifties. Chapter headings read, *The age of fossil fuels*, *The climate of towns*, and *Man as maker of new plants and plant communities*, etcetera. What has changed in the decades that followed? First of all, in the seventies new instruments brought the epistemological change that linked all these different elements together in conceptual models. The bold modelling of Jay Forrester and Donella and Dennis Meadows for the Club of Rome report *Limits to Growth* is perhaps the best-known example.[4] Some years later system ecologists like H.T. Odum expanded this by modelling both material and energy flows. He attempted to connect the human economy and the natural world, describing them in one ecosystem model, suggesting that we can predict the whole system's performance.[5] This could be a promise for ever; even quantum computers and big data won't allow real modelling here as we lack theoretical understanding and are unaware of much of the cause and effect relationship, as well as the sheer complexity of the whole. Some even claim that these hyper complexity makes predicting fundamentally impossible.

Big data can be very helpful though, in producing evocative pictures like NASA's well-known YouTube hit *A Year in the life of Earth's CO_2*. A humongous amount of data was aggregated to animate a year in the CO_2 cycle of our living planet, making clear that the real rupture in thinking in our age is the belief that we do not just influence on the scale of an ecosystem, not just on the scale of a landscape but our influence reached a global level. We are disrupting some of the Earth's systems.This is where Earth System Sciences come in. EES sets itself apart from geology or ecology by taking a systems view.[6] The Earth systems drastically altered are the geochemical cycles, the

sediment flows now that big rivers are dammed for energy production, ocean acidification, the changing land use fueled by reclamation for agriculture and urbanization, biodiversity erosion, and finally, the human-disrupted climate. 'Man, as a global force' was the main reason Crutzen and Stoermer coined the term 'the Anthropocene'.

The idea is being seriously studied by the International Commission on Stratigraphy. The focus of their debate is when this Anthropocene is supposed to have started, with three clashing lines of reasoning. Firstly, the 'old school' proposes two options; it either traces the influence of humans on Earth systems back to the out-of-Africa migration (beginning the hunt to extinction of large vertebrates and predators on every continent across the globe) thereby almost leapfrogging the Holocene completely or to the somewhat more recent start of agriculture, around 10,000 years ago. The second, more pragmatic, line asserts that the era began in 1769 when James Watt was granted a patent for the steam engine, initiating the use of fossil fuels on a massive scale. Gaining ascendance is the third school of thought, tracing the logical beginning of the Anthropocene to the mid-20th century. This claim is based on thousands of near-synchronous geological signatures in stratigraphic records during the post-World War Two period that marked a global increase in population, industrial activity, energy use, greenhouse gas emission, and, as a golden spike, the radioactive isotopes of the atomic bomb detonations as a geologic marker.

This post-war period is also known as the great acceleration. Looking at all the dials on the dashboard of planet Earth, one sees that in this period of somewhat more than half a century all the meaningful indicators in socio-economic trends and Earth system trends show similar patterns. Population growth, use of natural resources, energy use, depletion of fish stocks, greenhouse gas production, paper use, reclamation of woodland, and fresh water use, etcetera, show an almost exponential growth in that period. The ever steeper graphs are almost through the roof.[7]

There are rather different ways of looking at these climbing lines. Some see it as the proud rendering of economic success, some as an orderly way of identifying all the separate environmental problems we face. The French philosopher Bruno Latour takes a radically different position, considering it the representation of the apocalypse with humankind in the middle.[8] Not the four horsemen, but our explosions of wealth are the heralds of doom.

It does not much matter if the International Commission on Stratigraphy agrees on an officially-formalized Geological Anthropocene. The concept has already made its way into many scientific publications as well as the minds of the general public fed by the popular press. Without doubt, humankind must be reckoned with as a geologic force. Influences are measurable (and at times disruptive) on many fronts: ocean acidification; the erosion of biodiversity; reduction of sediment flows in most river systems; most of the world's geochemical cycles; and—important for the subject of this book—large-scale land use changes caused by reclamation for agriculture and urbanization.

Once the Anthropocene idea of humankind as a geological force sinks in, it will not let go. The insight that human and planetary histories are interconnected proves groundbreaking. It requires acknowledgement that human history and Earth history have converged[9], and the domains of free will and of necessity have more to do with each other than once presumed[10]. Seeing human intervention as a force of nature that affects earth systems undermines the pseudo-opposition between nature and humankind. This opposition—like that of body and mind—has for centuries dominated thinking and hampered focus on real problems. We humans thought that we existed outside nature, and nature outside us. Nature was either made sacrosanct and remote or seen as "other", the domain where we could withdraw unlimited resources and upon which we could dump waste forever. The Anthropocene postulates human and natural processes as linked together in a complex new whole, with no imaginary 'natural equilibrium' to fall upon.

For members of the design and planning fields, waking up in the Anthropocene unsettles previous thinking about relations between humankind and the sites and planet they inhabit. The Anthropocene must spur a new search for professional attitudes, responsibilities, and even a new look at the ethics of the design disciplines. Since reflecting on perspectives for action on the environmental conundrum of today demands a more distant view, a good theory provides assistance.

Four major positions: a myriad of layered possibilities

Borrowing from the Australian philosopher and science writer Clive Hamilton, a set of four distinct philosophical views—or attitudes—may help us to navigate in the new era[11].

On the vertical axis is the way one could view the position of mankind – at the top, as a futile, modest species impotent to change the course of planetary systems, down to the other extreme – a mighty, almost omnipotent, mankind. The horizontal axis indicates, from left, the world as an unchanging backdrop, our inexhaustible source where human projects land, and our utopias are projected, up to the living and mighty planet that is not passive but able to cause unpredictable trouble when its systems are disrupted.

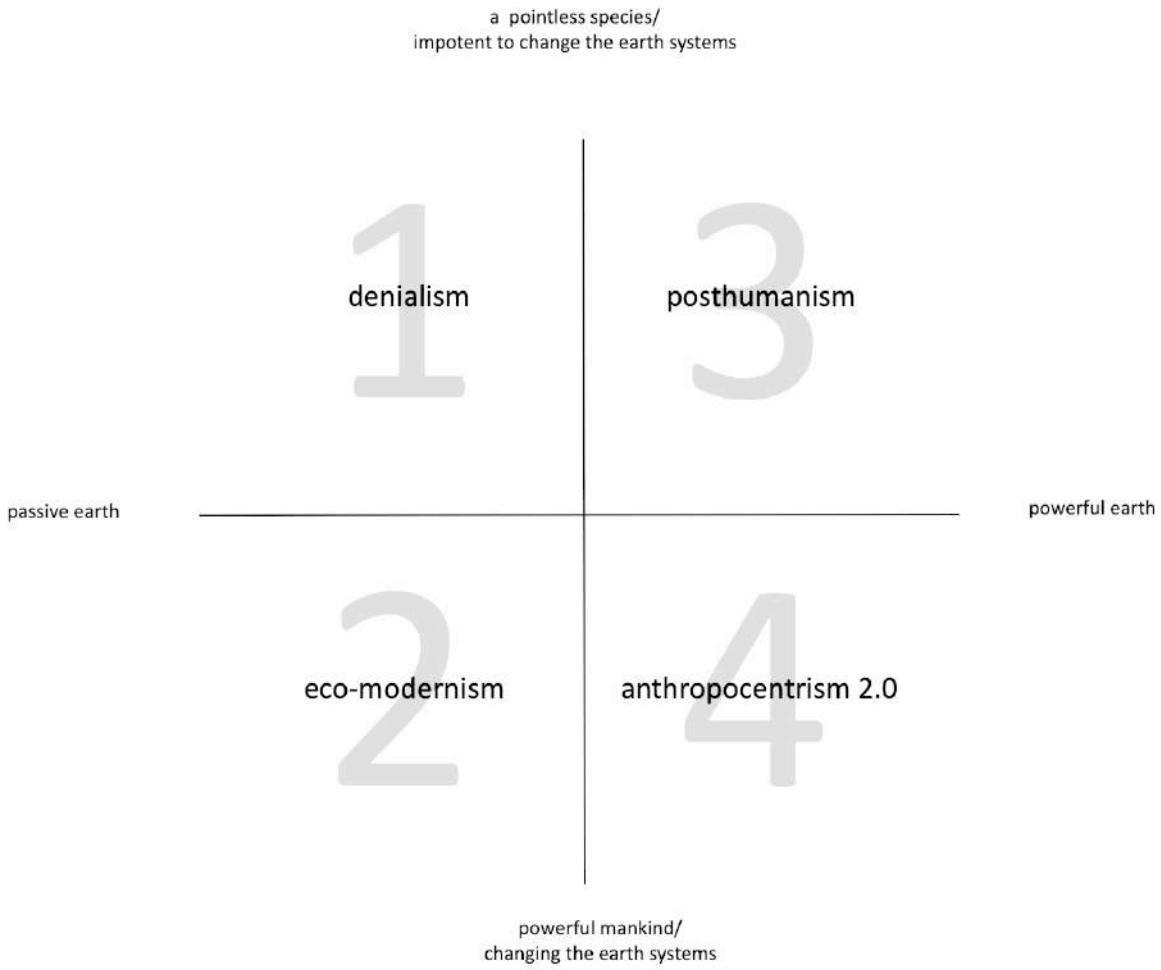
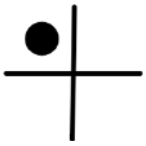


Figure 2: Quadripartite typology of philosophical positions towards the 'Anthropocene' (Adapted from: Clive Hamilton (2017) Defiant Earth, the Fate of Humans in the Anthropocene Polity Press, Cambridge)

The four -isms are philosophical positions towards the Anthropocene. Not more, and not less. Therefore we have to mind the – sometimes subtle - differences with notions like man-nature relationship, worldviews, politics and life styles. The views on the human-nature relationship are varied in philosophy and in religion. In the quadrilateral, this wealth of views is translated in a highly simplified way: by the division into whether or not to our

species might be able to change the earth's systems. Something similar also applies to worldviews. The quadrilateral contains literally ‘worldviews’ with its division into *passive earth* and *mighty earth* and while figurative worldviews are not that digital. In theory one can imagine the four positions materializing into life styles. One of the complexities of our era might be that the position people take isn’t always in line with their life style. Many people are aware and anxious on the environmental disruption but that doesn’t seem to moderate the propensity to fly. The that can be relationship between the four -isms with politics might even be more complex. Nevertheless, we will try to place the comments of our dinner guests in this four-part typology. We are convinced that the Anthropocene is such an overarching and dominant theme that it will absorb and shape various world views and views on our relationship with nature. Moreover, the typology is strong and seems to be covering the complete philosophical and political playing field. The four positions are ideal types. We have to recognize that both axes are gliding scales, allowing a myriad of positions allows a lot of flexibility in situating specific views into the quadrant.

This observation does not detract from the fact that Hamilton's typology is at a stratospheric level of abstraction, far away from daily political reality. We developed a number of intermediary concepts, interfaces and stepping stones to bridge this gap. Each sketch summarizes the philosophical background of one position and considers the ideological energy involved. In further elaborating the four positions, we will each time discuss which images of mankind can be associated with it. We ask ourselves which (land)ethics is underpinning to the position in question[12]. Ecologically, an ethic defines a limitation on freedom of action in the struggle for existence. Philosophically, an ethic differentiates between social and antisocial conduct. Which different action perspectives are conceivable in the four ideal typical positions, what different coloring will the perspectives bring to economy and what different roles the concept of site can play for the spatial approach. We are keenly aware that understandings of site always will be a complex interaction between characteristics and the ‘eye of the beholder’, the following four concise sketches elaborate on this moving target, recognizing that four world views will necessarily produce four different angles on ‘site’. Moreover we will give the perspectives more recognizable by mentioning the names of related thinkers and, finally, will not shy away from personifying the four perspectives.



Denialist

Let us start in the top left corner, where the idea is that man is unable to change creation on his own strength and that the planet and all there’s on it serves us, being the crown of creation. It is possible that the majority of the earth's inhabitants who today still remain uninformed of the notion of the Anthropocene and its likely implications, such as climate change, might be reached by information and education, while others might willingly choose to remain in a blissful state of oblivion. But a hard core of malicious ignorance also exists—people denying that humankind has any impact on global systems, let alone on climate. These denialists frame the Anthropocene as the next new metaphor adopted by environmentalists to raise alarm, presenting it as part of a leftist elite, or even communist conspiracy, to end “our way of life” and the well-deserved wealth (western) society attained through its ingenuity. They describe the Anthropocene as a hoax designed to gradually bring civilization, curtailed by too much self-reflection from living up to its true potential, to a grinding halt. Thanks to autocrats like ‘Individual Number 1’ a strong growing political movement has started of which climate denial is about the core. While it may be convenient to point to the (alt)right as the source, we must admit that the movement might be gaining strength because of the denier found in each of us, even the anxious. The voice that evokes “our politicians must act now” also whispers “I hope they do not have to; I would hate to give up my privileges.” As George H.W. Bush stated during the Kyoto deliberations, “The American way of life is non-negotiable.” Denialism is the position

of the anxious, as well as the only attitude of those wishing, with dry eyes and no shame, to continue the fossil fuel party until the last drop: it legitimizes interconnected inequity and greed. Denialism gains strength through a kind of cognitive dissonance that leads some adherents, when confronted with unwanted facts, to get ever more deeply entrenched in their own position. In this ideological haze the denialists find themselves in an everlasting present longing for a non-existent past. Not unlike the situation in the film The Truman Show where Jim Carrey does not notice that he is the protagonist in a reality TV show, in which everything is aimed at maintaining this illusion for him. That comes to an end only when he gradually sees that it is a constructed world. He eventually discovers the edges, escapes through a staircase and makes a final bow for his audience of millions and disappears behind a door. What is behind that door? In which reality does he end up? In which reality do people end up who conclude that denial is not sustainable? Denialists face-to-face with disasters, like Voltaire's Dr. Pangloss, might insist that they live in the best possible of all worlds[13].

With a small minority of 'scientists', and a strong tailwind of journalistic ethos to air both sides, further boosted by social media, the denialist world view has been able to confuse and sabotage debate with fake facts that in turn feed the denialist position[14]. Its weakness is that real facts will emerge, as people will learn the hard way. In the climate change debate, for example, it becomes increasingly difficult to maintain a denialist stance in the face of extreme weather—extended droughts, storms, floods, heatwaves, wildfires—as well as melting ice caps and rising sea levels. Nevertheless, the aforem[15]entioned cognitive dissonance can cause an long extended braking distance, as evidenced by the reaction to the catastrophic forest fire season 2019-2020 in Australia. Four in ten Australians still believe that humans have no influence on the climate. Ten percent think that it is completely a myth. The story has been brought into the world that the fires were caused by proposals from the Australian Green Party - who by the way never took part in the government – to forbit the preventive burning – which they didn't propose - and/or that the fires were no worse than in previous years – what is false - and/or that they were lit by pyromaniacs – what is also not true. The fact that their scientific institutes have been warning for years that these catastrophes are becoming more likely due to global warming and drought is denied on a daily basis and mixed with aforementioned lies and half-truths by the Murdoch press campaign journalism and echoed in the social media. Holding the denialist stance in the face of these observable conditions depends on believing in an externalized solution in the end, a *deus ex machina,* like nuking hurricanes and disrupting their course before they make landfall. Science and technology will help if things really go wrong.

Human nature in the denialist world might be akin to the Protestant conviction that there are inherent limitations and shortcomings to man. Man is born sinful. In this portrayal of man there can't be any confidence in progressive movements to improve society. They backfire because they disregard(ed) sin. Policies have to be modest and humble. Considering the land-ethic that best fits the denialist position, the ideal of the farmer and the farm—as mediating between society and nature—takes center stage. The farmer is the intermediary between society and nature. Biodiversity is a side effect of farming. Farming holds a central role in the ascent-of-man myth in monotheist religions (such as Judaism, Christianity, and Islam) where the invention of agriculture elevates humankind out of its wild barbaric stage, subsequently producing enough surplus-value for urbanization and, in an even later stage, spurring state formation[16]. In this world view, all civilization evolves from farming. An essentially libertarian position, it considers property rights (of farmers) as natural rights that should not be regulated, even when farming itself turns destructive to the environment. Inalienable property rights arise, in this way of seeing, for the first who reclaim (or, as an euphemism, 'improve') land and therefore can enclose it. Mind that this privatization is always nibbling away 'the commons'. It is also the eternal excuse for colonialism: 'they (the indigenous people) did nothing with the land till we came and improved it'.[17] Reclaimed land by the 'fathers' is almost sacrosanct and not to be given away. Wild land is there for hunting and nature-maintenance is guided by the principles of stewardship. Not surprising that in this way of seeing economy pivots around land property. We meet real entrepreneurs here, that unlike CEO's of big companies, have their skin in the game. The economic attitude here is a virtuous way of saving before spending. Corresponding, the banks might be cooperative. The outlook being libertarian and focused on a small state, taxes are seen as a stagnating arrangement in the economy.

In the engagement with space and site, from spatial planning to architecture, conservative notions dominate the Denialist quadrant. Appreciation for the rooted and local stands against raging powers of globalization. Identity is the keyword. Outspoken (landscape) architectural views have no place here; new artifacts must blend in with their

environment. Adopting this attitude toward the Anthropocene leaves ‘site’ to be considered as an objective attribute of a place, guarded by the *genius of the place,* not something in the eye of the beholder. By making it almost sacrosanct, site will be fixed and lose its power of expression.

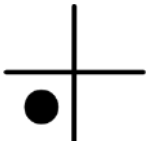
A metaphor for the professional attitude that fits this position might be something akin to golf course design. Representing a small niche, adhering to strict rules of the game and dominant – international – preconditions, golf course design produces the same results everywhere in the world, independent of the availability of water and other prerequisites: the illusion of the Irish or Scottish meadows where the sport originated.

Writers and thinkers we think may connect to this position are – apart from the already mentioned dr Pangloss - the recently diseased English conservative thinker and writer Roger Scruton, the mentor of Thierry Baudet, a philosopher defending his values in ‘How to be a Conservative’, interested in aesthetics and a very outspoken critic of architecture. Also appearing in this universe is Ayn Rand, the writer of ‘The Fountainhead’ and ‘Atlas Shrugged’, very popular in American conservative circles because she supported rational and ethical egoism and rejected altruism and broke a lance for a small state and laissez-faire capitalism.

Personification:
If we look into the abyss of trolling the climate crisis we observe that almost all angry and hateful tweets come from man, mostly white man, mostly anxious that things will change and they might lose their privileges. Although these people are very vocal, they consider themselves part of the silent majority that chooses to look away from the crises or think that only God’s plan will guide the way, and man has to be humble and silent. As a personalization we therefor choose for: the Silent.

Figure 3: Denialism

- Crisis? What Crisis? Supertramp Album Cover, (Cover design: Paul Wakefield, A&M, 1972)
- Professional Attitude: Golf Course Designer (Photograph: REUTERS/Jose Palazon, 2014)
- Stacked Identity: Hotel in Zaandam Holland, (Photograph: Paul Backaert, architect: Wilfried van Winden, 2015)
- Farmers are key to the land ethic (detail of 'American Gothic', Grant Wood, 1930), Art Institute of Chicago



(Eco)-Modernist

In eco-modernism, the modernist ideal of everlasting progress is kept alive. In this world-view economic growth can coexist with reducing the ecological footprint. Should growth produce problems, rational solutions will be found. The vector of modernism is emancipation. Predicated on the notion that modernism promises a way to break loose from the chains of nature, progressive modernist politicians and designers formulate ideals in utopian terms.

Eco-modernism, a recent radically optimistic strand of the environmental movement, originates in the U.S. and finds its most vocal champion in the Breakthrough Institute[18]. It emerged in an attempt to reunite the narrative of progress with an adapted form of environmentalism. To come up with answers to the problems of the Anthropocene, or at least construct qualifying stories that the consequences of human actions will not be too bad the eco-modernist world view assumes clearly defined problems exist that can be solved one by one, as a bullet list, in a rational way. Do we influence the geo-chemical cycles? We can solve that by shifting towards a circular economy. Eroding biodiversity? If novel ecosystems consisting of non-indigenous and non-coevolved species cannot deliver the same ecosystem services, then surely de-extinction programs will once DNA-technology develops further. This in not simply a matter of putting trust in technology. Eco-modernists live in a techno-sphere identified as an extra layer of culture; here, the global, massively interconnected system of technology vibrating around gains its own momentum and autonomy. This world view encourages development of each new invention toward the inherent good, to align it in the same progressive direction where all life is presumably headed.[19] The techno-sphere turbo-charges evolution.

Ecomodernism is very much in line with modernism in general. The rationalistic, modernist view on the world stems from the Enlightenment and rests on a couple of key notions. Nature and its resources are an unchanging constant and that the direction of development is clear, the vector is emancipation. Modernism promises freedom and breaking loose from the chains of nature. The best is (always) yet to come. Both politicians and designers formulate their ideals in solutionist or utopian terms.

The most striking example of the drive of this technologically optimistic belief in progress is perhaps still Bell Geddes GM pavilion at the 1939 World Fair in New York in which the Americans were prepared to the blessings of mass mobility and the cities adapted to it. 30,000 visitors a day got a button pinned: I've seen the Future. In our time, a Futurama2.0 might be the image of the mighty man that rises from the book Homo Deus by Yuval Harari[20]. Man becomes more machine and the machine more human and thanks to Big Data in our Smart Cities we can predict and regulate our behavior. The great disconnection between biological and technical evolution has begun. Trends towards extending mean life spans to over the 100 years and more emerge on many frontiers of the medical science. In this techno-optimistic view death is to be made into an outmoded concept[21]. For the real techno enthusiasts, the leap to colonization of Mars is a small step (after making Earth untenable?).

The portrayal of man in eco-modernism is positive, most people are good, but also very much focused on the individual. The trap is wide open here that individual action as consumers must solve the crises by changing their ways, switching light bulbs or buying sustainable furniture, rather than promoting political action as engaged citizens. The human body and mind are partly malleable. We will have to be to stay in tune with technology and the self-created techno-sphere[22]. Technological innovation is considered as an inescapable force of nature facing us. Robots will be taking our jobs. The dominant mindset is not how to guide technology, but how we are going to adapt to this tsunami, individually and as a society. How are we going to adapt the labor market, how are we going to adapt education?

Ecomodernists will consider remaking the earth and the effects of ceaseless interventions to overcome these problems the ultimate victory of mankind. They dub it the 'good Anthropocene'. This poses the Anthropocene as a state of romanticized ruin that will be easily saved or rebooted without any threat to humanity or anyone/thing else on the planet. It is a bit like new optimists like Pinker and Rosling rightfully pointing out that the situation with humankind has never been more positive[23] but missing that the planet is doing much worse these days and missing the whole point that there might be a cause and effect relationship between the two. If one would make a gradient between technique and science, ecomodernism will be on the scale towards the technology end. A rather narrow, reductionist, definition of science dominates this universe. Eco-modernists boast their rationality, and their rational solutionist approach to all questions, whether be it technical or ethical questions.

How this mentality translates into the climate problem is aptly expressed by Exxon CEO and former Minister of Foreign Affairs of the Trump administration Rex Tillerson: "Global warming is only an engineering problem". Adding sulphate particles, beaches of Olivine or iron to the oceans will solve the problem. But the side effects can be unpredictable and calamitous. If the earth is not the unchanging back drop for human action, as modernism supposes, the sorcerer apprentice effects could be disastrous.

The land-ethic that emerges from eco-modernism, the most technologically-oriented of the four positions, might be a utilitarian-inspired view that morally right action produces the maximum good for people. This land-ethic can be useful in deciding how to optimize land use. For example, it can form the foundation for industrial farming; an increase in yield will increase the number of people able to receive goods from farmed land, judged a good approach from the eco-modernist point of view. This land-ethic will also economize the ratio between yield and fertilizer/pest use. In this ethic, the agricultural engineer as 'planner' becomes the intermediary between society and the land(use). In practice this will mean that the ecomodernist would lobby for to change to super productive , genetically modified, crops combined with pests that are finetuned to these – patented – races. Nature will be seen as a commodity in this land ethic and will be instrumentalized. Thinking in terms of eco-system services is not rare in these circles.

A financial system close to the inclination of eco-modernism is very much in line with the land ethic. Land is precious real estate in this way of seeing. Free enterprise, free markets with level playing and free trade are the ideal. Rational, but one sided economic optimizing, leads to consolidations in the banking sector and the application of high-end algorithms hopped over from technology, produce their own reality and in the end tend to produce private banks that are 'too big to fail'. Caps and trade of transferable CO_2 rights very well fits into this system.

The spatial planning and architecture fields have long championed modernism. For much of the 20th century urbanism has been almost synonymous with (social) engineering. Utopian visions were projected on space or had spatial expression. In this sense spatial planning has been ally to and spokesperson for modernism, while landscape architecture played a much more modest role. Traditional ways of representing nature in landscape plans—the wilderness, the garden, and the landscape[24]—all but disappeared during the height of modernism. Planting schemes turned formal, a mere backdrop for program, e.g. leisure.

The specific role 'site' would take in eco-modernism aligns with this concern for utility. Site characteristics get expressed in quantitative measures and terms of fitness for different kinds of human use. The designer evaluates site in relation to the demands of program; a site is either suitable, or not. If not, the site needs to be improved or optimized. The matching professional attitude in ecomodernism is the engineering ethos.

No better personification to (eco)modernism than 'The Maker'. The Maker has a utopian side in being the great invertor and a possible dystopian face in the sorcerers apparentice.

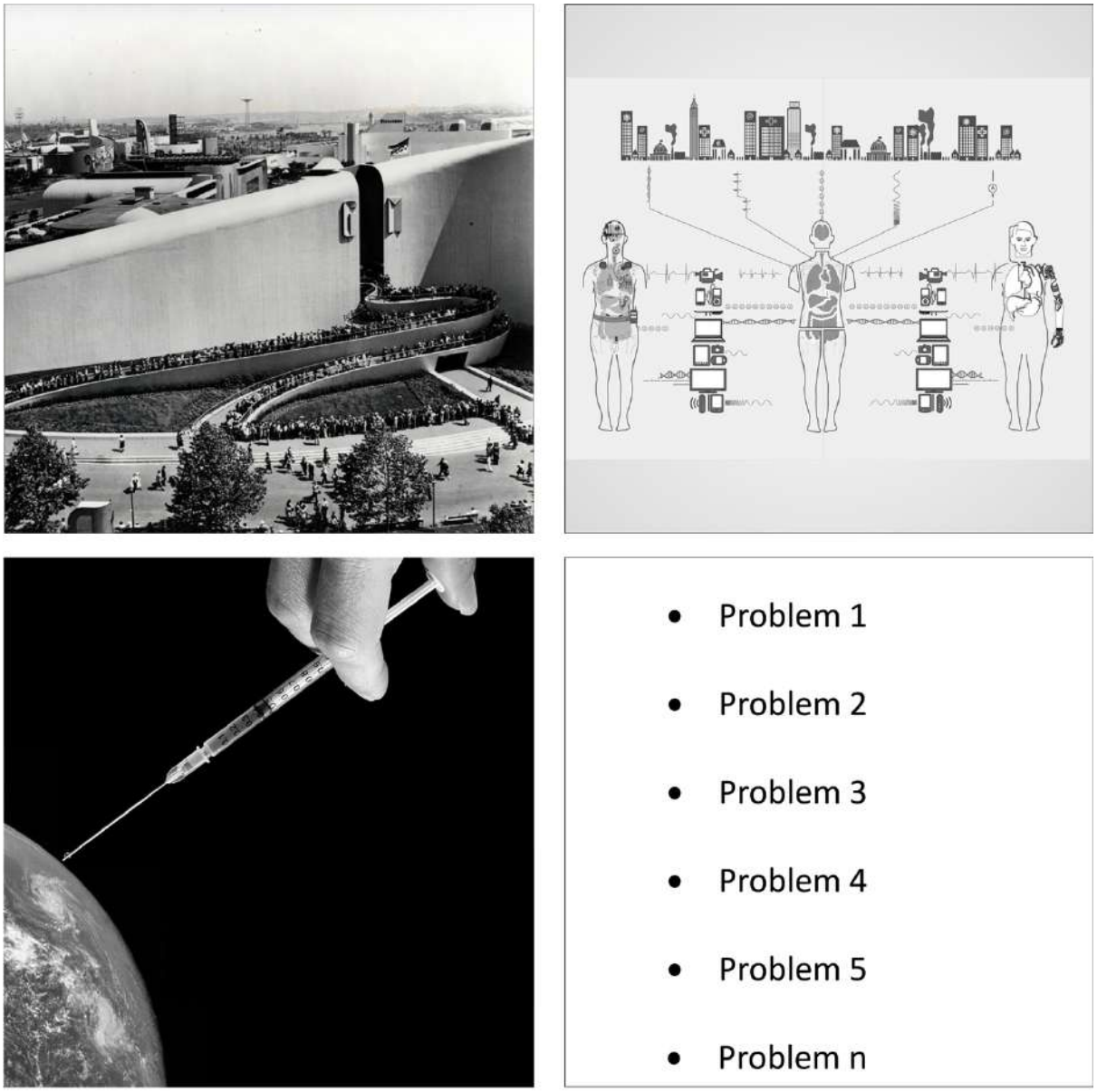


Figure 4: (Eco)modernism

- Frontier of modernism: GM Pavilion preparing for mass mobility Norman Bell Geddes, (1939)
- Newest frontier of modernism: technology in us, technology between us, technology as us (Alissa van Asseldonk).
- Engineering ethos: Climate problem? Stratospheric sulfate aerosols for that quick climate fix!
- Solutionism: well defined problems will be solved one by one in a rational, tech, way

Posthumanism

Let's jump over the fence and see what's there. Starting in the sector where we combine the modest mankind with the belief of the living planet, championed by Lovelock's Gaia theory seeing the earth as a self-regulating super organism. The central idea of the philosophical school of posthumanism is that all sorts of 'ways of being', ontologies, may and must exist side by side. The ways of Western culture are equal to other cultures and the ways of being of indigenous peoples. One gets to this position via two routes. A spiritual one leading to a pantheist world where every creature and every thing are animated. Or by following the route of the social sciences where after decades of 'critical' studies about race, gender, faith and capitalism, it has finally arrived at human complacency. In philosophical jargon this is characterized as ontological pluralism.

In Posthumanism, man is supposed to take a step back and realize that only a small entity is in the web of life sharing the planet with a myriad of live forms. In the recent past we considered the earth and nature a passive stage for and immobile back-cloth to the continuous history theatre of human civilization. Now more and more people are convinced that the stage itself has started to move and participates in this performance. The once thought solid border between culture and nature is crumbling on all fronts. Things are happening on this cutting edge that we don't yet have right words for. Even that we have a separate word for nature reveals that we think we are not part of it. Hybrids are being formed. are being formed. Everything we have mentioned so far is essentially the twinning of what we used to call natural and human processes. So even the climate is a hybrid and perhaps a larger artefact than the endless urban landscapes that we built.

There is a dominant undercurrent in posthumanism that is convinced that our environmental crises have their origin in a spiritual crisis[25]. We must not (only) change our behavior, solutions are to be found in changing our consciousness, our mindset, our way of standing in the world. The Encyclical letter Laudato Si' from pope Francis[26] added tailwind and gave momentum to this view. It can have quite different spiritual or religious roots. One can draw on traditional religions but also on contemporary movements, such as deep ecology and ecospirituality[27]. Other argue that we have to explore all the spiritual resources of the global community to meet the challenge of the ecological crisis[28]. In other words we have to reclaim the core teachings and practices of the great wisdom traditions for the well-being of the earth community.

'Site' in posthumanism will be described as a knot in an ultracomplex network of living, human, non-human, and even dead (or rather a-biotic) actants and, at the same time, the forever changing resultant of that network: site as snapshot of one moment of a myriad of processes. Mercurial, it cannot easily be read. Designers assisted by all their senses are aware of the embodied character of experience[29]. Here, *genius of the process* (no longer *genius of the place)* gives specific meaning to 'site'. It is not strange to see initiatives emerge these days to give landscapes or landscape elements their own legal status, such as the recognition of the Whanganui River in New Zealand. The Maori has been negotiating that for 140 years. No coincidence: ontological pluralism has played a part in this breakthrough. Closer to home: the establishment of an Embassy of the North Sea, very chic on the Lange Voorhout in The Hague with the aim of emancipating the North Sea in all its diversity to become a full political player through the collectives of people and non-humans, even the abiotic have an ontology[30]. Nature might be considered animated in this way of seeing. In its dystopian guise posthumanism has a less positive portrayal of man. Posthumanism in a broader sense is often associated with the recurring self-hate of human kind. E.g. the *Voluntary Human Extinction* movement is an extreme branch of posthumanism. It seeks a "posthuman future" that in this case is a future without humans[31].

Back to the even minded majority in post-humanist thinking: the land ethic closest will be the deep ecology view, which argues that human communities are built upon a foundation of the surrounding ecosystems or the biotic

communities, and that all life is of inherent worth[32] The agricultural expression of these ideas might be 'organic' or 'bio-dynamic' arable farming. Objections that these ways of farming will never be able to feed the billions of people on the world will be answered by the solutions in the way we eat. Eat less, never eat till your satisfied and stop earlier, *Hari Hashi Bu*, the Okinawa secret to longevity[33]. Or change your diet. Out of respect for non-human animals stop eating meat and fish any and switch to vegetable proteins. The impressive conversion losses between plant- and animal proteins makes it possible to feed the globe[34].

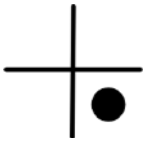
If we may freely associate about what a financial system would look like in this universe we will be confronted with a plurality of transaction systems and currencies. Even paying in time and a barter economy will be close to this worldview. Private and collective banks will compete over the sustainability of their portfolios. Taxing would be based on including all thinkable externalities in the real price of products here, ranging from CO_2 to resources used and biodiversity.

Artists somehow have the antennae to sense the changing of the zeitgeist. Posthumanism is being picked up by the artistic community as a way out of mainstream modernism. A writer that experiments with 'living like a beast' for a year[35] or the enriching experience to allow yourself a vacation from being human like artist Thomas Thwaites managed when he transformed into goat-man for a couple of weeks[36]. And more within the reach of the gaming industry as they showed in the Saatchi gallery in London: immerse yourself in the ocean of air, where your metabolism and that of an old growth forest get in close contact in virtual reality[37]. Or, more in the material world: nowhere the relationship between the transience and the transcendental is more tangible than sailing on the sea.

These new ways of seeking contact with and connecting to nature are rather close to the oldest ways of doing so: shamanism. That why we chose the Shaman as the personification of the Posthuman condition.

Figure 5: Posthumanism

- Ego, Man as the pinnacle of creation is being replaced by:
- Eco, Man as an equal cog, embedded in the web of life;
- Nature is no longer the backcloth of the human show (photo: Ilkka Halso, 2008);
- A vacation from being human, artist Thomas Twaithes in his 2016 project ‘Goat Man’ (photo: Tim Bowditch)



Anthropocentrism 2.0

Anthropos is placed in the center again by Anthropocentrism 2.0. It is a new Anthropos that is not self centered and complacent but places the unescapable responsibility of man center stage. Critique on Posthumanism is that man tries to make himself small as an equal in the web of life, but with that it puts its influence under the grain. Man has caused a catastrophe, has an unimaginable impact and must take responsibility accordingly. If we are a plague organism, we better be a reflective one. Our world view gradually becomes more and more marked by biology. The portrayal of man is that he might be an animal amongst other animals but because of his consciousness carries an ever heavier load of knowledge, concerns and responsibilities. This is the starting point of Anthropocentrism 2.0, the perhaps gloomier or most realistic movement that distinguishes itself from Eco-modernism by the estimation that 'The Worst can still be avoided', vs 'The Best is always yet to come'.

The diagnosis of the situation is also quite different. All hybrids enter the dancefloor together with humanity: there seems to be a perfect storm building up of unpredictable events that will have to teach us to ride the tiger. What we know of such complex systems is that they are fundamentally unpredictable, know countless bifurcations of developments, and most of all: they never return to their point of origin[38]. The arrow of time points relentless in one direction. Most of us are still educated with concepts like 'the balance of nature', and that we as humanity overstepped the balance and only had to take a few steps back to restore that balance. Now we know that we will never return to that calm and stable Holocene with some technical interventions.

No misunderstanding: this new anthropocentrism is not anti-technological. Technology is considered in a Goethean way: it can be a blessing for humanity but also its downfall. In this way of seeing, the ethical discussion about science and technology is dominant and ongoing: not everything that is possible could and should be allowed to happen. Questions have to be asked and repeated time and time again: in what kind of technological culture do we want to live. Which values have to come out? How can we arrange and equip institutions and democratic processes to do justice to these values. Which human needs and values have to be protected in doing so?[39] In other words technology has to be domesticated. That might be a hard thing to do, observing that technology seem to have taken an autonomous course that is gaining momentum. The scientific shop-floor will always be faster than the ethical discussions that are reactive by definition. Moreover moral and ethical development of humankind didn't keep up with technological development. Anthropocentrism 2.0 leans on a holistic science practice, an ecological view on reality and reserves a pivotal role for complexity theory.

A land ethics emerging from Anthropocentrism 2.0, the most science-oriented of the positions, would be solidly based on scientific knowledge from disciplines like ecology and geology. Understanding human communities are founded on the surrounding ecosystems helps us find our place and identify our responsibilities as a dominant species. This ethic is marked by a certain humility and cautious agency. Looking at the agricultural question, one might argue that agroecology will come close to meeting its standards. Agroecology studies and learns from traditional agricultural systems and develops strategies and technologies to scale up its findings. Its adherents are confident that agroecology can be productive and profitable for most farmers around the world without polluting the environment or compromising biodiversity. The often-heard critique that this strategy will not support the world population is delivered with the taunt that the Green Revolution already has proven unable to do just that for half a century.[40] Thus, this egalitarian-based land ethic could provide a strong argument for the preservation of soil fertility and water because it links land and water with the right to food, with the growth of human populations, and the decline of soil and water resources.[41]

The financial system would look like the housekeeping of an enlightened and rational estate owner balancing the positives and the negatives into a visionary, meaningful, business case. The lending economy is very close to this

way of broadened rationality. A banking system supporting this position would be large saving banks with an investment portfolio that is aimed at stimulating sustainable and 'planet repairman' kind of initiatives rather than Investing in companies primarily focused on shareholder value. The lower return on investments is accepted. A Carbon Added Tax (CAT) as a cascading tax system presenting a carbon bill for every step in the production chain would produce the tailwind for the innovations needed till the capillaries of our society.

'Site' is defined in a space-time-continuum, as a floating point. Reading the site in this worldview is a complex interaction between characteristics of the place and the designer (or beholder). The site informs the program and might be described in historic terms. This includes the cumulative damage in the case of 'brownfields'. What are the kind of perspectives for action that Eco-pragmatism has to offer? How can man take this network responsibility. My personal intuition is that, these lay in the realm of recovery, repair, undo, de-fragmentation etc. Healing what has been damaged or broken, defragmenting what has been disconnected. Reverse-engineering could also be an action perspective in Anthropocentrism 2.0. Reversing the damage done by engineering works, like the initiative of NGO's to remove defunct dams all over Europe[42] to re-establish possibilities for migrating fish. The sort of work a self-styled planet repair man would do. An inspiring example from the new toolbox is 'building with nature' to let natural processes work for us instead of hard civil engineering to satisfy human needs, such as with the Sand Engine on the Dutch coast as an alternative way of coastal protection shows.

A moving example is the well-known Brazilian photographer Sebastiao Salgado who has been an embedded photographer in all the disaster areas of the world in the first thirty years of his career. He got a burnout that resulted in an artistic crisis and complained his soul was broken. As an antidote he made a homage to life on the planet, nature and indigenous people in a photographic project that took almost a decennium.[43] Together with his wife Lélla, he stepped out the observing and commentary role to a direct acting role. They decided to reforest the eroded and completely cleared hacienda of his father. They did this with 200 plant and tree species of the endangered Atlantic rainforest and were proving the erosion of biodiversity doesn't have to be irreversible. Their initiative, organized in the Instituto Terra, proved to be the idea for the wide surroundings of the farm and after that for the region. Offering an action perspective and act. Their nurseries now have a capacity of some one million seedlings per year. Wim Wenders made a film, 'The Salt of the Earth' of this personal evolution.

All kinds and scales of ecological infrastructure initiatives fit this bill. These designs of new configurations, stepping stones and connecting zones are the application of the influential biogeographical theory of islands developed by ecologists McArthur and Wilson[44]. In the half century that followed this ground breaking publication Edward O. Wilson emerged as one of the most influential ecologist of our times. His recent book 'Half Earth' is a radical appeal to declare half of the earths landmass and oceans as strict reserves. He argues that for a real guaranty to protect life on earth – and life of humanity included – in all its diversity it is of paramount importance to protect not only individual species, not only ecosystems but also natural processes and above all evolutionary processes. Protect the web of life requires enough functional space: half earth. Somewhat more practicable are the rewilding initiative in North-America and Europe to support the spontaneous resurrection of large animals now that farming and hunting are locally in retreat.

For the personification for this position 'the healer' looks like a perfect cast.

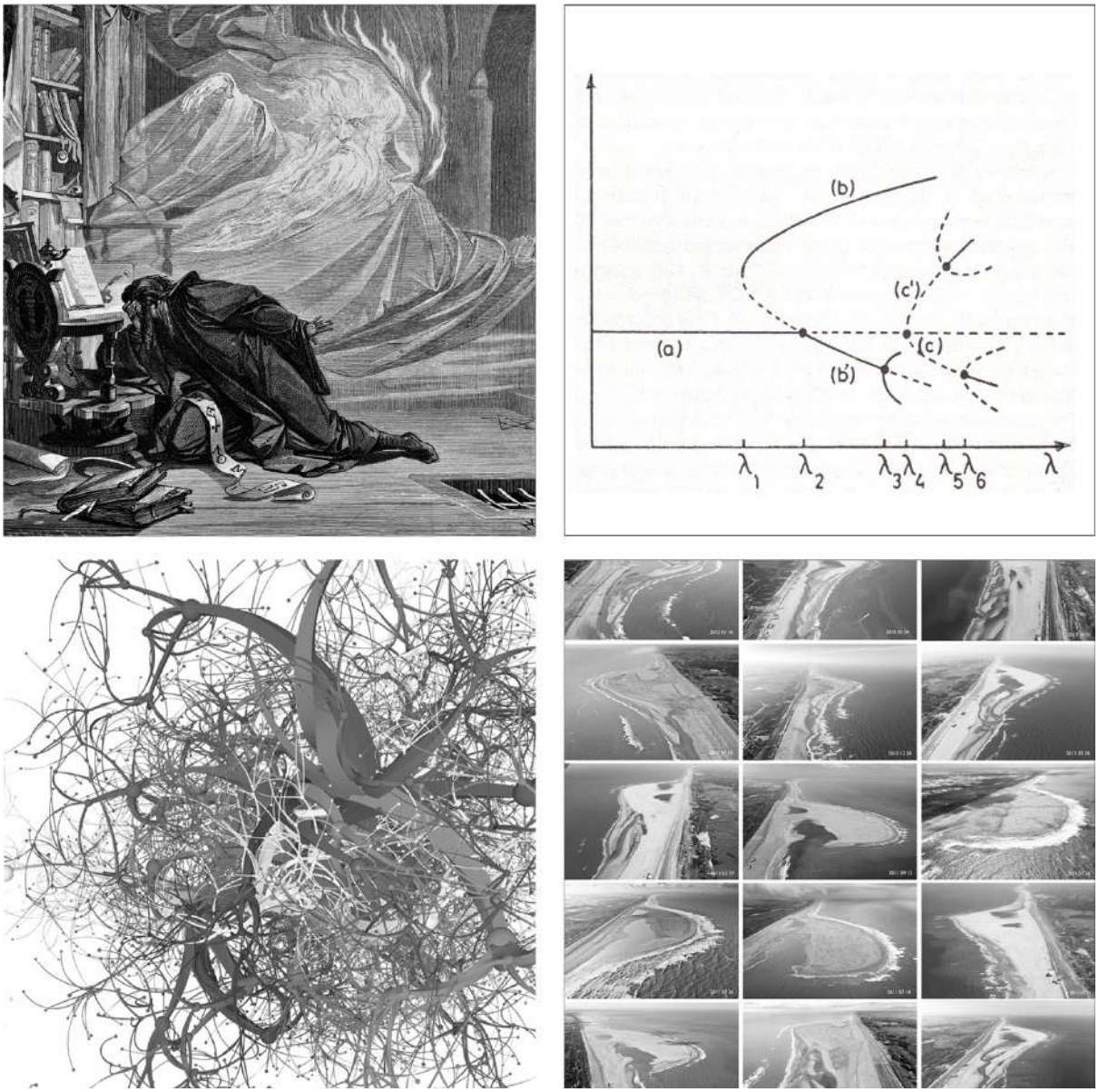
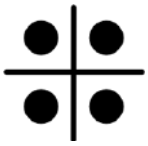


Figure 6: Anthropocentrism 2.0

- Technology: a blessing or a curse. Goethe's doctor Faustus (Alexander von Krefeld, 1806)
- Through unpredictable bifurcations, complex systems never return to their starting point (Prigogine, 1984[45])
- Diagnosis: a perfect storm building up: different crises in interference (Marius Watz, Trajectories, 2008)
- Typical project: working with natural forces to attain human goals (RWS, 2012-2015, Sand Engine, NL)

Pluralism?



Let's take an overview of the four positions discussed. The four positions form a handy navigating tool in the Anthropocene, plotting the position of politicians, environmentalists and philosophers too.
To my mind the various ideological fault lines between the four positions will determine the political and environmental debate in the coming decades. The differences in world views between the positions and their dynamics will produce an enormous amount of political energy.

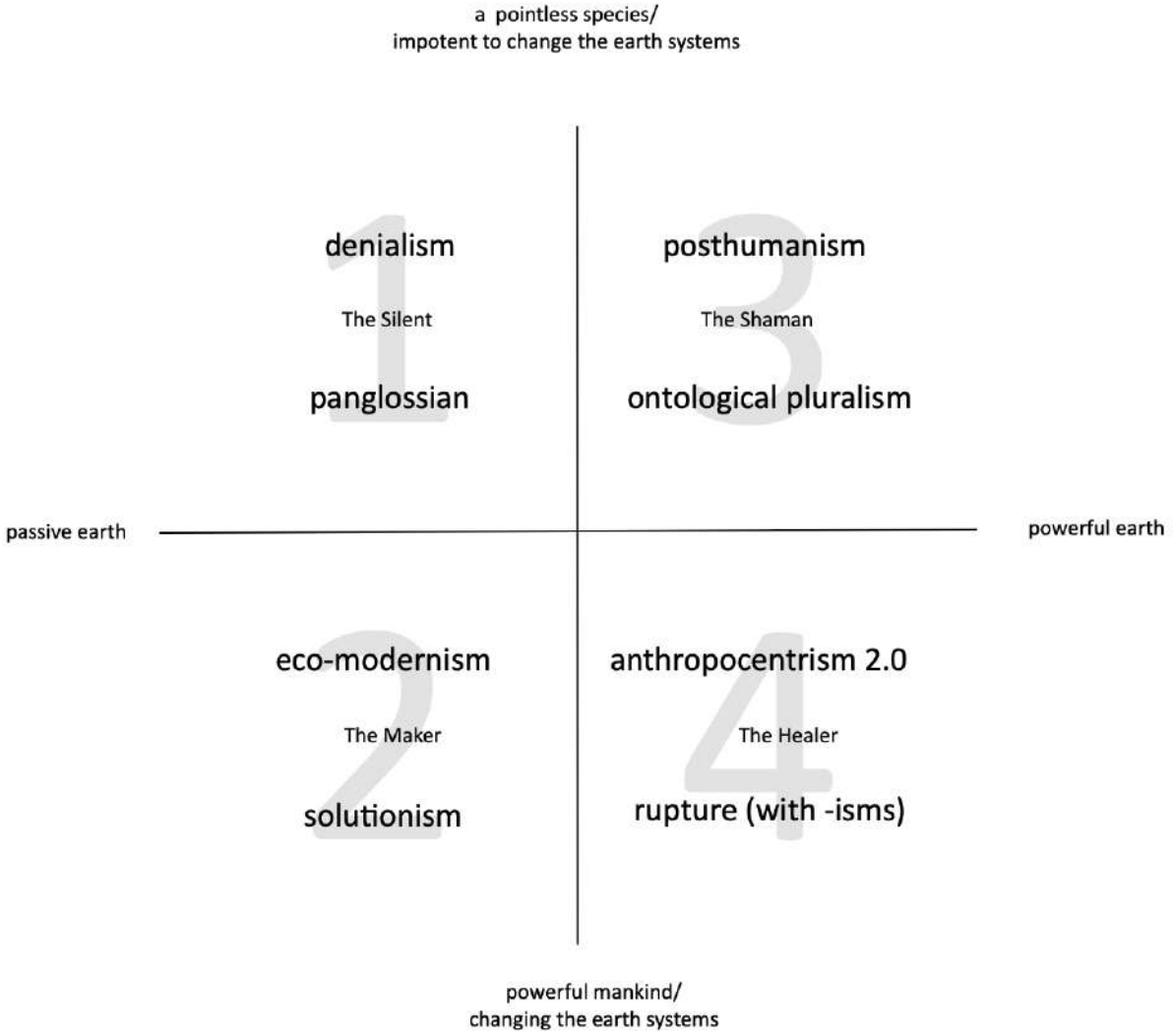


Figure 7: Characterization of the four sectors in the quadrant of philosophical positions towards the Anthropocene

First there is an inequality between the two halves of the quadrant. Possibly 90% of the environmental discourse takes place in the left part of the figure. In both positions people tend to believe or hope that it is possible to grow

economically and to decrease the ecological foot-print. Both positions are embedded within the existing economic paradigm of neo-liberalism. Having to abandon this familiar belief in progress produces a high fence between the two halves of the quadrant. Admittedly, it is very difficult to propose a coherent alternative. As Slavoj Žižek observed, most people find it easier to imagine the end of the world than the end of capitalism[46]. Before we look at the other side of the quadrant where one assumes that the earth is an active force, we must realize that for reductionist scientists as well as modernists this is a kind of superstition. Possibly the barrier between the two sides of the figure is being formed by the difference between reductionist thinking and holism or more precise: the difficulty for hard-science to accept complexity theories and schools of thought from the social sciences like Actor Network Theory and the like.

Between the two positions on top, Denialism and Posthumanism and the two at the bottom of the table Eco-Modernism and Anthropocentrism 2.0 a though barrier is in place too. It is a barrier between 'reason' – lower half – and 'belief' – upper half - that results in different views of nature. Above the line nature stands for the divine, or can be animated, under the line nature is a sacrosanct counterbalance for culture. On closer inspection the line could mark the old philosophical duality between Monism and Dualism[47]. Monism is the doctrine that denies any distinction between the physical brain and the abstract concept of the mind. Here, the mind is basically a personified expression of electrical signals. This differs radically from dualism, where the belief that a human being embodies two parts, the body as one entity and the mind or soul as another. For dualism there is more than between heaven and earth then the eye can see, the concept of an animated nature e.g., for monism the two - body and soul – must co-exist.

We must be aware that the epistemology of Hamilton's quadrant is limited. In dealing with the four positions we hinted at their respective utopian and dystopian sides, but that is a rather digital duality. The quadrant itself, constructed out of two gliding scales, allows for a myriad of positions to be taken. Moreover the four positions might have deeper layers in the form of worldviews and myths that, to make things even more complex, might be connected. The epistemology has the advantage of a convenient arrangement though and being aware of its limitations we think its applicable on the current environmental debate.

When held to the extreme, all four ideal positions contain flaws or weak points that prevent adherents from organizing a complete and coherent perspective for action. The denialist position cannot be sustained once physical disasters can no longer be downplayed, although cognitive dissonance can extend the resistance for some time[48]. The eco-modernists will become aware that rushing forward into technical solutions produces uncontrollable side effects and can be exposed as hubris. Post-humanism seems to lack practical tools needed to scale up their type of solutions. Anthropocentrism 2.0 will constantly be overtaken by the events as developments on the scientific shop floor bypass ongoing ethical discussion on the role of technique. Given this hasty diagnosis, the flaw of the new Anthropocentrism seems most easy to repair.
This having been said, morality and pointing the finger to each other doesn't seem to be the right way of addressing global problems. Nobody owns the one and only right moral compass.

All four positions are recognizable and present in society, be it with wide ranging legitimacy. We will have to embrace this plurality. The time of simple univocal solutions is over; we are not in control anymore. We are entering the realm of probabilism, the realm of post-normal science[49]. Science in times where facts become fluid, values conflict, stakes are high and the time to take decisions is limited. Moving forward will be muddling-through, in a constant dialogue with our defiant earth. And a constant societal dialogue that could result from the political energy between the protagonists of the four positions sketched. This dialogue requires a perspectivist sinuosity, projecting one in the other positions could be really helpful in constructing a real, Socratic, conversation between dissenters. In the slowly unfolding catastrophe Jem Bendell's 'deep adaptation' might be the outcome of this two-leveled dialogue[50]. The hopeful message is that this confrontation with our biosphere can be seen as a kind of adolescence, the awakening of the adulthood of mankind. In the Anthropocene, the grown adolescent bumps into the limits of prior unrestrained behavior. The Earth reacts in an unwelcoming, even hostile way[51].

For the design community, perhaps the most striking difference will be that the Anthropocene marks the gradual end of modernism. Modernism is hitting its boundaries and its golden age seems to be gradually coming to an end.

The earth turns out to be an active party and not an unmoving backcloth. The promised emancipation of shedding the chains that links us with nature turns into constant concern now that we are aware of all the environmental effects and where even the air we breathe has to be monitored. The consensus that it is possible at the same time to grow economically and to reduce the footprint turns bleaker every day. Freedom and detachment turn into their opposite, whereby man becomes, in a philosophical sense, an embedded subject, connected via a web with other living and dead actors. Designers have to wonder whether they will remain the faithful accessory to modernism like they always were or be part some kind of counterforce.

That the Anthropocene it is going to be a bumpy ride, and a real challenge for our politicians is an understatement. Trying to find the right course in a situation where you and your constituents are offender and victim at the same time is a political conundrum. What we see now is that politicians hide behind that there is no public support for action on the climate frontier. They act rather like an intermediary for the popular fury instead of acting like responsible delegates, chosen by us to see to that they protect the physical existence of our low lying delta. They are responsible to prevent the situation where les gilets jaunes have to be exchanged for yellow live vests.

Figure 8: A representation of the conceptual and political energy in and in between the four positions (Ro Koster, 2019)

Resilience by Design?

As said, the design community is still largely in an in-between state between modernism and the full acknowledgement of the Anthropocene. This is not surprising having being accomplices to modernism for so long and responsible for one or more of the many crises find ourselves in. We have to realize that sometimes we might be part of the problem rather than the solution. Can we be part of a counterforce? What agency can design or landscape architecture have? Can systemic design change the world like some think?[52]

We can't be too cocky about what design can do. We are still recovering from the hangover of the heydays of modernism and believe in malleability and the leaning towards 'Spatial Determinism' where we thought that almost all societal problems could be solved with spatial means. This legacy might very well explain the almost moral duty the design community seems to feel to being optimistic and seeing everything – including climate change – as a challenge or a chance even when the outside world interprets it as a form of whistling in the dark.

Already in the seventies of the 20th century the Austrian architect Hermann Czech came to the sobering conclusion: "Architecture is not life itself. Architecture is the backdrop, the background. All the other things are not architecture. Architecture won't solve our political, our social, not even our environmental problems, just as music won't solve our noise pollution problems"[53]. But not solving the noise pollution problems didn't stop musicians from composing music. So not solving the environmental problems won't stop us from producing landscape architecture. Our contribution to the world problems tends to be a bit more indirect. This might precisely be why there is still a tension felt between the will to engage with environmental problems and the pride designers take on keeping a critical distance that, in their eyes, is needed to have cultural relevance. There are ways of course to combine the two. To do that I want to dissect our possible role into four professional attitudes: that of our day-to-day practise, that of a landscape activist, thirdly that of our role as landscape researchers and finally that of land artists.

LANDSCAPE ARCHITECT

What is the potential of making a contribution in our day-to-day project driven practice as professionals? Of course that is dependent of the specific combination of the commission, the context, the client. With some projects you feel you are just hired to provide the broccoli around the (real-estate) steak. Won't make much of a contribution there. Other projects and programs I worked on have been born under a lucky star, like the 2005-2017 Room for the River Program that brought together a new way of looking at water safety, it brought design on board with spatial quality as second main goal for the program and a governance style emerged to combine top-down goals with bottom up goals. These three trend cracks merged and resulted in projects that really make a stand[54]. So working for a client doesn't have to stand in the way of making a meaningful or even a decisive contribution. But we have to be critical. Landscape architecture is not automatically one of the good guys in the play, just because we are working with living material. Turning a blind eye to the economic context and creating the illusion that every project we make is a step towards a sustainable stewardship of the biosphere is a form of overreaching. When colliding with the reality, we risk losing our credibility. Moreover, when scrutinized, our professional work has a rather limited repertoire when it comes to solutions. If we are honest, we see that to every problem thrown at us we tend to give an analogous answer: from brownfields to water safety, from energy transition to highway design, from waste dumps to habitat regeneration, 'we are turning problems into parks' or at least public spaces. No misunderstanding, this is our core business and I do not underestimate the importance of this social role. But most projects are largely aimed at the improvement of the well-being of people – which is fine - but will at best modestly contribute in solving the global problems. There is a difference between the two of course. Having a balanced and correct self-image adds to successful operating of the reflective practitioner.

LANDSCAPE ACTIVIST

The second possibility for engagement is could be taking on a landscape activist position. This could be a pivotal role if only to face the unprecedented challenges ahead. A more activist role could be pivotal in the complex

transitions, but even more so in the system much needed change. As practitioners we have to take sides anyway. We can't hide behind some sort of non-existing professional neutrality and stand at the side line. We have to engage politically. The content for a landscape activist role ranges from standing up for more attention to the landscape, to turning landscape into the battle field for the public debate. Sometimes an activist role can be combined with the regular professional role. Indirect and direct ways are open to give meaning to the activist role. Indirect and modest by supporting NGO's organizations with our skills or joining our professional organizations and bend these in the direction of supporting climate actions. In the direct role activists don't wait for a client: the landscape itself is their client.

The most humble way to be a landscape activist is being a gardener. This hands on attitude is a way to get into direct contact with nature. Admittedly It works on a personal level, scaled up it can turn into a movement. Let's remember that in other cultures 'enlightenment' is being sought by repeating the same exercises and gardening measures over and over again. And this pays off: In the past we always did the same with different results every time, nowadays we do things different all the time with results that look the same. The 14th century monk Muso Seseki founded and laid out the garden in Kyoto that was to become known as Kokedera, the moss garden. After some years the monks found that the mosses especially thrived in the garden and decided to focus their maintenance on optimizing for the mosses. Basically they did that for the last almost seven hundred years. The stunning result is both magic and it boasts a highly differentiated moss mat of almost hundred-and-thirty species: a true cathedral for nature.

The second example plays out on a larger scale: the activist role Sergei and Nikita Zimov show from the Siberian science-center in Tsjerski. The observation of father and son Zimov is that the permafrost, spurred by global warming, and excessive snowfall caused by climate change that traps the summer heat, is melting faster than models predicted. This might produce, what earth scientists call, a runaway climate scenario reinforcing itself by the huge amount of methane that will be freed when the arctic thaws[55]. Almost without budget the two ecologist started what they dubbed 'Pleistocene Park', an experiment to stop or mitigate this thawing process of the permafrost by the (re)introduction of massive scale grazing. Their paleo-ecological intuition is that mimicing the former Arctic steppe, with its almost African densities of grazing animals, could be a part of the answer. Herbivory on this scale could get rid of forests by reintroducing wisents, musk oxes and yaks and thereby change the albedo. Moreover the hoofs of the herds of grazers would pierce the snow deck and produce billions of openings for the trapped heat to escape. Restoration of pasture ecosystems in the Arctic can have a cooling effect on the climate. Their 144 km2 experiment runs for 25 years now and shows that the high productive Arctic steppe grassland – even storing more CO_2 underground than trees above ground – can return and thereby offering a strategy to mitigate the 'Great Thaw'.

RESEARCH-THROUGH-DESIGN

Research through design is the way we can use our abilities to synthesize to address complex societal problems and allows us as designers to play an important role in the realm of future studies. We can account for the normative side of future studies in a way other kinds of research can't. We can show what society, what politics may want by this type of future research and thereby breaking the crisis of the imagination.
What is perhaps most important, it offers a way to tackle urgent problems that will never find a paying client because they are too big, too complex, too interdisciplinary, too controversial or just too far away from mainstream business for any other reason. Two examples.

For the 2016 International Architecture Biennal of Rotterdam the curator, Maarten Hajer, asked me to team up in an attempt to take up the challenge that almost every public meeting on wind turbine parks ended in the vocal NIMBY suggestion of putting these monstrous machines on the North sea. In a pun to the environmental classic 'Small is Beautiful' we decided that under the motto 'Big is beautiful' we would show what using the potentials of the North sea really added up to. The result of this research by design was 2050: An energetic Odyssey, a well informed narrative combined with an animation that showed that, given the right ambition and Chinese building speeds, the North sea countries would be able to produce some 90% of their energy demand on the North sea by 2050. The production process was as interesting as the end result that immersed the visitors of the IABR—2016 in a giant floor projection. We had the main actors – energy firms, offshore contractors, wind turbine producers,

nature NGO's, harbor authorities, network providers, (Dutch) ministries – not only informing the narrative and the animation we had them step by step, discussing, financing and co-own the end product. The effect was a collective enthusiasm that led to an invitation to show the Odyssey to the Energy ministers of the EU. According to the Dutch minister, the Netherlands was chairing the EU during the production period, showing the Odyssey to his colleagues really helped in getting an agreement on offshore wind signed.[56]

Some twenty years ago Chinese landscape architect Kongjian Yu started studying ways of developing a different strategy for the Chinese city development. He criticized the 'small foot' – elitist - ways of looking at cities and city performance and propagated a return to 'big foot' ways, looking at the ways farmers use the land and urbanize listening to the landscape. He propagated inserting green-blue infrastructures into the almost viral development of Chinese city extension to solve the periodic floods and to remediate the standard concrete water drains that seem to accompany rapid urbanization all over the world, that makes cities unattractive. After trying out some strategies by research-through-design at his Turenscape office he came up with a strategy that was to become the 'Sponge City' concept. The mayor of Zhongshan was impressed by his ideas on ecological urbanism and he got the commission to design a park. Zhongshan Shipyard park can be considered as the pilot of the Sponge Cities – a concept synthesizing modern water management systems, nature besed solutions with the ancient Chinese agricultural wisdom deployed in rice paddies and ponds. Sponge Cities retain and slow down the flow of water through the use of terraces, ponds and dykes. Urban landscapes become active systems that absorb excess water during monsoon rains, retain and filter it within a meandering landscape, and release it for use during dry seasons. After presenting it to the Central Committee the Sponge City concept now is the standard in the urban design of Chinese cities and monsoon cities outside China[57]. Kongjian Yu's understanding that his practice—and its ambitions to have a decisive effect on the Chinese environment—has a fundamentally political ground and can be considered a twinning of research-through-design with a landscape activist role. The combination resulting in a professional market for his office and the discipline of landscape architecture in China at large. Carom off the cushion!

These are examples from 'hors-catégorie' of course but they show clearly the power of research-through-design by the impact the results can have. We have to be very careful with the 'LAB's and in which this kind of research is possible. Our Biennales, our University chairs and to somewhat lesser extend our competitions and congresses. These offer the free cultural space where policy problems can take a sabbatical detour. These 'incubators' are as vulnerable as they are precious. Through this cultural free space we might be able to show what we might want, what kind of world we want to live in. And that could be a great contribution. It looks like an investment in time and money at first but it can be opening up complete new frontiers for the discipline as the Konjian Yu practice shows.

LAND ARTIST

At first sight this might seem a very modest, to some even defeatist role, in the light of the problems facing us in the Anthropocene. But given the realistic possibility that all is not going to end well, and that we are in for a very bumpy ride the human way of processing situations into art might not just be pivotal element of consolation for anxious people to grab a hold but art might also be able to provoke critical thinking. The land artist – defined by its medium – will not be able to shock and awe the public the way an artist is able but by being more close to the daily life loosen the link between problem and solution that dominates 'normal' projects and introduce the four ingredients of dark ecology that Timothy Morton introduces: hesitation, uncertainty, irony, and thoughtfulness[58]
The first example that comes to my mind is the both monumental and subtle comment on modernism in the Deltagoot project. Imagine how the old Dutch Hydrological laboratory in the Noordoostpolder, in the sixties and seventies the pride of Dutch Civil engineering, is completely overgrown and rewilded nowadays. The remains of the analogous models of waterworks like harbors, river works, coastal defense works scaled down to make experiments possible are still visible between the rampant growth of water plants, trees and grasses. Land artists from RAAAF isolated the biggest model, the Delta gutter, some 200 meters long where waves could be simulated that crashed into modeled dike profiles. RAAAF dug the gutter free for its full length and sawed it open with concrete saws, placing the isolated sawing pieces, weighting some ten tons each, in a rhythmic way perpendicular to the plane of the Delta gutter. The result is a stunning piece of land art and an intelligent commentary on this icon of modernism and malleability.

Dutch sound artist Felix Hess started an experiment in the nineties[59]. He equipped his house with a couple of subsonic microphones able to pick up sounds beyond our limits, sounds to 0,07Hz. His idea was to let the windows of his studio be his extended eardrums and pick up the vibrations of everything outside, from passing planes, to wind turbines, to shouting people and let the lighting in his studio respond to these sounds. He also started to monitor his recordings. When he speeded his recordings up to 350 times he started to observe something strange. A very deep hum that he could not identify. It was irregular and sometimes only distinguished on the time scale of weeks. He ended up by asking earth scientists and meteorologist what this strange phenomenon could be. In the end is was agreed that what he heard – by means of the mediating help of his technique - were the air waves of colliding fronts when disturbances like the bumping of a high pressure area into a low pressure area. So in a way you can hear the unheard, how the planet is humming in itself.

As shown in the two examples cultural processing of the Anthropocene condition, will not only give meaning, consolation and beauty by opening up new conceptual horizons but could also invite us to re-envision our development of science and technology, our political and social structures, and our relation to others in a broader ecology[60].

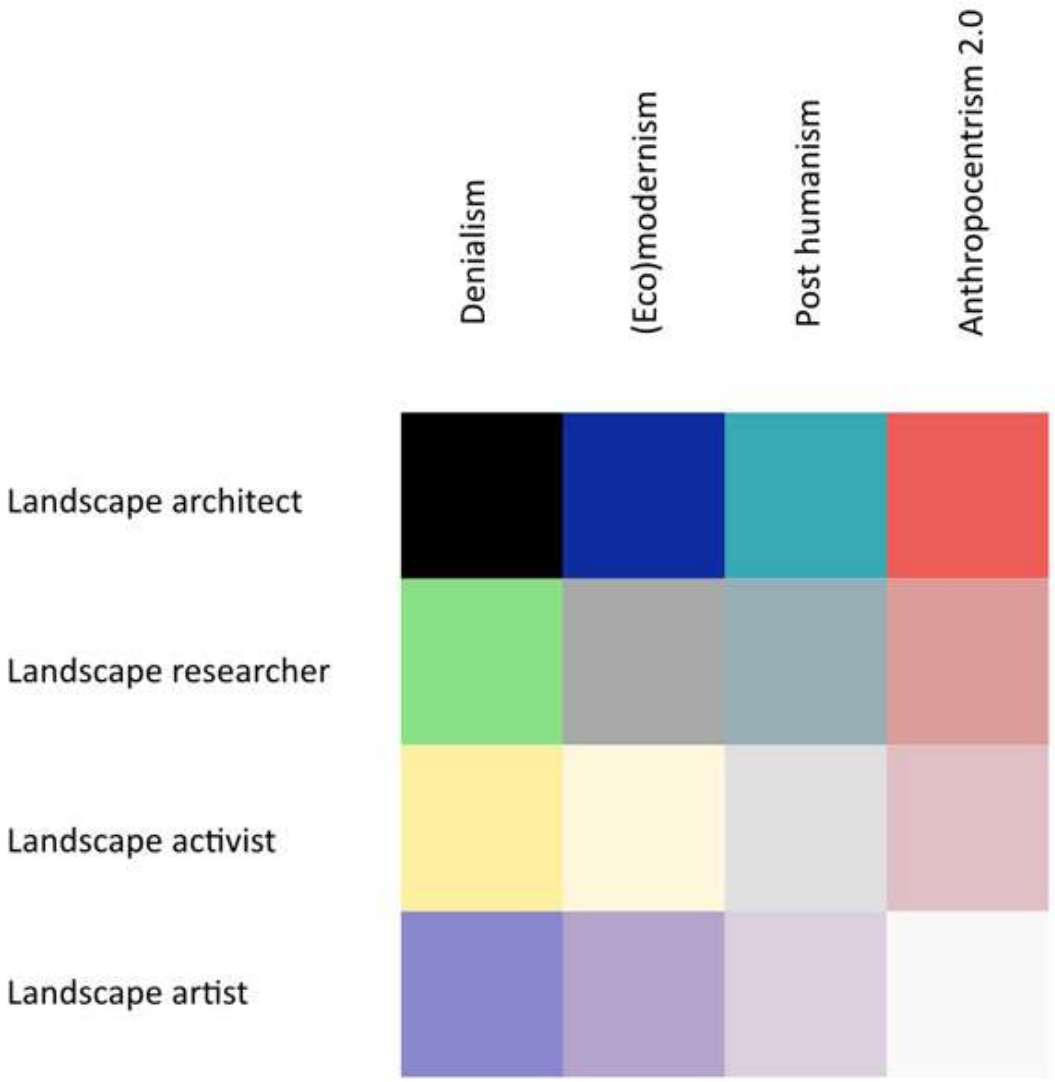


Figure 8: A 4x4 for a though ride. Reflective practitioners of different shades will emerge when we mix the four different professional roles with the four philosophical positions on the Anthropocene.

Finally, are we up to it? I am confident that mixing of these four roles with thoughtfulness, constructing bonds between them and reflecting on our position with the philosophical compass we can come a long way. Why for instance not boost the impact and thereby the contribution of Landscape Architecture, by including and research through design (and possibly some more activism) into our offices and in our day to day practice[61]. The Anthropocene could produce a generation of reflective practitioners from very different shades, that are better positioned to meet the specific Anthropocene challenges. *Mobilis in mobile* from Jules Verne's Captain Nemo will the best motto to navigate the Anthropocene and learning to ride its tigers knowing the time of simple univocal solutions is over.

Is this a pessimist perspective? I don't think so. Being reflective will change the diagnosis of the environmental situation into an anamnesis of the conundrum we're in by adding a critical and historical dimension to the analysis. This different approach will sharpen the vision on our professional position and change the solutions we choose. A

different anamnesis will gradually bring about different plans, different interventions. It also frees us as designers from our almost compulsory optimism, as whistlers in the dark, to a more realistic and effective attitude. Alexis Shotwell's book Against Purity shows why contamination and compromise can be a starting point for doing something, instead of a reason to give up[62]. Our work will become more complex, though. Possibly the only thing we know for sure is that all the transitions that are called for, be it the energy transition, the water-revolution, the agriculture transition, the mobility transition, mitigating the biodiversity crisis, or the adaptation to the effects of the climate disruption, all will meet in the spatial domain and struggle for space.

Let us conclude with a quote of Jedidiah Purdy reminds: "Everything needs a world to live in and the world we get to live in will only be the one that we make, and that is the Anthropocene situation"[63].
The world that we make in dialogue with our defiant Earth-systems, I would like to add. The world is going to get warmer. Almost inevitably, there will be a lot more pain and suffering in it than we have now. But how much is really up to us. And that imposes on us heavy new responsibilities to choose our common future sensibly and exercise self-restraint. This will require a new sort of environmental imagination—new systems of concepts, ideas, and beliefs regarding our relationship to the biosphere, and new ways to describe, express, and practice them. Reflective Landscape architects in their different manifestations can play a mediating and meaningful role in this struggle and give form to a myriad of surprising new projects emerging from the Anthropocene condition.

Notes:

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