

The Skies Are Belong to Us

An artistic research text about our atmosphere and how we treat it.

1. The Tragedy of the Commons

There is a dark cloud floating above us. The atmosphere is belong to all. The atmosphere is the thin layer composed of specific gases that enables life on Earth. It shields us from strong electromagnetic radiation. It holds precious oxygen than carbon dioxide that allows photosynthesis and respiration. As a skin layer around a planet it is in constant interaction with space and the planet it envelops. Radiative and turbulent exchange transferring energy and mass.

The atmosphere belongs to all of us but there is no collective agreement on how to use what belongs to all. Each single act - each very small individual act is harmless in itself, but harmful in aggregate. This collective action or collective harm problem is known as tragedy of the commons.

The missing consequence of individual action¹ leads to a form of cognitive dissonance, which Steurer denotes as action-efficacy dissonance². In total Kachold introduces three main criteria for collective action problems concerning common goods:

(M1) The sum of individual acts produces collective harm.

(M2) The individual act is not harmful.

(M3) The individual person takes advantage of their individual act.

¹ Kachold, Eva-Maria, 2021: Individuelles Handeln und Klimawandel: eine tugendethische Perspektive, Masterarbeit an der Humboldt Universität Berlin.

² Steurer, Reinhard, 2021: The Climate Dissonance Theory, discussion paper

„[I]n the circumstances of a T of C [tragedy of the commons, E.K.], including the absence of a collective agreement about how individuals should act to protect the commons, reducing one's own use to the sustainable level is a fruitless sacrifice“³

She proposes the necessity of a collective political solution. Keeping the categorical imperative in mind might help, also many answers can be found in the thoughts and writings of Aristotle about virtues and finding wise solutions based on context and experience. The emphasis on finding a middle way which leads to sustained happiness reminds of eastern philosophy. Finding the balanced solution involves lightness and clarity of thought and an absence of strong emotions or serenity (ge: *Heiterkeit*⁴). For finding a right solution thinking in systems is important⁵. No answer is absolute. But action is required to prevent a prolongation of a psychological crisis⁶. Psychological work is required —both within ourselves and in our relationships— that can free us up to take positive action⁷ and oppose denialism, disavowal, and negation.⁸

We are all connected^{9,10} and need connection. We tend to avoid conflict and separate the functions of life. But as e.g. Jane Jacobs and Christopher Alexander analyzed and realised for urban structures in *Life and Death of American Cities* and *A City is not a Tree* is that exactly where functions overlap and spatial structure enables web like relations social life, creativity and innovation is at its best¹¹.

This gives a complex image of life.

³ Johnson, Baylor 2003: „Ethical obligations in a tragedy of the commons“. *Environmental Values* 12, Nr. 3, pp. 271–287.

⁴ Frey, Jonas, 2019: *Klimawandel, Bewusstsein und Selbst - ein verdrehtes Leben*

⁵ Meadows, Donella H. 2009. *Thinking in Systems - A Primer*. 218 p. Earthscan.

⁶ Poulsen Bruce, 2018:

<https://www.psychologytoday.com/intl/blog/reality-play/201812/mourning-climate-change>

⁷ Lertzman, Renee. (2016). *Environmental Melancholia: Psychoanalytic Dimensions of Engagement*. London: Routledge.

⁸ Weintrobe, S. (2012). *Engaging with Climate Change: Psychoanalytic and Interdisciplinary Perspectives*. London: Routledge.

⁹ Morton, Timothy (2018) *Being ecological*. 288p, Penguin Random House UK

¹⁰ Haraway Donna J. (2019) *Staying with the Trouble - Making Kin in the Chthulucene*, Audiobook

¹¹ Mehaffy, Michael W, *Cities alive - Jane Jacobs, Christopher Alexander, and the Roots of the New Urban Renaissance*. Sustains Press in association with Center for the Future of Places KTH Royal Institute of Technology.

The tough reality of scientific evidence for policy is that there are various myths to be busted. It is not true that science provides "the truth", scientists inform, policy-makers decide or policy based on evidence is more effective than policy based on emotions, beliefs, interests. In reality we face scientific (technological & social) complexity, high uncertainty & ignorance as well as high economic, social & environmental stakes.

2. Earth turns towards the Sun

The earth turns towards the sun. Let's start at the beginning. The sun's surface is 150.89 million km distant from Earth's surface. The sun fuses hydrogen to helium. The released energy of the solar meltdown causes electromagnetic radiation from the sun's surface which spreads through space at light speed and hits the outermost layer of the planet Earth.

It takes light 8 minutes and 20 seconds on average to travel from sun to Earth. A solar storm can reach us in 1-2 days. At the solar radius its radiant temperature is around 5800 K, which makes it shine in the visible range familiar to us.

The photons are scattered and reflected in complex patterns on their trajectories in our atmosphere. Parts are absorbed and warm the atmosphere which radiates back to space to cool again. The photons pierce layer by layer of its airy sea and illuminate airy ships that float on its gentle waves. As they reach land or sea they fuel convection and evaporation lifting sensible and latent heat dancing through the troposphere. Water is dragged up and forms infinite ephemeral beauties. Resultant pressure and temperature gradients power local and synoptic scale movement of air masses. A part is stored in the surface layer. Our oceans being our largest heat buffer carrying heat in endless streams around the planet. The photosynthetic active part of the radiation is ingested by plants to power photosynthesis which enables life as we know it on our planet. Solar photons can directly be used to generate electricity and operate electronic devices. But also most other energies as water and wind or biomass would not be possible without the primary energy received by the sun. Even fossil fuels are based indirectly on the nuclear fusion of the sun. Only a small part of this abundance is processed.

When our desires are endless, our environment cannot but be perceived as limiting. When our desires are finite. Our environment is limitless and free¹².

Sustainers accepting limits vs Transcenders looking beyond¹³. I tend to be a Transcender rather than a Sustainer. constraint.

“Based on holistic and historical understanding of the origin, evolution, and development of life, as well as understanding of human origins, evolution, and development, we could view these two tendencies as both natural and needed.” Like pioneers and climax adapted species in ecological succession theory¹⁴.

The early arrivers are attuned for growth, rapid response, and facilitating the environmental conditions (r-selected species), whereas the later ones are prepared to persist over the long haul with a priority on stability and homeostasis at or near the carrying capacity (K-selected species). Since there is natural variety over space and time, both roles contribute to the overall functioning in a patchy landscape.

If these two modes are both natural and needed, if they have existed forever, and are likely to exist forever, then we should not be stuck in a battle in which adherents of the two worldviews fight against each other. It would be better to dispel any myths or assumptions that either of these modes is more right or absolute in truth. At a local scale, there may be a case of “right time, right place” that one worldview fits the situational conditions “better” when resources are plentiful (Transcenders) or scarce (Sustainers), but in a diverse and multiscale system there are typically niches satisfying and requiring both types.

Elbow (1986)¹⁵ provides a generic principle of cognition that is relevant here:

The dialectical pattern of thinking provides some relief from [the] difficulty inherent in knowing. Since perception and cognition are processes in which the organism “constructs” what it sees or thinks according to models already there, the organism

¹² Kalis, Giorgos, 2019: Limits - Why Malthus Was Wrong and Why Environmentalists Should Care, 154 p, Stanford University Press.

¹³ Fiscus, Daniel A and Fath, Brian D, 2019: Foundations for Sustainability - A Coherent Framework of Life-Environment Relations, Academic Press. 266 p.

¹⁴ Fiscus, Daniel A and Fath, Brian D, 2019: Foundations for Sustainability - A Coherent Framework of Life-Environment Relations, Academic Press. 266 p.

¹⁵ Elbow, P., 1986. Embracing Contraries: Explorations in Learning and Teaching. Oxford University Press, New York, NY, 314 pp

tends to throw away or distort material that does not fit this model. The surest way to get hold of what your present frame blinds you to is to try to adopt the opposite frame, that is, to reverse your model. A person who can live with contradiction and exploit it—who can use conflicting models— can simply see and think more. (p. 241)

We had not really understood the profound relevance of (D.Meadows) #1 source of leverage—the power to transcend paradigms—until after an extended period of time considering what it would mean not only to let go of our own cherished idea that the Sustainer paradigm is more correct, more true, and more good, but also to accept that its total opposite, the Transcender paradigm, is equally true and good.

...

While some sort of “victory” of Sustainers over Transcenders might help to resolve our current planetary eco- logical crisis in the shorter term, mutual understanding, acceptance, unity, and cooperation between both would seem to promise success of human life, and life itself, even beyond planet Earth and over the much longer term.

We cling on our system instead of being open to just move on and leave what does not work¹⁶.

3. No fear of death - we are not alone

In the centre of our system of problems or mess, which leads to the tragedy of the commons there is the normative system of ideas¹⁷. It's the science paradigm that life is separated from its environment. It severs life from its life-supporting systems conceptually. It's necessary to integrate death and dying and move away from a species centred paradigm of life. From discrete to sustained life.

The fundamental, net human-environment relationship most evolve from antagonistic or win-lose to mutualistic or win-win¹⁸.

¹⁶ Graeber, David and Wengrow, David, 2021. *The Dawn of Everything - A New History of Humanity*. p 672

¹⁷ Ackoff, R.L., 1974. *Redesigning the Future: A Systems Approach to Societal Problems*. Wiley, New York, NY.

¹⁸ Fiscus, Daniel A and Fath, Brian D, 2019: *Foundations for Sustainability - A Coherent Framework of Life-Environment Relations*, Academic Press. 266 p.

We have experienced that material success leads to social failure¹⁹. We have money but no time. Did we ever have any debate culture? Do we take time to listen to everyone around us²⁰ If we did - we might understand why they are different and we are not so different. Have similar fears and similar desires. And first of all: that we are not alone²¹ living in the same thermodynamic system powered by the sun. That we are in this together.

It might help to focus on the present. Not what was or will be. What others might think or do which are not even here. Permanently distracting us from facing reality. Why not talk about and feel what is there. See how sun rays are reflected and refracted, how energy moves in the atmosphere and feel the photons on our skin. What you make of this experience is up to you.

Heidi Trimmel 9.April 2023 Lindabrunn, 13.April Wien-Gersthof, 7.Nov Laxenburg 2023

¹⁹ Wilkinson, Richard and Pickett, Kate, 2010: The Spirit Level - Why Equality is Better for Everyone

²⁰ Graeber, David and Wengrow, David, 2021. The Dawn of Everything - A New History of Humanity. p 672

²¹ Wilkinson, Richard and Pickett, Kate, 2010: The Spirit Level - Why Equality is Better for Everyone