

*Extended Version of my talk
at EG2025, for uploading at
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GEO-SOCIETAL AGENCY AND NARRATIVES

FRAMING THE HUMAN CONDITION

Dr. Martin Bohle

ResearchGate D-4508-2014, ORCID: 0000-0002-8794-5810

- International Association for Promoting Geoethics (IAPG)

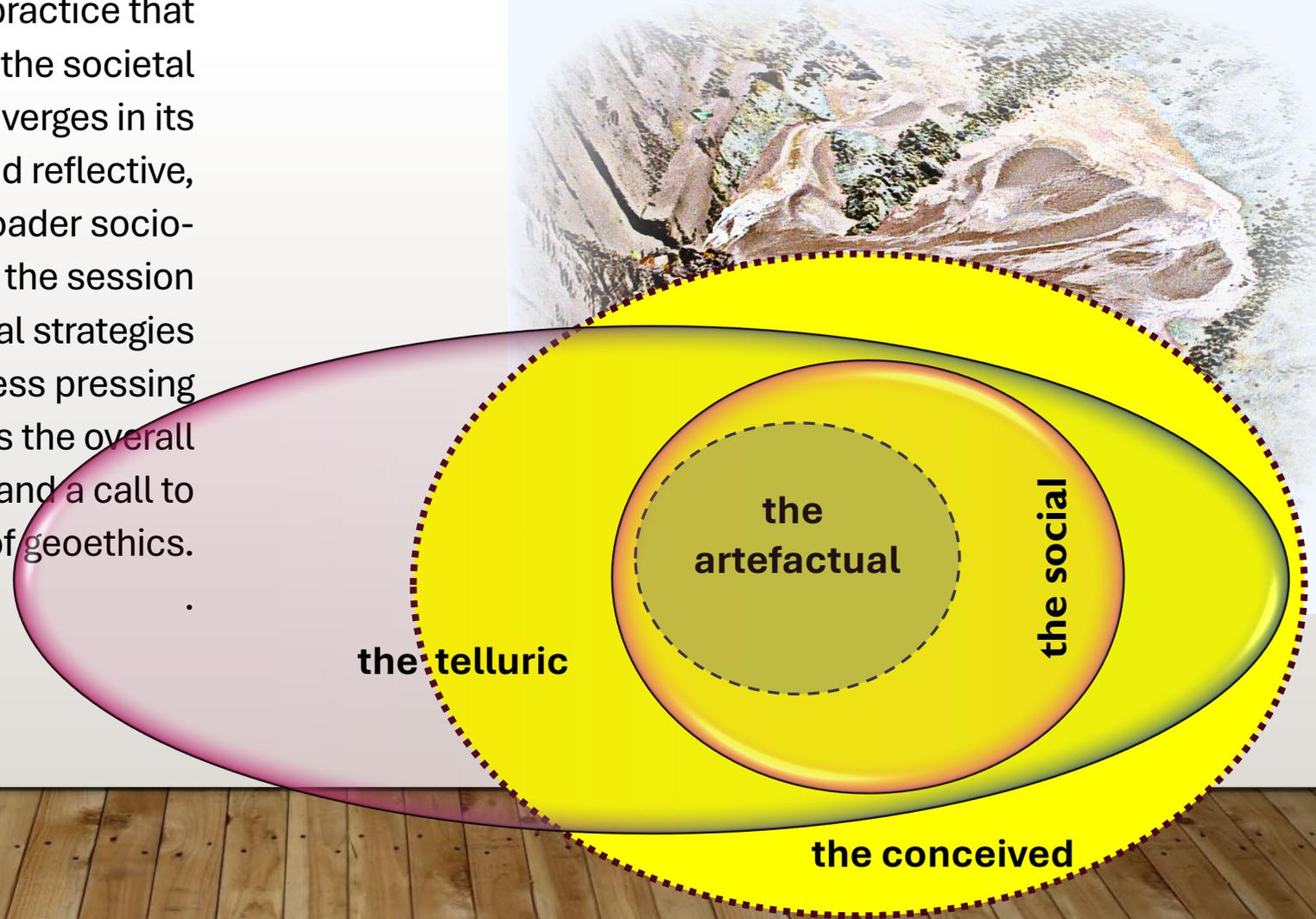
- IGDORE, [martin.bohle\(a\)igdore.org](mailto:martin.bohle@igdore.org), [martin.bohle\(a\)uni-erfurt.de](mailto:martin.bohle@uni-erfurt.de)

Associated Fellow of the Max Weber Centre for Advanced Cultural and Social Studies (Uni. Erfurt)



Overlapping “spheres of...”

ChatGPT: The contribution aligns with the session abstract by advocating for a reorientation of geoscientific practice that integrates ethical considerations and recognizes the societal dimensions of scientific knowledge. However, it diverges in its approach: the contribution is more theoretical and reflective, focusing on the narrative formation and the broader socio-cultural dynamics of the Anthropocene, whereas the session abstract is more directly engaged with practical strategies and immediate transformative actions to address pressing global crises. This difference in focus enriches the overall dialogue, offering both a conceptual framework and a call to action within the field of geoethics.



Towards: Earth System Literacy

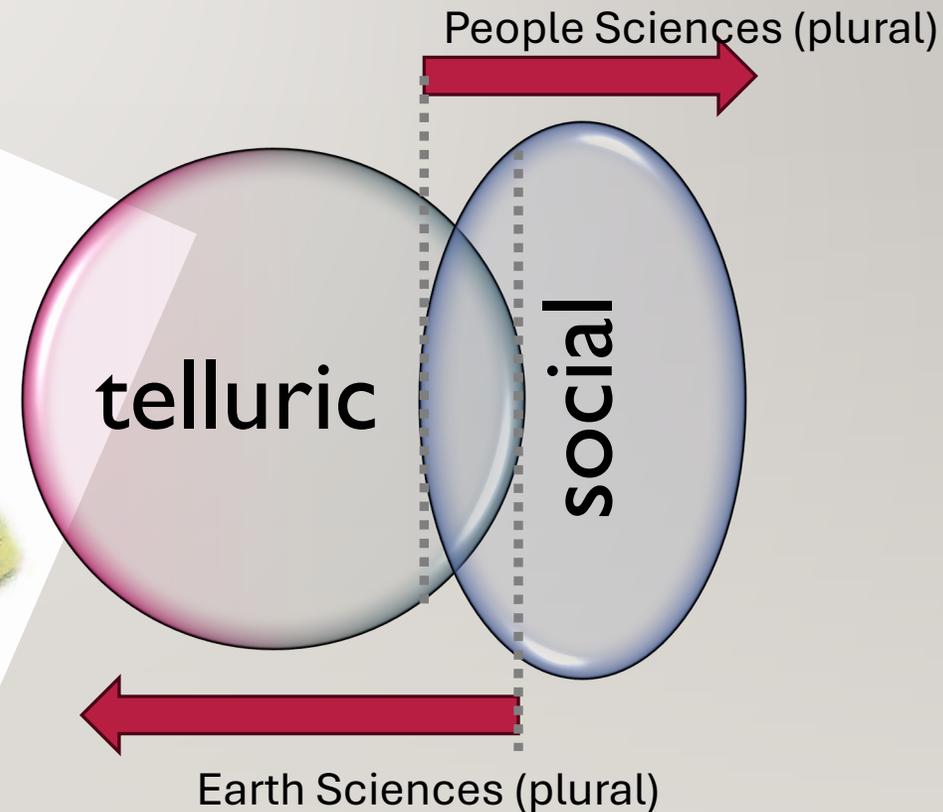
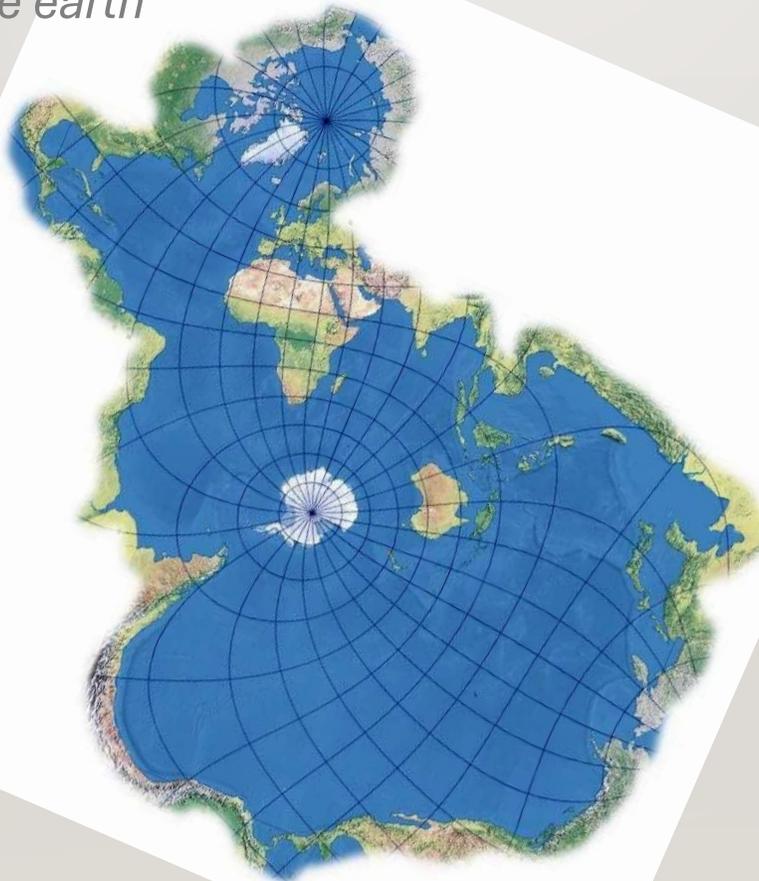
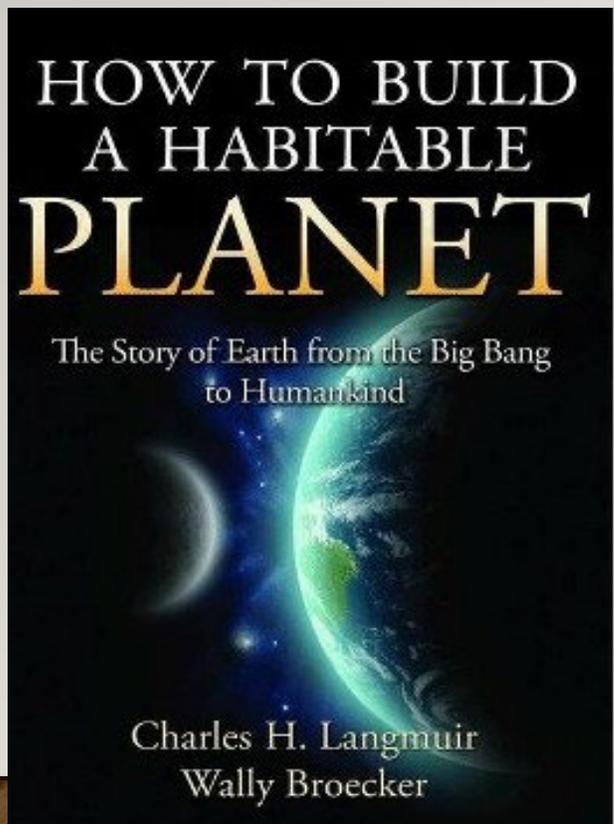
telluric:

of or relating to the earth

tellurian:

of, relating to, or characteristic of the earth

(Marriam Webster)

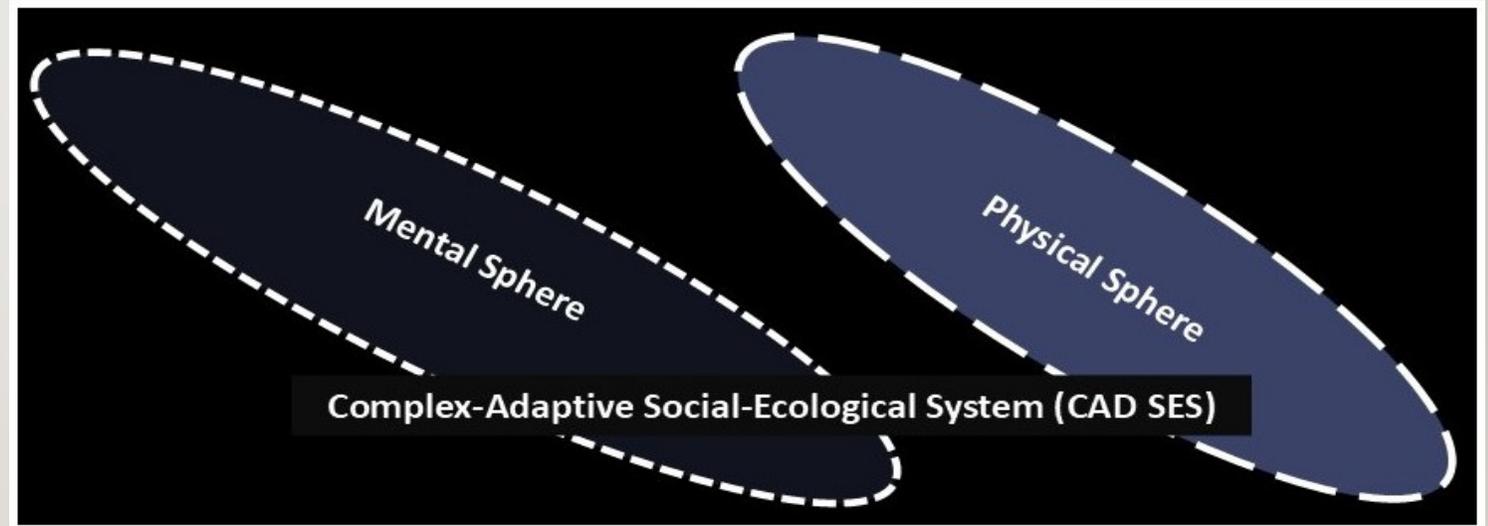


p.s. Literacy implies participatory empowerment of individuals and institutions.

The Earth System's Realms or Dimensions

realms or dimensions:

- i. conceived
- ii. telluric
- iii. social
- iv. artefactual



conceived = what people think,... i.e. people's mental constructs

telluric = processes, features,... of the planet (without humans)

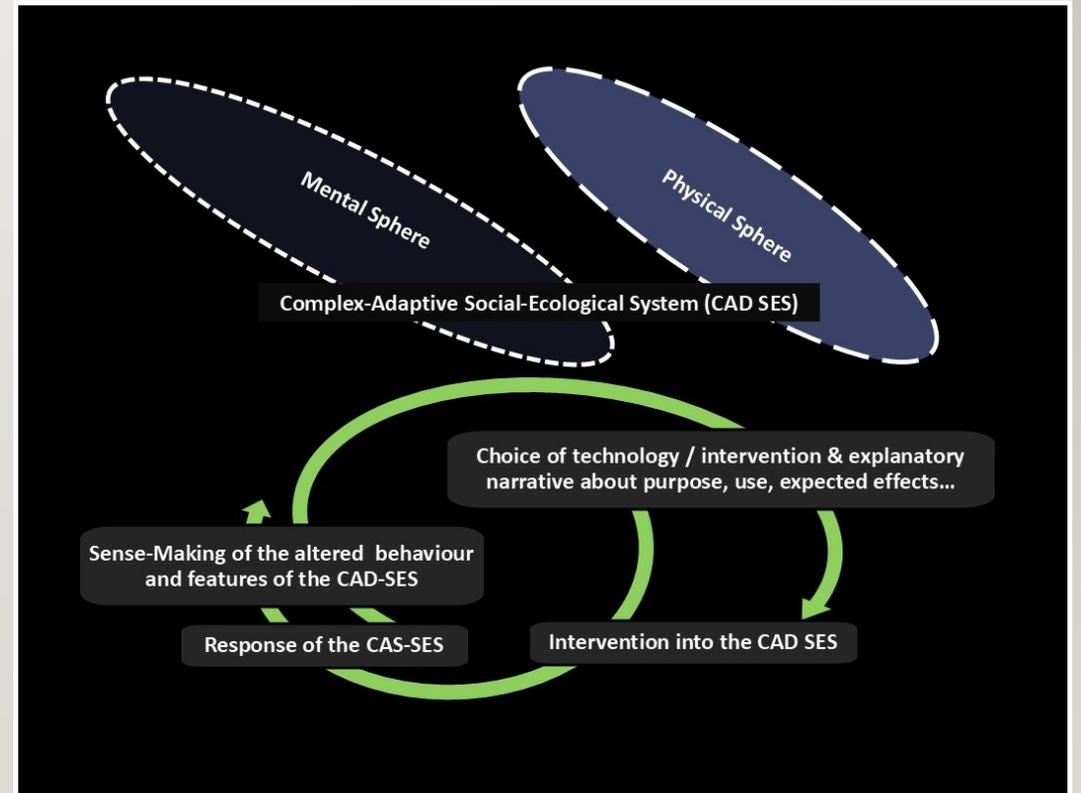
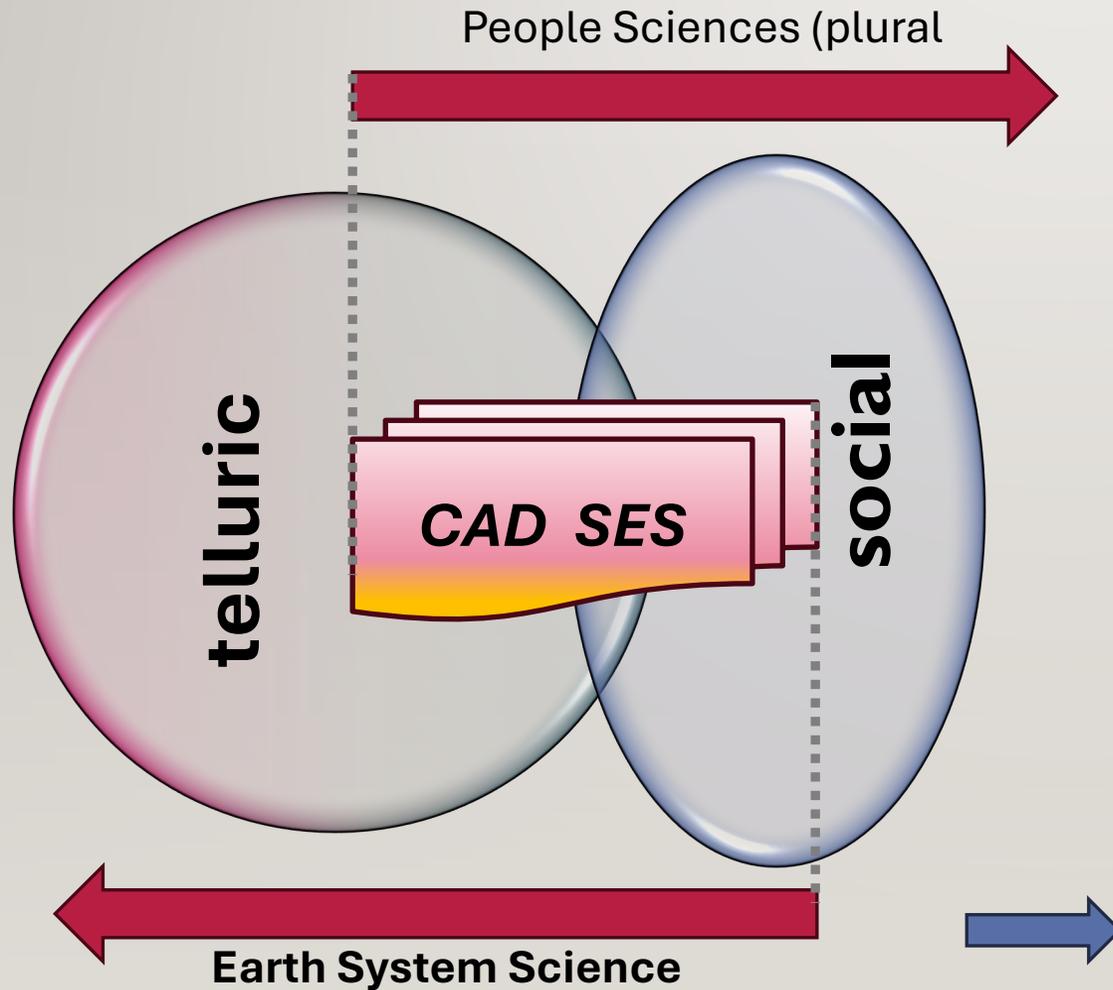
social = that what people do when they interact...

artefactual = what people engineer, build, design,...

...when applying their mental constructs.

Holocene & Anthropocene

How strong is the coupling, respectively ?



complex-adaptive dynamics of the tellurian realm.

EARTH A SINGLE SYSTEM HUMANS INCLUDED

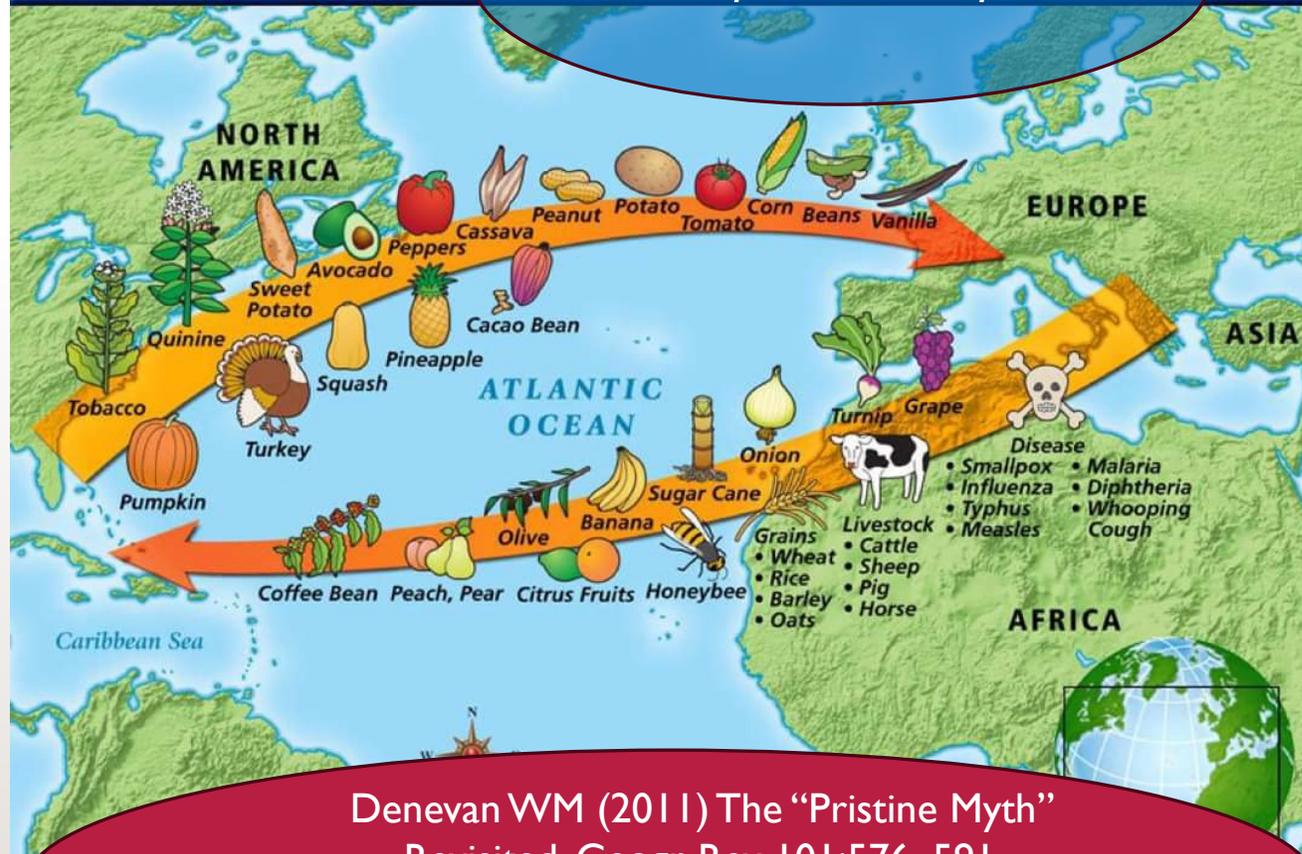
Meiske M (2021) Die Geburt des
Geoengineerings : Großbauprojekte in
der Frühphase des Anthropozäns.
Wallstein Verlag, Göttingen

- Global integration of Earth & World
 - connected through global supply chains
 - all-embracing division of labour
 - planetary technosphere / habitat
 - worldwide knowledge system / ergosphere
- Planetary Cycles / Tellurian Dynamics
 - matter, energy, and information cycles
 - linking socio-economic systems (World) with physical and biological systems (Nature)
- Hegemonic Contemporary Cultures (*of the Holocene*)
 - Nature a cheap, nearly unlimited resource
 - Narrative of intentional planetary-scale anthropogenic change

Anthropocene: Systemism and Rupture

The Columbian Exchange

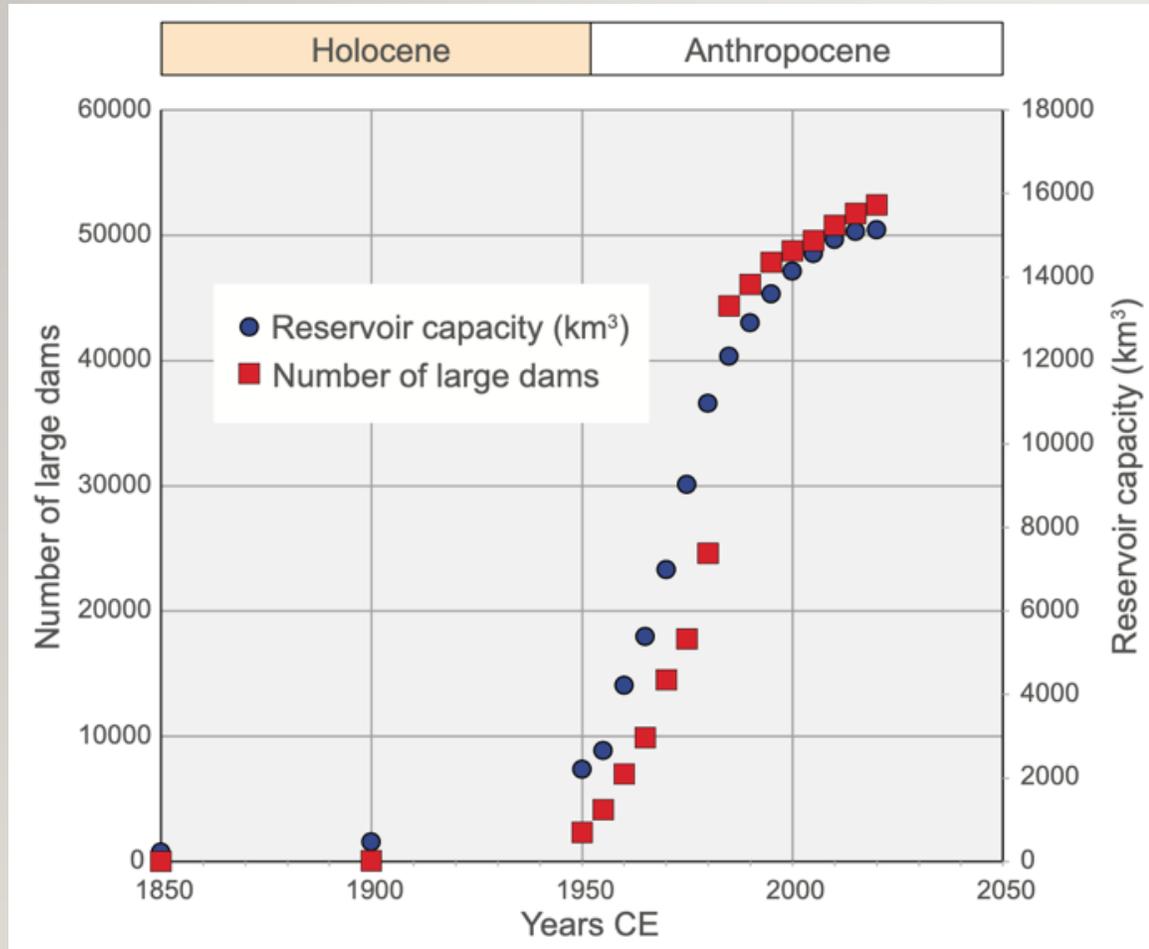
Example: Orbis Spike



Denevan WM (2011) The “Pristine Myth” Revisited. *Geogr Rev* 101:576–591.
<https://doi.org/10.1111/j.1931-0846.2011.00118.x>

- Social-ecological and Cultural-Economic Systems
 - Global supply chains and division of labour
 - Hegemonic cultures
- System features
 - emergent non-separable, hysteresis, irreversible & path-dependent
- Complex-Adaptive (or wicked) dynamics
 - irritated human agents (individuals, institutions)
 - from natural, social & cultural to tellurian processes

Anthropocene: Affluence or the Rupture of the Holocene



Zalasiewicz JA, Head MJ, Waters CN, et al (2024)

Reply to Edgeworth et al. 2024:

The Anthropocene is a time interval, and more besides



The Grande Dixence Dam is a concrete gravity dam at the head of the Val d'Hérémence in the canton of Valais in Switzerland. At 285 m high, it is the tallest gravity dam in the world, seventh tallest dam overall, and the tallest dam in Europe. It is part of the Cleuson-Dixence Complex. With the primary purpose of hydroelectric power generation, the dam fuels four power stations, totalling the installed capacity to 2,069 MW, generating approximately 2,000 GWh annually, enough to power 400,000 Swiss households. (source:Wikipedia)

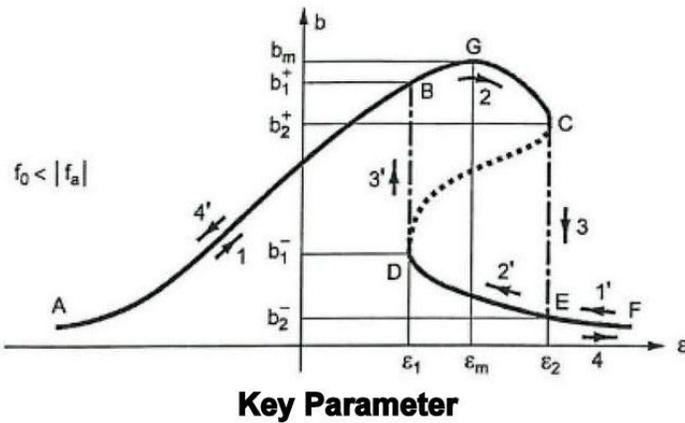
Anthropocene: Systemism and Rupture

..a 'big' example, AMOC...

MATHEMATICS AND PHYSICS FOR SCIENCE AND TECHNOLOGY

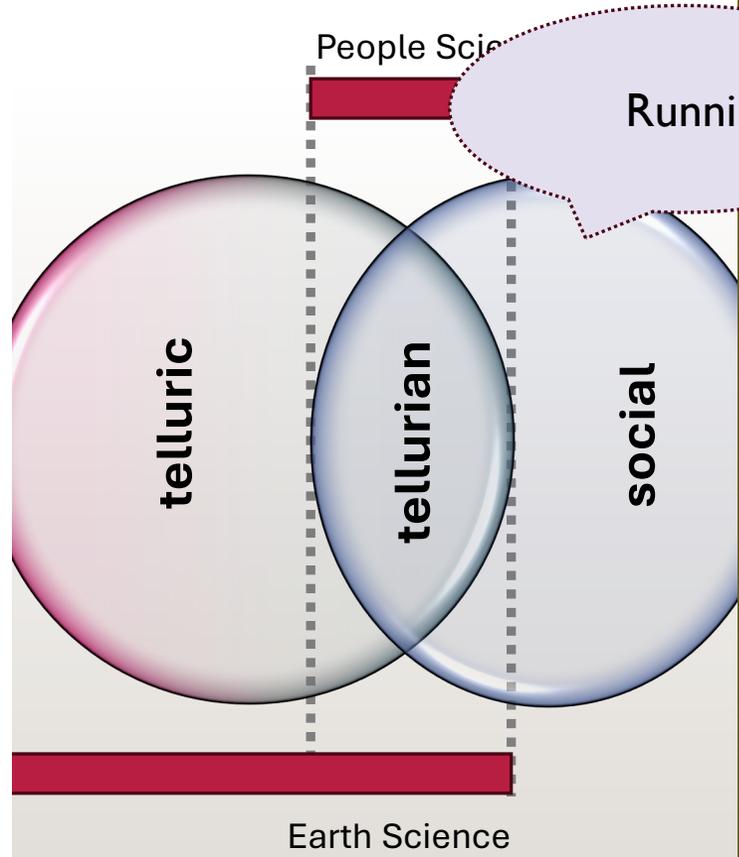
Non-Linear Differential Equations and Dynamical Systems

State of the System

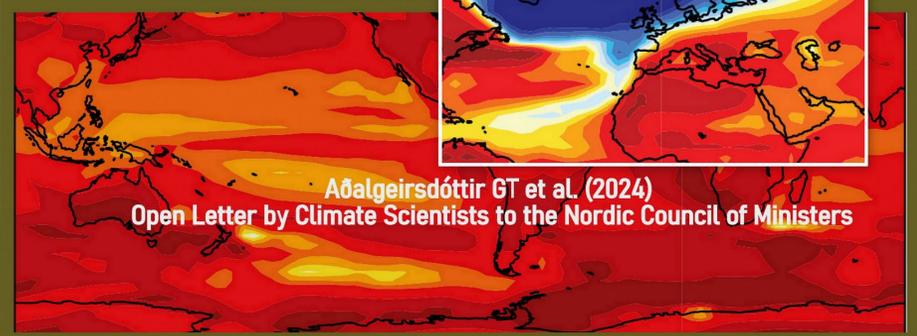
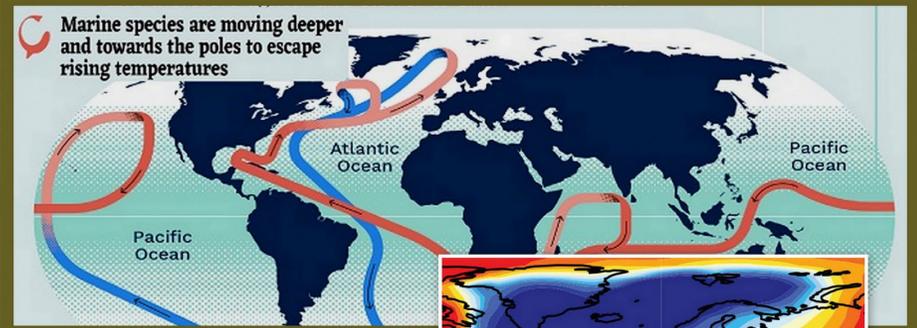


L.M.B.C. Campos

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The Atlantic meridional overturning circulation (AMOC) is the main ocean current system in the Atlantic Ocean.



Sound
Action
requires:

Philosophical Perspectives

- Hannah Arendt (1906-1975)
 - ...the human condition [adjusted for PSAC] (as simplified socio-political model); *three modes of action*:
 - *laboran, homo faber, zoon politicon*
- Mario Bunge (1919-2020)
 - ...synthetic thesis of truth (as knowledge building process in Earth Sciences)
- Hans Jonas (1903-1993)
 - ...responsibility for/in: “future technosphere”
- Lawrence Kohlberg (1927-1987)
 - ...hierarchy of [moral] development [downscaled] (as simplified model of variants of societal organisation)

The ‘truth’ is in the making & philosophy
is the engineering of the thinking.

TECHNO-/ ERGOSPHERE

-

cumulative /disruptive

*planetary scale
anthropogenic change*

(PSAC)

-

tellurian dynamics

- Planetary Techno- / Ergosphere
 - Constructing *the artefactual* (homo-faber)
 - Primarily 'Western'-centric (zoon-politikon)
- Anthropocene (as specified by the AWG)
 - onset of disruptive planetary-scale anthropogenic change post WWII (affluent consumption)
 - intentional impact on Earth (*Holocene zoo-politikon*)
- Challenges (for any "anthropos")
 - Tight coupling of the tellurian through *the artefactual* (*Anthropocene*)
 - Holocene inequality (laboran vs. homo-faber vs. zoo-politikon) tightened in Anthropocene
 - Key: lasting biological and social reproduction

Renn J (2020) *The Evolution of Knowledge - Rethinking Science for the Anthropocene*. Princeton University Press, Oxford, UK

HUMAN CONDITION AND PRACTICES *in the human niche / planetary habitat* (I)

analysing with
mode/role

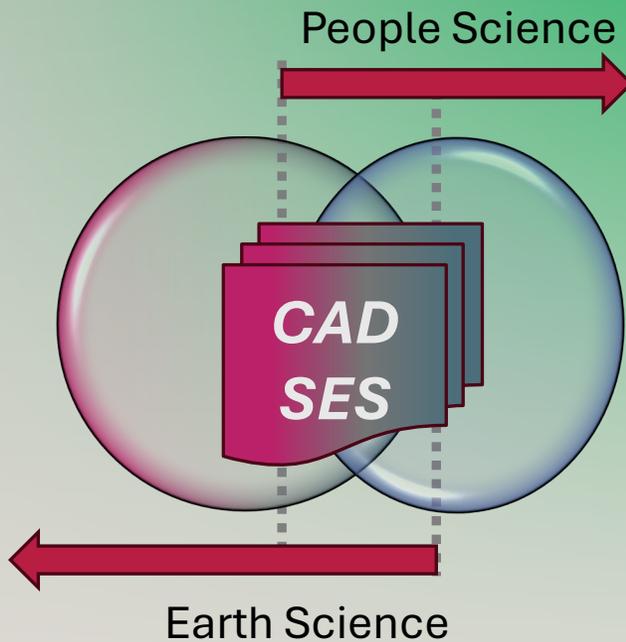
- *Mode/Role: Reproduction (laboran)*
 - Struggle for biological and social reproduction
 - At subsistence or affluence level
- *Mode/Role: Work (homo faber)*
 - building & operating the technosphere / ergosphere
- *Mode/Role: Governance (zoo politikon)*
 - Civism: political and cultural virtues and sentiments of a citizen

HUMAN INSIGHTS AND PRACTICES *in the human niche / planetary habitat* (II)

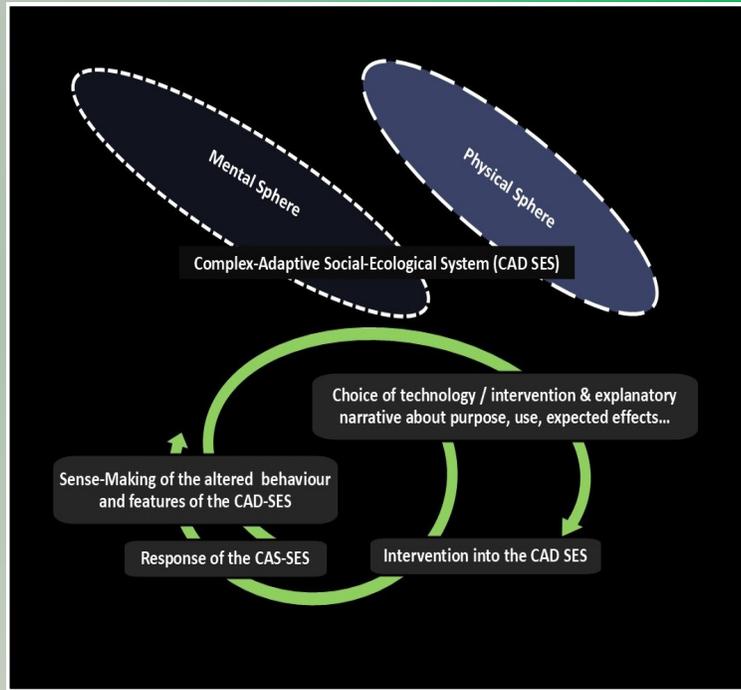
analysing through
knowledge building
and action

- Social Processes and Knowledge (*part of the artefactual*)
 - Production, preservation, accumulation, circulation, and appropriation of knowledge
 - Conceiving the socio/cultural-ecological niche humans live in
 - Hegemonic culture views (Holocene: Nature as a nearly unlimited resource) shape modes/roles
- Material Foundations for Action (*part of the artefactual*)
 - Global supply chains, division of labour, planetary technosphere / ergosphere, worldwide knowledge system
 - Cycles of matter, energy, and information tie socio-economic /cultural systems with the planet's systems

CRAFTING GEO-SOCIETAL NARRATIVES



- Social Processes, Knowledge Production, Action
 - Involves production, preservation, accumulation, circulation, and appropriation of knowledge (here: *Earth System Literacy*)
 - Conceiving the planetary socio-ecological niche people live in (planetary habitat)
 - Earth:
 - global supply chains, division of labour, planetary technosphere, and worldwide knowledge system
 - World:
 - human condition, agency, and practices in reproduction, work, and governance (here: *Civicsness*)
- Earth Scientists' *orthodox* Narratives:
 - Emphasize the functioning of the Earth systems (plural)
 - Focus on socio-economic development (resources)
 - Might consider individual well-being and cultural values (geoethics)



CRAFTING GEO-SOCIETAL NARRATIVES

- Earth Scientists' Narratives:
 - 'orthodox' (A) >> 'novel' (B)
 - (A) Earth systems (plural), & socio-economic development
 - (B) Informing the handling of disruptive planetary-scale anthropogenic change, i.e., the **Anthropocene**
- Anthropocene transition: *narratives go political*
 - Handling of disruptive planetary-scale anthropogenic change that alters the planetary habitat
 - planetary ergosphere
 - rupture of habitual (Holocene) dynamics (natural, social, cultural)
- Tellurian Narratives:
 - functioning of the Earth System (singular)
 - inequality among people & power relations (justice) under Holocene vs. Anthropocene conditions
 - describing *the embedding* of *the artefactual*

The Punch Line

- The Earth scientists' *conventional narratives* encompass
 - socio-economic development (e.g. production of goods, living conditions),
 - individual well-being and cultural values (e.g. favouring the sustainable functioning of the telluric Earth System), and
 - cultural or metaphysical perspectives like the evolution of life-bearing planets.
- However, informing the handling of *disruptive planetary-scale anthropogenic change*, i.e. going political in the Anthropocene:
 - Earth scientists' narratives are about the geo-societal, i.e.: they must recognize:
 - people's labour to reproduce biologically and socially,
 - people's work to build and run the technosphere, and
 - people's acts as citizens.

Thank You

