



BRIEF 2: STUDYING THE EMPIRICS OF HOPE

There are many potential approaches to study the Empirics of Hope. In this brief, we present a mixed methods approach, building on models and frameworks designed to study systemic change as well as ideas of what 'hopeful' Anthropocenes are or could be. The aim is to evaluate and provide evidence for where, when, and how we are moving towards 'hopeful' futures.

A mixed methods approach

A mixed methods approach is needed to provide evidence of change towards 'hopeful' Anthropocenes, with at least three components. **1.** Quantitative indicators of system states can reveal the rates and degree of change. However, such trends also have limitations regarding what is, and what can be, measured, and how - and might only pick up 'shallow' trends which may not bring about the fundamental changes needed for sustainability. **2.** Qualitative analysis of historical timelines and unfolding events can help capture underlying 'deeper' changes, and help to look at a richer set of unfolding events in combination with quantitative trends. **3.** Explicit statements of visions - both of what hopeful changes are as well as how to reach them - will often be needed to evaluate whether or not observed changes are indeed contributing to 'hopeful' Anthropocenes.



Figure 1. A mixed methods approach to studying the empirics of hope - an example. Recent events and trends related to protection of nature are illustrated. However, protecting space from direct human use has a much longer tradition. For example, fallow periods in agriculture have been documented as far back as 6000 B.C. The idea of nature worthy of protection in North America and Europe started to gain wider traction in the late 1800s.

A mixed methods approach to the Empirics of Hope

'Hopeful' Anthropocenes?

When studying signs of hope in the Anthropocene, it is imperative to explore diverse visions of 'hopeful' futures. Many scholars and practitioners have envisioned and strived to work towards futures where human activities lead to positive outcomes and well-being for people and the planet, e.g. in the form of collective action for Earth stewardship. Some prominent examples from the sustainability sciences include:

• **"Good Anthropocenes"** envisages futures where human actions result in a more prosperous, more just, and ecologically diverse planet – suggesting that improving human quality of life without harming the environment is possible¹⁻⁵.





- "Planetary/Earth Stewardship" refers to the proactive management of Earth's systems to support both nature and human well-being. It involves shaping biological, social, and physical conditions to sustain critical earth-system processes at various scales, from local to global⁶⁻⁸.
- **"The Sapiezoic"** is proposed as a new Eon where humans exhibit the capacity to manage the Earth system in a way that benefits not only themselves but all species. It highlights the need for "planetary intelligence" and a sense of interconnectedness with the biosphere^{9,10}.

Models and frameworks for hopeful change

Social tipping points. One model for studying positive change is the 'tipping point' model. Social tipping points are described as critical junctures in complex systems where small changes or actions can trigger a self-reinforcing shift toward a more desirable state^{11,12}. In the context of sustainability and social change, they represent moments when collective efforts, innovations, or policy changes lead to substantial improvements in environmental, economic, or social well-being. Social tipping points can catalyse transformative shifts, such as the adoption of renewable energy, sustainable practices, or social justice reforms. Recognising and harnessing these tipping points is crucial for achieving positive and lasting impacts, as they signify opportunities for profound and sustainable positive change. Human agency (the capacity of individuals and groups to influence events and outcomes) is important to consider within a tipping points framework. While agency can actively shape the world and Earth's systems through interventions at different social levels, it is not evenly distributed and differences in the agency of different actors and groups of actors should be considered¹⁴. *Social tipping points can guide a search for empirics of hope by drawing attention to positive feedbacks that perpetuate and accelerate hopeful change*¹⁴.

Sustainability transition frameworks are strategic models designed to guide societies and organisations toward more sustainable and environmentally responsible practices¹⁵⁻¹⁸. These frameworks emphasise an understanding of the interplay of socio-economics, ecosystem functions and services, technology, policy, culture, and institutions across multiple levels and spheres to drive change towards more sustainable systems. This framework often involves multilevel analysis, such as the interplay of dynamics across niches, regimes, and landscape scales, or dynamics across and within individuals, groups, organisations, and societies (Fig. 2)¹⁹. These different system levels and domains can guide data collection with a focus on transformative potential.







The **Three Spheres of Transformation**¹⁷ is a heuristic that describes transformations as happening in three arenas of change:

(1) The personal sphere, which involves recognising universal values we hold dear and collectively agreeing on guiding principles.

(2) The practical sphere articulates the problem we aim to address, and the hindrances posed by existing practices.

(3) The political sphere identifies systems upholding the status quo and determines necessary cultural and systemic shifts.

Fractal agency¹⁷ is a related recent framework that explicitly looks for transformative change across all possible levels of social organisation, from the individual (10[°]) to all homo sapiens that have ever lived (10¹¹). *Fractal agency can inform our approach to include and make explicit all levels and spheres of social organisation that the empirics of hope can be observed at*.

The 'leverage points' framework is often used to identify how to intervene within a system to achieve large and lasting change. Leverage points were originally proposed by Meadows²⁰ as a heuristic and practical tool for intervening in complex systems. The twelve leverage points are ordered with respect to their potential to bring about system-wide change from "shallow" to "deep". Different levers can be used to target different system components. This framework can be combined with the generic heuristic of the **Iceberg Model** often used in the sustainability sciences (but originally established by Edward T. Hall²¹ in 1976 as the 'Iceberg Model of Culture' differentiating 'visible' from 'invisible' culture), which emphasises that the events that we observe in a system are just the tip of an 'iceberg', whereas dynamics hidden from view include system structure, mental models and belief systems. The shallow levers of the leverage points framework can be regarded to act further towards the tip of the iceberg and correspond to fixed parameters or relatively mechanistic characteristics within a system (such as a tax or the amount of land set aside for conservation). Deep levers correspond to information and control parts of a system (such as a system's design, goal, intent or the paradigm out of which it arose). *Leverage points and the Iceberg model could be used as tools to critically reflect on whether observed trends are indeed hopeful, e.g. as in "deep" or merely addressing "shallow" levers of change. (Fig. 3).*



Leverage points:

12. Constants, parameters, numbers (such as subsidies, taxes, standards).

11. The sizes of buffers and other stabilizing stocks, relative to their flows.

10. The structure of material stocks and flows (such as transport networks, population age structures).

9. The lengths of delays, relative to the rate of system change.

8. The strength of negative feedback loops, relative to the impacts they are trying to correct against.

7. The gain around driving positive feedback loops.

6. The structure of information flows (who does and does not have access to what kinds of information).

- 5. The rules of the system (such as incentives, punishments, constraints).
- 4. The power to add, change, evolve, or self organisee system structure.

3. The goals of the system.

2. The mindset or paradigm out of which the system – its goals, structure, rules, delays, parameters – arises.

1. The power to transcend paradigms.

Figure 3. The Iceberg Model and the twelve leverage points for intervening in systems²⁰.



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We invite you to reflect on the following questions: Is the presented approach suited to study the empirics of hope? How can it be operationalised? What other methods and frameworks are useful for engaging with the topic? What are constructive ways to envision diverse futures and identify barriers to change? How to reduce the risk of focusing on superficial dynamics and how to capture changes in deeper societal norms and human behaviours?

Note: The collection of models and frameworks presented in this brief is merely a starting point. The intention behind this brief is to invite the reader to start thinking with us about how we can go about studying the Empirics of Hope. Please share additional ideas here: <u>bit.ly/Brief_2_Studing_Emphirics_Hope</u>.

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