



Extending Planetary Health: Global Ethics and Global Governance in the Noosphere

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Abstract

This essay proposes ways to extend the concept of *planetary health*, in the framework of major evolutionary transition applied to the planet as a whole. I argue that planetary health can be naturally extended to a fully planetary scale, including issues related to geo- bio- techno- and noo- spheres. I show the need and importance for ethics and governance to become global and I give some examples of physiological and psychological health issues from a planetary perspective.

Keywords Planetary health · International relations · Noosphere · Global governance · Global ethics · Earth Systems Science · Gaia theory · Major evolutionary transition

Introduction

Our planet is in trouble. More than at any point in time, individuals, nations, non-governmental organization have developed an awareness of global issues ranging from climate change, limited fossil fuels, biodiversity loss, pandemics, to nuclear war threats. Given the diversity, complexity, scale and importance of such global issues, humanity needs new ways of thinking about the health of our planet.

Efforts in planetary health have focused on safeguarding climate and biodiversity (Horton 2017), or safeguarding “the health of human civilisation and the state of the natural systems on which it depends” (Whitmee et al. 2015). Yet these approaches are limited because the concept of planetary health remains anthropocentric: the goal is to maintain the good “health” of natural systems as long as they contribute to the health of human civilization. My thesis is that planetary health requires an evolutionary perspective, and be open to radical transformation. Indeed, I believe that attempting to maintain and sustain human civilization at all cost may be a mistake in the long run. Our planet may be transforming towards a different and more complex organization than one centered solely on humans. For example, biology may be on the verge of merging with machines and thus creating new

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“species” or even new kinds of life (e.g. Kelly 2010). Limiting the focus to safeguarding the human species may be detrimental for the far-future evolution of planet Earth.

The notion of “spheres” is useful to guide us towards a better integration between the four main spheres relevant to the health of our planet: I mean the *geosphere* (itself composed of the atmosphere, the hydrosphere and the lithosphere, i.e. air, water and rocks), the *biosphere* composed of all living things, the *technosphere* composed of all human technological artefacts, and the *noosphere* as the sphere of mind currently emerging out of humans and their technology.

This essay thus insists on the whole breadth and complexity of *planetary health*, considering the Earth’s geo- bio- techno- and noo- spheres, and their interactions. This is in line with the etymology of “health” that comes from old English *hælh*, related to whole. This wholistic approach is indeed fundamental because each time a sphere will be neglected or ignored, systemic damage could eventually ensue.

All modern discourses on globalization agree on one thing: humanity lives in a unique period of deep change, transformation, and metamorphosis. This is true within the techno-optimist stance of the *singularity* discourse (e.g. Kurzweil 2005), as well as within the more alarming *anthropocene* discourse (e.g. Steffen et al. 2007), or *Gaia theory* (e.g. Lovelock 1979), according to which humans are disturbing a fragile equilibrium of Earth, but it is also true with attempts to provide meaning and hope for our global future through the *noosphere* discourse (e.g. Teilhard de Chardin 1966; Vernadskii 1945; Shoshitaishvili 2021; Vidal 2021).

Such deep changes point to the interpretation that humanity is the midst of a unique and unprecedented planetary major evolutionary transition (Furukawa and Walker 2018). To go through it successfully, humanity must extend human ethics and governance at planetary scales, that is, think global ethics and global governance.

Conceptualizing planetary health in such a broader context is a fundamental step to position ourselves as actors of future change and planetary transformation, which stands at the opposite mindset of seeing humanity as a victim of an upcoming and inevitable global collapse.

Global Ethics

Ethics has a history not only within human past, but also with evolutionary roots. Indeed, it has been shown that primates do exhibit proto-moral behavior (e.g. Boyd and Richerson 2006). The necessity of new morality and ethics has been driven since then by the need to maintain and manage larger and larger human groups (Boehm 2012).

The main theme of morality and ethics can thus be framed with the question of how to align or balance the interests of the parts with the interests of the whole. Framed this way, it’s part of a bigger problem, the one of creating and maintaining cooperation on larger and larger scales, while maintaining the necessary evolvability to survive (Stewart 2000). Such an evolutionary perspective is necessary when considering “planetary health”, whose scope includes but transcends the boundaries of humanity (see e.g. efforts to widen the scope of ethics in Vidal and Delahaye 2019; Vidal and Heylighen 2021).

There are two ways that morality and ethics can be extended to larger human groups. The first is the biocultural evolution of morality and moral traits that individual acquire,

and end up being beneficial to the group (e.g. Aunger 2017). The second way is through the creation of institutions that reward cooperative behavior and punish free riding.

This makes a natural transition from human ethics and morality, to the governance of institutions, where institutions are defined as “self-created rules of social organization where cooperation can be individually advantageous even in large groups of unrelated individuals” (Aunger 2017, 11b).

Global Governance

Global governance can be defined as “the patchwork of formal and informal arrangements among states, international organizations, and various public–private partnerships” (Weiss 2009). Although international organizations and big tech companies play an increasingly important role in international matters, it is worth emphasizing that the nation-states are still the most powerful actors as of today -for the better and for the worse. What else than nation-states can trigger a nuclear war, decide to massively pollute or to destroy biodiversity? When a country is being invaded, what else than nation-states have the power to sanction the attacking country, what else than nation states can send significant financial, humanitarian and military support? All this points to the fact that planetary health is a topic and concern most appropriate for nation-states, because they are still the most relevant actors with the power to act at a planetary scale.

What rang the alarm bell of Earth scientists to declare the epoch of the anthropocene was the discovery of *the Great Acceleration* that is affecting socio-economic trends and the Earth system (McNeill and Engelke 2014). In the context of planetary intelligence, Frank et al. (2022) noted that feedback loops are indeed “global in scale, coordination and operation”. The great acceleration has also positive aspects, for example in the entrepreneurial world, where new frameworks to make world impacts have been advocated, allowing “exponential technologies, moonshot thinking, and crowd-powered tools to create extraordinary wealth while also positively impacting the lives of billions” (Diamandis and Kotler 2015).

In cybernetic terms, an acceleration is led by positive feedback loops, so to avoid disastrous runaway effects, humans need to act on behalf of the planet by engaging in massive counter-actions that I propose to call the *Great Regulation*. Indeed, positive feedbacks, accelerations of exploitation and destruction of the environment and natural resources, as well as the drastic accelerating changes in the techno- and noo- spheres need to come under more control. Going back to our earlier definition of cooperation, our focus should be on inhibiting or stopping planetary free riders, i.e. nation-states or international actors benefiting while damaging the geo- bio- techno- or noo- sphere.

However, to do this properly, humanity needs to define planetary values and goals, along with desirable means to maintain and achieve them. In the context of the first planetary major evolutionary transition, this is arguably the greatest wicked problem humanity has ever been confronted against. To tackle it will require not only international courage and coordination, but also creativity and design (e.g. Sweeting 2018). An example on how to proceed is to start with an agreed-upon high-level agenda, such as the seventeen United Nations’ (2021) Sustainable Development goals, or the 41 indicators of impact and progress of the *Lancet* countdown (Watts et al. 2018), and then make sure that stakeholders for all the four different spheres are represented, before starting to collectively design creative solutions.

Planetary Health

Claude Bernard pioneered modern medicine by arguing that the difference between health and illness is of *quantitative* nature, and not *qualitative* as it was believed to be at his time. For example, he noticed that diabetes arises when the sugar levels are above a certain threshold. In cybernetic terms, it's equivalent of stating that the human body must keep some essential variables within acceptable ranges to stay healthy (Ashby 1956).

When thinking about our planet's health, it is vital to clarify what these variables are, what their acceptable range of variation are, and use or create control mechanisms to keep or steer them into these acceptable ranges.

To even start to explore the heuristic of health applied at a planetary scale, one needs to entertain the idea of the planet as a superorganism. Although the term "noosphere" etymologically means a sphere of mind, in Teilhard's writings (e.g. 1959), he means a superorganism with physiological, anatomical and psychological properties. So to articulate the notion of planetary health, one has to assume a kind of planetary superorganism framework, while avoiding simplistic or totalizing assertions (Shoshitaishvili 2022). Let us explore a few examples.

Physiological Health

A fundamental goal of organisms is simply to... survive. Within the prospects of nuclear war, energy depletion, climate change and disinformation, even survival is not trivial at a planetary scale. This is why it is easy to imagine global collapse scenarios, and much harder to come with positive ones.

An obvious disanalogy between warm-blooded mammals and the planet, is that mammals are able to control their bodily temperature. Such a basic metabolic capability doesn't exist at a planetary scale yet, and this is reflected by the fact that climate change is not under our control. However, overcoming climate change means more than solving global warming. Even if or when humans will be able to cool the planet down, this would cover only half of the control system over the planet's temperature. The reason is simple: humans wouldn't know how to heat it back to a desired temperature. The point here is that humans need to be prepared both for extreme warming as well as for extreme cooling, i.e. to be able to keep the planet in an acceptable temperature range.

What is the relevant level to consider when thinking about planetary health? There are two answers. First, from a hierarchical systems point of view, a given system at a focal level is always constrained both with *lower-level constraints* from the system below, and *higher-level constraints* from the level above (Salthe 1985). The level below the planet, I argued, are the nation-states; the level above would be planetary defense, for example protecting the planet against impact from near-Earth objects. However, in our complex and highly interconnected world, we have all experienced how a tiny virus can affect human health, but also cascade to affect sociological activities, nations and international issues. This is also true at an organism-level, where one cancer cell can trigger events eventually leading to death. This naturally leads to the requirement that health should be taken care of at multiple levels, and this strengthens the case for systems thinking if one aims to protect and heal the different levels (see e.g. Berry et al. 2018; Pongsiri et al. 2017).

Psychological Health

At a planetary scale, the psychology -if any!- may be noticeable with the incompleteness of globalization because of strong internet censorship and regulation, especially in China. Our era of disinformation, misinformation and fake news spreading virally benefit from easy positive feedback dynamics that cry for more regulation. There is no easy fix, but rather sets of policies and strategies that could be deployed, such as disincentivizing, fact checking, identity verification, collaborative filtering, or the reliance on trusted authority.

Our economic system has evolved to provide goods and services to humans, and nothing more. It thus remains largely blind to geo- bio- techno- spheric issues, possibly leading to a global insanity (Coffman and Mikulecky 2012). This key economical issue has been recognized, and alternatives to our current economic system have been proposed, for example within the field of ecological economics (e.g. Odum 2001; Daly and Farley 2010).

Conclusion

Humans live in an extraordinary time where our circles of compassion are extending to the planet as a whole, so that we can genuinely care about planetary health. In our complex and interconnected world, ethics and governance cannot be thought anymore for the benefit of humans only. If humans want to succeed to hatch a noosphere, to make it through this planetary major evolutionary transition, we have to extend the notion of planetary health, by focusing on the integration of the geosphere, the biosphere, the technosphere and the noosphere, and not only the well-being of humans and what supports them.

Of course, humans remain the prime actors and this is why human ethics and governance need to shift towards a planetary scale. By doing so, we will be ready to actively and creatively seek and find strategies to cope with global issues. Although the challenges are daunting, I proposed that creativity, innovation, as well as the taming the great accelerations with great regulations are key elements towards achieving planetary transformation and planetary health.

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