

Thus is a new version of a paper that I commented on previously. I returned to my comment and notice that the authors did not consider my arguments at all. Therefore, I just copy and paste my previous comment below.

I add one specific observation. The authors write: “The result is a robust homeostasis: the Earth system maintains an equilibrium and is resilient to small, slow perturbations.” This confuses the concepts of homeostasis and equilibrium. The key point of the Gaia hypothesis is that the Earth maintains homeostasis in *disequilibrium*. This disequilibrium is seen as one reliable indicator of life on other planets. In the ‘hybrid planet’ framework that I refer to in my comment below, the idea is that in principle, the technosphere can also achieve a similar state of homeostasis while further leveraging the thermodynamic productivity on Earth. On this mechanism, see the blog post by Axel Kleidon: <https://technosphere.blog/2019/05/03/do-humans-have-free-will-or-are-our-actions-merely-manifestations-of-a-thermodynamic-imperative-or-are-both-views-right-in-their-own-ways/>. This is the physical foundation for the arguments below.

Here is my previous comment.

My first comment is on juxtaposing biosphere and humans. This gives sort of romantic and backward-looking picture of the Earth system which humans have transformed into a ‘hybrid planet’ (Frank et al., 2017). There is now a rich literature on the technosphere as newly emerging regulatory sphere of the Earth system (Donges et al., 2017). How should humans locate in this complicated relationship, which, after all, is one if not *the* defining feature of the Anthropocene? Just arguing that we are in control anyway, and hence simply including the technosphere into the human domain, is certainly wrong (Haff, 2014). The technosphere follows its own evolutionary trajectory. There are many ways how humans can design co-evolutionary regulatory mechanisms, such as in specific context as the recently propagated ‘nature-based solutions’ (Herrmann-Pillath et al., 2022). I think the opinion piece needs to add more concrete references to such topics which would allow to demonstrate practical consequences of the suggested change of perspectives for policies.

The second comment continues with pointing to the rich literature in the humanities dealing with ‘nature’. For example, environmental philosopher Vogel has radically deconstructed nature and widens the notion to include artefacts with higher systemic complexity, with matches with the previous comment (Vogel, 2015). Juxtaposing nature and humans reinstates the Western epistemologies of dividing subject and object. I cannot map this rich debate here (Braidotti, 2019), but just highlight one, which is inspired by a lifelong study of and engagement with native Australians, Povinelli’s concept of ‘geontopower’ (Povinelli, 2016). Such contributions reveal the fallacies of much of the Anthropocene debates among scientists: They overlook that we should not talk about ‘humans’ in general, but about those humans that were and still are responsible for the tragedy that we face. In other words, there is a deeply political dimension of the issues, related to questions such as whether and how we must radically change our economic system. Without facing such political realities, calls for arms (as Scharf uses the term) don’t know the enemy. Addressing ‘humans’ can even dilute responsibilities and factually protect the vested interests of the current system.

Braidotti, R., 2019. Posthuman knowledge. Polity, Medford, MA.

Donges, J.F., Lucht, W., Müller-Hansen, F., Steffen, W., 2017. The technosphere in Earth System analysis: A coevolutionary perspective. *The Anthropocene Review* 4, 23–33.
<https://doi.org/10.1177/2053019616676608>

Frank, A., Kleidon, A., Alberti, M., 2017. Earth as a Hybrid Planet: The Anthropocene in an Evolutionary Astrobiological Context. *Anthropocene* 19, 13–21.
<https://doi.org/10.1016/j.ancene.2017.08.002>

Haff, P., 2014. Humans and technology in the Anthropocene: Six rules. *The Anthropocene Review* 1, 126–136. <https://doi.org/10.1177/2053019614530575>

Herrmann-Pillath, C., Hiedanpää, J., Soini, K., 2022. The co-evolutionary approach to nature-based solutions: A conceptual framework. *Nature-Based Solutions* 2, 100011.
<https://doi.org/10.1016/j.nbsj.2022.100011>

Povinelli, E.A., 2016. *Geontologies: a requiem to late liberalism*. Duke University Press, Durham.

Vogel, S., 2015. *Thinking like a mall: environmental philosophy after the end of nature*. MIT Press, Cambridge, Massachusetts.