

**This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.**

**Author(s):** Kortetmäki, Teea; Puurtinen, Mikael; Salo, Miikka; Cortés-Capano, Gonzalo; Karkulehto, Sanna; Kotiaho, Janne S.

**Title:** Planetary well-being : Ontology and ethics

**Year:** 2024

**Version:** Published version

**Copyright:** © 2024 selection and editorial matter, Merja Elo, Jonne Hytönen, Sanna Karkuleht

**Rights:** CC BY-NC-ND 4.0

**Rights url:** <https://creativecommons.org/licenses/by-nc-nd/4.0/>

**Please cite the original version:**

Kortetmäki, T., Puurtinen, M., Salo, M., Cortés-Capano, G., Karkulehto, S., & Kotiaho, J. S. (2024). Planetary well-being : Ontology and ethics. In M. Elo, J. Hytönen, S. Karkulehto, T. Kortetmäki, J. S. Kotiaho, M. Puurtinen, & M. Salo (Eds.), *Interdisciplinary Perspectives on Planetary Well-Being* (pp. 26-41). Routledge. <https://doi.org/10.4324/9781003334002-4>

# 2

## PLANETARY WELL-BEING

### Ontology and ethics

*Teea Kortetmäki, Mikael Puurtinen, Miikka Salo,  
Gonzalo Cortés-Capano, Sanna Karkulehto and  
Janne S. Kotiaho*

#### Introduction

Planetary well-being is defined as “a state in which the integrity of Earth system and ecosystem processes remains unimpaired to a degree that lineages can persist to the future as parts of ecosystems, and organisms (including humans) can realize their typical characteristics and capacities” (Kortetmäki *et al.*, 2021, p. 4). This “state” is a dynamic rather than a static condition: Planetary well-being may increase and decline, and human activities influence it greatly. Understanding these dynamics necessitates grounding the ontology and ethics of planetary well-being. In this chapter, we examine how the conceptualization of planetary well-being is grounded and positioned in the broader theoretical landscape, both in ontological and ethical terms. We also reflect upon the overall conceptual underpinnings of planetary well-being and its implications for the different well-being frames that are used for guiding societal development and policy-making, hoping to encourage further research. It should be noted that we limit our normative reasoning to human activities: Although large-scale natural events might also affect planetary well-being by disrupting large-scale processes, only humans are *morally responsible* for their activities’ impacts on planetary well-being.

#### Ontology behind planetary well-being: Systems and processes

Ontologically, planetary well-being takes a systems- and process-oriented approach. Planetary well-being commits to the Bungean type of systemism (see *e.g.*, Bunge, 2000) where every “thing” is a system or a component of one (Kortetmäki *et al.*, 2021). Ontologically speaking, a system is an entity that consists of interacting components and has structures and processes that are characteristic of

the given kind of system. All systems are situated in a context (environment) where they interact with other systems.

Most systems are material and independent of human and nonhuman minds.<sup>1</sup> Communication systems as well as human-made complex systems, such as schools, financial systems, and preservable semiotic and symbolic systems (texts and images), may be partially immaterial but their immaterial parts have causal effects only through cognition and action, *i.e.*, through the material neural system (Elder-Vass, 2010a). For example, money does nothing unless humans believe it does and agree with (and act upon) the rules determining what money can do.

Systems have both aggregative and emergent properties. Aggregative properties result from the simple addition of the properties of the parts. A classic example of an aggregative property is mass (*ibid.*). Emergent properties are those novel properties that emerge particularly due to the ordering and interaction of the components in a system (Bunge, 2000). Emergent properties are those that make the system “greater than the sum of its parts”: Its components do not have such properties in themselves, nor in aggregate. Certain emergent properties, such as the ability of systems to reproduce and preserve themselves, and sentience, also add to the properties of a system in a way that is relevant to moral considerations (see the section on ethical underpinnings).

Emergent properties constitute the basis for a view of the stratified nature of reality. Various phenomena have physical, chemical, biological, psychological, and social levels. Various scientific disciplines have also specialized in the research of a specific level of reality. While scientific activities may often be most fruitful when a level is studied with the concepts, theories, and methods developed for that particular level, it is also possible and sometimes valuable to combine tools or apply them at different levels. For example, psychological level phenomena can be viewed through psychology but also approached with the tools of neurobiology (a lower level), or with social psychology and sociology (a higher level). Phenomena in complex systems, such as societies, can only be explained comprehensively by studying them with multi- and interdisciplinary approaches.

In the planetary well-being framework, the well-being of a system is understood in a nonsubjective way, as the functional integrity of that system. Well-being means meeting the needs conveyed through critical processes at the biological, mental, and social levels. This understanding is in line with the above-described systems- and process-oriented approach where also non-conscious entities can gain or lose well-being. In the case of conscious entities such as sentient animals (those who can feel pain and suffer), consciousness does not always capture all critical processes. Also, some subjects with rich imagination and tendencies to comparison (many human beings) may consider some non-critical processes hastily as critical to their well-being. Hence, the subjective experience of well-being—although generally a good indicator of, for example, experienced human well-being—is not necessarily accurate or a comprehensive description of the state of well-being of an individual in the sense of the definition relevant to planetary well-being.

### *Processes and relations*

Planetary well-being is rooted in the idea that all living systems come into existence (emerge), develop, and behave in ways that result from complex sets of causal relations and patterns of species association (assemblages/communities of species) (Banitz *et al.*, 2022; DeLanda, 2016). Relations and feedbacks between interacting entities generate emergent properties: Many ecological processes are produced by the interactions between species (Folke *et al.*, 2016). For example, pollination as an ecological process often emerges from the relations between animal pollinators and the plants they pollinate (see also Chapter 6 for soil processes). These processes are mostly contingent: If the interactions end, animal pollination as an emergent process would cease to exist (DeLanda, 2016). The integrity of ecological processes in turn is vital for the continuity and well-being of the members of the communities, that is species and organisms (Levin *et al.*, 2013).

It is important to note that in many relations between the entities (*e.g.*, species) and the emergent systems they belong to (*e.g.*, ecosystems), entities maintain their relative autonomy and are not fused together into a homogeneous whole (DeLanda, 2016). For example, individuals can be connected to each other in many ways yet also remain as individuals in their community. Acknowledging the relative autonomy of entities as parts-of-wholes implies in some cases replaceability or functional redundancy within processes: A pollination process can (at least in many cases) continue even if the current pollinator species is replaced with other species, local or exotic, or robot brushes, as long as the replaced entities realize the same functions in the system. However, very rarely does a species have only one role in an ecosystem. Pollinators, for example, also interact in numerous other assemblages beyond pollination such as comprising a food source for other species in that system. This overall complexity of relationships means that precautionary measures and preventive action should be adopted to avoid potential harm to the integrity of larger ecological systems, and hence, to planetary well-being.

Knowledge about the interactions between and among Earth's geophysical systems, ecosystems, and human-created systems is still very limited (*e.g.*, Mastrángelo *et al.*, 2019). The ontological basis of planetary well-being implies the need for interdisciplinary work to make sense of the connections between different processes that comprise planetary well-being. This also necessitates acknowledging epistemic humility: We humans will likely never be able to know, and thus take into account, all relevant relations and interactions between different species. To avoid too simplistic ontological or epistemic assumptions, it is important to recognize the social dimensions of such knowledge, while asserting the reality of the material dimension of the problems (Bhaskar *et al.*, 2010).

The ontological position taken in planetary well-being challenges traditional dualisms between humans and nature and the assumption that humans' interactions with (the use of) nonhuman entities or materials could be considered in isolation from their ecosystems and processes. Planetary well-being emphasizes that

humans are part of co-evolving systems and participants in multispecies processes in nature, not external to the rest of the natural world (*cf.*, Berkes and Folke, 1998). The processual viewpoint in planetary well-being also highlights the presence of agency throughout nature, as life is intertwined in these processes in myriad ways: Humans are not the active agent using and managing passive nature, but a participant in the webs of actants. However, moral agency—the capacity to think of (and shape) one’s actions with an ethical perspective—and, thus, also the responsibility to act ethically, is specific only to humans. As the technological capacity of humans to use nonhuman world and interfere with its processes has grown, the concept of moral agency has also become more important since human actions can have such huge and far-reaching effects on planetary well-being.

Notably, the ontological basis of planetary well-being described here leaves room for different, more detailed ontological perceptions. For example, it is possible to emphasize the different levels of complexity in the existence of entities. Moreover, questions about how inter-entity relations are constitutive of the entities engaged in such relations, remain open to different characterizations. This, we believe, allows the engagement with planetary well-being from different perspectives and worldviews (see also Chapters 3 and 8).

### The ethical underpinnings of planetary well-being

Planetary well-being is based on certain normative premises, some of which are influenced by the above-described ontology, that constitutes the ethical underpinnings of planetary well-being. By “underpinnings”, we emphasize that such considerations still leave room for the diversity of further ethical elaborations. In our treatment, we adhere to scientific realism about values. Scientific realism

commits one to treating values as socially produced and historically contingent. This does not, however, prevent us from reasoning about values, nor from developing critiques by combining ethical reasoning with a theoretical understanding of the social world and its possibilities.

*(Elder-Vass, 2010b, p. 33)*

Most importantly, planetary well-being transcends human-prioritizing value hierarchies (moral anthropocentrism) for more inclusive and equal valuation. The more inclusive stance is known as moral non-anthropocentrism or more-than-human ethics (*e.g.*, Puig de la Bellacasa, 2017; see also Kohler *et al.*, 2019) and broadens the sphere of moral considerability. Morally considerable entities have a particular moral status and moral (intrinsic or non-instrumental) value regardless of their utility for humans. The value of nonhuman well-being is not derived from its importance to humans (without denying such importance): In the planetary well-being framework, both human and nonhuman well-beings are morally worthy for their own sake.

The basic sphere of moral considerability in planetary well-being grounds moral value in the self-regulative and self-regenerative capacity of living entities, extending moral considerability beyond humans (Kortetmäki *et al.*, 2021, p. 3). This is closely connected to the functional integrity, the well-being, of such entities. Understood this way, well-being as a morally relevant idea also extends beyond individuals. However, since individuals' striving for well-being unavoidably generates continuous conflicts between organisms, and because the organisms are so vast in their number, it would be extremely difficult or even impossible to adequately capture ethical concern for all well-being by paying attention to each individual. Thus, planetary well-being seeks to focus on another level to capture the moral concern for all well-being in a way that is meaningful and applicable to guiding societal development and policy evaluation. To succeed in this, planetary well-being takes a dual standpoint to moral valuation: First, it takes lineages (a group of organisms with a shared genetic ancestry) as the key entities of moral concern, and second, it embraces a multicriterial valuation that is relevant for addressing the diversity in how well-being is manifested in different life forms.

Focusing on lineages (*e.g.*, species and populations) is a theoretically and pragmatically satisfactory way to capture the moral concern for all nonhuman well-being. This is for two reasons. First and foremost, lineages as species possess particularly weighty value. Each species manifests a unique historical continuum and story of evolving life; many lineages have existed for thousands, even millions of years, and many of them will continue to exist far beyond the duration of human communities. However, if a species is driven into extinction by human activities, it is likely lost forever; the irreversibility of the harm and the piece of history lost due to it makes the harm particularly severe (Rolston, 1985). Second, pragmatic reasons also favour the focus on lineages. The status of lineages indicates well the overall state of affairs regarding the possibility of nonhuman entities to satisfy their needs and strive for well-being. Population declines or the increased number of endangered species are signs that some critical processes are failing and compromising planetary well-being (see Chapter 14).

Another ethically focal acknowledgement in planetary well-being, already highlighted, is that both human and nonhuman well-being are valuable for their own sake. The well-being of various humans and nonhumans requires sufficient integrity of Earth system and ecosystem processes (shared preconditions for all well-being) but also the satisfaction of species-specific needs. This implies that planetary well-being is inclusive of multicriterial approaches to moral considerability where the moral status can be grounded in several criteria. The multicriterial approach also has the advantage of being much better equipped to explain some of the carefully considered ethical intuitions that are illustrated by the range of problem cases used to test various moral approaches. For example, single-criterion approaches that attribute moral value only to an entity's characteristic of having a life would not explain why we might have special (additional) duties to the individuals of endangered species (Warren, 2000, pp. 172–173). The use of multiple criteria also

helps distinguish and clarify why we have such different duties to different morally considerable entities: Our duties to fellow human beings are different from our duties to nonhuman individuals, let alone the duties to non-individual entities such as species or populations.

In multicriterial moral valuation, different criteria constitute together the overall sphere of moral considerability, which is comprised of different (overlapping) spheres of morally considerable entities. Different spheres set different demands and limitations to acceptable human behaviour, depending on the features of the systems. Sentience, for example, constitutes one feature-specific sphere of moral considerability. The well-being of sentient creatures sets some additional well-being related requirements because sentience influences the behavioural and physical needs of these beings. Many of those activities that are wrong towards sentient beings (such as industrialized meat production) would not, to our current knowledge, harm non-sentient beings and would therefore be wrong only when practised towards sentient beings. This way, multicriterial valuation is also compatible with the view that we human beings owe some species-specific duties to fellow human beings.

The broadest sphere of moral considerability includes all entities that can have well-being and have self-regenerative capacities. This broadest sphere is relevant for the framing of well-being in contexts that aim to guide overall societal development. Planetary well-being, thus, means a paradigmatic change in how well-being should be framed in such contexts. The inclusive notion of well-being broadens the scope of consideration when the well-being impacts of societal development are to be assessed (or when policy planning and implementation aim to improve the overall well-being or more equal well-being). As a non-anthropocentric notion, planetary well-being requires that a society-guiding conception of well-being is framed in a way that considers nonhuman well-being for its own sake, not only as a factor that influences human well-being. This implies that the possibilities of non-humans to satisfy their needs, now and in the future, must not be undermined when societies strive to increase well-being or promote development that is assumed to increase well-being indirectly.

The needs-based understanding of well-being also highlights the universality of human needs, which has ramifications on the appropriate framing of human well-being in societal contexts. Ramifications concern universality and inclusiveness. Regarding universality, an objective approach to well-being—a conception where well-being is neither defined nor usually measured by subjective experiences but by external criteria—is necessary for considering social contexts and inequalities adequately (e.g., Nussbaum, 2011).<sup>2</sup> Objective approaches have a strong foothold in justice and social policy studies (e.g., Doyal and Gough, 1984; Nussbaum, 2011). Protecting the opportunity of all humans to satisfy their needs and strive for a good life is a condition for minimum social justice (e.g., Nussbaum, 2011). This condition of considering *all* humans is quite demanding: The needs fulfilment of current generations should take the global perspective and must not compromise the possibility of future generations to fulfil their needs (Max-Neef, 1991; the



World Commission on Environment and Development (WCED), 1987). The needs-based understanding of well-being is thereby also more attentive (than subjective accounts) to the situation of disadvantaged human communities and groups. It urges the prioritization of the satisfaction of universal human needs before investing in the fulfilment of desires that stem from the increased standard of living in high-income communities and consumerist marketing processes (see also Chapters 9 and 10), even though such desires might be perceived locally as important to subjective well-being. Overall, an objective approach to well-being provides a tangible set of criteria for conceptualizing well-being for societal development purposes in a more suitable and morally acceptable way than subjective approaches do (e.g., Doyal and Gough, 1984; Kortetmäki *et al.*, 2021; Nussbaum, 2011; Rice, 2013).

The objective approaches to well-being also allow the moral inclusiveness that planetary well-being seeks to promote. Some approaches already extend inclusiveness beyond human well-being and thus provide a compatible platform for further theorizing about the politics of planetary well-being. They have addressed the well-being of nonhuman animals (e.g., Broom, 1991; Nussbaum, 2011), other organisms, and even species and ecosystems (Kortetmäki, 2017; Schlosberg, 2007; see also Prescott-Allen, 2001). Adopting the non-anthropocentric, inclusive framing of well-being to guide societal development makes a big difference for the consideration of legitimate and illegitimate societal actions, policies, and development trajectories. It renders the nonhuman world from a background resource and service provider into an ensemble of active recipients, beneficiaries, and sufferers, of societal development. The relevant community affected by societal development and policies always includes the biotic community (Dryzek and Pickering, 2018).

### *Planetary well-being and moral duties*

Assigning at least some moral value to well-being for its own sake means that moral duties related to well-being arise in relation to any entities that may gain or lose well-being. Such duties, however, are not identical towards all morally considerable entities. Negative duties, or duties to avoid causing harm, comprise the cornerstone of environmental ethical duties to nonhuman nature. Because planetary well-being comprises processes whose functioning is the general precondition for the well-being of morally considerable entities, the primary duty for planetary well-being would be the negative duty to avoid impairing those processes. However, the impairments already caused—and the consequent harm to nonhuman and human well-being at all levels—suggest that positive duties to restore the prospects of nonhumans to strive for well-being can be justifiably demanded. We see this kind of positive duty, or a duty to actively promote good, as crucial. The moral obligation to aim at restoring the impaired Earth and ecosystem processes is an important ethical implication of the idea of planetary well-being.

May positive duties also imply duties to advance planetary well-being even in situations where the impairment is not human-originated? The quick answer



intuitively appears to be “no”: Humans are unlikely to have duties to compensate the impacts of volcanic eruptions to nonhuman species. However, the actual question is more complex since it is increasingly hard to tell whether the negative impacts from “nonhuman activities” are exacerbated by human activities. For example, volcanic eruptions might today induce greater harm to nonhuman well-being because the human-induced habitat degradation prevents nonhumans from migrating to new places from areas damaged by the eruption. Addressing the question of positive duties beyond restoration goes, in its complexity, beyond this chapter’s scope. Here it can be noted that even for now, the positive duty to restore processes that comprise planetary well-being but have been degraded by human activities is so significant that taking it seriously implies transformative changes to human activities.

When it comes to duties to individuals, the planetary well-being framework goes beyond individualistic approaches in its framing of moral considerability. This does not need to render the well-being of individuals unmeaningful or valueless. Both individuals and entities beyond individuals, such as species or ecosystems, are acknowledged to be morally considerable. Yet, the duties for planetary well-being must be imposed on levels higher than the individual to make the obligations feasible. The ethical framework that underpins planetary well-being allows the integration of various approaches with the attribution of moral considerability (also inherent value) in environmental ethics. Yet, the requirements set by planetary well-being limit the range for the approaches that planetary well-being embracing pluralism can accommodate. Moral obligations to individuals, whatever they comprise (depending on the chosen ethical approach), must not require actions that would cause societies to undermine planetary well-being.

### ***Mapping planetary well-being in environmental ethics***

How is the normative core commitment of planetary well-being positioned within environmental ethics? Inclusive approaches that grant moral considerability to nonhumans comprise three stances where moral considerability is grounded in different attributes (*e.g.*, Goodpaster, 1978; Schweitzer, 1969; Taylor, 1981; for a good summary, see Warren, 2000): sentientism, biocentrism, and ecocentrism. Sentientism (*e.g.*, Nussbaum, 2011; Singer, 2002) only considers sentient animals. Biocentrism grants moral considerability to individual organisms that act as teleological systems so that something can be good or bad for them.<sup>3</sup> It has also been proposed that biocentric moral considerability is grounded in the state of being alive as the ultimate goal or good, for which all other goals are instrumental. Ecocentrism, in turn, emphasizes the stability and integrity of ecosystems and/or ecological entities (such as lineages) more broadly but essentially beyond individuals who are not of primary concern in ecocentric approaches (Callicott, 1986; Leopold, 1949; Naess, 2008). The most-cited articulation of an ecocentric viewpoint is Leopold’s (1949, pp. 224–225) land ethic thesis: “A thing is right when it tends to preserve

the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”

Ecological dynamics entail that individuals’ striving for well-being creates constant conflicts. Thus, even if an individual’s well-being is valuable for its own sake, we align planetary well-being in the camp of approaches which posit that individualist non-anthropocentrism cannot meaningfully ground normative guidance for societal development. Despite works that attempt to resolve these conflicts in different ways by, for example, determining certain simple rules (such as choosing the action with the least number of harmed individuals) or principles for making prioritizations for certain goods to be protected or harms to be avoided (*e.g.*, Taylor, 1981; Wienhues, 2017), there is an overwhelming number of conflicting demands. Attempts to include and navigate all the claims between different kinds of individuals, let alone the claims between ecosystem-, species-, and organism-levels, have been heavily criticized as prone to fail (*e.g.*, Cripps, 2010). We agree with the criticism that creating a conflict-generating approach is unlikely to successfully guide societal action: It is important to find a way to consider all well-being without considering all possible claims at all levels. More-than-individualistic environmental ethics, such as ecocentrism, usually ground moral considerability in the self-regulative and self-regenerative capacities of living entities (*e.g.* Kortetmäki, 2017; Rolston, 2002; Schlosberg, 2007) and planetary well-being aligns well with them.

There is also another reason why planetary well-being must reach beyond individualistic ethics: The moral considerability of non-individual entities is not reducible to individuals. We agree with Callicott (1986) and Rolston (1985) that the loss of a species due to human action is morally reprehensible for its own sake and not just due to the suffering it causes to individual beings. The extinction of lineages are exceptionally grave and morally reprehensible losses because of the timeframe of evolutionary history that reaches up to millions of years to the past and could have reached equal periods in the future without human interruption. Thus, planetary well-being aligns with those normative views where the survival of lineages is an end in itself (Naess, 1989, 2008; Rolston, 1985). This is a huge issue since the currently estimated number of species under risk of extinction due to human-originating interference is around 1 million (based on a rough but informed extrapolation, IPBES, 2019).

Amongst the established environmental ethics approaches, deep ecology is the most resemblant to planetary well-being. Deep ecology is grounded in a relational and holistic approach and considers human and nonhuman flourishing as morally valuable for their own sake. This implies that “[h]umans have no right to reduce this [nonhuman] richness and diversity except to satisfy vital needs” (Naess, 1989, p. 29; “vital needs” remains a vague notion but is not restricted to biological survival needs). Planetary well-being differs from deep ecology by paying more attention to socio-ecological systems, relations, and processes. This is in line with socio-ecological sustainability and transformations research, thereby providing a more elaborate basis for the examination of societal development and

for creating non-anthropocentric framings of sustainable development (see United Nations (UN), 2015; WCED, 1987 for the recent and original framings). Second, planetary well-being gives a more process-oriented definition for the limits of permissible harm by focusing on process integrity. This might also imply differences between deep ecology and planetary well-being approaches in the permissibility of some actions deep ecology and planetary well-being find morally permissible, but an examination of them is beyond the scope of this chapter. It must be, however, emphasized that planetary well-being is meant to complement, not to replace social ethics that further guides the promotion of equal well-being among humans and the organization of human societies.

Since planetary well-being addresses large-scale processes (see section Introduction in this chapter), it may become confused with the planetary boundaries framework that is also systemic and process-oriented. The planetary boundaries framework was introduced (Rockström *et al.*, 2009) as a framework to help maintain the Holocene, the stable environmental conditions on Earth. The essential difference between planetary boundaries and planetary well-being is both epistemic and normative. Planetary boundaries are measurable thresholds, the crossing of which could lead to irreversible changes and unstable environmental conditions, threatening safe human existence. It highlights the importance of avoiding the crossing of “tipping points” (and thus staying within stricter boundaries of safe action) that could lead to the abrupt changes or collapse of crucial processes. In contrast, planetary well-being focuses on functional integrity. These thresholds differ greatly: Consider, analogously, the difference between avoiding the crossing of a human individual’s tipping point (physical or psychological collapse) vs. securing their functional integrity (well-being). Protecting one’s functional integrity requires more than simply avoiding the crossing of a safety boundary; admittedly, however, the state of integrity is also fuzzy. Moreover, planetary boundaries are defined with reference to human safety: The framework is thus explicitly anthropocentric in normative terms. This also shows in the status of biodiversity loss rate as just one of the safety boundaries. In the planetary boundaries framework, extinctions are not a concern *per se* but due to their impacts on the safe existence of humans and stability of the Holocene. Planetary well-being sets more demanding limits for permissible activities: Increasing the risk of extinctions is a concern as such, and some disruptions that are insignificant for planetary boundaries can be very significant for planetary well-being.

Finally, one central ethical aspect of planetary well-being is the shift of attention from actual well-being outcomes to the *opportunities* to achieve well-being, to avoid paralysis in front of unavoidable conflicts between individuals in their realization of well-being. Planetary well-being focuses on factors that are constitutive of the opportunity of almost any living entity to achieve well-being. In its focus on the opportunities to achieve well-being, the ethical grounding of planetary well-being resembles the influential capabilities approach to justice and development (Nussbaum, 2011; Nussbaum and Sen, 1993). The capabilities approach focuses on

evaluating the capabilities of humans—what they can do and be in terms of striving for a dignified and worthy life—rather than the actual outcomes of each individual or their perception of well-being. Although the initial capabilities approach was limited to humans, social justice literature expanded it to sentient animals (Nussbaum, 2006) and ecological justice literature even to ecosystems and species, asking whether such entities are able to maintain their functional integrity and what impediments to that goal human activities are causing (e.g., Kortetmäki, 2017; Schlosberg, 2007).

### *Ethics of moderate and severe scarcity*

Opportunities for achieving well-being depend on numerous goods. Many of them are scarce in one way or another. This very fact of scarcity has, in the first place, given rise to various theories of justice that aim to define (among other things) appropriate criteria for the just distribution of goods. However, almost all approaches to justice—even those that speak about justice for nature—assume that scarcity is only *moderate* and that there are enough goods to provide everyone what they need (Wienhues, 2020). However, the present world manifests significant or severe scarcity for many nonhumans (*ibid.*): They barely survive or even face extirpation as populations or extinction as species. The basic moral imperative of planetary well-being is to strive towards circumstances where Earth and ecosystem processes function so well that nonhuman entities have the opportunity to achieve well-being. This is to be pursued alongside the production of greater equality of well-being among human beings.

Of course, one thing needing clarification is whether the scarcity concerns all potential need satisfiers that could satisfy the species-specific needs of humans, or whether it is caused by unbearably burdensome/consuming need satisfiers. Severe scarcity would urge promoting the availability of the least harmful need satisfiers that can provide well-being to humans and the rejection of the more harmful ones. The prospects for planetary well-being would then be maximized by shifting to the least burdensome human need satisfiers. For example, standards for adequate housing, the availability of fuelled traffic vehicles and the composition of adequate diets differ greatly in their impacts on planetary well-being. But what if scarcity is too severe for combining such goals: What if the needs of all humans cannot be satisfied due to scarcity, or what if satisfying all human needs necessarily hampers the prospects of nonhumans to achieve well-being?

Speaking of equality remains relevant also with relation to well-being and to “survival” (existence deprived of well-being). Insofar as there are enough goods to support survival, there are still prospects to reach “back” to well-being later. This happens, for example, when human communities face acute catastrophes but get over them and recover. Below the threshold of survival, however, speaking of equal distribution becomes meaningless. If a ship is sinking and there are life jackets only for half of the passengers, cutting life jackets in half (if the half-jacket does not

increase the likelihood of survival) for equality would not make sense: Everyone would die. To avoid tragedies that are analogous to this metaphor, realizing the need for urgent transformations and communicating this urgency in action-encouraging ways is crucially important. From the viewpoint of survival, helping species stay existent until their prospects to be well are secured again is a meaningful goal.

Planetary well-being can provide a hopeful vision also for the ethics of scarcity by suggesting a focus on thinking about the preconditions of well-being, which constitutes a broadly embraced value and thus a common overarching vision across times and even groups of deep differences (Rogers *et al.*, 2012). The above-described considerations of just distribution do, however, also raise unavoidably questions about human population size in the long term. What share of goods are we, as one species, entitled to use on the planet whose goods we share with millions of other species?

### **Planetary well-being as a bridging concept**

The relational notions underpinning the concept of planetary well-being acknowledge the importance of fundamental, life supporting processes and relationships for the survival and well-being of both humans and nonhumans. By overcoming human—nature dualisms, these relational notions resonate with both Western and non-Western considerations that take into account traditional knowledge, Indigenous views, and diverse forms of experience (Muraca, 2011) and may facilitate understanding of the diverse ways human societies relate to and interact with non-human nature (Köhler *et al.*, 2019). The critique of Enlightenment-based Cartesian, Eurocentric, and anthropocentric humanism has generated calls for the recognition of pluralism in, for example, biodiversity conservation (Cortés-Capano *et al.*, 2022). Planetary well-being as a framework might resonate with the plurality of ethical-theoretical approaches such as feminist, gender, and queer studies; postcolonial, indigenous, and critical race studies; human—animal studies, new materialism, and posthumanism; virtue ethics, and ethics of care. In the case of planetary well-being, the framing of well-being around the idea of needs and combining the consideration of human and nonhuman needs (non-anthropocentrism) could support the identification of boundaries against unlimited desires and wants driving the crisis, and for finding ways forward to foster just sustainability transformations.

### **Conclusion: The imperative for planetary well-being**

Planetary well-being addresses the need for a morally inclusive and systemic conceptualization of well-being that considers the multiple levels of interaction between the different living systems and the processes they co-create and co-maintain. Planetary well-being acknowledges the value of both human and nonhuman well-being for their own sake: The moral right for both humans and nonhumans to exist, to have their needs satisfied, and to realize their typical characteristics and capacities.

The satisfaction of the needs of various entities creates both synergies and conflicts. Hence, the concept transcends the level of individual organisms and focuses on the integrity of Earth system and ecosystem processes underlying the well-being of all forms of life.

As a concept, planetary well-being facilitates scientific, political, and ethical discussions by using the same vocabulary to address the impacts of human activities on both human and nonhuman well-beings. Of course, one concept alone cannot do the work. Transdisciplinary collaboration is needed to understand how planetary well-being can help humans, both as individuals and in their collective efforts, in transforming worldviews, values, and assumptions towards a direction that promotes sustainable well-being for all. It is crucial to analyze the prevalent societal structures and power relations in terms of how they maintain or prevent striving towards planetary well-being and the equal prospects of different species and human communities to achieve it.

Planetary well-being calls for transformative changes in how we think and discuss well-being, deliberate and create policies for well-being, and how the various inhabitants of the planet are incorporated and valued in these discussions. In the common framings of sustainable development, the minimum threshold for “sustainability” is that to be sustainable, human activities must retain the opportunity of present and future human generations to satisfy their needs. In contrast, planetary well-being implies that human activities, to be sustainable, must retain the opportunity of all types of living entities on Earth to satisfy their needs now and in the future. Planetary well-being makes a difference to how we think about sustainability and well-being.

Planetary well-being does not require compromising human well-being but urges finding other ways to achieve it than those which currently dominate in high-consumption societies. Various human need satisfiers differ greatly in their impacts on planetary well-being: This calls for studying how the processes of production and consumption influence the satisfaction of universal human needs (Gough, 2017) *and* planetary well-being. The central question is: How to organize human systems to simultaneously allow meeting human needs while retaining Earth and ecosystem process integrity so that both humans and nonhumans—with particular attention to those who now are unable to achieve well-being—have the opportunity to strive for well-being, now and in the future?

## Notes

- 1 Scientific materialism, or philosophical materialism, refers to ontological thinking where “the real world is composed exclusively of material things”; scientific realism refers here to the epistemic view where scientific knowledge can—and attempts to—represent reality (Bunge, 1981). Such views can be embraced in varying degrees and planetary well-being does not involve commitment to the “pure” stances of these views. Instead, the conceptualization of planetary well-being resonates more closely with many ideas presented in the new materialism that “is cross-fertilized by both the human and natural sciences” and emphasizes the processual nature and the self-organizing capacities of matter (*e.g.*, Yi Sencindiver, 2017).



- 2 For example, long oppression might lead humans to internalize their “inferior” status in which case the oppression is not reflected in subjective reports about experienced well-being. Long privileged status, in turn, might lead humans to internalize their well-off status so that even minor impairment in, let us say, access to luxury goods might be reflected strongly in subjective reports about experienced well-being. Thus, the subjective experiences of privileged groups get easily overemphasized in subjective reports about well-being.
- 3 Those things that are good for an entity are also often called its interests. Having interests does not require mental awareness of those interests; human infants also demonstrate this case (Taylor, 1986).

## References

- Banitz, T. *et al.* (2022) ‘Visualization of causation in social-ecological systems’, *Ecology and Society*, 27(1), p. 31. <https://doi.org/10.5751/ES-13030-270131>
- Berkes, F. and Folke, C. (1998) *Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience*. New York: Cambridge University Press.
- Bhaskar, R. *et al.* (eds.) (2010) *Interdisciplinarity and Climate Change: Transforming Knowledge and Practice*. Abingdon: Routledge.
- Broom, D.M. (1991) ‘Animal welfare: Concepts and measurement’, *Journal of Animal Science*, 69, pp. 4167–4175. <https://doi.org/10.2527/1991.69104167X>
- Bunge, M. (1981) *Scientific Materialism*. Dordrecht: R. Reidel Publishing Company.
- Bunge, M. (2000) ‘Systemism: The alternative to individualism and holism’, *The Journal of Socio-Economics*, 29, pp. 147–157. [https://doi.org/10.1016/S1053-5357\(00\)00058-5](https://doi.org/10.1016/S1053-5357(00)00058-5)
- Callicott, J.B. (1986) ‘On the intrinsic value of nonhuman species’, in Norton, B.G. (ed.) *The Preservation of Species*. Princeton, NJ: Princeton University Press, pp. 138–172. <https://doi.org/10.1515/9781400857869>
- Cortés-Capano, G. *et al.* (2022) ‘Ethics in biodiversity conservation: The meaning and importance of pluralism’, *Biological Conservation*, 275, 109759. <https://doi.org/10.1016/j.biocon.2022.109759>
- Cripps, E. (2010) ‘Saving the polar bear, saving the world: Can the capabilities approach do justice to humans, animals and ecosystems?’, *Res Publica*, 16, pp. 1–22. <https://doi.org/10.1007/s11158-010-9106-2>
- DeLanda, M. (2016) *Assemblage Theory*. Edinburgh: Edinburgh University Press.
- Doyal, L. and Gough, I. (1984) ‘A theory of human needs’, *Critical Social Policy*, 4, pp. 6–38. <https://doi.org/10.1177/026101838400401002>
- Dryzek, J.S. and Pickering, J. (2018) *The Politics of the Anthropocene*. Oxford: Oxford University Press. <https://doi.org/10.1093/oso/9780198809616.001.0001>
- Elder-Vass, D. (2010a) *The Causal Power of Social Structures: Emergence, Structure and Agency*. Cambridge: Cambridge University Press.
- Elder-Vass, D. (2010b) ‘Realist critique without ethical naturalism and moral realism’, *Journal of Critical Realism*, 9, pp. 33–58. <https://doi.org/10.1558/jcr.v9i1.33>
- Folke, C. *et al.* (2016) ‘Social-ecological resilience and biosphere-based sustainability science’, *Ecology and Society*, 21(3), p. 41. <https://doi.org/10.5751/ES-08748-210341>
- Goodpaster, K.E. (1978) ‘On being morally considerable’, *Journal of Philosophy*, 75(6), pp. 308–325. <https://doi.org/10.2307/2025709>
- Gough, I. (2017) ‘Recomposing consumption: Defining necessities for sustainable and equitable well-being’, *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 375, 20160379. <https://doi.org/10.1098/rsta.2016.0379>



- IPBES (2019) *Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. Zenedo. <https://doi.org/10.5281/zenodo.3553579>
- Kohler, F. et al. (2019) 'Embracing diverse worldviews to share planet Earth', *Conservation Biology*, 33(5), pp. 1014–1022. <https://doi.org/10.1111/cobi.13304>
- Köhler, J. et al. (2019) 'An agenda for sustainability transitions research: State of the art and future directions', *Environmental Innovation and Societal Transitions*, 31, pp. 1–32. <https://doi.org/10.1016/j.eist.2019.01.004>
- Kortetmäki, T. (2017) 'Applying the capabilities approach to ecosystems: Resilience as ecosystem capability', *Environmental Ethics*, 39, pp. 39–56. <https://doi.org/10.5840/ENVIROETHICS20179263>
- Kortetmäki, T. et al. (2021) 'Planetary well-being', *Humanities and Social Sciences Communications*, 8, p. 258. <https://doi.org/10.1057/s41599-021-00899-3>
- Leopold, A. (1949) *A Sand County Almanac, and Sketches Here and There*. Oxford: Oxford University Press.
- Levin, S. et al. (2013) 'Social-ecological systems as complex adaptive systems: Modeling and policy implications', *Environment and Development Economics*, 18, pp. 111–132. <https://doi.org/10.1017/S1355770X12000460>
- Mastrángelo, M.E. et al. (2019) 'Key knowledge gaps to achieve global sustainability goals', *Nature Sustainability*, 2, pp. 1115–1121. <https://doi.org/10.1038/s41893-019-0412-1>
- Max-Neef, M.A. (1991) *Human Scale Development: Conception, Application and Further Reflections*. New York: The Apex Press.
- Muraca, B. (2011) 'The map of moral significance: A new axiological matrix for environmental ethics', *Environmental Values*, 20, pp. 375–396. <https://doi.org/10.3197/096327111X13077055166063>
- Naess, A. (1989) *Ecology, Community and Lifestyle: Outline of an Ecosophy*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511525599>
- Naess, A. (2008) in Devall B. and Drengson, A. (eds.) *Ecology of Wisdom: Writings by Arne Naess*. New York: Counterpoint.
- Nussbaum, M.C. (2006) *Frontiers of Justice: Disability, Nationality, Species Membership*. Cambridge, MA: Harvard University Press.
- Nussbaum, M.C. (2011) *Creating Capabilities: The Human Development Approach*. Cambridge, MA: Harvard University Press.
- Nussbaum, M.C. and Sen, A. (eds.) (1993) *The Quality of Life*. Oxford: Clarendon Press.
- Prescott-Allen, R. (2001) *The Wellbeing of Nations*. Washington, DC: Island Press.
- Puig de la Bellacasa, M. (2017) *Matters of Care: Speculative Ethics in More Than Human Worlds*. Minneapolis: University of Minnesota Press.
- Rice, C.M. (2013) 'Defending the objective list theory of well-being', *Ratio*, 26, pp. 196–211. <https://doi.org/10.1111/rati.12007>
- Rockström, J. et al. (2009) 'A safe operation space for humanity', *Nature*, 461, pp. 472–475.
- Rogers, D.S. et al. (2012) 'A vision for human well-being: Transition to social sustainability', *Current Opinion in Environmental Sustainability*, 4, pp. 61–73. <https://doi.org/10.1016/j.cosust.2012.01.013>

- Rolston, H.I. (1985) 'Duties to endangered species', *BioScience*, 35, pp. 718–726. <https://doi.org/10.2307/1310053>
- Rolston, H.I. (2002) 'What do we mean by the intrinsic value and integrity of plants and animals', in *Genetic Engineering and the Intrinsic Value and Integrity of Plants and Animals* [workshop]. Edinburg: Royal Botanic Garden, pp. 18–21 September. Available at: <https://mountainscholar.org/bitstream/handle/10217/39371/Ifgene-updated.pdf> (Accessed: 14 January 2023).
- Schlosberg, D. (2007) *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford: Oxford University Press. <https://doi.org/10.1093/ACPROF/OSO/9780199286294.001.0001>
- Schweitzer, A. (1969) *Reverence for Life*. New York: Harper & Row.
- Singer, P. (2002) *Animal Liberation*. 1st Ecco paperback ed. New York: Ecco.
- Taylor, P.W. (1981) 'The ethics of respect for nature', *Environmental Ethics*, 3, pp. 197–218. <https://doi.org/10.5840/ENVIROETHICS19813321>
- Taylor, P.W. (1986) *Respect for Nature: A Theory of Environmental Ethics*. Princeton, NJ: Princeton University Press. <https://doi.org/10.2307/j.ctt7sk1j>
- UN (2015) *Transforming Our World: The 2030 Agenda for Sustainable Development*. A/RES/70/1. Geneva: United Nations General Assembly. Available at: <https://sdgs.un.org/2030agenda> (Accessed: 14 January 2023).
- Warren, M.A. (2000) *Moral Status: Obligations to Persons and Other Living Things*. Oxford: Clarendon Press.
- WCED (1987) *Our Common Future [Brundtland Report]*. A/42/427. Geneva: United Nations General Assembly. Available at: <https://digitallibrary.un.org/record/139811?ln=en> (Accessed: 14 January 2023).
- Wienhues, A. (2017) 'Sharing the earth: A biocentric account of ecological justice', *Journal of Agricultural and Environmental Ethics*, 30(3), pp. 367–385. <https://doi.org/10.1007/S10806-017-9672-9>
- Wienhues, A. (2020) *Ecological Justice and the Extinction Crisis: Giving Living Beings their Due*. Bristol: Bristol University Press. <https://doi.org/10.46692/9781529208528>
- Yi Sencindiver, S. (2017) 'New materialism', *Oxford Bibliographies Online in Literary and Critical Theory*. <https://doi.org/10.1093/OBO/9780190221911-0016>