

Contents lists available at [ScienceDirect](#)

Earth System Governance

journal homepage: www.journals.elsevier.com/earth-system-governance

Research article

Planetary justice: What can we learn from ethics and political philosophy?

Colin Hickey^{*}, Ingrid Robeyns

Utrecht University, Janskerkhof 13, 3512 BL, Utrecht, the Netherlands

ARTICLE INFO

Article history:

Received 27 June 2019

Received in revised form

20 February 2020

Accepted 21 February 2020

Available online 16 March 2020

Keywords:

Planetary justice

Climate justice

Environmental justice

Global justice

Animal rights

Intergenerational justice

Political philosophy

Ethics

ABSTRACT

In this paper, we attempt to contribute to understanding the concept of 'planetary justice.' Rather than advancing a specific philosophical vision, we attempt to illuminate the theoretical landscape by highlighting a range of distinctions, decision-points, and stakes that are at play in navigating issues of planetary justice. We consider the range of reasons and values that matter for planetary justice, including those related to humans, non-human animals, and non-sentient nature, and complicate this backdrop with another set of distinctions and decision points one must grapple with in order to come to any substantive position or recommend any action on the basis of planetary justice. After surveying some of the leading contemporary approaches to justice to see how they interface with the challenges posed by the concept of planetary justice, we end by distilling why all of this matters for scholars engaged in Earth System Governance research.

© 2020 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Justice is an essentially contested concept, that is, a concept of which the proper use will be the subject of inevitable and unsolvable debates among its users (Gallie, 1995). In other words, agreement on some precise and settled meaning of the concept is not forthcoming. It should come as no surprise, then, that the very idea of something such as 'planetary justice' would also be unsettled terrain. While a consensus account for what planetary justice consists in is unlikely, it isn't the case that just anything goes, and some arguments and positions are more defensible than others. As scholars involved in Earth System Governance (ESG) research increasingly engage in matters of justice at the planetary scale, some theoretical clarity would be well worth seeking. Otherwise we run the risk that Earth System Governance scholars, and indeed others too, will be using the same term ('planetary justice') while having quite divergent, and perhaps even conflicting meanings of that term in mind. This is especially true as the new ESG Science and Implementation Plan includes a new theme on 'justice and allocation' and indicates further expansion of the project's interests

in working on justice issues (Burch, 2019).

Since the term 'planetary justice' is not an established term, we first need to explain what we are aiming for. If one searches in the scholarly literature across all disciplines, one finds a few very scattered references to 'planetary justice', which are mainly referring to the same ideal as what has become known in contemporary political philosophy as 'global justice' or 'cosmopolitan justice'. However, we are interested in the use of this term in a specific context, and that is in the recent use of the term 'planetary justice' as a combination of both social justice as well as environmental and ecological justice, developed in a way that takes the conditions of the Anthropocene into account.¹ In particular, in 2018 the Earth System Governance Project has set up

¹ The Anthropocene is meant to mark a new geological epoch that reflects the profound impact of humans on the Earth. To further clarify, social justice is meant here to capture justice in the wide array of social relations between persons, from cultural to political to economic relations. While obviously interconnected, it is often discussed, even when pitched under the heading of 'global justice' at a distance from humans' relations to other species, ecosystems, or the environment, which environmental or ecological justice foreground (perhaps unsurprisingly environmental justice often tends to do a better job at accounting for social justice concerns than the literature on social justice tends to do with environmental justice concerns).

^{*} Corresponding author.

E-mail addresses: c.j.hickey@uu.nl (C. Hickey), i.a.m.robeyns@uu.nl (I. Robeyns).

a task force on planetary justice, and Ruben Zondervan, the ESGP's Executive Director, mentioned planetary justice as "an emerging issue" and as a principle underlying the Sustainable Development Goals (SDGs), which the research agenda of the ESGP should include (Zondervan, 2018). Outside these agenda-setting documents and articles, there are two other texts in which 'planetary justice' has been used. Peter Singer (2009), writing about "the greatest moral challenge" of our time, used the term 'planetary justice', but was effectively referring to climate justice only. The account of 'planetary justice' by Dryzek and Pickering (2019: 58–81) is much more elaborate. They argue that conditions in the Anthropocene require that we extend traditional Holocene thinking to make sure justice reaches beyond national borders, that it reaches across generations, and that it includes justice for non-humans. Put in the language of theorizing about justice, in order to develop a solid account of 'planetary justice', we must bring the accounts and literatures on environmental justice, climate justice, global justice, intergenerational justice, social justice, and justice for non-humans together. What we aim to do in this paper, is not to defend a specific normative view of what the most defensible synthesis of these various forms of justice into 'planetary justice' would amount to, but rather to detail and discuss the normative choices that anyone choosing to work with the term 'planetary justice' must make. We will do that by providing a guide to the available literature in political philosophy and ethics. Hence, we see our paper as complementary to the account that Dryzek and Pickering provide, as the analysis we present in this paper is contributing to the same overall project of advancing our understanding of the term 'planetary justice.' All of the papers helpfully assembled in this special issue of *Earth System Governance* share the broader goal of expanding our understanding of the concept of planetary justice. These contributions come from a variety of perspectives and disciplines - and our contribution in this paper comes from political philosophy and ethics.

We don't mean to suggest that the work we include under the heading of planetary justice couldn't, in principle, be done without using the term—for instance, in the global justice literature. However, if one is going to embrace the term, as is increasingly common in the ESG community, the questions and considerations we raise from disparate literatures need to be addressed. Moreover, there is value in bringing these issues together under a single heading, given the extent to which scholars in global justice (for example, which is the nearest literature with rival claim to capture the substance of 'planetary justice') tend to forego or underemphasize questions about animals, ecosystems, and the environment more generally. 'Planetary justice' may therefore be a term that also forces scholars working on or embracing 'global justice' to become less anthropocentric. It could also bring scholars working on poverty in developing countries and scholars working on environmental and ecological sustainability together.

In this paper, we would like to select and discuss relevant knowledge from political philosophy and ethics, to help advance this agenda, by spelling out what we could possibly understand under 'planetary justice'. However, we will not advance a specific philosophical vision, approach, or theory to the concept of planetary justice. What we hope to do instead, however, is illuminate the theoretical landscape by highlighting a range of distinctions, decision-points, and stakes that are at play in considering issues of planetary justice, so as to facilitate more careful and critical engagement with the notion. We hope that this paper also helps scholars in ESG who are not trained as philosophers to more easily navigate the philosophical literature.

It is important to also be clear about what this paper does not

do. We do not address the notion of 'justice' from a legal perspective, which would require another paper. Moreover, as we note in section 3, what justice requires *morally* is not always what legal justice requires: hence the moral question logically *precedes* the legal question - in other words, a legal approach to justice supervenes on the moral analysis. We therefore believe that an in-depth discussion of the moral and conceptual questions at stake are important, which is what this paper focuses on. Second, we will mainly focus on substantive accounts of justice, which allow us to judge whether a certain situation or policy is leading to more or less justice. There are other dimensions of justice, most importantly procedural justice, and issues that are relevant to taking questions of justice into practice, such as questions of the agents of justice and of power, that we will also not discuss. Without doubt, as other authors have made clear, these issues *are* important (e.g. Schlossberg, 2007, 2013), and hence the fact that they are not the focus of this paper should in no way be taken as an implicit statement on their importance or relevance. Finally, we will not be discussing empirical approaches to justice, in which the focus is on what people consider just or unjust situations or policies (e.g. Pasgaard and Dawson, 2019). People's views on justice are often partly informed by (or could be challenged by) insights from theoretical work on justice, whether or not mediated through more applied debates in public that make those abstract ideas more easily accessible. Hence, while they certainly are more abstract and theoretical, the ideas and theories that we will be discussing in this paper could help in inspiring and theoretically supporting applied and empirical analysis related to planetary justice. Indeed, one of the conclusions of the paper by Elizabeth Dirth, Frank Biermann and Agni Kalfagianni (2020) in this special issue is that empirical social science research on planetary justice should engage more with political philosophy. We hope that our paper will make that task easier.

To that end, at the most general level, in the second section of the paper we consider three domains of reasons and values that are at stake in considering matters of planetary justice. These include both human and non-human animal interests, as well as any potential interests or values associated with non-sentient nature.

Against this backdrop of possible stakeholders for any investigation into planetary justice, in the third section, we overlay another array of distinctions to further complicate the range of normative and theoretical choices facing scholars engaged in issues of planetary justice. These further distinctions relate to which stakeholders matter, as well as how and why they matter in the way they do.

Once we have a sense of the complicated range of choices facing those seeking to understand or deploy concepts of planetary justice, in the fourth section we briefly survey some of the leading contemporary approaches to justice writ-large in the political philosophy literature. In particular, we look to the human rights tradition and the distributive justice tradition in order to see how some of the best developed strands of thought stack up to the challenges posed by the concept of planetary justice.

In the fifth and penultimate section, we distil the reasons why getting clear on all of these distinctions matters for scholars engaged in Earth System Governance research and neighboring fields. The implications for coming down in different ways are potentially significant, and the arguments in various directions are substantial, which together recommend careful deliberation about one's claims and commitments when engaging in matters of planetary justice.

We end the paper by raising some additional philosophical questions for researchers to think about carefully as they move forward into more robust arguments and claims about planetary justice.

2. Domains of reasons and values at stake

At the outset of any conceptualization of planetary justice one must come to terms with the range of potential values that are at stake and the kind of reasons that could be put to use in arguments about the demands of planetary justice. At the most general level we can help clarify the conceptual space by distinguishing between three main domains where considerations of planetary justice are at play, as well as the values and reasons that attach to them. Any approach to planetary justice must contend with the balance of human interests, non-human animal interests, and whatever values or reasons exist regarding non-sentient nature itself, like trees, plants, and forests.

Humans. In the first place, and most familiar, planetary justice surely must encompass a range of interests and rights of human beings. Purported claims about planetary justice that didn't include humans, or which sanction widespread human rights violations, inequalities, or domination are non-starters. Naturally, it is a matter of debate what human interests or rights are to be protected as a matter of justice (e.g., what subsistence rights, which civil/political rights, etc.). Such debates are, of course, well-rehearsed and not unique to the planetary stage, but they are significant decisions and commitments that would shape one's vision of the demands of planetary justice. For instance, in political philosophy, there has been a lively debate about whether or not duties of justice extend beyond national borders. It would seem that an account of planetary justice would be positioned sympathetically with so-called cosmopolitan accounts of justice, in thinking that *all* humans are to be included under the domain of planetary justice. As another example, if one maintains that realizing the SDGs would be sufficient for planetary justice regarding humans, one may be satisfied with an outcome which still allows for many inequalities that would be condemned by other ethical frameworks, such as a more demanding theory of egalitarian justice.

Non-human Animals. In addition to the range of human interests and rights that need to be accounted for in any discussion of planetary justice, any plausible account must also contend with a potentially extensive second domain of interests and rights; those of non-human animals. There are, again, significant debates how to think about non-human animal interests and their implications for behavior and policy. We might wonder which interests, if any of them, generate or warrant moral rights protections?² (Singer, 1975; Regan, 1983; Korsgaard, 2018; Kagan, 2019; Francione and Garner, 2010; Varner, 1998; Donaldson and Kymlicka, 2011). Or are non-human animal rights generated via other mechanisms? Moreover, what do any such rights entail, e.g., what freedoms and opportunities for flourishing are they entitled to? Here, again, we see that the choices that are made matter. The status one affords to non-human animal interests has the potential to dramatically shift what may be required to realize planetary justice. For example, if we hold the view that non-human animals have certain rights to live well and flourish, then this may entail that we need to allocate large areas of forests of other natural habitat for meeting their needs to flourish, which we then cannot use for our own purposes. Similarly, if we hold the view that killing animals for human consumption is wrong, then this would impose a duty on humans to not eat animals. In general, we need to come to terms with what are

permissible and impermissible forms of use and interaction with non-human animals. What constitutes objectionable domination? (Blattner et al., 2019) What forms of intervention are required to protect non-human animal interests? Such issues, central to the philosophical literature on 'animal ethics,' thus should be part and parcel of our thinking on planetary justice. Some philosophers and legal scholars have earlier argued that non-human animals should be included in the scope of social justice and environmental justice (Donaldson and Kymlicka, 2011; Nussbaum, 2006; Schlosberg, 2013; Berkey, 2017; Pepper, 2016, 2019; Schlottmann and Sebo, 2018; Nussbaum Wichert and Nussbaum, 2017; Blattner, 2019). Hence our account of planetary justice needs to engage with those arguments.

Non-Sentient Nature. Third, and finally, the language of 'planetary' justice suggests an even more extensive push than stopping with non-human animals. It invites, perhaps requires, debates about the moral status of non-sentient nature. Are there ethically defensible arguments to be made that plants, forests, mountains, rivers, oceans, or the like, themselves deserve protection as a matter of justice? (Stone, 2010; Taylor, 2011; O'Neill, 1992; Varner, 1998; Rolston, 1994; Hill, 1983; Schmidt, 1998; Katz, 1992). Moreover, how do answers to that question impact the broader picture of what one takes planetary justice to consist in?

Naturally, merely raising this trio of domains does little to fix the scope and settle the actual stakeholders owed justification as a matter of planetary justice. As mentioned above, because substantive decisions and arguments need to be made about what the inclusion of each element means, how they interact, and what the balance of various reasons directs us towards, the task moving forward is no small feat (to put it mildly!). There are potential tensions when including all of these spheres in the domain of justice and navigating them might require us to revise certain pre-theoretical commitments about, for instance, what humans are entitled to as a matter of justice.

We raise the issues here to highlight exactly how important it is to come to grips with one's commitments along these lines in proceeding to make claims about planetary justice. The analysis one makes will inevitably look very different depending on how much one weighs various animal interests, or if one is skeptical about natural environments themselves having rights, versus someone who embraces the idea.

3. Some complicating distinctions

The above hints at the extensive conceptual work required to make sense of what planetary justice might entail are, unfortunately, just the beginning. There are further distinctions and decision points that one has to grapple with in order to come to any substantive position or recommend any action on the basis of planetary justice.

Current vs. Future Generations. First, wherever one settles with respect to the human, non-human, and natural values, interests, and rights that matter for planetary justice, there are difficult questions one has to contend with about which time-frames are relevant. Debates in intergenerational justice (which tend to be largely anthropocentric) show just how difficult it is to balance the relationship between the demands of existing, current generations and future generations, whether in the near future or the far future (Sikora and Barry, 1978; Gosseries and Meyer, 2009; Gosseries and Gonzales-Ricoy, 2016; Meijers, 2018). Considering, in addition, future generations of plant and non-human animal life have the potentially to significantly complicate and alter the decision space.

Collectivist vs. Individualist Accounts. Another conceptual lacuna to complicate the pursuit of planetary justice involves asking whether the stakeholders—be they human, non-human, or non-

² We are focused here on moral rights. Rights encoded in treaties and legal frameworks are essential for actually enforcing and protecting moral rights of non-human animals, but we are asking the question at a prior, more abstract, level about the properties that generate moral rights, which can then be formalized and protected in legal and institutional structures. A turn toward legal philosophy will eventually be an important part of a theory of planetary justice, but conceptually, it plays a secondary role.

sentient—should be considered qua individuals or if we need to consider some groups qua collectives, potentially with collective rights? (Leopold, 1949; Callicott, 1989, 1999, 2010; Cahen, 1988; Varner, 1987, 2002; Basl, 2017). This kind of debate already surfaces, for instance, in thinking about climate refugees. Would it be enough to offer resettlement rights somewhere to each individual climate refugee from a low-lying Pacific country, or is the nation itself owed something as a collective (e.g., territorial rights over new land)? (Nine, 2010, 2012; Bell, 2004; Heyward and Odalen, 2012). But the distinction also may have significant implications elsewhere. Consider, is it individual organisms or, say, species or ecosystems that matter from the perspective of planetary justice? If only individual organisms matter, some species extinctions may not be particularly problematic, as long as the individual animals don't suffer terribly, but if the species itself is a locus of justice-concerns it may be. If ecosystems or other collectives themselves are the focus, it might sanction certain kinds of managed hunting to keep population levels balanced that wouldn't be licensed if only individual organisms were considered.

The answers to these questions, then, come with significant implications for how we might understand the various rights, permissions, and duties of planetary justice.

Intrinsic vs. Instrumental Reasons. The next important distinction worth raising has already been gestured at above in introducing the questions about non-sentient nature. In the philosophical literature, a distinction is often made between intrinsic and instrumental value. Something is intrinsically valuable if it matters for its own sake, or in its own right. If something is *merely* instrumentally valuable, then it matters only insofar as it is a means to some other good. Hence, if it were no longer productive toward that end, it would cease to be valuable. For example, politicians and policy makers often talk about economic growth as if this matters in its own right. But this cannot be the case. Economic growth may be, and in many cases is, instrumentally contributing to our quality of life and the freedoms we can enjoy, by reducing involuntary unemployment, raising the level of average income, and raising total tax revenues. It could, however, also lead to a situation in which only the interests of the best-off are served, and in which the quality of life of most people does not improve, or even decreases due to the inequality, and all the while the quality of the natural environment deteriorates. Thus, in the planetary justice arena it is important to not only figure out where, how, and how much various human, non-human, and non-sentient entities matter, with respect to justice, but also whether they matter intrinsically or instrumentally.

The language of planetary justice, on its surface, seems to invoke the idea that some parts of the natural world matter beyond exclusively their use to humans. It is very plausible that the lives of many non-human animals are intrinsically valuable, and not just insofar as they serve or sustain a livable environment for humans. It is more controversial whether claims of intrinsic value are similarly true of non-sentient nature, especially once we have separately considered its instrumental value to non-human animals as well as humans.

However, such a thesis might be defensible. Perhaps a giant sequoia, the Grand Canyon, or the Colorado River matter in and of themselves such that deforestation, oil drilling, or dam-building betray their intrinsic value and wrong them, independent of the effects on humans or non-humans. In addition to Aldo Leopold and the biocentric holists referenced above from the environmental ethics canon, some non-western worldviews also have a holistic view on nature, seeing human and non-human animals as inseparably part of the non-sentient natural world. For some indigenous peoples, rivers, mountains and lands have important meanings related to their identities, often through the roles they play in the

relationships with ancestors. They are not 'natural resources' that are interchangeable for other natural resources, let alone non-natural resources. For example, for the Māori, the land, sea, rivers, mountains and other natural resources are ancestors and hence kin, and are therefore given spiritual powers and authority (Watene, 2016).

If one endorses such a holistic worldview, it is possible to attach intrinsic value to the non-sentient natural world. Others, however, will balk at using such language in anything more than a metaphorical sense in such contexts. They'll press that in order to be 'wronged,' or be owed duties certain properties must be present (for instance cognitive ones) that rivers and trees don't possess.

The arguments in both directions are sophisticated and tricky, but settling one's thoughts on this question is not just some innocuous decision, nor is withholding judgment. The implications one way or another across many debates may again be significant. For instance, consider land-use permissions. If some plot of land matters only insofar as it serves human and/or non-human animal interests, then we might permissibly be able to permissibly radically transform it for such productivity. If, on the other hand, non-sentient nature is intrinsically valuable such transformation might be impermissible. Of course, a full accounting of all of the reasons and values at stake would be important because such intrinsic value of non-sentient nature may in the end be outweighed, but that would be a substantive conclusion. When around half of the world's biosphere is used for human food production or habitation, and we lose 18.7 million acres (75,676 km²) of forests annually, a full accounting of planetary justice requires the conceptual resources to recognize and think through such tensions (Ellis, 2010; World Wildlife Fund 2019).

Existing vs. required mechanisms. The final clarifying and/or complicating distinction we want to offer in this section may be of particular note to scholars working on Earth System Governance research, insofar as this is generally conceived as a field that is mainly grounded in empirical research. It is important to recognize the difference, in advancing claims of planetary justice, between two things. On the one hand, there are claims about what existing institutions, frameworks, or mechanisms (whether formal or informal) would protect and defend as a matter of planetary justice if they were meeting their charge. Connected to this, ESG researchers are likely to be more comfortable in doing the social science of comparing existing regulations to observed behavior and reporting or explaining problems, gaps, etc. The core of this work is more empirical and less normative than the moral philosophical project we have been focused on.

On the other hand, there are claims about what is ultimately, all things considered morally desirable to protect or required as a matter of planetary justice. Such claims are more squarely normative and they are the kinds of claims that require most careful attention to the various distinctions and questions raised above as a way of adequately defending the kind of fundamental framework with which to evaluate institutions, policy decisions, and behavior as more or less just, planetarily.

We might of course be falling short of fulfilling negotiated agreements or legally recognized requirements that implicate matters of planetary justice, and recognizing such deficits is an important endeavor. But furthermore, as gestured at in the example above about the SDGs and a more thoroughgoing egalitarianism, even if we weren't falling short, there is still a live and normatively fundamental question about what full-fledged planetary justice would require, which may in fact include different or additional institutions, frameworks, and mechanisms. Consider, as an example, the International Whaling Commission. Quite clearly Japan is not in compliance with its requirements, and that is important to notice and combat. But planetary justice, might

require even more protection for whales than the current legal requirements, such that even full compliance with the IWC would still be unjust (Nussbaum Wichert and Nussbaum, 2017).

Preserving and attending to this distinction is an important check against too much uncritical adoption of the status quo. Existing legal and regulatory frameworks will tend to look conservative when put into conversation with the issues and domains of planetary justice we've raised so far. Given that the project of planetary justice is meant to include humans, non-humans, and non-sentient nature around the globe and across time that have been historically ignored, dismissed, or discounted, it is poised to present a radical departure from the status quo. It might require giving political rights to non-human animals and or non-sentient nature (Donaldson and Kymlicka, 2011; Stone, 2010). Or it might demand mechanisms to give voice to future generations in our political decision-making, for example, via special representatives, procedural rules, or lowering the voting age (Ekeli, 2005; Bidadanure, 2016). Or it might require a radically more egalitarian global distribution of resource rights and the benefits of the Earth's resource systems? (Armstrong, 2017) Among many other similarly revisionary prospects of the project of planetary justice, foregrounding this distinction between the existing mechanisms that address matters of planetary justice and the all-things-considered requirements of planetary justice, not tethered to existing potentially conservative biases is important.

4. Two strands of thought in political philosophy

As is obvious from the preceding sections, there is a lot to sort out in the pursuit of a clear vision of planetary justice. In this section we look to two of the leading contemporary approaches to justice in the political philosophy literature. In particular we focus on the human rights tradition and the distributive justice tradition as two strands of thought that have not only secured positions of clout theorizing about justice, but have been put to good purpose in dealing with a range of issues big and small implicated by the concept of planetary justice like climate change and resource use.³

So, although not an exhaustive survey of contenders nor mutually exclusive, the human rights and distributive justice approaches seem particularly productive to put into conversation with ideas about planetary justice to see how they stack up to the many challenges it poses. In doing so, we will gain some insight into just how consequential a move towards planetary justice might be for our received theoretical traditions, and put a spotlight on some of the departures and innovations that planetary justice might demand.

From the Universal Declaration of Human Rights and beyond, much of the lingua franca of justice is cashed out in terms of human rights. There are of course many different conceptions of what human rights are, how they are justified, which ones exist, and so on. But the general idea of there being some basic set of robust

moral entitlements, owed in virtue of our humanity and which imply strict duties on others is a powerfully stable force in the justice literature (UN, 2019; Dworkin, 1978; Gewirth, 1982; Shue, 1996; Beitz, 2009; Griffin, 2008; Nickel, 2007; Buchanan, 2013; Tasioulas, 2011; Nickel, 2017). Human rights are often employed to mark out some kind of basic, moral minimum that people are owed and are commonly used in highlighting things such as poverty relief or in tracing out development goals.

Human rights-based approaches have been crucially important, and provided much of the moral currency in condemning problematic aspects, when dealing with many of the issues we might consider under the heading of planetary justice. Things like climate change, extractive industries, land-use patterns, over-fishing, pollution, etc., can be condemned on the basis of being threats to substantive rights (like the right to life, subsistence, health, or against forcible eviction) as well as undermining various procedural rights (like a right to democratic participation) (Caney, 2006, 2010; Humphreys, 2010; Düwell et al., 2018).

A second, and notable, orienting approach in the political philosophy literature comes from the tradition looking at unfairness and distributive injustice (Rawls, 1971; Dworkin, 1981a,b; Arneson, 1989; Cohen, 1997; Sen, 1982; Nussbaum, 2009; Roemer, 1996; Lamont and Favor, 2017). From this angle, fundamental to the task of justice is a focus on the fair distribution of various social benefits and burdens. This might be understood at a general, society-wide level or deployed in a specific location or context. Moreover, it might take the shape in reference to a broad bundle of goods, or in discrete contexts with respect to a specific of good or set of goods. For instance, the environmental justice movement has focused much attention on thinking about the distribution of environmental benefits and burdens (Bullard, 1990, 1993; Shrader-Frechette, 2002; Schlosberg, 2007).⁴ The central concepts here tend to be those like 'fair shares' and 'overuse.' For instance, discussions of climate change often invoke the idea of a 'carbon budget' and arguments about distributive justice suggest that, through their profligate lifestyles and high emissions, the wealthy have used more than their fair share of the carbon budget, and thereby owe it as a matter of justice to reduce their emissions and fund adaptation efforts to mitigate the harms from such a violation (Hayward, 2006; Blomfield, 2013; Traxler, 2002; Vanderheiden, 2006). In more popular discourses these issues often get taken up under the mantle of carbon or ecological 'footprints,' which are meant to measure various levels of resource use and which can then be evaluated against certain principles or schemes of distributive justice (Wackernagel and Rees, 1996).

Both the human rights and distributive justice approaches have some natural links to the impulse to worry about planetary justice, and indeed have been operationalized in arguments thereof. But it is also interesting, after unearthing the various distinctions we have above, to see what their limitations or gaps might be for the project of planetary justice.

It is perhaps no surprise that the human-rights approach, while can generate significant implications about issues of planetary justice like climate change, is not immediately equipped to deal with issues of non-human or non-sentient rights. If they only have instrumental value, this may not be as big of a problem because all decisions about earth systems could be put in terms of what promotes human rights. In that case, whatever notions of

³ There are other broad approaches to justice that are influential in the political philosophy literature. Among them, one approach that stands out, goes under the heading 'relational egalitarianism,' which conceives of justice as oriented around the kinds of relationships of authority, status, and standing people share with others. This approach has highlighted concepts like oppression, domination, exploitation, marginalization, exclusion, shame, and stigma as they relate to how we design our social, political, and economic institutions (Anderson, 1999; Wolff, 2015; Young, 2000; Schemmel, 2012; Fraser, 1995; Gheaus, 2018; Lippert-Rasmussen, 2018). Such concepts will likely be indispensable in a complete theory of planetary justice, but we will limit our discussion here partly because significantly less work has been done under the heading of 'relational egalitarianism' to deal particularly with the kind of *global* issues that fall under the heading of planetary justice, which is a place the human rights and distributive justice approaches have already directly and extensively expanded into.

⁴ This is not to discount the practical and theoretical importance of other dimensions highlighted in the environmental justice literature about matters of procedural justice, participation, power, and recognition. As mentioned in the introduction, we have narrowed our scope to focus on the substantive side, but work on these issues is also crucially important.

sustainability, climate policy, land and ocean governance would be grounded in standard rights claims. On the other hand, if necessary, perhaps a general rights-based approach can be extended to this broader scope, but it might also be that the reasons some are so drawn to the power of the human rights approach prevents it from neatly stretching beyond humans. The same could be said for how the human-rights approach might navigate the challenge of dealing with future generations and whether and how it can address the issue of collective rights, and most approaches tend to be fairly individualistic and focused on the near-term.

Looking to the distributive justice approach, it has often had a more domestic focus (i.e., within the boundaries of a state) (Rawls, 1993; Blake, 2001; Nagel, 2005; Sangiovanni, 2007, 2011; Meckled-Garcia, 2008), but many have also persuasively pushed the approach at a more global level (Caney, 2008; Cohen and Sabel, 2006; Beitz, 1979; Buchanan, 2000; Fraser, 2010; Abizadeh, 2007; Gilibert, 2012, 2015; Ronzoni, 2009; Valentini, 2011). Again, the focus has been on 'fair shares' for humans, of the earth's resource systems. In that, it may already have stronger assumptions about common or collective ownership that are not without controversy (Risse, 2009), but furthermore, trying to think about what fair shares and distributive justice with non-human animal or non-sentient nature as shareholders is a new endeavor. The same goes for future generations or collectives, for that matter. And doing so may push the bounds of the conceptual resources developed in the tradition. Moreover, developing the perspective of 'planetary justice' may suggest shifts in thinking about distributive justice between, for instance, the received 'fair shares' orientation and one that places more emphasis on who has *duties* of justice. Or, given the kinds of scarcity 'planetary justice' might implicate, it could suggest a shift in our thinking from a 'fair shares' view to an 'emergency ethics' view (Caney, 2014).

These difficulties may tell us that we need to revise or abandon the well-developed views of the tradition. As Dryzek and Pickering (2019) put it, Holocene conceptions of justice are not apt to deal with justice in the Anthropocene. We may need conceptual innovation to get out of some of the parochial focus of the past, now that we are confronted by issues at planetary scale. But it may also give us pause about how far we really need to go, or how far we can go with good argumentative support. That is part of what Rawls called the "reflective equilibrium" that we'll need to reach between our theoretical commitments, the values and principles we accept, and our moral intuitions about their implications when we are confronted by such new and big challenges (Rawls, 1971; Daniels, 2018). We don't have an answer, but we do know that the debates need to be had and the issues need to be thought through carefully. They can't be ignored or assumed away.

5. Why does this matter?

Throughout the paper, we have gestured at why paying attention to any of these (perhaps seemingly abstract) philosophical points matters for conceptualizing, employing the term, and ultimately realizing planetary justice. With this penultimate section, we aim to assemble some of those thoughts and make a few related points before we close.

If there is something like a central takeaway from our efforts to canvass the terrain in the way we have, it is that wherever we stand on these multiple values, distinctions, and possible approaches will, normatively, set the terms for any substantive debates about planetary justice (including potentially offering a vision of planetary justice significantly more, and differently, demanding than many existing ideals of justice). They do so in shaping the long-term, broad vision of what planetary justice consists in. They do so in constraining and directing us towards a range of options for

justifiable institutions of planetary justice. Furthermore, they may also be essential for strategizing and providing concrete action guidance or prioritization here and now, setting the terms for justifiable transitional steps to achieve the vision and institution, given the world as it is currently constituted.

It is too much to expect everyone who deploys the concept of planetary justice to have a fully developed theory in their back pocket that answers all of these questions. Doing so may not even be possible as a life-time project. That said, a call for humility in being more explicit about one's working assumptions and a sensitivity to the key elements of the domain is more reasonable.

6. Some further questions

We have tried, in this paper, to shine some light on the complicated conceptual landscape of planetary justice. There is a wide array of controversial decisions to be made before coming to any substantive claims about the demands of planetary justice. While we have not ventured to solve such controversies, we hope exposing them and their stakes more explicitly is of value.

While the preceding comments already indicate how expansive the philosophically significant issues are at play in working on planetary justice, they may still be just the tip of the iceberg. In closing, we want to raise a few more pertinent questions to (further) stimulate future discussion of questions of planetary justice among ESG scholars.

First, while most of what we have said has pointed to decisions about the scope and shape of planetary justice, there is of course an important set of companion questions about who should be the agents of planetary justice. This is, for instance, where Dryzek and Pickering (2019) focus much of the attention in their treatment of planetary justice, and the theoretical terrain is rich. Who should bear responsibility for realizing planetary justice? Are the duties primarily collective (and which levels of collective organization are responsible for what?)? Furthermore, how do those collective obligations fairly distribute or redound to individuals? Is it possible that new, as yet non-existent, collective institutions are required to discharge the responsibilities of planetary justice? This is where the moral, political, and legal spheres meet to actually enact a defensible vision of planetary justice. These are but a few of the important questions to think through, regardless of where one settles on the various distinctions raised above to inform a broader vision of planetary justice.

Another important domain of questions to be further considered involve representation. Specifically, how can and/or should we represent whatever various non-human and non-contemporary interests we deem relevant? What institutional measures or reforms would be needed in order to adequately accomplish the task?

We also think it is important, while deliberating on the range of issues already presented, for Earth System Governance researchers specifically to wrestle with the question of how it should incorporate normative commitments into its mission. To do so, we believe it is imperative for ESG researchers to engage more with the work of normative theory and collaborate more with philosophers and other normative theorists. As can be seen above, there are normative decisions to be made at every turn in coming to a working conception of planetary justice. There is no neutral ground to stand on and the normative implications for various choices are substantial. This can be an uncomfortable position if one thinks of oneself as doing mainly empirical or non-normative research, but it is unavoidable if trying to incorporate claims about justice into the fold of one's research agenda. Moreover, this affords another good opportunity to make explicit what would otherwise be hidden normative assumptions. The issue is not unique to issues of planetary justice and the work by ESG scholars. For example,

economists have also often endorsed the self-image of a completely non-normative science, but philosophers of economics have shown in detail why this is impossible, since several key concepts require normative decisions (Reiss, 2013; Hausman et al., 2016). If ESG scholars venture to use terms such as ‘sustainability’ or ‘planetary justice’, they also, inevitably, move onto terrain that is to some extent normative.

Finally, as a parting thought, it is also worth probing what conceptual work is being done in thinking about planetary justice, specifically, rather than something like, ‘planetary ethics.’ ‘Ethics’ is often taken to refer to a broader normative category than ‘justice’, which takes into consideration various other values, virtues, interpersonal as well social normative phenomena. Conceptualizing the area of inquiry as a matter of *justice* specifically makes certain tools, language, and conceptual resources available, but it may also invite controversy and de-emphasize certain important tools and resources that approaching it as a matter of *ethics* would not. For instance, among other things, justice-language importantly helps us focus on basic human rights, patterns of resource distribution, and fundamental features of institutional design, broadly construed. However, to the extent that it does so, depending on one’s conception of justice, keeping the focus on justice at the planetary scale may simultaneously foreclose some important conversations about certain environmental virtues we should instill (Hill, 1983; Sandler, 2007), or relationships of care with the natural world that we should be foregrounding (Gilligan, 1982; Noddings, 1984; Held, 1995, 2006; Ruddick, 1989; Kittay and Feder, 2003; Robinson, 1999). Moreover, justice-language has traditionally been interpreted as marking a particularly stringent, urgent, and fundamental normative domain and set of moral requirements. On the one hand, inclusion at such a level might be indispensable to the project of planetary justice. On the other, the more radical and speculative the claims get—as regards for instance non-human animals, non-sentient nature, or future generations—the more resistance one might invite to being welcomed in the domain of justice. And some of that might be needless resistance, or controversy if similar claims could be deployed with other moral language. This all depends on the role the concept of justice has played, and should play, in political philosophy and political debates, which is of course also up for debate. However, if the change that is needed would be hampered because of negative reactions that policy makers and other agents of change have towards the term ‘justice’, then one might, in order to reach the relevant goals, opt for the term ‘ethics’. Whether that kind of resistance to the term ‘justice’ is currently significant, is an empirical question that we cannot answer. Future work on planetary justice should not only make progress on spelling different concepts of planetary justice, but also examine the question whether we should not (merely) talk about planetary justice, but (also) about planetary ethics.

Funding

This project has received funding from the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (grant agreement No 726153).

Declaration of competing interest

We have no conflicts of interest to declare.

CRediT authorship contribution statement

Colin Hickey: Conceptualization, Writing - original draft, Writing - review & editing. **Ingrid Robeyns:** Conceptualization, Writing - original draft, Writing - review & editing.

Acknowledgements

We would like to thank two anonymous reviewers, the editors, and audiences at the 2018 Earth System Governance Conference in Utrecht for helpful comments.

References

- Abizadeh, A., 2007. Cooperation, pervasive impact, and coercion: on the scope of distributive justice. *Philos. Publ. Aff.* 35 (4), 318–358.
- Anderson, E., 1999. What is the point of equality? *Ethics* 109 (2), 287–337.
- Armstrong, C., 2017. *Justice and Natural Resources: an Egalitarian Theory*. Oxford University Press, Oxford.
- Arneson, R., 1989. Equality and equal opportunity for welfare. *Phil. Stud.* 56 (1), 77–93.
- Basl, J., 2017. A trilemma for teleological individualism. *Synthese* 194 (4), 1057–1074.
- Beitz, C., 1979. *Political Theory and International Relations*, second ed. Princeton University Press, Princeton, NJ.
- Beitz, C., 2009. *The Idea of Human Rights*. Oxford University Press, Oxford.
- Bell, D., 2004. Environmental refugees: what rights? Whose duties? *Res. Publica* 10, 135–152, 2004.
- Berkey, B., 2017. Prospects for an inclusive theory of justice: the case of non-human animals. *J. Appl. Philos.* 34, 679–695.
- Bidadanure, J., 2016. Youth quotas, diversity and long-termism: can Young people act as proxies for future generations? In: González-Ricoy, I., Gosseries, A. (Eds.), *Institutions for Future Generations*. Oxford University Press, Oxford, pp. 266–281.
- Blake, M., 2001. Distributive justice, state coercion, and autonomy. *Philos. Publ. Aff.* 30 (3), 257–296.
- Blattner, C., 2019. *Protecting Animals within and across Borders: Extraterritorial Jurisdiction and the Challenges of Globalization*. Oxford University Press, Oxford.
- Blattner, C., Coulter, K., Kymlicka, W., 2019. *Animal Labor: A New Frontier of Interspecies Justice?* Oxford University Press, Oxford.
- Blomfield, M., 2013. Global common resources and the just distribution of emission shares. *J. Polit. Philos.* 21 (3), 283–304.
- Buchanan, A., 2000. Rawls’s law of peoples: rules for a vanished westphalian world. *Ethics* 110 (4), 697–721.
- Buchanan, A., 2013. *The Heart of Human Rights*. Oxford University Press, Oxford.
- Bullard, R., 1990. *Dumping in Dixie: Race, Class, and Environmental Quality*. Westview Press, Boulder, CO.
- Bullard, 1993. *Confronting Environmental Racism: Voices from the Grassroots*. South End Press, Boston.
- Burch, S., et al., 2019. New directions in earth system governance research. *Earth Syst. Govern.* 1, 100006, 1–18.
- Cahen, H., 1988. Against the moral considerability of ecosystems. *Environ. Ethics* 10 (3), 195–216.
- Callicott, J.B., 1989. *Defense of the Land Ethic*. SUNY Press, Albany.
- Callicott, J.B., 1999. *Beyond the Land Ethic*. SUNY Press, Albany.
- Callicott, J.B., 2010. The conceptual foundations of the land ethic. In: Hanks, C. (Ed.), *Technology and Values: Essential Readings*. Wiley-Blackwell, NY, pp. 438–453.
- Caney, S., 2006. Cosmopolitan justice, rights and global climate change. *Can. J. Law Jurisprudence* 19 (2), 255–278.
- Caney, S., 2008. Global distributive justice and the state. *Polit. Stud.* 56 (3), 487–518.
- Caney, S., 2014. Two kinds of climate justice: avoiding harm and sharing burdens. *J. Polit. Philos.* 22 (2), 125–149.
- Cohen, G.A., 1997. Where the action is: on the site of distributive justice. *Philos. Publ. Aff.* 26 (1), 3–30.
- Cohen, J., Sabel, C., 2006. Extra rempublicam nulla justia? *Philos. Publ. Aff.* 34, 147–175.
- Daniels, N., 2018. Reflective equilibrium. In: Zalta, E. (Ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2018 Edition). <https://plato.stanford.edu/archives/fall2018/entries/reflective-equilibrium/>.
- Dirth, S., et al., 2020. What do researchers mean when talking about justice?. In: *An Empirical Review of Justice Narratives in Global Change Research*, Earth System Governance <https://doi.org/10.1016/j.esg.2020.100042>.
- Donaldson, S., Kymlicka, W., 2011. *Zoopolis: A Political Theory of Animal Rights*. Oxford University Press, Oxford.
- Dryzek, J., Pickering, J., 2019. *The Politics of the Anthropocene*. Oxford University Press, Oxford.
- Düwell, M., Bos, G., Van Steenberg, N., 2018. *Towards the Ethics of a Green Future. The Theory and Practice of Human Rights for Future People*. Routledge, London.
- Dworkin, R., 1978. *Taking Rights Seriously*. Harvard University Press, Cambridge, MA.
- Dworkin, R., 1981a. What is equality? Part 1: equality of welfare. *Philos. Publ. Aff.* 10 (3), 185–246.
- Dworkin, R., 1981b. What is equality? Part 2: equality of resources. *Philos. Publ. Aff.* 10 (4), 283–345.
- Ekeli, K., 2005. Giving a voice to posterity – deliberative democracy and representation of future people. *J. Agric. Environ. Ethics* 18 (5), 429–450.
- Ellis, E.C., et al., 2010. Anthropogenic transformation of the biomes, 1700 to 2000.

- Global Ecol. Biogeogr. 19, 589–606.
- Francione, G., Garner, R., 2010. *The Animal Rights Debate: Abolition or Regulation?* Columbia University Press, NY.
- Fraser, N., 1995. Recognition or redistribution? A critical reading of Iris young's justice and the politics of difference. *J. Polit. Philos.* 3 (2), 166–180.
- Fraser, N., 2010. Who counts? Dilemmas of justice in a postwestphalian world. *Antipode* 41 (1), 281–297.
- Gallie, W.B., 1955. Essentially contested concepts. *Proc. Aristot. Soc.* 56, 167–189.
- Gewirth, A., 1982. *Human Rights: Essays on Justification and Applications.* University of Chicago Press, Chicago.
- Gheaus, A., 2018. Hikers in flip-flops: luck egalitarianism, democratic equality and the distribuenda of justice. *J. Appl. Philos.* 35 (1), 54–69.
- Gilbert, P., 2012. From Global Poverty to Global Equality: A Philosophical Exploration. Oxford University Press, Oxford.
- Gilbert, P., 2015. Global moral egalitarianism and global distributive egalitarianism. *Ethics Int. Aff.* 29 (3), 269–276.
- Gilligan, C., 1982. *A Different Voice: Psychological Theory and Women's Development.* Harvard University Press, Cambridge, MA.
- Gosseries, A., Gonzales-Ricoy, I. (Eds.), 2016. *Institutions for Future Generations.* Oxford University Press, Oxford.
- Gosseries, A., Meyer, L., 2009. *Intergenerational Justice.* Oxford University Press, Oxford.
- Griffin, J., 2008. *On Human Rights.* Oxford University Press, Oxford.
- Hausman, D., McPherson, L., Satz, D., 2016. *Economic Analysis, Moral Philosophy and Public Policy.* Cambridge University Press, Cambridge.
- Hayward, T., 2006. Global justice and the distribution of natural resources. *Polit. Stud.* 54 (2), 349–369.
- Held, V., 1995. *Justice and Care: Essential Readings in Feminist Ethics.* Westview Press, Boulder, CO.
- Held, V., 2006. *The Ethics of Care: Personal, Political, and Global.* Oxford University Press, Oxford.
- Heyward, C., Odalen, J., 2012. A free movement passport for the territorially dispossessed. In: Heyward, C., Roser, D. (Eds.), *Climate Justice in a Non-ideal World.* Oxford University Press, Oxford, pp. 208–226.
- Hill Jr., T.E., 1983. Ideals of human excellence and preserving natural environments. *Environ. Ethics* 5 (3), 211–224.
- Humphreys, S., 2010. *Human Rights and Climate Change.* Cambridge University Press, Cambridge.
- Kagan, S., 2019. *How to Count Animals, More or Less.* Oxford University Press, Oxford.
- Katz, E., 1992. The call of the wild: the struggle against domination and the technological fix of nature. *Environ. Ethics* 14 (3), 265–273.
- Kittay, E.F., Feder, E.K., 2003. *The Subject of Care: Feminist Perspectives on Dependency.* Rowman & Littlefield, Lanham, MD.
- Korsgaard, C., 2018. *Fellow Creatures: Our Obligations to Other Animals.* Oxford University Press, Oxford.
- Lamont, J., Favor, C., 2017. Distributive justice. In: Zalta, E. (Ed.), *The Stanford Encyclopedia of Philosophy (Winter 2017 Edition).* <https://plato.stanford.edu/archives/win2017/entries/justice-distributive/>.
- Leopold, A., 1949. *A Sand County Almanac.* Oxford University Press, Oxford.
- Lippert-Rasmussen, K., 2018. *Relational Egalitarianism: Living as Equals.* Cambridge University Press, Cambridge.
- Meckled-Garcia, S., 2008. On the very idea of cosmopolitan justice. *J. Polit. Philos.* 16 (3), 245–271.
- Meijers, T., 2018. *Justice between Generations.* Oxford Research Encyclopedia of Politics, 2018. Retrieved 15 Feb. 2019, from <http://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-233>.
- Nagel, T., 2005. The problem of global justice. *Philos. Publ. Aff.* 33 (2), 113–147.
- Nickel, J., 2007. *Making Sense of Human Rights,* second ed. Blackwell Publishing, Malden, MA.
- Nickel, J., 2017. Human rights. In: Zalta, E. (Ed.), *The Stanford Encyclopedia of Philosophy.* Spring 2017 Edition. <https://plato.stanford.edu/archives/spr2017/entries/rights-human/>.
- Nine, C., 2010. Ecological refugees, states borders, and the lockean proviso. *J. Appl. Philos.* 27 (4), 359–375.
- Nine, C., 2012. *Global Justice and Territory.* Oxford University Press, Oxford.
- Noddings, N., 1984. *Caring: A Feminine Approach to Ethics and Moral Education.* University of California Press, Berkeley.
- Nussbaum, M., 2006. *Frontiers of Justice: Disability, Nationality, and Species Membership.* The Belknap Press of Harvard University, Cambridge, MA.
- Nussbaum, M., 2009. *Creating Capabilities: the Human Development Approach.* The Belknap Press of Harvard University Press, Cambridge, MA.
- Nussbaum, W., Nussbaum, M., 2017. Legal protections for whales: capabilities, entitlements and culture. In: Cordeiro-Rodríguez, L., Mitchell, L. (Eds.), *Animals, Race and Multiculturalism.* Springer, New York, pp. 95–120.
- O'Neill, J., 1992. The varieties of intrinsic value. *Monist* 75 (2), 119–137.
- Pasgaard, M., Dawson, N., 2019. Looking beyond justice as universal basic needs is essential to progress towards 'safe and just operating spaces'. *Earth Systems Governance* 2 (1000030), 1–13.
- Pepper, A., 2016. Beyond anthropocentrism: cosmopolitanism and nonhuman animals. *Global Justice: Theor. Pract. Rhetor.* 9 (2), 114–133.
- Pepper, A., 2019. Adapting to climate change: what we owe to other animals. *J. Appl. Philos.* 36 (4), 592–607.
- Rawls, J., 1971. *A Theory of Justice.* Harvard University Press, Cambridge, MA.
- Rawls, J., 1993. *The Law of Peoples.* Harvard University Press, Cambridge, MA.
- Regan, T., 1983. *The Case for Animal Rights.* University of California Press, Berkeley, CA.
- Reiss, J., 2013. *Philosophy of Economics.* Routledge, London.
- Risse, M., 2009. Common ownership of the earth as a non-parochial standpoint: a contingent derivation of human rights. *Eur. J. Philos.* 17 (2), 277–304.
- Robinson, F., 1999. *Globalizing Care: toward a Politics of Peace.* Beacon Press, Boston, MA.
- Roemer, J.E., 1996. *Theories of Distributive Justice.* Harvard University Press, Cambridge, MA.
- Rolston, H., 1994. Value in Nature and the Nature of Value, vol 36. *Royal Institute of Philosophy Supplement*, pp. 13–30.
- Ronzoni, M., 2009. The global order: a case of background injustice? A practice-dependent account. *Philos. Publ. Aff.* 37 (3), 229–256.
- Ruddick, S., 1989. *Maternal Thinking: toward a Politics of Peace.* Ballantine Books, New York.
- Sandler, R., 2007. *Character and Environment: A Virtue-Oriented Approach to Environmental Ethics.* Columbia University Press, NY.
- Sangiovanni, A., 2007. Global justice, reciprocity, and the state. *Philos. Publ. Aff.* 35 (1), 3–39.
- Sangiovanni, A., 2011. Global justice and the morality of coercion, imposition, and framing. In: Ronzoni, M., Banai, A., Schimmel, C. (Eds.), *Social Justice, Global Dynamics.* Routledge, New York, pp. 26–46.
- Schemmel, C., 2012. Distributive and relational equality. *Polit. Philos. Econ.* 11 (2), 123–148.
- Schlosberg, D., 2007. *Defining Environmental Justice: Theories, Movements, and Nature.* Oxford University Press.
- Schlosberg, D., 2013. Theorising environmental justice: the expanding sphere of a discourse. *Environ. Polit.* 22, 37–55.
- Schlottmann, C., Sebo, J., 2018. *Food, Animals, and the Environment: an Ethical Approach.* Routledge, New York.
- Schmidtz, D., 1998. Are all species equal? *J. Appl. Philos.* 15 (1), 57–67.
- Sen, A., 1982. Equality of what? In: Sen, A. (Ed.), *Choice, Welfare and Measurement.* Cambridge University Press, Cambridge, pp. 353–369.
- Shrader-Frechette, K., 2002. *Environmental Justice: Creating Equality, Reclaiming Democracy.* Oxford University Press, New York.
- Shue, H., 1996. *Basic Rights,* second ed. Princeton University Press, Princeton, NJ.
- Sikora, R., Barry, B. (Eds.), 1978. *Obligations to Future Generations.* Temple University Press, Philadelphia.
- Singer, P., 1975. *Animal Liberation.* Harper Collins, NY.
- Singer, P., 2009. *A Day for Planetary Justice.* Project Syndicate, 14 October 2009. <https://www.project-syndicate.org/commentary/a-day-for-planetary-justice>.
- Stone, C.D., 2010. *Should Trees Have Standing?: Law, Morality, and the Environment.* Oxford University Press, Oxford.
- Tasioulas, J., 2011. On the nature of human rights. In: Ernst, G., Heilinger, J. (Eds.), *The Philosophy of Human Rights: Contemporary Controversies.* Walter de Gruyter, Berlin, pp. 17–59.
- Taylor, P.W., 2011. *Respect for Nature: A Theory of Environmental Ethics.* Princeton University Press, Princeton, NJ.
- Traxler, M., 2002. Fair Chore Division for Climate Change, *Social Theory and Practice*, vol 28, pp. 101–134.
- UN General Assembly, 1948. *Universal declaration of human rights.* <https://www.refworld.org/docid/3ae6b3712c.html>. (Accessed 15 February 2019).
- Valentini, L., 2011. A paradigm shift in theorizing about justice? A Critique of Sen. *Econ. Philos.* 27 (3), 297–311.
- Vanderheiden, S., 2006. Climate Change and the Challenge of Moral Responsibility. *Ethics and the Life Sciences*, pp. 85–92.
- Varner, G., 1987. Do species have standing? *Environ. Ethics* 9, 57–72.
- Varner, G., 1998. *Nature's Interests?: Interests, Animal Rights, and Environmental Ethics.* Oxford University Press, Oxford.
- Varner, G., 2002. Biocentric individualism. In: Schmidtz, D., Willott, E. (Eds.), *Environmental Ethics: what Really Matters, what Really Works,* first ed. Oxford University Press, Oxford, pp. 108–120.
- Wackernagel, M., Rees, W., 1996. *Our Ecological Footprint: Reducing Human Impact on the Earth.* New Society Publishers.
- Watene, K., 2016. Valuing nature: Māori philosophy and the capability approach. *Oxf. Dev. Stud.* 44 (3), 287–296.
- Wolff, J., 2015. Social equality and social inequality. In: Fourie, C., Schuppert, F., Wallimann-Helmer, I. (Eds.), *Social Equality.* Oxford University Press, Oxford, pp. 209–225.
- World Wildlife Fund, 2019. *Deforestation Overview.* <https://www.worldwildlife.org/threats/deforestation>. (Accessed 16 February 2019).
- Young, I.M., 2000. *Inclusion and Democracy.* Oxford University Press, Oxford.
- Zondervan, R., 2018. *Towards More Sustainable Governance,* pp. 4–5. Impact.