



Should we Ascribe Capabilities to Species and Ecosystems? A Critical Analysis of Ecocentric Versions of the Capabilities Approach

Anders Melin¹ 

Accepted: 24 June 2021 / Published online: 18 August 2021
© The Author(s) 2021

Abstract

Martha Nussbaum's capabilities approach is today one of the most influential theories of justice. In her earlier works on the capabilities approach, Nussbaum only applies it to humans, but in later works she extends the capabilities approach to include sentient animals. Contrary to Nussbaum's own view, some scholars, for example, David Schlosberg, Teea Kortetmäki and Daniel L. Crescenzo, want to extend the capabilities approach even further to include collective entities, such as species and ecosystems. Though I think we have strong reasons for preserving ecosystems and species within the capabilities approach, there are several problems with ascribing capabilities to them, especially if we connect it with the view that species and ecosystems are subjects of justice. These problems are partly a consequence of the fact that an ascription of capabilities to species and ecosystems needs to be based on an overlapping consensus between different comprehensive doctrines, in accordance with the framework of political liberalism on which the capabilities approach builds. First, the ascription of capabilities to species and ecosystems presupposes the controversial standpoint that they are objectively existing entities. Second, the ascription of capabilities to ecosystems and species and the view that they are subjects of justice is justified by claiming that they have integrity and agency, but these characteristics have different meanings when applied to collective entities and humans, respectively. Third, the view that species and ecosystems are subjects of justice seems to require the controversial assumption that they have interests of their own, which differ from the interests of the sentient beings that are part of them. However, even if we do not ascribe capabilities to species and ecosystems and regard them as subjects of justice, there are still strong reasons to protect them within the capabilities approach, as the preservation of ecosystems and species is an important precondition for many human and animal capabilities.

Keywords Nussbaum · Capabilities approach · Non-anthropocentrism · Species · Ecosystems

Introduction

The capabilities approach, Martha Nussbaum's version of what is generally called the capability approach or capability theory, is today one of the most influential theories of justice. The central idea in her approach is that each individual should be guaranteed a threshold level of the following ten capabilities as a minimum requirement of justice: (1) Life, (2) Bodily Health, (3) Bodily Integrity, (4) Senses, Imagination and Thought, (5) Emotions, (6) Practical Reason, (7) Affiliation, (8) Other Species, (9) Play, and (10) Control over One's Environment. Nussbaum describes all these capabilities as essential for living a dignified human life; a deficit in one capability cannot be compensated for by a surplus in another (Nussbaum, 2000, 77–81). In her earlier works on the capabilities approach, Nussbaum applies it to humans only, and the concept of capability is closely connected with the concept of human dignity. She describes dignity as a unique human characteristic that requires the ability to reflect on one's life (Nussbaum, 2000, 71–72). However, in later works she extends the capabilities approach to include sentient animals. Nussbaum argues that sentient animals should be assigned capabilities as such animals also possess dignity. Sentient animals are complex beings with a capacity for agency, and they should be allowed to live a flourishing life (Nussbaum, 2006, 351). However, some scholars, for example, David Schlosberg, Teea Kortetmäki and Daniel L. Crescenzo, want to extend the capabilities approach even further than Nussbaum, and advocate an ecocentric interpretation of the capabilities approach according to which we should ascribe capabilities also to collective entities, such as ecosystems and species (Crescenzo, 2013; Kortetmäki, 2018; Schlosberg, 2007, 2012). In this article I analyze their arguments for ascribing capabilities to ecosystems and species. There is a need for a critical discussion of their argumentation as an ascription of capabilities to collective entities has significant theoretical and practical consequences, and so far, there has not been so much debate about these proposals. Ascribing capabilities to a species or an ecosystem means that we do so also to an entity that is very different from a human—the paradigm case of a being having capabilities—which have significant implications for our understanding of what a capability is. Moreover, if we assume that species and ecosystems have capabilities and that we should be concerned about them for their own sake, this has considerable consequences for how we should act towards them. Since the last 15 years, there is a lively discussion concerning whether, and if so how, different living beings and other aspects of nature should be included in the capabilities approach (see, for example, Keulartz & Swart, 2012; Clark, 2009; Wissenburg, 2011; Ilea, 2008; Hailwood, 2012; Cripps, 2010; Crescenzo, 2013; Fulfer, 2013; Bendik-Keymer 2014, 2021a, b; Linch & Holland, 2017; Nussbaum Wichert & Nussbaum, 2016, 2017), but I focus on those contributions that explicitly argue for ascribing capabilities to species and ecosystems.

Ecocentric Extensions of the Capabilities Approach

‘Capability’ is, of course, the most important concept within the capabilities approach, and Nussbaum defines it in contrast to ‘functioning’. The latter concept denotes something that people actually are or do, such as being mothers or fathers, or working as teachers, while a capability is an opportunity to function in a specific way. Freedom concerning how one wants to live one’s life has a central role in the capability approach. People should not be forced to educate themselves or to participate in politics; however, they should be guaranteed the opportunity to do so (Nussbaum, 2000, 87–88). As stated above, the capabilities approach was originally only concerned with humans and their opportunities to live the life they desire. In later works, Nussbaum wants to include sentient animals in her theory of justice. She argues that such animals are entitled to not be mistreated, and therefore, it is not only morally wrong to treat them badly but also unjust. Sentient animals should be regarded as ends in themselves, and as subjects of justice, not only objects of compassion (Nussbaum, 2006, 337, 351).

Nussbaum thinks we should ascribe capabilities only to humans and individual sentient animals, and not to other beings or entities. In *Frontiers of Justice*, Nussbaum does not put forward any elaborate defense for limiting the ascription of capabilities to sentient animals; rather, she merely states that ‘we have enough on our plate’ for the time being if we focus on sentient animals (Nussbaum, 2006, 362). However, in later contributions to the debate regarding which entities should be considered members in a community of justice, she discusses briefly why she thinks that sentience should be regarded as a requirement for being a subject of justice. Nussbaum argues that we can only do injustice to a being if it can have desires, because it is then possible to thwart these desires. The painless death of a plant cannot be seen as a form of injustice (Nussbaum, 2011, 158–159; Nussbaum, 2018, 14). Moreover, she states that an ecosystem cannot suffer injustice as it does not have experiences or strivings, although there may be other moral reasons for being concerned about it. In addition, it is only individual living beings and not species as wholes that can suffer injustice (Nussbaum, 2011, 159). However, Nussbaum believes that we can have moral reasons that are not based on justice for caring about species (Nussbaum, 2006, 357–358).

Some scholars do not agree with Nussbaum’s conclusion that capabilities should be ascribed only to sentient animals. They claim that her approach is too individualistic as it does not include collective entities in the community of justice. David Schlosberg formulates an ecological theory of justice that encompasses both the moral relations between humans, and between humans and different aspects of nature. Moreover, it includes questions of distributive and procedural justice, as well as issues of recognition. He argues that the language of capabilities and functioning is applicable both to non-sentient beings and collective entities (Schlosberg, 2007, 144). Although he is positive of Nussbaum’s extension of the capabilities approach to include sentient animals, Schlosberg still thinks her approach is tied to a too individualist conception of justice (Schlosberg, 2007, 148). Instead, Schlosberg wants to extend the moral community to

include collective entities, such as ecosystems, as they share the characteristics of agency and integrity with humans (Schlosberg, 2007, 132). Schlosberg claims that the capabilities approach can be applied to both individual animals and larger systems, provided that we define capabilities differently for the different entities in question (Schlosberg, 2007, 151). He states that the concepts of integrity and flourishing are more appropriate as a point of departure for ecological justice than the concept of dignity as they are also relevant for entities, which are not conscious subjects (Schlosberg, 2007, 147). Both individual subjects and ecosystems have integrity in the sense that they are autonomous, self-directing and self-regulating entities (Schlosberg, 2007, 137–139). Schlosberg argues that we do not need to limit the application of the concept of capability to rational subjects that can choose between different beings and doing. Instead, we should recognize that ecosystems can have a different type of agency that is expressed through a potential or a process (Schlosberg, 2007, 154).

As a similar line of argumentation is put forward by Daniel L. Crescenzo, who builds on Schlosberg's view by claiming that we should ascribe capabilities to ecosystems because of their integrity and that we should regard ecosystems as subjects of justice. Integrity should replace dignity as the conceptual foundation for being a subject of justice within the framework of the capabilities approach. Crescenzo argues that each ecosystem should have the opportunity to maintain its integrity in the sense that it should have the possibility to function as the kind of system it is. However, Crescenzo contends that Schlosberg's understanding of ecosystem integrity needs further specification to provide an appropriate ground for justice for ecosystems (Crescenzo, 2013, 56–59). He wants to understand integrity as *loose integrity*, which means that a disruption is unjust if it 'removes an ecosystem's capacity to return to substantially the same kind of function it had before the disruption' (Crescenzo, 2013, 61). If a certain ecosystem has the capacity to return to functioning as substantially the same kind of ecosystem as it did before the disruption the disruption cannot be regarded as unjust, even if it at a given point of time does not function in substantially the same way as before the disruption. The disruption is only unjust if it is permanent and does not allow the ecosystem to return to its original function (Crescenzo, 2013, 62).

The view that the concept of capability should be extended to collective entities is defended also by Teea Kortetmäki, who argues that species should be ascribed capabilities. She points out that the view that species are morally considerable is often criticized, based on the argument that species are only categories of classification and not objectively existing entities. However, Kortetmäki endorses species realism as she regards species as evolutionary groups with an objective existence (Kortetmäki, 2018, 309–310). In line with the understanding of capabilities put forward by Nussbaum, Kortetmäki understands capabilities as opportunities to do or to be something (Kortetmäki, 2018, 311). Also she follows the line of argumentation by Schlosberg by arguing that ecological integrity—which she define as 'the agency and autonomy through which nonhuman nature can develop, self-correct and self-regulate itself—is the essential notion for justifying the ascription of capabilities to collective entities (Kortetmäki, 2018, 312). Kortetmäki maintains that species have the capacity to self-correct and to adapt to different circumstances. She claims that

they manifest autopoietic, i.e., self-making, capacity in many different ways, and that these capacities are different from the capacities of inanimate objects, such as lava flows (Kortetmäki, 2018, 314).

However, Kortetmäki recognizes that it is a difficult theoretical task that requires more work to justify the view of species as subjects in a theory of justice due to their integrity. In addition, she states that the ascription of capabilities of species does not necessarily mean that we should include them in a theory of justice. We can use the ascription of capabilities merely as a way of studying how human activities damage the integrity and flourishing of other life forms (Kortetmäki, 2018, 318).

Problems with Ascribing Capabilities to Ecosystems and Species

Although I think there are strong reasons for protecting ecosystems and species within the framework of the capabilities approach, ascribing capabilities to them entails certain difficulties that are not fully recognized by the mentioned authors, especially as both Schlosberg and Crescenzo assume that entities having capabilities are subjects of justice. In accordance with the framework of political liberalism, the ascription of capabilities needs to be based on an overlapping consensus between different comprehensive doctrines, which makes it difficult to ascribe capabilities to species and ecosystems as it requires us to take a stand on several controversial issues.

First, we should recognize that the view of ecosystems and species as objectively existing entities that Schlosberg, Crescenzo and Kortetmäki presuppose is controversial. As for ecosystems, there are different views of whether they have an objective existence within the scientific and philosophical debate. Some biologists and philosophers defend a form of 'ecosystem realism', while others claim that ecosystems are only conceptual projections (Odenbaugh, 2007; Simus, 2011). The view of ecosystems as organic entities that are self-regulating and self-directing is only one possible conception within the science of ecology. Some ecologists regard ecosystems as nothing more than aggregates of species at particular places and times (Odenbaugh, 2007, 630). Concerning species, to regard them as objectively existing entities is only one alternative among others, as Kortetmäki recognizes. Some philosophers and biologists regard species merely as collections of individuals (for a discussion of the different positions on the ontological status of species, see Zachos, 2016). If we regard species and ecosystems as collections of entities and beings, it seems problematic to claim that we have duties to them, over and above the duties we have to the beings that are part of them. For example, it seems questionable to assume that a teacher has a duty towards a class of students as a whole, over and above the duty he or she has to the individual students.

Second, even if we assume that species and ecosystems are objectively existing, the task remains of justifying that they should be ascribed capabilities. For the authors, the view that ecosystems and species should be ascribed capabilities is justified by referring to their integrity and agency. As long as we do not connect the ascription of capabilities to species and ecosystem with the moral claim that they are as subjects of justice, having integrity and agency may be sufficient reasons for

ascribing capabilities to them. Because both species and ecosystem have certain forms of functioning, it can be possible to ascribe capabilities to them. However, contrary to what Schlosberg and Crescenzo claim, the fact that species and ecosystems have integrity and agency does not seem to be a valid reason for regarding them as subjects of justice.

Schlosberg argues that our duties of justice to ecosystems is based on a respect for their 'bodily integrity', by which he means a respect of them for their autonomy and the fact that they are self-regulating. He claims that if we respect the integrity of ourselves and other people, we should also respect the integrity of different aspects of nature. In the same way as we respect the physical integrity of other humans, we have reason to respect the physical integrity of nature (Schlosberg, 2007, 137–138). However, I do not think that we can draw the conclusion that we should be concerned with the bodily integrity of ecosystems for their own sake merely because we respect the bodily integrity of humans for their own sake. To ascribe integrity to ecosystems and species is quite common among both scientists and philosophers (see Westra et al., 2000; Scoville, 2016) so the ascription of integrity to these entities seems to fulfil the requirement of being based on an overlapping consensus between comprehensive doctrines. However, neither Schlosberg nor Crescenzo clearly justify why we should regard collective entities as subjects of justice, based on the fact that they have integrity (as mentioned Kortetmäki states that the ascription of capabilities to species does not necessarily imply that they are subjects of justice). Maybe they assume that species and ecosystems are so similar to humans because they have integrity, that we should regard also them as subjects of justice? However, such an argument is unconvincing as integrity is an ambiguous word with many different meanings. When we ascribe integrity to a human being, we do not only mean that the individual in question is self-regulating but also that he or she can act according to his or her intentions. Damian Cox et al. describe the following conceptions of human integrity: (1) integrity as self-integration, (2) the identity view of integrity, (3) the self-constitution view of integrity, (4) integrity as standing for something, (5) integrity as moral purpose, and (6) integrity as a virtue. All of them presuppose that the entity being ascribed integrity at least has the ability to act according to its intentions, and many of them demand that its actions are rationally defensible from a moral point of view (Cox et al., 2017). Because the concept of integrity has a different meaning when applied to species and ecosystems, and humans, respectively, when cannot conclude that species and ecosystems are so similar to humans because they have integrity that we are compelled to regard them as subjects of justice.

The same argumentation can be used against the conclusion that species and ecosystems should be regarded as subjects of justice as they share the characteristic of agency with humans. Schlosberg argues that also ecosystems have agency although of a different type than humans, which he characterizes as 'a potential, a process, or a form of life illustrated by its history, ecology, way of being, and nonreason-based forms of communication' (Schlosberg, 2007, 154). As Schlosberg recognizes, it seems clear that humans can have agency in a very different sense than species and ecosystems. According to what is often referred to as the standard conception of agency, it requires intentionality. A being can exercise agency only if it has the capacity to act intentionally. However, some philosophers claim that also very

simple organisms, such as bacteria, can have a form of agency as they can exhibit goal-directed behaviour, but then in a quite different sense that can be labelled as 'minimal agency' (Schlosser, 2015). Also representatives of New Materialism and Posthumanism, such as Karen Barad (2007) and Jane Bennet (2010), want to ascribe agency to many other entities than humans. Barad, for example, describes agency as 'a matter of interacting', and not as a characteristic of a being or entity (Barad, 2007, 178). As humans can have agency in a very different sense than species and ecosystems, we cannot draw the conclusion that species and ecosystems are so similar to humans that we have to regard them as subjects of justice because we regard humans as subjects of justice, due to the fact that also species and ecosystems have agency.

We need to recognize that the specific human form of integrity and agency is connected with the fact that humans are rational and sentient, which justifies duties of justice to them. Nussbaum raises an important point when she says that an ecosystem or a species cannot suffer injustice because they do not have experiences, although this issue requires further elaboration. It is common to assume in the debate on ecological justice that we only have duties of justice to beings and entities that have interests (Baxter, 2005), which makes it possible to regard humans and sentient animals as subjects of justice. However, it is difficult to regard species and ecosystems in the same way as it requires that they have interests that are not just the aggregated interests of individual organisms. It is at least unclear whether a species has any interest in surviving or an ecosystem in remaining in its present state, as neither of them seems to care about it. We can claim that the individual animals that make up an animal species or form part of an ecosystem have interests, but that is not the same as claiming that a species or an ecosystem as a whole has interests. When we say that an entity has interests, we imply that some conditions is good for it from its own perspective, not merely from the perspective of someone else. For example, we do not normally think that a car has an interest in getting its oil changed as we do not consider it good from the perspective of the car, but from the perspective of its users. That humans and sentient animals can have interests seems clear as they have subjective experiences and it is therefore in their interest to experience pleasure and to avoid pain. However, justifying the view that also species and ecosystems have interests is much more problematic, as it is difficult to provide any convincing reasons for why something is good or bad from the perspective of a species or an ecosystem as a whole. Justifying the view that ecosystems and species can have interests presupposes the controversial view that some conditions can be good or bad from their own perspective, which is difficult to base on an overlapping consensus.

Some attempts have been made within the environmental ethical debate to defend the view that species and ecosystems have interests, but they are questionable in important respects and have not gained widespread acceptance (Johnson, 1993; Rolston, 1988). For example, Lawrence E. Johnson argues that a species has well-being needs because it needs certain conditions in order to survive and therefore has an interest in getting those things (Johnson, 1993, 156). However, as mentioned, it does not follow from the fact that a species needs certain conditions to survive that a species has interests. Those conditions are in the interest of the individual species members, but it does not mean that they are in the interest of the species as a whole.

Moreover, Johnson argues that we should regard the human species as having morally relevant interests as it shares the characteristics of being rational and capable of moral agency with individual humans, and it is those characteristics that are the reason for why individual humans have morally relevant interests. He asserts that humanity as a whole also has its rationality, which differs from the rationality of individual humans. Humanity acts rationally when it participates in activities such as science, philosophy and art. Moreover, humanity is a moral agent as human institutions develop a life of their own and function in accordance with morally relevant reason inherent within them (Johnson, 1993, 159). However, Johnson's arguments here are unconvincing as he does not demonstrate clearly why certain activities should be understood as activities of humanity as a whole and not as joint activities of individual humans. It is common to describe certain actions as conducted by humanity, but such description should probably not be understood literally. For example, people sometimes speak about the progress of humanity, when they actually mean the joint progress of individual humans.

As for ecosystems, Johnson argues that they have interests that are not just the aggregated interests of their parts. For example, it can be in the interest of an ecosystem for a specific species to become extinct if it maintains the homeostasis of the ecosystem. Likewise, a forest fire can be in the interest of an ecosystem as it promotes its complexity, diversity and stability in the long run, although it damages the interests of many of the living beings in the ecosystem (Johnson, 1993, 217–220). However, also in this context Johnson's arguments seem unpersuasive. A forest fire can promote the long-term complexity and diversity of an ecosystem, but it is questionable whether the fire is in its interest as it does not seem to care about how its complexity and diversity is developed. We can draw a parallel here to a car that is repaired. Although the reparation promotes the functioning of the car, it does not seem to be in its interests to become repaired as it does not care about whether it functions or not.

Concern for Species and Ecosystems within the Framework of the Capabilities Approach

I have argued that there are several difficulties involved in ascribing capabilities to ecosystems and species, especially if we connect such an ascription with the view that ecosystems and species are subjects of justice. However, it is necessary to acknowledge that some authors have come to the opposite conclusion. Crescenzo, for example, claims that the ascription of capabilities to ecosystems can become the object of an overlapping consensus between different comprehensive doctrines. He mentions Nussbaum's conclusion that ecosystems are not worthy of being considered for their own sake, but that we have reasons for preserving ecosystems for the sake of humans. Crescenzo claims that this argument is in line with Breena Holland's idea that having the opportunity to live under good ecological conditions should be regarded a meta-capability, as it is a precondition for having other capabilities (Crescenzo, 2013, 64–65; Holland, 2008). Crescenzo admits that preserving the opportunity for an ecosystem to maintain its integrity is not always necessary to

protect human capabilities, but he still thinks that Holland's argument gives some support for it to become the object of an overlapping consensus. Some of the policies that are needed for protecting ecosystems for the sake of humans are the same as those that are needed for protecting ecosystems for their own sake (Crescenzo, 2013, 65–66).

Moreover, Crescenzo claims that the view that we should protect ecosystems for their own sake is supported by some versions of Christian theology. According to some Christian interpretations of the idea of stewardship, all of God's creation has a value even if it is not valued by humans. Crescenzo argues that such a view of stewardship provides stronger support than Nussbaum's and Holland's anthropocentric arguments for maintaining an ecosystem's opportunity to maintain its loose integrity (Crescenzo, 2013, 69–70).

However, Crescenzo seems wrong in concluding that Nussbaum's and Holland's arguments can give some support to the conclusion that ecosystems' opportunity to maintain their loose integrity should be protected, as he confuses supporting a certain policy with supporting the ethical foundation of that policy. Also from the perspective of Nussbaum and Holland it is possible to justify some policy decisions that can be supported by the ecocentric view that we should treat ecosystems as subject of justice, but that does not mean that their perspective supports the ecocentric view. As for Crescenzo's conclusion that the ascription of capabilities to ecosystems can be supported by certain ecotheological views, I think it is less clear than he assumes. He is right in pointing out many theologians today, both conservative and liberal, claim that humans have duties to non-human nature (see, for example, Northcott, 1999; Ruether, 1994; Jenkins, 2008; Scheid, 2016), but the view that we have duties to ecosystems as wholes, over and above our duties to the individual living beings that are part of these ecosystems, is a more specific moral position that ecotheologians not always take a clear stand on. Moreover, a convincing support of the position that humanity has duties to ecosystems as wholes requires an answer to the question whether ecosystems have an objective existence. That is an issue, which to my knowledge has not been discussed in detail within ecotheology. In the light of current debates within science and philosophy of science, it seems naïve to just assume that ecosystems are objectively existing entities created by God. To conclude, there are several difficulties involved in basing the ascription of capabilities to ecosystem on an overlapping consensus that Crescenzo does not consider.

Even though the concept of integrity is problematic as a point of departure for justifying the ascription of capabilities to ecosystem if we connect this ascription with the view that ecosystems are subjects of justice, it can be helpful for clarifying why concern for ecosystems is important within the capabilities approach. J. Michael Scoville's discussion of integrity as a conservation concept seems to fit well for that purpose. He understands integrity in a partly different way than Schlosberg and Crescenzo as he puts more emphasis on limiting human interference with nature. Scoville defines integrity as a characteristic of a landscape that is relatively free from human interference and with large parts of its original biota remaining (Scoville, 2016, 81), which is line with how it is defined in some other contributions to the debate on integrity (Westra et al., 2000, 20–21). Scoville argues that it is important to preserve ecosystems with a high level of integrity because

their biological systems have proven to persist in the region's environment. Large and connected areas with high integrity can play an important role in mitigating the impacts of global climate change and other anthropogenic threats against the environment. In addition, areas with high integrity can function as storehouses of resources that other areas need to maintain their ability to withstand stress and function well over time (Scoville, 2016, 86–88). For Scoville, preserving the integrity involves maintaining the existence of animals and plants belonging to a specific site. Animals that are sentient care about what happens to them and therefore we have a reason to preserve them for their own sake. We should provide the space for them to live their lives in their own manner, which means that we should limit our interference with them (Scoville, 2016, 100).

Scoville's discussion provides reasons for being concerned with ecosystems and their integrity because of their instrumental role for human capabilities. As Holland argues, the capability to live in a well-functioning ecosystem can be seen as a meta-capability, because it is a precondition for having other capabilities (Holland, 2008). Conserving ecosystems is essential for protecting many of the human capabilities on Nussbaum's list, such as the capabilities of Life and Bodily Health. Preserving ecosystems and their integrity is, of course, also essential for promoting the capabilities of the sentient animals that are part of them. Moreover, ecosystems and species can also have significant immaterial values for humans, such as cultural values, recreational values, aesthetic value, and scientific value (Rolston, 1994). Thus, they are also relevant for promoting the Capability of Senses, Imagination and Thought.

In addition, the Capability of Other Species, another capability on Nussbaum's list, is one important point of departure for justifying concern for species and ecosystems, as it shows why non-instrumental relations to species and ecosystems are essential for human dignity. This capability is discussed by Jeremy Bendik-Keymer who wants to give it a much more central role than what is often assigned to it within the capabilities approach. The foundation of this capability is the human ability of wondering over other life forms, which Bendik-Keymer sees as a way of understanding our human form of life in the process. Moreover, this ability is essential for being a moral person, as non-instrumental relations to nature help us develop our power of reflection and self-reflection which is an important aspect of human freedom (Bendik-Keymer, 2021a, b, 1–10).

Conclusions

There are several problems involved in ascribing capabilities to ecosystems and species, especially if we connect it with the view that species and ecosystems are subjects of justice, and these problems are not fully recognized by Schlosberg, Crescenzo and Kortetmäki. First, ascribing capabilities to species and ecosystems conflicts with ecosystem and species anti-realism, which makes it difficult to base the ascription of capabilities to them on an overlapping consensus. Second, we cannot draw the conclusion that we should ascribe capabilities to ecosystems and species and regard them as subjects of justice because they share the characteristics of integrity and agency with humans, as humans have these characteristics in

a radically different sense than ecosystems and species. Third, to regard ecosystems and species as subjects of justice seems to require that they can have interests, which is a controversial viewpoint that is difficult to support. However, even if we do not ascribe capabilities to ecosystems and species, we still have strong reasons for protecting them as many human and animal capabilities are dependent on well-functioning ecosystems and on many of the species that are part of them. Moreover, developing non-instrumental relations to ecosystems and species can be considered essential for humans in order to become moral persons.

Acknowledgements This article has been written as a part of a research project, funded by the Swedish Research Council, Dnr 421-2013-781.

Funding Open access funding provided by Malmö University.

Declarations

Conflict of interest The author declared that they have no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Barad, K. (2007). *Matter the universe halfway: Quantum physics and the entanglement of matter and meaning*. Durham and London: Duke University Press.
- Baxter, B. (2005). *A theory of ecological justice*. Abingdon, Oxon, UK: Routledge.
- Bendik-Keymer, J. (2014). Living up to our humanity: The elevated extinction rate event and what it says about us. *Ethics, Policy and Environment*, 17(3), 339–354. <https://doi.org/10.1080/21550085.2014.955309>
- Bendik-Keymer, J. (2021a). Beneficial relations between species & the moral responsibility of wondering. *Environmental Politics*. <https://doi.org/10.1080/09644016.2020.1868818>
- Bendik-Keymer, J. (2021b). The other species capability & the power of wonder. *Journal of Human Development and Capabilities*, 22(1), 154–179. <https://doi.org/10.1080/19452829.2020.1869191>
- Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Durham and London: Duke University Press.
- Clark, J. P. (2009). Capabilities theory and the limits of liberal justice: On Nussbaum's Frontiers of Justice. *Human Rights Review*, 10(4), 583–604. <https://doi.org/10.1007/s12142-008-0109-8>
- Cox, D., Marguerite La Caze, M., & Levine, M. (2017). Integrity. In E. N. Zalta (Ed.), *Stanford encyclopedia of philosophy*, <https://plato.stanford.edu/entries/integrity/>. (Revised February 20, 2017), pp. 1–21.
- Crescenzo, D. L. (2013). Loose integrity and ecosystem justice on Nussbaum's capabilities approach. *Environmental Philosophy*, 10(2), 53–74.

- Cripps, E. (2010). Saving the polar bear, saving the world: Can the capabilities approach do justice to humans, animals and ecosystems? *Res Publica*, 16(1), 1–22. <https://doi.org/10.1007/s11158-010-9106-2>
- Fulfer, K. (2013). The capabilities approach to justice and the flourishing of non-sentient life. *Ethics and the Environment*, 18(1), 19–38.
- Hailwood, S. (2012). Bewildering Nussbaum: Capability justice and predation. *The Journal of Political Philosophy*, 20(3), 293–313.
- Holland, B. (2008). Justice and the environment in Nussbaum’s “capabilities approach”: Why sustainable ecological capacity is a meta-capability. *Political Research Quarterly*, 61(2), 319–322. <https://doi.org/10.1177/1065912907306471>
- Ilea, R. (2008). Nussbaum’s capabilities approach and nonhuman animals: Theory and public policy. *Journal of Social Philosophy*, 39(4), 547–563. <https://doi.org/10.1111/j.1467-9833.2008.00442.x>
- Jenkins, W. (2008). *Ecologies of grace. Environmental ethics and christian theology*. Oxford: Oxford University Press.
- Johnson, L. E. (1993). *A morally deep world: An essay on moral significance and environmental ethics*. Cambridge: Cambridge University Press.
- Keulartz, J., & Swart, J. A. A. (2012). Animal flourishing and capabilities in an era of global change. In A. Thompson & J. Bendik-Keymer (Eds.), *Ethical adaptation to climate change*. (pp. 123–144). Cambridge, MA: The MIT Press.
- Kortetmäki, T. (2018). Can species have capabilities, and what if they can? *Journal of Agricultural and Environmental Ethics*, 31(3), 307–323. <https://doi.org/10.1007/s10806-018-9726-7>
- Linch, A., & Holland, B. (2017). Cultural killing and human-animal capability conflict. *Journal of Human Development and Capabilities*, 18(3), 322–336. <https://doi.org/10.1080/19452829.2017.1342383>
- Northcott, M. S. (1999). *The environment and christian ethics*. Cambridge: Cambridge University Press.
- Nussbaum, M. C. (2000). *Women and human development: The capabilities approach*. Cambridge: Cambridge University Press.
- Nussbaum, M. C. (2006). *Frontiers of Justice: Disability, nationality, species membership*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Nussbaum, M. C. (2011). *Creating capabilities: The human development approach*. Cambridge, MA: The Belknap Press of Harvard University Press.
- Nussbaum, M. C. (2018). Working with and for animals: Getting the theoretical framework right. *Journal of Human Development and Capabilities*, 19(1), 2–18. <https://doi.org/10.1080/19452829.2017.1418963>
- Nussbaum Wichert, R., & Nussbaum, M. C. (2016). The legal status of whales: Capabilities, entitlements and culture. *Sequentia: Estudios Juridicos e Politicos*, 37(72), 19–40. <https://doi.org/10.5007/2177-7055.2016v37n72p19>
- Nussbaum Wichert, R., & Nussbaum, M. C. (2017). Scientific whaling? The scientific research exception and the future of the international whaling commission. *Journal of Human Development and Capabilities*, 18(3), 356–369. <https://doi.org/10.1080/19452829.2017.1342386>
- Odenbaugh, J. (2007). Seeing the forest and the trees: Realism about communities and ecosystems. *Philosophy of Science*, 74, 628–641. <https://doi.org/10.1086/525609>
- Rolston, III, H. (1988). *Environmental Ethics. Duties to and Values in The Natural World*, Philadelphia: Temple University Press.
- Rolston, H., III. (1994). *Conserving natural value*. New York: Columbia University Press.
- Ruether, R. R. (1994). *Gaia & God. An ecofeminist theology of earth healing*. HarperSanFrancisco: San Francisco.
- Scheid, D. P. (2016). *The cosmic common good. religious grounds for ecological ethics*. Oxford: Oxford University Press.
- Schlosberg, D. (2007). *Defining environmental justice: Theories, movements, and nature*. Oxford Scholarship Online.
- Schlosberg, D. (2012). Justice, ecological integrity, and climate change. In A. Thompson & J. Bendik-Keymer (Eds.), *Ethical adaptation to climate change. Human virtues of the future*. (pp. 165–183), Cambridge, MA: The MIT Press.
- Schlosser, M. (2015). Agency. In E. N. Zalta (Ed.), *Stanford encyclopedia of philosophy*, <https://plato.stanford.edu/entries/agency/>. (August 10, 2015), pp. 1–20.
- Scoville, J. M. (2016). A defense of integrity as a conservation concept. *Ethics and the Environment*, 21(3), 79–115. <https://doi.org/10.2979/ethicsenviro.21.2.04>

- Simus, J. (2011). Metaphors and metaphysics in ecology. *Worldviews*, 15(2), 185–202.
- Westra, L., Miller, P., Karr, J. R., Rees, W. E., & Ulanowicz, R. E. (2000). In D. Pimentel, L. Westra, & R. F. Noss (Eds.), *Ecological integrity: Integrating environment, conservation, and health* (pp. 19–41). Washington, DC: Island Press.
- Wissenburg, M. (2011). The lion and the lamb: Ecological implications of Martha Nussbaum's animal ethics. *Environmental Politics*, 20(3), 391–409. <https://doi.org/10.1080/09644016.2011.573361>
- Zachos, F. E. (2016). *Species concept in biology: Historical development, theoretical foundations and practical relevance*. Heidelberg: Springer.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Authors and Affiliations

Anders Melin¹ 

✉ Anders Melin
anders.melin@mau.se

¹ Dep. of Global Political Studies, Malmö University, 205 06 Malmö, Sweden