

## The Capability Approach as a Normative Framework for Urban Biodiversity Management: Strong Points and Unresolved Issues

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*The Capability Approach (CA) has since the 1990s become one of the most influential theories of justice. It has been proven to be helpful for analysing both questions of social, environmental and multispecies justice. This article contributes to the debate on the usefulness of the CA in the context of ecological sustainability by evaluating its appropriateness as a normative framework for urban biodiversity management. The paper concludes that in its present form, it is uncertain whether the CA is suitable as a normative framework in this context. Its multidimensional view of human welfare can be considered a strong point, but there are also important unresolved issues. There are reasons for considering a redefinition of the concept of capability as it is problematic to apply to animals and even more so to plants. Finally, the question of whether collective entities should be considered for their own sake within the CA challenges the ethical individualism that is a core assumption in most formulations of the CA.*

### Introduction

The Capability Approach (CA) has since the 1990s become one of the most influential theories of justice. It has been proven to be useful for analysing both questions of social, environmental and multispecies justice.<sup>1</sup> This article contributes to the debate on the usefulness of the CA in the context of ecological sustainability by evaluating its appropriateness as a normative framework for urban biodiversity management. At the same time, it contributes to the debate on urban biodiversity management and justice. Today, there is an increasing interest in protecting biodiversity in urban settings among

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<sup>1</sup> Amartya Sen, *Inequality Reexamined* (Oxford: Clarendon Press, 1992), Ortrud Lessmann & Felix Rauschmayer. 2013; “Re-conceptualizing Sustainable Development on the Basis of the Capability Approach: A Model and Its Difficulties,” *Journal of Human Development and Capabilities*, 14 (1), pp. 95-114; Martha C. Nussbaum, *Justice for Animals: Our Collective Responsibility* (New York: Simon & Schuster, 2022).

municipal planners and scientists, as well as residents and community groups.<sup>2</sup> At the same time, urban residents often do not have equal access to biodiversity. Areas where citizens have high socioeconomic status is often characterized by better access to green spaces.<sup>3</sup> The current inequalities have made scholars increasingly interested in analysing urban biodiversity management from a justice perspective.<sup>4</sup> In addition, it is necessary to acknowledge the question of whether urban biodiversity and its components should be considered for their own sake within the CA, regardless of their value for humans.

The reason for focusing especially on *urban* biodiversity is that ethical discussions on biodiversity management have so far concerned primarily non-urban settings. In an article from 2001, Light<sup>5</sup> identifies an “urban blind spot in environmental ethics” which is connected with the fact that environmental ethicists often value wilderness much higher than natural areas created by or heavily modified by humans. Although some scientific works on urban environmental ethics have been published more recently, partly as a response to Light’s call for more attention to urban contexts<sup>6</sup>, the ethics of urban nature conservation remains a relatively unexplored area. Therefore, there is a gap in the research field that needs to be filled.

The article starts with a brief description of the concept and phenomenon of urban biodiversity and of the CA. Then I discuss what can be considered the strong points of the CA as a normative framework for urban biodiversity. Finally, I discuss some unresolved issues that raises questions about the usefulness of the CA in this context.

### The concept of urban biodiversity

Biodiversity is a concept with many possible definitions and there is currently no consensus on how it should be defined. The most well-known definition is the one presented in the UN Convention on Biological Diversity that states that: “biological diversity” means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems”.<sup>7</sup> However, many other definitions have been proposed, based on characteristics, such as richness, difference, and rarity. There have been some attempts to define biodiversity in a

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<sup>2</sup> Archana Bele and Ujwala Chakradeo, “Public Perception of Biodiversity: A Literature Review of its Role in Urban Green Spaces,” *Journal of Landscape Ecology*, 14:2, (2021), pp. 1-28.

<sup>3</sup> Jennifer R. Wolch, Jason Byrne and Joshua P. Newell. “Urban green space, public health, and environmental justice: The challenge of making cities ‘just green enough’,” *Landscape and Urban Planning*, 125 (2014), pp. 234-244.

<sup>4</sup> Max R. Lambert and Christopher J. Schell, “Cities as the Solution to the Biodiversity Crisis,” in *Urban Biodiversity and Equity: Justice-centered conservation in cities*, edited by Max R. Lambert and Christopher J. Schell, (Oxford: Oxford University Press, 2023), pp. 1-21.

<sup>5</sup> Andrew Light, “The Urban Blind Spot in Environmental Ethics,” *Environmental Politics*, 10:1 (2001), pp. 7-35.

<sup>6</sup> Clare Palmer, “Placing Animals in Urban Environmental Ethics,” *Journal of Social Philosophy*, 34:1 (2003), pp. 64-78; Diane P. Michelfelder, “Valuing Wildlife Populations in Urban Environments,” *Journal of Social Philosophy*, 34:1 (2023), pp. 79-90; Samantha Noll, “History Lessons: What Urban Environmental Ethics Can Learn from Nineteenth Century Cities”, *Journal of Agricultural and Environmental Ethics*, 28 (2015), pp. 143-159.

<sup>7</sup> UN (1992). *Convention on Biological Diversity*.

more narrow sense than in the UN definition to make it operationalizable.<sup>8</sup> Here I adhere to a pluralistic view of the concept according to which definitions may vary between contexts.<sup>9</sup> In policy documents and in the social scientific debate on biodiversity,<sup>10</sup> the concept of biodiversity is often defined in a rather broad sense as biological variation at different levels, both within and between species and between ecosystems. Thus, for the purpose of this article, a broad definition of biodiversity as biological variation at all these levels seems most appropriate.

Urban biodiversity can be defined as the diversity of living beings in urban areas.<sup>11</sup> However, what should be considered as urban areas is not obvious and the definitions vary between different disciplines. Social scientists often define urban areas in terms of population density and environmental scientists in terms of dominant land cover. Here, I define urban areas based on population density and follow the definition Degree of Urbanisation endorsed by the UN Statistical Commission. It considers cities, towns and semi-dense areas as belonging to the category of urban areas and defines them in the following way:

1. **An urban centre** consists of contiguous grid cells of 1 km<sup>2</sup> that have a density of at least 1500 inhabitants per km<sup>2</sup>. The contiguous cells should have a total population of at least 50,000. Gaps in these urban centres are filled and edges are smoothed. This defines a **city**.
2. **An urban cluster** consists of contiguous grid cells with a density of at least 300 inhabitants per km<sup>2</sup>. The contiguous cells should have a total population of at least 5000; This defines a **town and semi-dense area**.<sup>12</sup>

### The capability approach

As mentioned, I have chosen to apply the CA to ethical questions of urban biodiversity managements as its usefulness for analysing both questions of social and environmental justice has been demonstrated. Amartya Sen and Martha Nussbaum are the two most influential pioneers within the capability approach. Sen first developed the capability approach as an alternative to traditional Utilitarian theories in welfare economics, and later

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<sup>8</sup> Sahotra Sarkar, "Approaches to biodiversity," in *Routledge Handbook of Philosophy of Biodiversity*, edited by Justin Garson, Anya Plutynski and Sahotra Sarkar, (Milton Park, Abingdon, Oxfordshire: Routledge, 2016), pp. 43-55.

<sup>9</sup> David M. Frank, "Biodiversity" and biological diversities: Consequences of pluralism between biology and policy," in *Routledge Handbook of Philosophy of Biodiversity*, edited by Justin Garson, Anya Plutynski and Sahotra Sahar, (Milton Park, Abingdon, Oxfordshire: Routledge, 2016), pp. 96-109.

<sup>10</sup> European Environment Agency. "Biodiversity – Ecosystems," <https://www.eea.europa.eu/themes/biodiversity/intro> (retrieved 2024-06-07), Bele and Chakradeo, "Public Perception of Biodiversity".

<sup>11</sup> P. Farinha-Marques, J.M. Lameiras, C. Fernandes, S. Silva and F. Guilherme. "Urban biodiversity: a review of current concepts and contributions to multidisciplinary approaches," *Innovation: The European Journal of Social Science Research*, 24:3 (2011), pp. 247-272.

<sup>12</sup> Dijkstra, Lewis, Aneta J. Florczyk, Sergio Freire, Thomas Kemper, Michele Melchiorri, Martino Pesaresi and Marcello Schiavina. "Applying the Degree of Urbanisation to the globe: A new harmonization reveals a different picture of global urbanization," *Journal of Urban Economics*, 125 (2021), 103312, p. 2.

Nussbaum put forward her version of the capability approach (labelled “the capabilities approach”) which she describes as a minimal theory of justice.<sup>13</sup>

“Capability” is, of course, a central concept within the capability approach, which is defined in contrast to functionings. While the concept of functionings stands for what people are or do, such as being a father or working as a carpenter, a capability stands for an opportunity to function in a specific way. Within the capability approach, freedom to live the kind of life one wants is a central value.<sup>14</sup>

One of the most significant differences between Sen’s and Nussbaum’s versions of the capability approach is that Nussbaum advocates a set list consisting of the following capabilities: 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.<sup>15</sup> By contrast, Sen<sup>16</sup> is critical of formulating a set list as he thinks that a list needs to be based on democratic deliberation in specific contexts.

### Strong points of the CA

*A multidimensional view of the importance of urban biodiversity for human well-being and freedom*  
Discussing issues of social justice within the CA has a long tradition, and its strongest point as a normative framework for urban biodiversity management is its multidimensional view of human well-being and freedom. This enables a nuanced understanding of what impact urban biodiversity has on human beings. In contrast to mainstream utilitarian and opulence-based approaches, the CA recognises that human well-being and freedom has many dimensions that cannot be reduced to monetary measures. A loss of urban biodiversity cannot always be compensated for through increases of income or wealth.<sup>17</sup>

To analyse how urban biodiversity affect the different capabilities, we first need to clarify how biodiversity can be of instrumental value for city residents, in other words in what sense it can be valuable as a means to an end, in this case human well-being. As mentioned, environmental ethicists often value wilderness higher than nature created by or heavily modified by humans. However, urban biodiversity can have considerable instrumental value, even if it is made by humans. The instrumental value of individual living beings is more direct than the value of biodiversity, because it is individual living beings that humans directly receive value from as they are the source of environmental goods and services – commonly labelled as “ecosystem services” – that ecosystems provide.<sup>18</sup> However, biodiversity can have an indirect instrumental value if it is the

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<sup>13</sup> Amartya Sen, *Inequality Reexamined*, (Oxford: Clarendon Press, 1992); Martha C. Nussbaum, *Women and Human Development. The Capabilities Approach*, (Cambridge: Cambridge University Press, 2000). According to Sen’s original use of the term, a person has only one capability, or capability set, which consists of the combinations of functionings that he or she can achieve. However, other capability scholars, such as Nussbaum, use the concept to denote a potential functioning, and therefore a person’s capability set consists of a number of capabilities. In this article, I adhere to the latter use of the term capability as it has become dominant in the scientific debate.

<sup>14</sup> Sen, *Inequality Reexamined*, pp. 40-42; Nussbaum, *Women and Human Development*, pp. 87-88.

<sup>15</sup> Nussbaum, *Women and Human Development*, pp. 78-80.

<sup>16</sup> Sen, Amartya, *The Idea of Justice*, (London: Allen Lane, 2009).

<sup>17</sup> Lessmann & Rauschmayer, “Re-conceptualizing Sustainable Development”; Sudhir Anand and Amartya Sen, “Human Development and Economic Sustainability”, *World Development*, 28:12 (2000), pp. 2029-2049.

<sup>18</sup> Millenium Ecosystem Assessment, *Ecosystems and Human Well-Being: Synthesis*, (Washington, D.C.: IslandPress, 2005)

precondition of the existence of individual living beings. Instrumental values can be linked to one another in chains.<sup>19</sup> Some living beings belonging to species A may have direct instrumental value because of the goods they provide, while these beings are dependent on the biodiversity in the ecosystem in which they live. Thus, biodiversity may have derivative instrumental value. It should be acknowledged that biodiversity may have different forms of instrumental value, both material ones as a certain level of biodiversity is a precondition for human survival and health and immaterial ones as it is a source of aesthetic enjoyment and recreation.

The CA is helpful for attaining a better understanding of how human welfare depends on a certain level of urban biodiversity by analysing its impact on different capabilities. Taking the capabilities on Nussbaum's list of 10 central capabilities as examples, it seems clear that a certain diversity of urban plant species is needed as urban plants provide humans with ecosystem services that are necessary for the capabilities of life and bodily health. For example, they regulate the levels of oxygen in the atmosphere and improve air quality.<sup>20</sup> As for the diversity of animal species in urban settings, some non-domesticated urban animals also perform ecosystem services that can be important for the capability of bodily health. Scavengers, such as magpies, crows, and foxes, perform three different ecosystem services: they increase stability within food webs, distribute nutrients both across the borders of ecosystems and within ecosystems, and play a crucial hygienic role by removing sources of pathogens and toxins.<sup>21</sup> Moreover, urban plants and non-domesticated animals have recreational and aesthetic value, and therefore urban biodiversity positively affects the capability of senses, imagination and thought, as well as the capabilities of emotions and play.<sup>22</sup> Furthermore, the capability of other species is obviously dependent on a certain level of biodiversity.

One central difference between different theories of distributive justice concerns the unit of distribution. For the CA, capabilities are the units of distribution, while welfarists regard instead regard welfare – defined as the satisfaction of desires or preferences – as the correct currency of justice. Resourcist theories of justice instead see material resources as the correct unit of distribution.<sup>23</sup> It can be argued that compared with the other two forms of theories, the CA has certain advantages that are relevant in the context of urban biodiversity management. As for welfarist theories, one central problem consists of the fact that individuals often adapt their preferences to their specific living conditions.<sup>24</sup> For example, urban residents growing up in a poor district with no or very

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<sup>19</sup> Patrik Baard, *Ethics in Biodiversity Conservation* (Routledge Studies in Conservation and the Environment), (London: Routledge, 2021), p. 62.

<sup>20</sup> David J. Nowak, Daniel E. Crane and Jack C. Stevens, "Air pollution removal by urban trees and shrubs in the United States," *Urban forestry & urban greening*, 4 (2006), pp. 115-123.

<sup>21</sup> Richard Inger, Daniel T. C. Cox, Esra Per, Briony A. Norton and Kevin J. Gaston, "Ecological role of vertebrate scavengers in urban ecosystems in the UK," *Ecology and Evolution*, 6 (2016), pp. 7015-7023.

<sup>22</sup> Emma Wood, Alice Harsant, Martin Dallimer, Anna Cronin de Chavez, Rosemary R. C. McEachan and Christopher Hassall, "Not All Green Space Is Created Equal: Biodiversity Predicts Psychological Restorative Benefits From Urban Green Space," *Frontiers in Psychology*, 9 (2018), article 2320; Lin Qiu, Stefan Lindberg and Anders B. Nielsen, "Is biodiversity attractive? – On-site perception of recreational and biodiversity values in urban green space," *Landscape and Urban Planning*, 119 (2013), pp. 136-146.

<sup>23</sup> Edward A. Page, "Intergenerational justice of what? Welfare, resources or capabilities?," *Environmental Politics*, 16:3 (2007), pp. 453-469.

<sup>24</sup> Nussbaum, *Women and Human Development*, p. 136.

small greenspaces and thus a very low level of biodiversity, may be accustomed to the situation and do not prefer a higher level. From a welfarist perspective, it may not be considered unjust that they live in an area with much lower biodiversity than residents in richer neighbourhoods as they do not have more unsatisfied preferences, which seems counterintuitive. As for resourcist theories, one problem is that individuals with the same resources may have different possibilities to use them, due to different characteristics. For example, two individuals that live in the same area and have the same distance to a large park have different possibilities to enjoy it if one of them is disabled and cannot afford a wheelchair. Therefore, the disabled person may need more resources in order to live an equally good life, which conflicts with resourcist theories of justice. In the context of urban biodiversity management, it can be seen as an advantage of the CA that it is focused on what people can actually be or do, rather than on whether their preferences are satisfied or what material resources they have.<sup>25</sup>

To conclude, the CA is useful for assessing how measures that impact urban biodiversity affect people's possibilities to live a good life. Thus, it can help us determine whether such measures fulfil the demands of social justice. According to both Nussbaum and Sen, it is important that individuals reach a certain threshold for the essential capabilities.<sup>26</sup> Policies that affect urban biodiversity are problematic from a justice perspective if they cause residents to fall below this threshold.

#### *A multidimensional view of the well-being of urban animals*

When assessing different policies on urban biodiversity management, it is crucial to determine not only their impact on individual humans but also their impacts on individual urban animals. This statement may come as a surprise to some readers as both the scientific and political debates on urban biodiversity are focused on non-human collective entities, such as species and ecosystems, rather than on individual animals.<sup>27</sup> However, from an ethical perspective, there are strong reasons for recognizing the importance of the well-being of individual animals. Especially during the past half century, it has become increasingly accepted within the ethical debate that humans should be concerned about animals for their own sake. This claim has been supported both from Utilitarian and Deontological perspectives.<sup>28</sup>

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<sup>25</sup> Ingrid Robeyns, Morten Fibieger Byskov, "The Capability Approach", Stanford Encyclopedia of Philosophy, edited by Edward N. Zalta, Uri Nodelman, online at <https://plato.stanford.edu/entries/capability-approach/>.

<sup>26</sup> Nussbaum, *Women and Human Development*, pp. 78-82; Amartya Sen, "Equality of what?", online at [http://tannerlectures.utah.edu/\\_documents/a-to-z/s/sen\\_80.pdf](http://tannerlectures.utah.edu/_documents/a-to-z/s/sen_80.pdf), 1979, pp. 217-219.

<sup>27</sup> UN, *Convention on Biological Diversity*, 1992; Charles H. Nilon, and Myla F. J. Aronson (Eds.). *Routledge Handbook of Urban Biodiversity*, Milton Park, Abingdon, Oxfordshire: Routledge, 2024.

<sup>28</sup> Peter Singer, *Practical Ethics*, (Cambridge: Cambridge University Press, 2011); Tom Regan, *The Case for Animal Rights* (updated with a new preface), University of California Press, 2004 [originally published in 1983]; Christine Korsgaard, *Fellow Creatures: Our Obligations to the Other Animals* (Oxford: Oxford University Press, 2018)

There is a growing body of the literature that discusses animal ethics from the perspective of the CA.<sup>29</sup> As for Sen<sup>30</sup>, his version of the CA is focused on human agency, and he has not acknowledged questions about the moral status<sup>31</sup> of non-human beings and entities, but Nussbaum has given important contributions to the debate on animal ethics. She argues that we do not only have duties of charity to animals, but also duties of justice.<sup>32</sup> Nussbaum claims that all sentient animals have inherent dignity. Each sentient animal has strivings that should not be hindered, and we have no reason to claim that only some sentient creatures should be considered for their own sake.<sup>33</sup>

Nussbaum argues that beings must have some form of subjective experience in order to be regarded as subjects of justice<sup>34</sup>. The necessary and sufficient conditions for being a subject of justice is “sentience, emotion, cognitive awareness of objects, movement toward the good and away from the bad”.<sup>35</sup> Nussbaum concludes that there is scientific evidence that many forms of animals fulfil the criteria for being a subject of justice, such as mammals, fish, birds and cephalopods.<sup>36</sup>

Moreover, Nussbaum argues that her list of ten human capabilities can be applied also to animals, although they must be adapted to each specific species.<sup>37</sup> The CA is concerned not only with animal suffering but also the possibility of animals to live a full species-characteristic form of life, which includes many different forms of characteristic activities, such as free movement, play and reproduction.<sup>38</sup> Thus, it can be argued that the CA can provide a more comprehensive understanding than other ethical theories, such as Utilitarianism, of how urban biodiversity affects the well-being of urban non-domesticated animals. As for humans, a certain level of biodiversity is necessary for urban animals to live a decent life. Some of the ecosystem services that urban plants produce for humans, such as regulating the content of oxygen, are also of importance for urban animals.<sup>39</sup> Moreover, urban plants are important sources of food for non-domesticated urban birds and mammals. The well-being of herbivores requires a certain level of species diversity among urban plants.<sup>40</sup>

Nussbaum’s argumentation provides strong support for the conclusion that concern for animal well-being for its own sake should be a part of the CA. However, I think

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<sup>29</sup> Simon Hailwood, “Bewildering Nussbaum: Capability Justice and Predation”, *The Journal of Political Philosophy*, 20:3 (2012), pp. 293-313; Amy Linch and Breena Holland, “Cultural Killing and Human-Animal Capability Conflict”, *Journal of Human Development and Capabilities*, 18:3 (2017), pp. 332-336; Nicolas Delon, “Animal Capabilities and Freedom in the City”, *Journal of Human Development and Capabilities*, 22:1 (2021), pp. 131-153.

<sup>30</sup> Sen, *The Idea of Justice*, pp. 248-252.

<sup>31</sup> That a non-human being or entity is ascribed moral status means that we should consider it for its own sake, regardless of its instrumental value for humans. However, that fact that such a being or entity has moral status does not necessarily imply that we should care about it as much as we care about a human being.

<sup>32</sup> Martha C. Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership*, Cambridge, MA: The Belknap Press of Harvard University Press, 2006, p. 327.

<sup>33</sup> Martha C. Nussbaum, *Justice for Animals: Our Collective Responsibility*, (New York: Simon & Schuster, 2022), p. 96.

<sup>34</sup> In line with Nussbaum’s argumentation in *Justice for Animals*, I understand the status as subject of justice as one specific form of moral status.

<sup>35</sup> Nussbaum, *Justice for Animals*, p. 138.

<sup>36</sup> Nussbaum, *Justice for Animals*, pp. 141-148.

<sup>37</sup> Nussbaum, *Justice for Animals*, p. 102.

<sup>38</sup> Nussbaum, *Justice for Animals*, p. 98, p. 236.

<sup>39</sup> Clark E. Adams, *Urban Wildlife Management*, (Boca Raton, FL: CRC Press, 2021), pp. 90-94.

<sup>40</sup> Adams, *Urban Wildlife Management*, p. 95.

there is a need of more reflection on whether concern for the well-being of urban animals should focus on their functionings, rather than on their capabilities. Nussbaum acknowledges this issue in *Creating Capabilities*<sup>41</sup> where she states that we should favour choice for beings that has a capacity for making choices, but that a focus on functioning can be more appropriate for animals than for humans. However, it is not discussed in *Justice for Animals* where she instead seems to assume that the reasons for regarding animals as subjects of justice are also valid reasons for ascribing capabilities to them.

However, the claim that animals are subjects of justice does not necessarily lead to the conclusion that they should be ascribed capabilities. Instead, it can be a reason for being concerned with their functionings for their own sake, and not their capabilities. Nussbaum's account of animal capabilities lacks a detailed discussion of what a capability is and what is required for having a capability. She describes a capability as "a real, substantive, freedom, or opportunity to choose to act".<sup>42</sup> However, there is no analysis of whether, and to what extent, animals have the freedom to choose to act. It can be argued that humans have a unique level of self-consciousness and that only humans can understand their lives as a narrative with a past, present and future. Some forms of choices, such as whether to shift to a plant-based diet or continue to eat meat, seem to require such a high level of consciousness. It is questionable whether we have valid reasons for ascribing capabilities to animals.<sup>43</sup>

However, even if we conclude that we lack valid reasons for assigning capabilities to animals, it is not necessarily a convincing argument for discarding the CA as a normative framework for urban biodiversity management. Concern for animals for their own sake can be expressed in terms of protecting or promoting their functionings instead of their capabilities. It seems clear that animals have certain functionings that are important for them to live a decent life, such as eating healthy food, procreating and having relationships with other members of their species.<sup>44</sup> Regardless of whether we express concern for animals in terms of respect for their capabilities or their functionings, the fact remains that the CA provides us with a multidimensional view of animal well-being.

However, the problems involved in ascribing capabilities to animals gives rise to the question whether a redefinition of the concept of capability is necessary. The concept of capability was originally developed to emphasize the value of having freedom in areas that are unique for humans, for example, having the opportunity to choose to take part in an education. Such forms of freedom seem to require the specific human ability to make rationally considered choice, based on one's values and future goals.<sup>45</sup> It can be argued that current conceptualizations of capability are too much based on unique human abilities. This concern become even more important if we want to consider non-sentient beings and collective entities for their own sake within the CA, as I discuss in the following section.

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<sup>41</sup> Martha C. Nussbaum, *Creating Capabilities: The Human Development Approach*, (Cambridge, MA: The Belknap Press of Harvard University Press, 2011), p. 162.

<sup>42</sup> Nussbaum, *Justice for Animals*, p. 86.

<sup>43</sup> Gary E. Varner, *Personhood, Ethics, and Animal Cognition: Situating Animals in Hare's Two Level Utilitarianism*, (Oxford: Oxford Scholarship Online, 2012), 135-155, 169-170; Anders Melin and David Kronlid, "Should We Ascribe Capabilities to Sentient Animals? A Critical Analysis of the Extension of Nussbaum's Capabilities Approach, *De Ethica: A Journal of Philosophical, Theological and Applied Ethics*, 3:2 (2016), pp. 53-63.

<sup>44</sup> Melin & Kronlid, "Should We Ascribe Capabilities to Sentient Animals?"

<sup>45</sup> Melin & Kronlid, "Should We Ascribe Capabilities to Sentient Animals?"

## Unresolved issues

Here I identify and discuss some unresolved issues that need to be addressed to determine whether the CA is appropriate as a normative framework for urban biodiversity management: questions about the moral status of individual non-sentient beings and of non-human collective entities. These questions are important to discuss as it is often assumed in policy documents on biodiversity, such as the Convention on Biodiversity, that biodiversity and its components have not only instrumental value for humans, but also intrinsic value.<sup>46</sup>

### *The consideration of individual non-sentient beings*

From the perspective of urban biodiversity management, it is a crucial question how we should relate also to other individual beings than animals. If we can conclude that such beings have some form of moral status, this leads indirectly to stronger reasons for preserving urban biodiversity. The protection of other individual beings, such as plants, for their own sake is not a direct argument for protecting urban biodiversity as it is concerned with individual life forms and not the diversity of life forms, but the protection of such beings indirectly leads to the protection of at least some level of biodiversity.

As mentioned, several works discuss justice to animals from the perspective of the CA, but the question of whether we should consider other individual beings for their own sake have received less attention. Nussbaum discusses this issue, but relatively briefly. In her most detailed treatment of the topic, Nussbaum acknowledges that the question about the sentience of plants is controversial.<sup>47</sup> Even though experiments have shown that plants convey information about the colour and intensity of light to other plants with the help of electrical signals, she still concludes that at present the evidence that they are sentient are not sufficient. Moreover, as for their neuroanatomical characteristics, plants do not have brains or central nervous systems. Concerning behaviour, plants do not have the same flexibility to react to different situations as animals have. Even if they grow in the direction of gravity and turn to the light, it is not a strong enough reason for concluding that they have subjective feelings. Nussbaum concludes that plants can be harmed, but we cannot treat them unjust as they cannot be subjects of justice. Still, she maintains that they deserve some form of ethical concern. The natural environment is of importance both instrumentally and intrinsically.<sup>48</sup> In other words, Nussbaum concludes that plants cannot be considered subjects of justice, but they may have some other form of moral status.

Nussbaum seems right in claiming that the scientific support for the conclusion that plants are sentient is at present rather weak.<sup>49</sup> However, even if we assume that plants are not sentient, it is unclear whether it is a valid reason for concluding that they cannot be ascribed the status as subjects of justice within the CA. Some capability scholars, primarily Fulfer<sup>50</sup>, argue that we have reasons for regarding plants as subjects of justice and for ascribing capabilities to them even if they lack sentience. Fulfer claims that the concept of

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<sup>46</sup> UN, *Convention on Biological Diversity*. Intrinsic value seems to have a similar meaning as moral status in this context, i.e., that something has intrinsic value if we should consider it for its own sake.

<sup>47</sup> Nussbaum, *Justice for Animals*, pp. 148-152.

<sup>48</sup> Nussbaum, *Justice for Animals*, pp. 151-152.

<sup>49</sup> Miguel Segundo-Ortin, and Paco Calvo. "Consciousness and cognition in plants," *WIREs Cognitive Science*, (2021), 13e1578.

<sup>50</sup> Katy Fulfer, "The Capabilities Approach to Justice and the Flourishing of Nonsentient Life", *Ethics & the Environment*, 18:1 (2013), pp. 19-38.

flourishing that is central for Nussbaum can be applied also to plants and that they should be regarded as subjects of justice. She points out that the notion that we should promote the flourishing of non-human life forms is central to Nussbaum's argumentation and that she conceives of flourishing from both an objective and a subjective point of view. Whether a life form flourish can be determined in a subjective sense by considering its own perception of its living conditions, but it can also be determined in an objective sense by comparing a living being with a species norm. For example, by looking at a tree we can see whether it flourishes even if it does not have a perception of its living conditions, at least none that it can communicate to us. Fulfer claims that the CA only needs an objective definition of flourishing as a standard for determining what justice requires. According to an objective standard, non-sentient living beings can flourish, and therefore we should care about them for their own sake. She argues that our moral responsibility towards non-sentient life forms follows from the fact that we are dependent on them.<sup>51</sup>

However, Fulfer's argumentation is unconvincing in several respects. First, the ascription of capabilities to plants is problematic as capabilities are commonly understood as "real freedoms or opportunities" within the CA, and it is highly doubtful that plants have freedom of choice. Although some scientists claim that plants have consciousness, such claims have been refuted by others.<sup>52</sup> However, as with animals, the problem with ascribing capabilities to plants is not a strong argument against ascribing to plants the status as subjects of justice as our concern for plants for their own sake can also be expressed in terms of concern for the functionings, rather than capabilities. It seems clear that plants have functionings that are important for their survival and well-being, such as the functioning of absorbing water through their roots and the functioning of photosynthesis. Nevertheless, the fact that it is problematic to ascribe capabilities to plants can be a good reason for revising the concept.

We need to consider, however, that there are other problems with Fulfer's argumentation that are more difficult to handle. First, I agree with her claim that a tree needs water to flourish even if it has no subjective experience of such a need, but the question remains why humans ought to take the needs of the tree into account for its own sake. The fact that we are dependent on non-sentient life forms cannot in itself be considered a valid argument for the claim that they are subjects of justice or have another form of moral status, because we are dependent on many inanimate objects in nature to which we normally do not ascribe moral status.

To grant moral status to plants we need a persuasive argumentation for why we should be concerned about the flourishing of plants for their own sake, even though it is uncertain whether they have subjective experiences. Several elaborated attempts to justify this moral claim have been presented within environmental ethics and many of them make use of an extensionist form of moral reasoning according to which non-sentient beings are assigned moral status due to their similarities with humans, in principle the same argumentative strategy that has been used successfully for supporting the claim that sentient animals should be ascribed moral status. For example, Varner argues that also beings that cannot have desires, such as insects and plants, can have morally relevant interests. Varner claims that certain conditions can be in the interest of a being even if it does not desire anything. For example, a plant does not desire water, but it is still in its

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<sup>51</sup> Fulfer, "Flourishing of Nonsentient Life".

<sup>52</sup> Jon Mallat, Michael R. Blatt, Andreas Draguhn, David G. Robinson, and Lincoln Taiz, "Debunking a myth: plant consciousness". *Protoplasma*, 258 (2021), pp. 459-476.

interest to receive it because the plant would die without water.<sup>53</sup> Varner criticizes mental state theories of interests, which is the dominant form of theories of interests. These theories define an individual's interests based on his or her idealized desires, and Varner argues that they fail to acknowledge that humans have biological interests, which cannot be identified based on their desires. For example, a smoker has a morally considerable interest in not smoking as it damages his or her lungs, irrespective of his or her preferences.<sup>54</sup> However, Varner's line of argumentation has been called into question because it rests on an unconvincing critique of mental state theories of interest. For example, Agar claims that the case of a person who prefers smoking and similar cases can be handled by an externalistic version of an ideal desires theory, which says that what is good for a being A to experience is what an idealized person would want A to experience in A's actual situation.<sup>55</sup> In later publications, Varner concedes that this critique is valid.<sup>56</sup>

Also other extensionist attempts to support the claim that non-sentient beings should be ascribed moral status have been criticized in the debate.<sup>57</sup> To justify the ascription of moral status to beings that lack sentience because of similarities to humans is a problematic strategy. The only humans who lack sentience and cannot be expected to become sentient in the future are individuals in a permanent state of coma. However, it is unclear whether we have any moral responsibility towards such persons. Many would probably conclude that we do not have any reasons to maintain their lives.<sup>58</sup> Moreover, it can be argued that extensionist strategies are ethically illegitimate because they presuppose an anthropocentric logic, which assigns moral status to other life forms only if they are significantly similar to humans. Instead, an ethically legitimate strategy ought to appreciate both differences and similarities.<sup>59</sup>

Within the CA, the concept of wonder can be a useful starting-point for developing a non-extensionist strategy. In *Justice to Animals*, Nussbaum states that animal lives are wonderful because animals actively pursue their own ends. As animals have active and striving agency, they are not only objects of wonder but also subjects of justice. For Nussbaum, wonder shows that animals matter for their own sake, not because of their similarity with ourselves.<sup>60</sup> As mentioned, Nussbaum concludes that only sentient beings can be considered subjects of justice, but she at the same time connects wonder to the realization that the consideration of other beings for their own sake is not due to the similarities with us. This opens for the possibility of ascribing the status as subjects of justice also to beings that do not share the characteristic of being sentient with humans.

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<sup>53</sup> Gary E. Varner, *In Nature's Interests? Interests, Animals Rights, and Environmental Ethics*, (New York: Oxford University Press, 1998), pp. 55-60; Anders Melin, *Living with Other Beings: A virtue-oriented approach to the ethics of species protection* (Studies in Religion and the Environment, Vol. 9), Münster: LIT Verlag 2013, p. 62.

<sup>54</sup> Varner, *In Nature's Interests?*, pp. 57-62,

<sup>55</sup> Nicholas Agar, *Life's Intrinsic Value. Science, Ethics, and Nature*, (New York: Columbia University Press, 2001), pp. 74-77.

<sup>56</sup> See, for example, Jonathan A. Newman, Gary Varner and Stefan Linquist, *Defending Biocentrism: Environmental Science and Ethics*, (Cambridge: Cambridge University Press, 2017), pp. 404-405.

<sup>57</sup> John Basl, *The Death of the Ethic of Life*, (Oxford: Oxford University Press, 2019).

<sup>58</sup> Melin, *Living with Other Beings*, p. 64.

<sup>59</sup> Anna Wienhues, *Ecological Justice and the Extinction Crisis: Giving Living Beings their Due*, (Bristol: Bristol University Press, 2020), pp. 37-38.

<sup>60</sup> Nussbaum, *Justice for Animals*, pp. 66-67.

Bendik-Keymer has developed the concept of wonder in this direction. He argues that wonder helps us recognize the variety of ways in which different beings strive. For Bendik-Keymer, wonder is connected with a positive form of anxiety that opens us to new ways of making sense of the world. It helps us understand how all living beings, including non-sentient ones, such as plants, seek to realize their own ways of life.<sup>61</sup> Bendik-Keymer's interpretation of wonder may be a useful point of departure for justifying the claim that also non-sentient beings can be considered subjects of justice within the CA, although it needs to be discussed in more detail than what the space allows for here.

*The consideration of non-human collective entities*

Another question that is necessary to recognize in the context of urban biodiversity management is whether also non-human collective entities, such as species and ecosystems, should be granted the status of subjects of justice or some other form of moral status. This moral belief conflicts with the CA as most versions of it are based on ethical individualism, that is, the view that only individuals, and not collectives, should be considered for their own. Robeyns describes ethical individualism as an unavoidable property of the CA, as the evaluation of functionings and capabilities that is a core element of the approach is an evaluation of the well-being and freedom of individuals.<sup>62</sup> By contrast, the concept of biodiversity builds at least implicitly on the view that also non-human collective entities, such as species and ecosystems, can have moral status. For example, textbooks on biodiversity preservation often state that species have intrinsic value, in the sense that we should consider them for their own sake.<sup>63</sup>

Also in the case of non-human collective entities, the debate within the CA has been more limited than the question about the moral status of animals. Nussbaum discusses this issue very briefly and concludes that non-human collective entities do not have subjective experiences and therefore cannot be regarded as subjects of justice, although they may have some other form of moral status.<sup>64</sup> However, the question about the moral status of non-human collective entities deserves further treatment, because Nussbaum's conclusion is contested by other capability theorists<sup>65</sup> who defend the view that non-human collective entities should be granted the status as subjects of justice.

Schlosberg's has put forward an elaborated defense for the view that non-human collective entities should be ascribed the status as subjects of justice within the CA. First, he argues that the concepts of flourishing and integrity are more suitable than the concept of dignity for entities that are not conscious subjects.<sup>66</sup> He states that also such entities should be regarded as subjects of justice because they share the characteristics of agency and integrity with humans.<sup>67</sup> Schlosberg concludes that both individual subjects and non-human collective entities have integrity because they are self-regulating and

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<sup>61</sup> Jeremy Bendik-Keymer, "Beneficial relations between species & the moral responsibility of wondering", *Environmental Politics*, 31:2 (2022), pp. 320-337, at pp. 321-325.

<sup>62</sup> Ingrid Robeyns, *Wellbeing, Freedom and Social Justice: The Capability Approach Re-Examined* (Cambridge: Open Book Publishers, 2017), p. 58.

<sup>63</sup> Hunter, Jr. et al., *Fundamentals of Conservation Biology*, p. 39.

<sup>64</sup> Nussbaum, *Frontiers of Justice*, pp 357-358.

<sup>65</sup> David Schlosberg, *Defining Environmental Justice: Theories, Movements, and Nature*, (Oxford: Oxford University Press, 2007); Daniel L. Crescenzo, "Loose Integrity and Ecosystem Justice on Nussbaum's Capabilities Approach," *Environmental Philosophy*, 10:2 (2013), pp. 53-74.

<sup>66</sup> Schlosberg, *Defining Environmental Justice*, pp. 147-148.

<sup>67</sup> Schlosberg, *Defining Environmental Justice*, pp. 132-136.

autonomous.<sup>68</sup> He suggests that the concept of capability is applicable not only to rational subjects that can decide between different functionings. Instead, we should acknowledge that ecosystems can have a different type of agency that takes the form of a potential or a process.<sup>69</sup>

However, Schlosberg's line of argumentation seems unpersuasive. We cannot draw the conclusion that we should ascribe the status of subjects of justice to species and ecosystems because they share the characteristics of agency and integrity with humans, as these two concepts have a different meaning when applied to species and ecosystem, and humans, respectively. When ascribing the characteristics of integrity and agency to humans, we assume that they have the ability to act in accordance with intentions.<sup>70</sup> As mentioned, when Schlosberg refers to the integrity of species and ecosystems, he is only thinking of the characteristic of being autonomous and self-regulating. Moreover, he acknowledges that such entities only can have agency in a very different sense than humans.<sup>71</sup>

Also in the case of collective entities, a non-extensionist strategy for justifying their status as subjects of justice seems more fruitful than the extensionist one that Schlosberg has put forward. Bendik-Keymer's interpretation of wonder can be helpful also in this regard as it builds on a questioning of the ontological and normative individualism within the CA. He argues that some of the goods of individuals can only be understood in the light of the collective to which they belong. For example, bees are genetically programmed to sting in order to protect the hive and the queen bee, even though it leads to their own death.<sup>72</sup>

Wonder may make us recognize the strivings of collective entities, over and above the striving of their constituting parts. However, a more elaborate discussion of it is required before we can establish that we have sufficient reasons for discarding the well-entrenched ethical individualism of the CA. If we come to the conclusion that also collective entities should be ascribed the status as subjects of justice within the CA, it would have significant practical implications for urban biodiversity management as it would give us stronger reasons for preserving threatened species.

## Conclusions

In its present form, it is unclear whether the CA is suitable as a normative framework for urban biodiversity management. It has its strong points, mainly connected with its view of human capabilities and social justice, but there are also important unresolved issues. The CA can give a nuanced account of how urban biodiversity impacts the well-being of sentient animals, but there is a need for a more detailed discussion of whether animals can

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<sup>68</sup> Schlosberg, *Defining Environmental Justice*, pp. 137-139.

<sup>69</sup> Schlosberg, *Defining Environmental Justice*, p. 153-154; Anders Melin, "Should we Ascribe Capabilities to Species and Ecosystems? A Critical Analysis of Ecocentric Versions of the Capabilities Approach", *Journal of Agricultural and Environmental Ethics*, 34:26, 2021.

<sup>70</sup> Damian Cox, Marguerite La Caze and Michael Levine, "Integrity" in *Stanford encyclopedia of philosophy*, edited by Edward N. Zalta and Uri Nodelman, <https://plato.stanford.edu/entries/integrity/>, (Revised February 20, 2017); Markus Schlosser, "Agency," In *Stanford encyclopedia of philosophy*, edited by Edward N. Zalta and Uri Nodelman (Eds.), <https://plato.stanford.edu/entries/agency/>, (August 10, 2015); Melin, "Should we Ascribe Capabilities to Species and Ecosystems?".

<sup>71</sup> Schlosberg, *Defining Environmental Justice*.

<sup>72</sup> Bendik-Keymer, "Beneficial relations between species", p. 326.

be ascribed capabilities as it seems to presuppose having the ability to make choices. The problems involved in ascribing capabilities to animals can be a reason for revising the concept of capability so that it more easily can be applied to non-humans. Moreover, when discussing the consideration of non-sentient beings, such as plants, it becomes even more apparent that the current definition of capability may not be suitable in an ecological context. It is also unclear whether plants should be granted the status as subjects of justice within the CA. Finally, the question of whether we should consider collective entities for their own sake within the CA challenges the ethical individualism that is a core assumption in most versions of the CA. The concept of wonder may be helpful for justifying the ascription of the status of subject of justice to both individual non-sentient beings and collective entities, but it needs to be discussed in more detail.<sup>73</sup>

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