



Ethical Approaches at the Intersection of Climate Change, the Environment and Health

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Summary

This literature review provides an overview of ethical approaches used at the intersection of climate change, the environment and health. Six ethical approaches are discussed: (i) rights-based approaches, concentrating on human rights, animal rights and environmental rights; (ii) justice approaches, discussing issues of distribution, relations, climate health justice, future generations, and interspecies justice; (iii) integrated concepts of health, such as One Health and Planetary Health; (iv) Indigenous and non-Western perspectives, introducing the significance of biocultural heritage, harmonious relationships, and decolonisation movements; (v) professional responsibilities towards the environment among health workers and other professions; and (vi) ethical principles in relation to climate change and the environment. A concise assessment is provided on how each of these ethical approaches may inform policy and practice addressing climate change, environmental degradation and health.

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1. Introduction

This work was commissioned by the Nuffield Council on Bioethics and was carried out during eight weeks in June and July 2024.¹ The guiding research questions were (1) What ethical approaches arise at the intersection between climate change, the environment and health? And (2) how can they help inform policy and practice addressing climate change and health?

There are several factors that influenced the selection of ethical approaches and the nature of this work:

1. All approaches overlap and there is no universally agreed definition of either the approaches or their points of intersection.
2. We wanted to combine a broad range of institutional, structural, professional and individual ethical approaches that address the relationship between humans, non-human animals and the environment.
3. We were keen to identify both the different forms of reasoning deployed in this area, and to demonstrate how different stakeholders might approach the same field. Awareness of different ethical approaches can improve dialogue and facilitate consensus.
4. Action in response to climate change requires the identification and management of potentially conflicting interests. Understanding the values at stake and the processes of reasoning that different perspectives deploy can help towards the development of ethically informed policy in this area.

After outlining our methodology we provide an overview of six ethical approaches: (1) rights-based approaches, (2) justice approaches, (3) integrated concepts of health, (4) Indigenous and non-Western perspectives, (5) professional responsibilities, and (6) principlism. This is followed by a brief general discussion of these approaches and a statement on the limitations of this review.

This review presents summaries of ethical approaches that are commonly used to analyse ethical issues in relation to climate change, the environment and health. These are deliberately intended to be short and suggestive, rather than exhaustive. We are aware, for example, that such a brief review cannot hope to capture the richness of Indigenous and non-Western perspectives on the complex relationships between health, climate change and the environment. Nor can it do justice to the depth and complexity of western philosophical perspectives that help bring some light to this area, such as utilitarianism, virtue ethics and deep ecology.² We do however provide footnotes to the rich and complex scholarship that lies behind our sketches. We recognise that there is also far greater acknowledgement of the

¹ The final version of this review has been edited by the Nuffield Council on Bioethics. This work sits within their Environment and Health Priority area: <https://www.nuffieldbioethics.org/publications/environment-and-health>. For correspondence about this project please contact bioethics@nuffieldbioethics.org

² Brennan, Andrew and Norva Y.S. Lo. "Environmental Ethics." *The Stanford Encyclopedia of Philosophy (Summer 2024 Edition)*, edited by Edward N. Zalta and Uri Nodelman, 2024, <https://plato.stanford.edu/entries/ethics-environmental/>, Palmer, Clare et al. "Environmental Ethics." *Annual Review of Environment and Resources*, vol. 39, no. Volume 39, 2014, 2014, pp. 419-42, doi:10.1146/annurev-environ-121112-094434.

impact of environmental and climate crises on health. As such we are witnessing an exponential increase in research attention in this area.³ Once again we provide references for further reading.

³ Sheather, Julian et al. "Ethics, Climate Change and Health ? A Landscape Review." *Wellcome Open Research*, vol. 8, no. 343, 2023, doi:10.12688/wellcomeopenres.19490.1.

2. Methodology

This literature review was undertaken using a purposive and iterative search strategy. Literature was collected and researched by the authors in the areas of climate health ethics, justice, applied ethics (especially in bioethics and public health ethics) and political philosophy. This provided the starting point for further targeted searches for references to underpin important issues or to shed light on gaps in the emerging sources. We focussed on published academic articles or policy documents that we considered rich in theoretical substance or influential in shaping the debates around the subject matter for this review.

Academic literature and policy documents in English, German and Spanish were assessed. Searches using the databases PubMed, Scielo and Google Scholar were carried out as well as the web search engines where appropriate (e.g. for policy documents).

Soft quality control criteria were applied to allow for sources from a range of ethical approaches to be included in this review: (i) book chapters needed to come from established publishers, and (ii) journals that were not indexed in PubMed or Scielo had to be backed by regional or national medical or other professional associations.

To report our findings, six overarching categories were devised. These include well-established ethical approaches (e.g. rights-based or justice approaches) and an approach which has normative implications (integrated concepts of health). These were selected by the authors based on discussions with the Nuffield Council on Bioethics (the commissioner). Within these overarching categories, sub-categories representing specific applications of ethical approaches were chosen by the authors.

3. Results

3.1 Rights-based approaches

Summary: Rights-based approaches have a long tradition in ethics and can serve as a common global language to secure fundamental interests in relation to the environment and health. The human rights language is one of the dominant approaches to argue for a right to health, particularly for a right to a healthy environment. Recently, there are efforts to recognise rights for non-human animals and the wider environment.

Introduction

A rights-based approach to ethics emphasises respecting and upholding the inherent moral value – the ‘moral rights’ if you like – of individuals and communities as the basis for ethical decision-making and action. Rights are usually first theorized in ethical discussions, and once they gather wide acceptance, they are often protected by legal instruments, thus becoming legal rather than just moral rights. Sometimes these rights gain stronger protection, by becoming recognised as human rights. Rights can specify that others should refrain from certain actions (negative rights) or that others (typically the State) have the obligation to provide certain goods or services (positive rights). For instance, people might have a right not to be harmed by pollution by industry, which can be understood as a negative right. An example of a positive right is that the State may be required to ensure cities dedicate enough public space or green areas for people to enjoy their right to a healthy environment. These rights are sometimes framed as duties, e.g. as duties not to cause environmental harms (negative duty) and duties to provide certain environmental goods (positive duty).

We can find rights-based approaches in relation to health and environment for humans, non-human animals, and also the environment.

Human rights

Human rights are the most widely accepted rights-based approach concerning human health in the broadest sense. From an ethical perspective, human rights are based on agreement on what we, as a global society, want to secure for every person.⁴ Hence, human rights have universal applicability – they are not limited geographically or temporally. There have however been attempts both to limit and expand human rights in relation to health since they were first recognized in the Universal Declaration of Human Rights (1948).⁵

There are already a number of human rights related to the environment (both natural and built) and health. These can be found in the Universal Declaration of Human Rights and in the International Covenant on Economic, Social and Cultural Rights (ICESCR) (1966),⁶ as well as a large number of regional agreements and national constitutions.⁷ In relation to the

⁴ Beitz, Charles R. *The Idea of Human Rights*. Oxford University Press, 2009.

⁵ "Universal Declaration on Human Rights." 1948.

⁶ "International Covenant on Economic, Social and Cultural Rights." 1966.

⁷ Knox, John H. "Constructing the Human Right to a Healthy Environment." *Annual Review of Law and Social Science*, vol. 16, 2020, pp. 79-95, doi:10.1146/annurev-lawsocsci-031720-074856.

ICESCR, the United Nations (UN) General Comment on the right to the highest attainable standard of health specifies a relatively broad understanding of this right: *'the drafting history and the express wording of article 12.2 acknowledge that the right to health embraces a wide range of socio-economic factors that promote conditions in which people can lead a healthy life, and extends to the underlying determinants of health, such as food and nutrition, housing, access to safe and potable water and adequate sanitation, safe and healthy working conditions, and a healthy environment.'*⁸

Attempts to narrow down these rights frequently seek to only recognize political and civil human rights (e.g. freedom of speech and of association) or reconceptualize social human rights as second generation human rights, giving them less weight even though both are included in the Universal Declaration of Human Rights. For example, there is an influential philosophical discussion on whether people actually have a 'right to health' or whether this should be seen merely as a right to a decent minimum of healthcare.⁹ Narrow understandings of the right to health also rarely acknowledge other possible interpretations of 'attainable' in 'the right to the highest attainable standard of health,' such as the obligation to progressively work towards the full realization of such a right.¹⁰ In policy and practice, various interpretations of the right to health have been adopted.

The United Nations, endorsed by the World Health Organisation, include the right to the 'highest attainable standard of physical and mental health' in article 12 of the ICESCR. As recognised in their general comment, the UN indicates that this provides the most comprehensive article on the 'right to health' in international human rights law, going far beyond issues of access to healthcare.¹¹ It has been suggested that in times of climatic and other environmental crises, it may be necessary to work with a broad understanding of the right to health, and to look at both social and environmental determinants of health, to fully understand the effect of climate change, environmental degradation and its drivers (e.g. air pollution caused by the burning of fossil fuels and industrial waste) on health, particularly on marginalized population groups.¹² There are ample possibilities to counteract environmental health hazards, for example, by enacting and enforcing environmental protection laws, and designing cities to facilitate healthy lifestyles by developing green areas and cycling infrastructure.¹³

Nowadays, in line with the broader understanding of the human right to health, the impact of the environment on health is explicitly recognized. The urgency of climate action and the health hazards caused by pollution of air, land and water, in addition to the unsound

⁸ UN Committee on Economic, Social and Cultural Rights. "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Article 12 of the International Covenant on Economic, Social and Cultural Rights)." United Nations Economic and Social Council, 2000.
<http://www.unhcr.ch/tbs/doc.nsf/%28symbol%29/E.C.12.2000.4.En>.

⁹ Buchanan, Allen E. "The Right to a Decent Minimum of Health Care." *Philosophy & Public Affairs*, 1984, pp. 55-78.

¹⁰ UN Committee on Economic, Social and Cultural Rights. "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Article 12 of the International Covenant on Economic, Social and Cultural Rights)." United Nations Economic and Social Council, 2000.
<http://www.unhcr.ch/tbs/doc.nsf/%28symbol%29/E.C.12.2000.4.En>.

¹¹ Ibid.

¹² Rydin, Yvonne et al. "Shaping Cities for Health: Complexity and the Planning of Urban Environments in the 21st Century." *The Lancet*, vol. 379, no. 9831, 2012, pp. 2079-108, doi:10.1016/S0140-6736(12)60435-8.

¹³ Ibid.

management of chemicals and waste have led the UN Human Rights Council to acknowledge the 'right to a clean, healthy and sustainable environment' in October 2021,¹⁴ commonly referred to as the 'right to a healthy environment.' The right to a healthy environment goes beyond reducing pollution. It also incorporates a right to participate in decision-making over environmental issues, access to information, and access to justice and effective remedies.¹⁵ Additionally, it includes substantive elements, such as 'clean air; a safe and stable climate; access to safe water and adequate sanitation; healthy and sustainably produced food; non-toxic environments in which to live, work, study and play; and healthy biodiversity and ecosystems.'¹⁶ This deploys a broad concept of health that not only covers the absence of health hazards but also includes factors that underpin and promote mental and physical health. There are also recurrent references to obligations on the present generation to engage in environmental protection to ensure future generations can also secure their human rights.¹⁷

Several UN institutions are using a rights-based approach to call for urgent action in view of the additional health hazards of climate change and environmental degradation.¹⁸ For example, a previous UN Special Rapporteur placed special emphasis on assessing and responding to people living in extreme poverty and the additional health risks brought by climate change.¹⁹ Similarly, UN institutions have repeatedly pointed out the international legal obligations in relation to the 'rights of the child',²⁰ particularly on the effect of climate change on life, survival and development, and to recognize their special vulnerability to climate-related health risks.²¹ UN institutions working on food and agriculture have also voiced concern over the health hazards of imprudent use of pesticides as well as climate-related food insecurity.²²

¹⁴ UN General Assembly. "The Human Right to a Clean, Healthy and Sustainable Environment." *A/76/L.75*, United Nations, 2022.

¹⁵ *Idem*.

¹⁶ United Nations. "What Is the Right to a Healthy Environment?" Office of the High Commission of Human Rights, United Nations Environment Programme & United Nations Development Programme, 2023. <https://www.undp.org/sites/g/files/zskgke326/files/2023-01/UNDP-UNEP-UNHCHR-What-is-the-Right-to-a-Healthy-Environment.pdf>, p. 9

¹⁷ Turquet, Laura et al. *Feminist Climate Justice: A Framework for Action*. UN Women, 2023, United Nations. "What Is the Right to a Healthy Environment?" Office of the High Commission of Human Rights, United Nations Environment Programme & United Nations Development Programme, 2023. <https://www.undp.org/sites/g/files/zskgke326/files/2023-01/UNDP-UNEP-UNHCHR-What-is-the-Right-to-a-Healthy-Environment.pdf>.

¹⁸ ---. "What Is the Right to a Healthy Environment?" Office of the High Commission of Human Rights, United Nations Environment Programme & United Nations Development Programme, 2023. <https://www.undp.org/sites/g/files/zskgke326/files/2023-01/UNDP-UNEP-UNHCHR-What-is-the-Right-to-a-Healthy-Environment.pdf>.

¹⁹ Alston, Philip. "Climate Change and Poverty: Report of the Special Rapporteur on Extreme Poverty and Human Rights." Human Rights Council, 2019.

²⁰ UN General Assembly. "Convention on the Rights of the Child." *General Assembly resolution 44/25*, United Nations, 1989.

²¹ Prasad, Deva and Suchithra Menon. "Children's Rights and Climate-Change Policy: Addressing the Concerns of Children and Future Generations." *Environmental Policy and Law*, vol. 48, 2018, pp. 157-60.

²² Elver, Hilal. "The Challenges and Developments of the Right to Food in the 21st Century: Reflections of the United Nations Special Rapporteur on the Right to Food." *UCLA J. Int'l L. Foreign Aff.*, vol. 20, 2016, pp. 1-40, United Nations Environment Programme. "Synthesis Report on the Environmental and Health Impacts of Pesticides and Fertilizers and Ways to Minimize Them." United Nations, 2022.

Literature on the rights of Indigenous peoples introduce additional elements. The natural environment is, for many Indigenous communities, a crucial nexus for passing on cultural knowledge and practicing cultural traditions.²³ Moreover, Indigenous communities are often dependent on their surrounding biodiversity for medicinal plants and in many cases, herbal medicine is the only type of healthcare they can access.²⁴ Biodiversity loss not only threatens Indigenous populations; it also deprives humanity of an important repository of traditional knowledges and biological resources from which future medicines could be developed.²⁵ Furthermore, environmental deterioration may have an added negative effect on the mental health of Indigenous peoples.²⁶ Lastly, the life and health of environmental activists are all too often at risk, especially if they are Indigenous, with a substantial toll of activists murdered or 'disappeared'.²⁷ Further discussion on Indigenous perspectives can be found in Section 3.4.

Rights for non-human animals and the environment

There are also moves to apply a rights-based approach to the effects of environmental degradation and climate change on the health of non-human animals and other parts of nature. The recognition of animal rights has a long tradition in philosophy²⁸ and advocacy.²⁹ Historically, cruelty to animals was regarded as morally reprehensible because of its potential to brutalise human beings with ensuing harmful effects on society.³⁰ For example, animal cruelty was condemned because people who engage in it may extend their cruelty to people. More recent animal rights approaches have sought to improve the welfare of animals for their own sake.³¹ These ideas have inspired regulation to improve animal welfare in research and farming.³² Agriculture is a critical area for animal rights approaches, and there are new attempts to link animal rights to the right to a healthy environment.³³ Some

²³ Rozzi, Ricardo. "Biocultural Ethics: Recovering the Vital Links between the Inhabitants, Their Habits, and Habitats." *Environmental Ethics*, vol. 34, no. 1, 2012, pp. 27-50.

²⁴ Dahlberg, Annika C. and Sophie B. Trygger. "Indigenous Medicine and Primary Health Care: The Importance of Lay Knowledge and Use of Medicinal Plants in Rural South Africa." *Human Ecology*, vol. 37, no. 1, 2009, pp. 79-94, doi:10.1007/s10745-009-9217-6.

²⁵ Chivian, Eric and Aaron Bernstein. *Sustaining Life: How Human Health Depends on Biodiversity*. Oxford University Press, 2008.

²⁶ Vecchio, Emily Ann et al. "Indigenous Mental Health and Climate Change: A Systematic Literature Review." *The Journal of Climate Change and Health*, vol. 6, 2022, p. 100121, doi:10.1016/j.joclim.2022.100121.

²⁷ Arguedas Ramírez, Gabriela. "A Feminist Food Justice Reflection on the Politics of Food, Land, and Agriculture in Central America." *Food, Environment, and Climate Change: Justice at the Intersections*, edited by Erinn Cunniff Gilson and Sarah Kenehan, Rowman & Littlefield, 2018, pp. 137-53.

²⁸ Regan, Tom. *The Case for Animal Rights*. University of California Press, 1983.

²⁹ For instance, the animal rights organisation Animal Aid sets as its aim to: 'Change the status and perception of animals, from 'objects' that can be used for human gain, to sentient individuals whose rights should be respected', see Animal Aid. "Our Aims." Animal Abuse Injustice and Defence Society <https://www.animalaid.org.uk/about-us/aims-objectives/>. Accessed 2 August 2024.

³⁰ Cf. Vollum, Scott et al. "Moral Disengagement and Attitudes About Violence toward Animals." *Society & Animals*, vol. 12, no. 3, 2004, pp. 209-35, doi:10.1163/1568530042880668.

³¹ Cf. Healey, Richard and Angie Pepper. "Interspecies Justice: Agency, Self-Determination, and Assent." *Philosophical Studies*, vol. 178, no. 4, 2021, pp. 1223-43, doi:10.1007/s11098-020-01472-5, Singer, Peter. *Animal Liberation*. HarperCollins, 1975/2009.

³² Thompson, Paul B. *From Field to Fork: Food Ethics for Everyone*. Oxford University Press, 2015.

³³ Van Hoorick, Geert and Elien Verniers. "Some Explorations About Extending the Right to a Healthy Environment to Future Generations and Animals." *The Right to a Healthy Environment in and Beyond the Anthropocene*, Edward Elgar Publishing, 2024, pp. 227-45.

animal rights scholars argue that the most reasonable approach is to refrain from meat consumption and abolish industrial dairy production.³⁴

Recent developments also include moves to recognize the rights of non-sentient parts of nature, such as rivers and glaciers. There have been some successes here, including the acknowledgement of rights in critical parts of the environment in New Zealand and India.³⁵ There are also philosophical developments discussing whether plants have rights³⁶ or what responsibilities exist to provide the conditions in which they can flourish.³⁷ Further discussion can be found on non-human animals and the environment in Section 3.2 within the subsection on interspecies justice.

How can right-based approaches inform policy and practice?

Rights-based approaches are increasing in scope and regional and national institutions are continuously adopting new regulations to protect people and the environment from environmental hazards in many regions.³⁸ These approaches are also directed at improving animal welfare standards.³⁹ While some stakeholders will interpret certain rights narrowly, 'rights-based' approaches remain an important common global language. Concerning the newly recognized 'right to a healthy environment', it is uncertain whether it will be interpreted mostly in negative terms, demanding a reduction of pollution or greenhouse gasses emissions, or also positively, demanding, for example, the 're-naturalisation' of eroded landscapes and access to green areas.

³⁴ Adams, Carol J. *The Sexual Politics of Meat : A Feminist-Vegetarian Critical Theory*. Continuum, 1990, Singer, Peter. *Animal Liberation*. HarperCollins, 1975/2009.

³⁵ Celermajer, Danielle et al. "A Political Theory for a Multispecies, Climate-Challenged World: 2050." *Political Theory*, vol. 51, no. 1, 2023, pp. 39-53, doi:10.1177/00905917221128833, Knauß, Stefan. "Conceptualizing Human Stewardship in the Anthropocene: The Rights of Nature in Ecuador, New Zealand and India." *Journal of Agricultural and Environmental Ethics*, vol. 31, no. 6, 2018, pp. 703-22, doi:10.1007/s10806-018-9731-x, Kramm, Matthias. "When a River Becomes a Person." *Journal of Human Development and Capabilities*, vol. 21, no. 4, 2020, pp. 307-19, doi:10.1080/19452829.2020.1801610.

³⁶ Taylor, Paul W. *Respect for Nature : A Theory of Environmental Ethics*. Princeton University Press, 1986. *Studies in Moral, Political, and Legal Philosophy*.

³⁷ Kallhoff, Angela. "Plants in Ethics: Why Flourishing Deserves Moral Respect." *Environmental Values*, vol. 23, no. 6, 2014, pp. 685-700, doi:10.3197/096327114x13947900181518, Kallhoff, Angela et al. *Plant Ethics : Concepts and Applications*. Routledge, 2018.

³⁸ Esborraz, David Fabio. "El Modelo Ecológico Alternativo Latinoamericano Entre Protección Del Derecho Humano Al Medio Ambiente Y Reconocimiento De Los Derechos De La Naturaleza." *Revista Derecho del Estado*, 2016, pp. 93-129, doi:10.18601/01229893.n36.04, Lambert, Elisabeth. "The Environment and Human Rights: Introductory Report to the High-Level Conference Environmental Protection and Human Rights." Council of Europe, 2020, Tang, Ke and Otto Spijkers. "The Human Right to a Clean, Healthy and Sustainable Environment." *Chinese Journal of Environmental Law*, vol. 6, no. 1, 2022, pp. 87-107, doi:10.1163/24686042-12340078.

³⁹ Macdonald, Mia. "Emerging from Covid-19: A New, Rights-Based Relationship with the Nonhuman World?" *Health and human rights*, vol. 23, no. 2, 2021, pp. 13-20, PubMed, Thompson, Paul B. *From Field to Fork: Food Ethics for Everyone*. Oxford University Press, 2015.

3.2 Justice approaches

Summary: Justice approaches evaluate and suggest how national and international institutions and social practices should be shaped to protect the environment and promote health for all. They seek to identify rights and entitlements of people or the environment and to determine tasks and obligations of persons and institutions in this context. Two main perspectives – a *distributive* and a *relational* one – can be distinguished in the general debate about environmental and health justice, that is shaped by a number of more specific approaches or elements such as *climate health justice*, *intergenerational justice* and *interspecies justice*.

Introduction

There is an extensive literature on justice. As a result, we have made a limited selection for the purpose of this overview of forms of justice prevalent in the health and environmental justice literature. Justice will also be taken up as a principle (see section 3.6), but here we understand justice as a philosophical theory and concept, reaching far beyond its characterization as a principle. Given the rich literature, even in the area of health and environmental justice, it is important to emphasize that there are many more dimensions of justice than we have space to discuss here. Justice, in general, is about fairness, and what we owe to one another.⁴⁰ It also addresses what a fair distribution of any particular good or harm might look like, including how this is distributed and to whom, as well as how just our relations and structures are.

Distributive approaches

Distributive approaches to environmental and health justice explore how benefits and burdens should be distributed. There are numerous different benefits, such as access to a clean environment, food or water, or health services. The relevant burdens are also diverse, including financial contributions to mitigating and/or adapting to climate change, or behavioural changes in the consumption of environmentally harmful products.⁴¹ When evaluating such distributions, we can distinguish between *egalitarian* distributions which demand equal shares (e.g. of the relevant social goods for all),⁴² *prioritarian* understandings that give priority to the worst off,⁴³ and so-called *sufficientarian* ones, stipulating that all

⁴⁰ In some senses, justice and equity can be understood together or interchangeably particularly when it comes to ideas of fairness. Yet there are multiple forms of justice encompassing issues of recognition, restoration and empowerment that go beyond equity, see MacKay, Douglas and Gopal Sreenivasan. "Justice, Inequality, and Health." *The Stanford Encyclopedia of Philosophy (Winter 2021 Edition)*, edited by Edward N. Zalta, 2021, <https://plato.stanford.edu/archives/win2021/entries/justice-inequality-health/>, Miller, David. "Justice." *The Stanford Encyclopedia of Philosophy (Fall 2023 Edition)*, edited by Edward N. Zalta and Uri Nodelman, 2023, <https://plato.stanford.edu/archives/fall2023/entries/justice/>.

⁴¹ Shue, Henry. *Climate Justice: Vulnerability and Protection*. Oxford University Press, 2014.

⁴² Rawls, John. *A Theory of Justice*. Rev. ed., Belknap Press of Harvard University Press, 1999.

⁴³ Holtug, Nils. "Prioritarianism." *Oxford Research Encyclopedia of Politics*, 2017, Parfit, Derek. "Equality and Priority." *Ratio*, vol. 10, no. 3, 1997, pp. 202-21, doi:10.1111/1467-9329.00041.

must have their needs covered above a certain threshold.⁴⁴ In many accounts, these three dimensions are combined in different ways. Recently, more attention has been directed to *limitarian* demands, which can be understood as the need to reign in excessive consumption of environmentally and socially harmful goods.⁴⁵

Relational approaches

Relational approaches to environmental and health justice scrutinise the quality of social interactions and the kind of relations that exist on the national and/or international level.⁴⁶ Here, it is argued that harmful outcomes such as environmental degradation or health inequalities often reflect discrimination and underlying asymmetries in power, influence and the ability to make one's voices heard.⁴⁷ Some privileged groups have disproportionate influence in the pursuit of their interests, while the interests of others – often distinguished along lines of nationality, ethnicity, gender or socio-economic status – are ignored or discounted.⁴⁸ If knowledges and voices are not included, addressed or believed, this is called *epistemic injustice*.⁴⁹ The relational perspective thus integrates a critical analysis of *structural injustices*, that is of social and political relations and structures into thinking about environmental and health issues.⁵⁰ It contends that promoting environmental and health justice requires narrowing asymmetries in power and influence, and the creation of political and societal structures into which equal and non-discriminatory respect for all voices are included.⁵¹ Addressing epistemic justice also improves problem-solving and problem-identification capacities as people who are currently marginalised will have the opportunity to speak up and share their knowledge in discussion platforms that welcome new perspectives.⁵²

⁴⁴ Deutscher Ethikrat. "Klimagerechtigkeit." Deutscher Ethikrat, 2024, Fourie, Carina and Annette Rid. *What Is Enough? : Sufficiency, Justice, and Health*. Oxford University Press, 2017, Herlitz, Anders. "The Indispensability of Sufficiency." *Critical Review of International Social and Political Philosophy*, vol. 22, no. 7, 2019, pp. 929-42, doi:10.1080/13698230.2018.1479817, Shields, Liam. "Sufficiency." *Philosophy Compass*, vol. 15, no. 11, 2020, p. e12704, doi:10.1111/phc3.12704.

⁴⁵ Gupta, Joyeeta et al. "Earth System Boundaries and Earth System Justice: Sharing the Ecospace." *Environmental Politics*, forthcoming, pp. 1-20, doi:10.1080/09644016.2023.2234794, Robeyns, Ingrid. "What, If Anything, Is Wrong with Extreme Wealth?" *Journal of Human Development and Capabilities*, vol. 20, no. 3, 2019, pp. 251-66, doi:10.1080/19452829.2019.1633734.

⁴⁶ Skillington, Tracey. "A Relational View of Responsibility for Climate Change Effects on the Territories and Communities of the Arctic." *Arctic Justice*, edited by Corine Wood-Donnelly and Johanna Ohlsson, Bristol University Press, 2023, pp. 36-50, Voigt, Kristin and Gry Wester. "Relational Equality and Health." *Social Philosophy and Policy*, vol. 31, no. 2, 2015, pp. 204-29, Cambridge Core, doi:10.1017/S0265052514000326.

⁴⁷ Turquet, Laura et al. *Feminist Climate Justice: A Framework for Action*. UN Women, 2023.

⁴⁸ Deivanayagam, Thilagawathi Abi et al. "Envisioning Environmental Equity: Climate Change, Health, and Racial Justice." *The Lancet*, vol. 402, no. 10395, 2023, pp. 64-78, doi:10.1016/S0140-6736(23)00919-4.

⁴⁹ Fricker, Miranda. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, 2007.

⁵⁰ Young, Iris Marion. *Responsibility for Justice*. Oxford University Press, 2010.

⁵¹ Noll, Samantha Elaine and Laci Nichole Hubbard-Mattix. "Health Justice in the City: Why an Intersectional Analysis of Transportation Matters for Bioethics." *Essays in Philosophy*, vol. 20, no. 2, 2019, pp. 130-45, doi:10.7710/1526-0569.1632.

⁵² Bærøe, Kristine et al. "Towards an Environmentally Sensitive Healthcare Ethics: Ten Tasks and One Model." *Journal of Medical Ethics*, vol. 50, no. 6, 2024, pp. 382-83, doi:10.1136/jme-2024-109875, Pratt, Bridget et al. "Justice: A Key Consideration in Health Policy and Systems Research Ethics." *BMJ global health*, vol. 5, no. 4,

Climate health justice

A more specific approach that combines distributive and relational elements of justice is *climate health justice*. Climate health justice builds upon the well-established interdisciplinary scholarship on *environmental justice* and *health justice*. The *environmental justice* scholarship has roots in 1970s discourse within the United States that condemned how minorities, especially African Americans, were disproportionately affected by the proximity of toxic waste sites and areas of high air pollution, without being consulted and receiving adequate compensation.⁵³ This approach thereby seeks to acknowledge the different burdens and the capacities of communities to contribute to problem-solving, while procedural justice requires fair access to information on environmental risks and participative decision-making mechanisms for environmental decisions.⁵⁴ It is currently used to ensure that all people are treated fairly and can contribute to environmental laws, regulations and policies regardless of their ethnicity, gender, disability, etc.⁵⁵ The extensive scholarship on *health justice* addresses the unjust distribution of social determinants of health, the social gradient of health and the effects of poverty and marginalization, as well as structures, clusters and overcoming of disadvantage.⁵⁶ Environmental health justice approaches complement each other to assess whether environmental determinants of health align with ideas of social justice. To analyse environmental health (in-)justices, it is often asked how the demands of three elements of justice are being met: distributive justice, recognition justice (as a form of relational justice), and procedural justice.

Intergenerational justice

Environmental and health justice also includes an *intergenerational aspect*.⁵⁷ The distribution of benefits (including the benefits of using cheap sources of energy without fully paying for its environmental impact)⁵⁸ and the distribution of burdens (including the burdens

2020, p. e001942, doi:10.1136/bmjgh-2019-001942, Timmermann, Cristian. "Contributive Justice: An Exploration of a Wider Provision of Meaningful Work." *Social Justice Research*, vol. 31, no. 1, 2018, pp. 85-111, doi:10.1007/s11211-017-0293-2.

⁵³ Shrader-Frechette, Kristin. *Environmental Justice: Creating Equality, Reclaiming Democracy*. Oxford University Press, 2002.

⁵⁴ Coolsaet, Brendan, editor. *Environmental Justice: Key Issues*. Routledge, 2020, Schlosberg, David. *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford University Press, 2007.

⁵⁵ Almond, Grace. "Your Guide to Environmental Justice Language." Greenpeace <https://www.greenpeace.org.uk/news/environmental-justice-glossary/>. Accessed 2 August 2024, Environmental Protection Agency. "Learn About Environmental Justice." Environmental Protection Agency, United States Government <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice>. Accessed 2 August 2024.

⁵⁶ Chung, Ryoa. "Structural Health Vulnerability: Health Inequalities, Structural and Epistemic Injustice." *Journal of Social Philosophy*, vol. 52, no. 2, 2021, pp. 201-16, doi:10.1111/josp.12393, Marmot, Michael and Richard Wilkinson. *Social Determinants of Health*. Oxford University Press, 2005, Powers, Madison and Ruth R. Faden. *Social Justice: The Moral Foundations of Public Health and Health Policy*. Oxford University Press, 2006, Venkatapuram, Sridhar. *Health Justice: An Argument from the Capabilities Approach*. Polity, 2013.

⁵⁷ WHO. "Climate Change, Health, & Intergenerational Equity." *WHO Policy Brief*, WHO, 2022. https://cdn.who.int/media/docs/default-source/climate-change/who-unfccc-cop27_cchie_11122_lc.pdf.

⁵⁸ On the social and environmental costs of fossil fuels, see Patel, Raj and Jason W Moore. *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet*. University of California Press, 2017.

of adapting to a changing climate or of providing compensation for climate change-related losses and damages) occurs over extended periods of time so that the historically responsible agents or institutions cannot plausibly be held responsible.⁵⁹ This has given rise to a prolific debate about the intergenerational distribution of justice-based obligations.⁶⁰

The delay in taking adequate climate action after reaching major consensus on the human role in climate change in the early 1990s brings new tensions between generations. The failure to mitigate climate change over the last three decades has placed the onus on people now to invest massive amounts of resources in both mitigation to avoid the most catastrophic consequences of climate change and adaptation to protect livelihoods under the new climatic conditions.⁶¹ People in the present are also asked to urgently enact laws to protect biodiversity and invest in conservation efforts to make sure future generations are also able to benefit from our natural heritage.⁶² The urgency of climate action and the magnitude of the required greenhouse gases mitigation efforts leaves open the question of how far the present generation can advance their own interest without further jeopardising the ability of future generations to live flourishing lives in complex societies.

At the policy level, the UN covers many relevant aspects on intergenerational justice in relation to health in its report on 'Intergenerational solidarity and the needs of future generations.'⁶³ To advocate for the interests of future generations, the report suggests to establish a High Commissioner for Future Generations.⁶⁴ The inadequacy or lack of representation of future generations' interests in today's institutions has also been problematised by political philosophers.⁶⁵

Interspecies justice

Questions of justice also apply to the interaction between humans and other species. The conclusions that are drawn from this approach vary significantly, as there are differences in opinion on the moral status of non-human animals or other organisms and whether the

⁵⁹ Gosseries, Axel. "Historical Emissions and Free-Riding." *Ethical Perspectives*, vol. 11, no. 1, 2004, pp. 36-60, Meyer, Lukas H and Dominic Roser. "Climate Justice and Historical Emissions." *Critical Review of International Social and Political Philosophy*, vol. 13, no. 1, 2010, pp. 229-53.

⁶⁰ Gosseries, Axel. *What Is Intergenerational Justice?* Polity Press, 2023, Meijers, Tim. "Climate Change and Intergenerational Justice." *Handbook of the Philosophy of Climate Change*, edited by Gianfranco Pellegrino and Marcello Di Paola, Springer International Publishing, 2023, pp. 623-45. https://doi.org/10.1007/978-3-031-07002-0_55.

⁶¹ Singer, Peter. *One World: The Ethics of Globalization*. 2nd ed., Yale University Press, 2004.

⁶² Timmermann, Cristian and Zoë Robaey. "Agrobiodiversity under Different Property Regimes." *Journal of Agricultural and Environmental Ethics*, vol. 29, no. 2, 2016, pp. 285-303, doi:10.1007/s10806-016-9602-2, Wood, Paul M. "Biodiversity as the Source of Biological Resources: A New Look at Biodiversity Values." *Environmental Values*, vol. 6, 1997, pp. 251-68.

⁶³ UN General Assembly. "Intergenerational Solidarity and the Needs of Future Generations." *A/68/100*, United Nations, 2013. <https://sustainabledevelopment.un.org/content/documents/2006future.pdf>.

⁶⁴ Ibid.

⁶⁵ Bidanure, Juliana. *Justice across Ages : Treating Young and Old as Equals*. Oxford University Press, 2021, Gonzalez Ricoy, Iñigo and Axel Gosseries, editors. *Institutions for Future Generations*. Oxford University Press, 2016.

concept of 'a person' can realistically apply to them.⁶⁶ While this section focuses on sentient animals, there are ongoing developments studying how the concept of intelligence applies to plants or fungi.⁶⁷ There are several factors that are assessed in relation to possible animal interests, such as their capacity to (i) feel pain and joy (sentience), (ii) maintain social bonds (e.g. parenthood, recognise other group members), (iii) cooperate with other animals, (iv) anticipate events and plan, (v) pursue their own good, and (vi) their role within the ecosystem.⁶⁸

There is wide support for the idea that animals should not be made to suffer unnecessarily. Yet there are significant differences in how 'unnecessary' is understood. There are prevailing perspectives that legitimise harming animals when this improves human welfare, particularly when it is to avoid harms (e.g. culling to control human health hazards). While current forms of intensive animal farming are widely condemned by animal ethicists, there are positions that tolerate the humane rearing and killing of animals to satisfy food preferences.⁶⁹ In this context, the European Union has introduced five freedoms for the protection of animals kept for farming: freedom from hunger and thirst, freedom from discomfort, freedom from pain, injury and disease, freedom to express normal behaviour, and freedom from fear and distress.⁷⁰ Some ethicists set the bar much higher, and only accept harming animals when there is immediate danger (e.g. self-defence when attacked by a wild animal) or in some cases of animal experimentation with very high benefits for humans or other animals.⁷¹ There is increased awareness that humans ought not to inflict physical pain on animals without necessity, and avoid exposing animals to stress and suffering, for example through solitary confinement or detachment from their "social circle", particularly by separating mothers from their offspring.⁷² In terms of interspecies justice, these considerations play a key role in relation to what humans owe to non-human animals. Three applications of interspecies justice follow.

There are substantial efforts to prevent and reduce the infliction of pain and suffering caused by humans. Here the influence of animal ethics and justice are clearly visible. In their public education campaigns, the British animal rights organisation Animal Justice Project (AJP) point to traits of farmed animals that indicate an ability to have interests that deserve protection. In the case of dairy cows, AJP specifies that these animals display a wide range of emotions (including joy, anger, fear, anxiety, and sadness), have long-term memory and

⁶⁶ Gruen, Lori. "The Moral Status of Animals." *The Stanford Encyclopedia of Philosophy (Summer 2021 Edition)*, edited by Edward N. Zalta, 2021, <https://plato.stanford.edu/archives/sum2021/entries/moral-animal/>.

⁶⁷ Cf. Calvo, Paco and Natalie Lawrence. *Planta Sapiens : Unmasking Plant Intelligence*. The Bridge Street Press, 2022.

⁶⁸ Cf. Donaldson, Sue and Will Kymlicka. *Zoopolis : A Political Theory of Animal Rights*. Oxford University Press, 2011, Singer, Peter. *Animal Liberation*. HarperCollins, 1975/2009, Wienhues, Anna. *Ecological Justice and the Extinction Crisis: Giving Living Beings Their Due*. Bristol University Press, 2020.

⁶⁹ Cf. Korthals, Michiel. *Before Dinner: Philosophy and Ethics of Food*. Springer, 2004.

⁷⁰ European Commission. "Animal Welfare Proposals and Communication Adopted by the Commission on 7 December 2023." https://food.ec.europa.eu/animals/animal-welfare_en. Accessed 2 August 2024.

⁷¹ For a utilitarian analysis of these different scenarios, see Singer, Peter. *Animal Liberation*. HarperCollins, 1975/2009.

⁷² Nussbaum, Martha C. *Frontiers of Justice : Disability, Nationality, Species Membership*. The Belknap Press : Harvard University Press, 2006, Singer, Peter. *Animal Liberation*. HarperCollins, 1975/2009.

complex social dynamics, have the ability to anticipate harm, and notice missing family members.⁷³ Other animal rights organisations, such as Cruelty Free, see their fight against animal cruelty as part of the social justice movement.⁷⁴

Environmental degradation and climate change are affecting the ability of animals to thrive in their own ecosystems. It is argued that justice demands the maintenance of environmental conditions necessary for their wellbeing and the enactment of animal protection laws to secure their opportunities to flourish, in the sense of having the ability to live rich and complex lives.⁷⁵ Many wild animals require extensive healthy ecosystems to have the same opportunities.⁷⁶ It has been argued that humans have illegitimately appropriated ecological space and that justice requires the transfer of opportunities to use ecological space to species who do not have enough space, water and interaction with other living organisms to flourish.⁷⁷ In this argument, it therefore becomes crucial that political institutions advance the interests of all those who are affected by environmental decisions – including non-human animals – and develop ways to represent non-human animals in political decision-making.⁷⁸

Anthropogenic, i.e. human-induced, climate change is clearly affecting animal health. This has driven debate as to whether humans should assist wild animals who are vulnerable to climate change as a matter of ‘*rectificatory*’ justice (i.e. as restorative measures).⁷⁹ This could entail rescue and rehabilitation, habitat restoration and assisted migration, and even the provision of some healthcare.⁸⁰

⁷³ Animal Justice Project. "Facts About Cows." <https://www.animaljusticeproject.com/campaigns/dairy>. Accessed 23 July 2024.

⁷⁴ Cruelty Free International. "About Cruelty Free International." <https://crueltyfreeinternational.org/about-cruelty-free-international>. Accessed 2 August 2024.

⁷⁵ Nussbaum, Martha C. *Frontiers of Justice : Disability, Nationality, Species Membership*. The Belknap Press : Harvard University Press, 2006.

⁷⁶ Mancilla, Alejandra and Patrik Baard. "Climate Justice and Territory." *WIREs Climate Change*, vol. 15, no. 2, 2024, p. e870, doi:10.1002/wcc.870.

⁷⁷ Donoso, Alfonso. "Climate Injustice in a More-Than-Human World." *Journal of Agricultural and Environmental Ethics*, vol. 36, no. 3, 2023, p. 19, doi:10.1007/s10806-023-09914-w.

⁷⁸ Celermajer, Danielle et al. "A Political Theory for a Multispecies, Climate-Challenged World: 2050." *Political Theory*, vol. 51, no. 1, 2023, pp. 39-53, doi:10.1177/00905917221128833, Cochrane, Alasdair. *Sentientist Politics : A Theory of Global Inter-Species Justice*. Oxford University Press, 2018, Donoso, Alfonso. "Representing Non-Human Interests." *Environmental Values*, vol. 26, no. 5, 2017, pp. 607-28, doi:10.3197/096327117x15002190708137, Meijer, Eva. *When Animals Speak : Toward an Interspecies Democracy*. New York University Press, 2019. *Animals in Context*, Nussbaum, Martha C. *Justice for Animals : Our Collective Responsibility*. Simon & Schuster, 2022. For an interactive tool, see Animals in the Room. "What Is Animals in the Room?" <https://animalsintheroom.org/>. Accessed 2 August 2024.

⁷⁹ Palmer, Clare. "Assisting Wild Animals Vulnerable to Climate Change: Why Ethical Strategies Diverge." *Journal of Applied Philosophy*, vol. 38, no. 2, 2021, pp. 179-95, doi:10.1111/japp.12358.

⁸⁰ Cf. Horta, Oscar. "Wild Animal Suffering." *Animal Suffering: The Ethics and Politics of Animal Lives*, edited by Emilie Dardenne and Florence Burgat, ISTE-Wiley, 2023, pp. 141-60, Mancilla, Alejandra and Patrik Baard. "Climate Justice and Territory." *WIREs Climate Change*, vol. 15, no. 2, 2024, p. e870, doi:10.1002/wcc.870, Palmer, Clare. "Assisting Wild Animals Vulnerable to Climate Change: Why Ethical Strategies Diverge." *Journal of Applied Philosophy*, vol. 38, no. 2, 2021, pp. 179-95, doi:10.1111/japp.12358.

How can justice approaches inform policy and practice?

Integrating distributive, relational, procedural, intergenerational and interspecies perspectives can guide just and ethical approaches to tackling environmental and health challenges, ultimately striving for a global society that respects the rights of all individuals, regardless of their temporal, social, or geographical position, and that seeks to include the interests, voices and the participation of all.

3.3 Integrated concepts of health

Summary: Concepts of health, such as Planetary Health and One Health are broadly characterized by an acknowledgement of the interconnectedness of human health with the health of the planet's underlying ecosystems. Practically, many of these approaches prioritise human health while acknowledging its dependence on the non-human biosphere. Some approaches go further, seeking to decentre this human or anthropocentric focus, arguing for independent moral value in non-human parts of the world. Although Planetary Health and One Health have a great deal in common, they have different histories and emphases.

Introduction

Integrative thinking on human health and its determinants can be traced back to ancient times.⁸¹ However, the last decades have witnessed the emergence of a number of integrated, or as they are commonly referred to, holistic concepts of health within Western ethical perspectives and scientific literature.⁸² This has been in the face of mounting evidence for the impact of changes in natural systems and processes on human and animal health (including pets, livestock and wild animals) as well as their mutual interconnectedness.

Integrated/holistic concepts of health acknowledge the interconnectedness of human health and wellbeing with the state of non-human animals, plants and entire ecosystems as well as natural systems and processes such as the global climate. These concepts, to varying degrees, also recognise the role of the social, economic and political conditions created within societies in shaping these complex interdependencies.

This section provides an overview of two prominent concepts: One Health and Planetary Health. While they do not constitute ethical approaches as such, their application in policy and practice can give rise to ethical issues, e.g. regarding the balancing of trade-offs between human welfare, animal welfare and environmental flourishing or the interests of current and future generations. Although these concepts have a great deal in common, they have different histories and emphases. These concepts have fostered an expanded understanding of health by emphasising how health is dependent on and determined by ecological and societal factors. They have also contributed to political agenda-setting and an expansion of multidisciplinary research and practice.

One Health

Against the backdrop of a suite of emerging infectious diseases that caused international crises and pandemic concerns, such as severe acute respiratory syndrome (SARS) and avian influenza, One Health was employed to foster international and interdisciplinary cooperation

⁸¹ Lerner, Henrik and Charlotte Berg. "A Comparison of Three Holistic Approaches to Health: One Health, Ecohealth, and Planetary Health." *Frontiers in veterinary science*, vol. 4, 2017, p. 163, doi:10.3389/fvets.2017.00163.

⁸² Buse, Chris G et al. "Public Health Guide to Field Developments Linking Ecosystems, Environments and Health in the Anthropocene." *Journal of Epidemiology and Community Health*, vol. 72, no. 5, 2018, pp. 420-25, doi:10.1136/jech-2017-210082.

for prevention and control of diseases originating from animals.⁸³ A key milestone in its conceptual development was the 2004 'One world – One health' conference organized by the Wildlife Conservation Society (WCS) and hosted by the Rockefeller University where the 12 'Manhattan Principles' on One Health were developed.⁸⁴ These include the notion that *'human health programs can greatly contribute to conservation efforts' and that opportunities should be sought 'to fully integrate biodiversity conservation perspectives and human needs [...] when developing solutions to infectious disease threats'*.⁸⁵ In 2019, the Berlin Principles on One Health were conceived. These expand on the Manhattan Principles to include a new principle urging governments, civil society and scientists to combat climate change as a *'threat to human, animal and environmental health'*.⁸⁶ They also explicitly broaden the focus from communicable disease to non-communicable diseases.⁸⁷ Over the last 20 years, the One Health concept has gained traction in the policy realm (internationally, e.g. with the European Union committing to adopting 'initiatives under the One Health umbrella'⁸⁸ and nationally, e.g. with the UK taking up One Health as a guiding framework for tackling antimicrobial resistance⁸⁹ and in its Biological Security Strategy⁹⁰), as well as in research and practice.

Definitions of One Health have been published by several institutions. The Food and Agriculture Organization (FAO) state that *"One Health is a collaborative, cross-sectoral, multidisciplinary approach to addressing threats and reducing risks of endemic, emerging and re-emerging infectious diseases"*⁹¹ while the One Health High Level Expert Panel (OHHLEP) advising the World Health Organisation (WHO), UN Environment Programme (UNEP), Food and Agriculture Organization (FAO) and World Organization on Animal Health (WOAH) describe One Health as *"an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and*

⁸³ Gibbs, E. Paul J. "The Evolution of One Health: A Decade of Progress and Challenges for the Future." *Veterinary Record*, vol. 174, no. 4, 2014, pp. 85-91, doi:10.1136/vr.g143, Mackenzie, John S and Martyn Jeggo. "The One Health Approach—Why Is It So Important?" *Tropical Medicine and Infectious Disease*, vol. 4, no. 2, 2019, p. 88, doi:10.3390/tropicalmed4020088

⁸⁴ Wildlife Conservation Society. "The Manhattan Principles." <https://oneworldonehealth.wcs.org/About-Us/Mission/The-Manhattan-Principles.aspx>. Accessed 3 July 2024.

⁸⁵ Ibid.

⁸⁶ Berlin Principles Working Group. "The 2019 Berlin Principles on One Health." <https://oneworldonehealth.wcs.org/About-Us/Mission/The-2019-Berlin-Principles-on-One-Health.aspx>. Accessed 3 July 2024.

⁸⁷ Ibid.

⁸⁸ Commission, European et al. *Outcome and Impact Assessment of the Global Response to the Avian Influenza Crisis 2005-2010*. Publications Office, 2010.

⁸⁹ UK Government. "Confronting Antimicrobial Resistance 2024 to 2029." <https://www.gov.uk/government/publications/uk-5-year-action-plan-for-antimicrobial-resistance-2024-to-2029/confronting-antimicrobial-resistance-2024-to-2029>. Accessed 13 July 2024.

⁹⁰ ---. "Uk Biological Security Strategy." 2023. <https://www.gov.uk/government/publications/uk-biological-security-strategy>.

⁹¹ FAO. *Fifth Report on the Global Programme for the Prevention and Control of Hpa1 (January 2011–January 2012)*. FAO, 2013.

contributing to sustainable development.’⁹² As Gipps notes ‘[d]efinitions of One Health tend to reflect the mission of the respective organisations.’⁹³ Notions of One Health include the recognition of the complex interdependencies between humans, non-human animals and ecosystems which necessitate collaboration of diverse (academic) disciplines, spanning human health, veterinary health and ecosystem sciences, with policymakers and practitioners at different levels of governance (local, national, international) to minimize hazards and address threats to health that arise from these interdependencies.

One Health is thus concerned not just with the health of humans but also with the health of non-human animals and the interconnections between the two. One ethical issue that arises from applying this concept is whether (sentient) animals or the natural environment are being assigned moral status and how trade-offs both between these, and in relation to human health, are balanced and decided upon (which is also part of the debate in *interspecies justice*, see section 3.2). For example, these considerations have been raised in relation to decision-making around culling to prevent disease spread which might lead to different outcomes if a non-anthropocentric (i.e. not human-centred) component was being considered.⁹⁴ Lederman argues that considering sentient non-human animals as moral entities or even just assuming that sentient creatures have interests, adds weight to arguments against culling.⁹⁵ Another ethical issue is whether non-human animals and ecosystems are valued for their own sake or solely considered in terms of their role in supporting human well-being. According to Verweij and colleagues, a One Health approach to livestock keeping practices and zoonotic disease prevention and control demands the consideration of further outcomes beyond human wellbeing and health in decision-making such as ‘*animal welfare, environmental flourishing and [...] moral quality of human–animal relationships*’.⁹⁶ One Health has been critiqued for being conceptually ambitious but failing to overcome anthropocentrism in practice.⁹⁷

Climate change has been recognized as an important driver of ecosystem degradation and the emergence and spread of disease vectors and zoonoses.⁹⁸ Accordingly, adopting a One

⁹² Adisasmito, Wiku B et al. "One Health: A New Definition for a Sustainable and Healthy Future." *PLoS pathogens*, vol. 18, no. 6, 2022, p. e1010537, doi:10.1371/journal.ppat.1010537.

⁹³ Gibbs, E. Paul J. "The Evolution of One Health: A Decade of Progress and Challenges for the Future." *Veterinary Record*, vol. 174, no. 4, 2014, pp. 85-91, doi:10.1136/vr.g143.

⁹⁴ Lederman, Zohar. "One Health and Culling as a Public Health Measure." *Public Health Ethics*, vol. 9, no. 1, 2016, pp. 5-23, doi:10.1093/phe/phw002.

⁹⁵ Ibid.

⁹⁶ Verweij, Marcel and Bernice Bovenkerk. "Ethical Promises and Pitfalls of Onehealth." *Public Health Ethics*, vol. 9, no. 1, 2016, pp. 1-4, doi:10.1093/phe/phw003.

⁹⁷ Cañada, Jose A et al. "In Critique of Anthropocentrism: A More-Than-Human Ethical Framework for Antimicrobial Resistance." *Medical Humanities*, vol. 48, no. 4, 2022, pp. e16-e16, doi:10.1136/medhum-2021-012309, Kamenshchikova, A. et al. "Anthropocentric Framings of One Health: An Analysis of International Antimicrobial Resistance Policy Documents." *Critical Public Health*, vol. 31, no. 3, 2021, pp. 306-15, doi:10.1080/09581596.2019.1684442, van Herten, Joost et al. "One Health as a Moral Dilemma: Towards a Socially Responsible Zoonotic Disease Control." *Zoonoses and Public Health*, vol. 66, no. 1, 2019, pp. 26-34, doi:10.1111/zph.12536.

⁹⁸ Institute, United Nations Environment Programme and International Livestock Research. *Preventing the Next Pandemic: Zoonotic Diseases and How to Break the Chain of Transmission*. United Nations Environment Programme and International Livestock Research Institute, 2020, Mackenzie, John S et al. *One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases: Food Safety and Security, and International and National Plans for Implementation of One Health Activities*. Springer, 2016, World Health

Health perspective on climate change adaptation (i.e. focussing on both human and animal protection from its impacts) was postulated to provide added value in areas such as food security, intensive livestock systems and antimicrobial resistance control.⁹⁹ Verkuil and colleagues have shown that taking a One Health approach to climate change mitigation in the context of farmed animals can be beneficial in showcasing how pursuing only one goal – emission reduction – can have negative impacts on human or animal health. However, some mitigation strategies can also act synergistically to support all three outcomes.¹⁰⁰

Planetary Health

Although use of the term Planetary Health can be traced back to earlier publications¹⁰¹ and the roots of the concept are not new,¹⁰² the Planetary Health concept was taken up more broadly by Western scientific audiences after 2015 when the final report by the Rockefeller-Lancet Commission on Planetary Health was published.¹⁰³ The report defines it as '*the achievement of the highest attainable standard of health, wellbeing, and equity worldwide through judicious attention to the human systems—political, economic, and social—that shape the future of humanity and the Earth's natural systems that define the safe environmental limits within which humanity can flourish.*'¹⁰⁴ Although it shares conceptual overlap with One Health in that it acknowledges the interdependence of human health and the state of nature and other living beings, it has been described as '*a new science for exceptional action*' as it sees cooperation at the scientific, social and governance levels as indispensable for survival.¹⁰⁵ Planetary health has a strong focus on the anthropogenic drivers of changes in global natural systems and processes, such as climate change and biodiversity loss, and accordingly on the need for profound changes in economic and societal activities.¹⁰⁶

Conceptual discussion and (scientific) community building around Planetary Health as a relatively new concept is still ongoing. For example, the Canmore Declaration Principles for

Organization. Regional Office for Europe. *A Health Perspective on the Role of the Environment in One Health*. . World Health Organization. Regional Office for Europe, 2022.

⁹⁹ Wolmuth-Gordon, Hannah and Natasha Mutebi. *Public Health and Climate Change: A One Health Approach*. Parliamentary Office of Science and Technology, 2023.

<https://researchbriefings.files.parliament.uk/documents/POST-PN-0701/POST-PN-0701.pdf>, Zinsstag, Jakob et al. "Climate Change and One Health." *FEMS Microbiology Letters*, vol. 365, no. 11, 2018, doi:10.1093/femsle/fny085.

¹⁰⁰ Verkuil, Cleo et al. "Climate Change, Public Health, and Animal Welfare: Towards a One Health Approach to Reducing Animal Agriculture's Climate Footprint." *Frontiers in Animal Science*, vol. 5, 2024, doi:10.3389/fanim.2024.1281450.

¹⁰¹ Prescott, Susan L. and Alan C. Logan. "Larger Than Life: Injecting Hope into the Planetary Health Paradigm." *Challenges*, vol. 9, no. 1, 2018, p. 13, doi:10.3390/challe9010013

¹⁰² ---. "Planetary Health: From the Wellspring of Holistic Medicine to Personal and Public Health Imperative." *EXPLORE*, vol. 15, no. 2, 2019, pp. 98-106, doi:10.1016/j.explore.2018.09.002.

¹⁰³ Whitmee, Sarah et al. "Safeguarding Human Health in the Anthropocene Epoch: Report of the Rockefeller Foundation–Lancet Commission on Planetary Health." *The Lancet*, vol. 386, no. 10007, 2015, pp. 1973-2028, doi:10.1016/S0140-6736(15)60901-1.

¹⁰⁴ Ibid.

¹⁰⁵ Horton, Richard and Selina Lo. "Planetary Health: A New Science for Exceptional Action." *The Lancet*, vol. 386, no. 10007, 2015, pp. 1921-22.

¹⁰⁶ Change, WBGU German Advisory Council on Global. *Healthy Living on a Healthy Planet*. WBGU, 2023, Seltnerich, Nate. "Down to Earth: The Emerging Field of Planetary Health." *Environmental health perspectives*, vol. 126, no. 7, 2018, p. 072001, doi:doi:10.1289/EHP2374.

Planetary Health are based on an understanding of Planetary Health *'as the interdependent vitality of all natural and anthropogenic ecosystems; [...] biologically defined ecosystems [...] human-constructed social, political, and economic ecosystems [...] also includes the business ecosystems that influence sustainable and health-promoting local and global commerce.'*¹⁰⁷

Rossa-Roccor and colleagues showed that most published peer-reviewed literature using Planetary Health as a keyword were opinion pieces; only a minority were original research articles.¹⁰⁸

Some scholars have argued that Planetary Health has an undue focus on human health, i.e. placing value on human health while valuing other species and ecosystems only instrumentally.¹⁰⁹ Planetary Health has also been criticised, especially by Indigenous scholars, for predominantly relying *'on western Eurocentric understandings of health and natural systems'* which see humans as separate from each other and nature, and positions the planet's natural systems as a means to an end.¹¹⁰ Planetary Health (alongside related concepts) has been critically discussed as a contributor to ongoing colonial domination and a preserver of current exploitative and destructive economic models.¹¹¹

Other scholars have however explicitly used Planetary Health approaches to criticise neoliberal economics.¹¹² Inequities within current generations, and between current and future generations, regarding contributions to undermining the planet's health and being exposed to its subsequent effects have also been discussed as part of an overall planetary health approach.¹¹³ There have been also discussions on the potential for Planetary Health

¹⁰⁷ Prescott, Susan L. et al. "The Canmore Declaration: Statement of Principles for Planetary Health." *Challenges*, vol. 9, no. 2, 2018, p. 31, doi:10.3390/challe9020031.

¹⁰⁸ Rossa-Roccor, Verena et al. "Scoping Review and Bibliometric Analysis of the Term "Planetary Health" in the Peer-Reviewed Literature." *Frontiers in Public Health*, vol. 8, 2020, doi:10.3389/fpubh.2020.00343.

¹⁰⁹ Lerner, Henrik and Charlotte Berg. "A Comparison of Three Holistic Approaches to Health: One Health, Ecohealth, and Planetary Health." *Frontiers in veterinary science*, vol. 4, 2017, p. 163, doi:10.3389/fvets.2017.00163.

¹¹⁰ Jones, Rhys et al. "Navigating Fundamental Tensions Towards a Decolonial Relational Vision of Planetary Health." *The Lancet Planetary Health*, vol. 6, no. 10, 2022, pp. e834-e41, doi:10.1016/S2542-5196(22)00197-8, Ratima, Mihi et al. "Indigenous Voices and Knowledge Systems—Promoting Planetary Health, Health Equity, and Sustainable Development Now and for Future Generations." *Global Health Promotion*, vol. 26, no. 3, 2019, pp. 3-5, Redvers, Nicole. "The Determinants of Planetary Health." *The Lancet Planetary Health*, vol. 5, no. 3, 2021, pp. e111-e12, doi:10.1016/S2542-5196(21)00008-5.

¹¹¹ Baquero, Oswaldo Santos et al. "From Modern Planetary Health to Decolonial Promotion of One Health of Peripheries." *Frontiers in Public Health*, vol. 9, 2021, doi:10.3389/fpubh.2021.637897, Missoni, Eduardo. "Global Health, Planetary Health, One Health: Conceptual and Ethical Challenges and Concerns." *Theoretical Medicine and Bioethics*, vol. 45, no. 3, 2024, pp. 241-50, doi:10.1007/s11017-024-09670-6.

¹¹² Horton, Richard et al. "From Public to Planetary Health: A Manifesto." *The Lancet*, vol. 383, no. 9920, 2014, p. 847, doi:10.1016/S0140-6736(14)60409-8, Mair, Simon. "Neoliberal Economics, Planetary Health, and the Covid-19 Pandemic: A Marxist Ecofeminist Analysis." *The Lancet Planetary Health*, vol. 4, no. 12, 2020, pp. e588-e96, doi:10.1016/S2542-5196(20)30252-7.

¹¹³ Williams, Phoebe CM et al. "Ethical Considerations Regarding the Effects of Climate Change and Planetary Health on Children." *Journal of Paediatrics and Child Health*, vol. 57, no. 11, 2021, pp. 1775-80, doi:10.1111/jpc.15704.

to promote the 2030 Agenda for Sustainable Development¹¹⁴ and have made initial attempts at incorporating it in research practices.¹¹⁵

According to our searches, (academic) discussions of ethical issues that can arise from adopting a Planetary Health lens in policy and practice is not yet well developed and uptake in (inter)national policy documents has been sparse so far. Broadening (e.g. bioethics) scope by adopting a Planetary Health perspective has been suggested by some, but what this means concretely remains subject to debate.¹¹⁶ Ethicists have also critically examined Planetary Health's central tenets as proposed by the Rockefeller-Lancet Commission and concluded that a less all-encompassing definition, and relatedly a less dominant role of the health professions, within planetary health could help avoid ethical challenges in practice.¹¹⁷

How can integrated concepts of health inform policy and practice?

The concepts of One Health and Planetary Health can contribute to an expanded focus on environmental determinants of health by policymakers, scientists and practitioners alike. In a transdisciplinary way they have contributed to agenda-setting and movement-building, thus creating momentum for evidence-informed practices and collective actions that help secure habitability of the Earth and (human) health. They can inform policy and practice by shedding light on potential negative or unintended consequences of activities by bringing attention to the needs and rights of diverse human populations groups and other species and ecosystems. However, to continue to support policy and practice, it is argued that these concepts should deepen their ethical and normative dimensions, and instigate objective (rather than ideologically biased) and truly foundational analyses of the root causes of the ecological, and social, crises that characterise the Anthropocene.¹¹⁸

¹¹⁴ Pongsiri, Montira J. et al. "Planetary Health: From Concept to Decisive Action." *The Lancet Planetary Health*, vol. 3, no. 10, 2019, pp. e402-e04, doi:10.1016/S2542-5196(19)30190-1.

¹¹⁵ Belesova, Kristine et al. "Designing a Planetary Health Watch: A System for Integrated Monitoring of the Health Effects of, and Responses to, Environmental Change." *Transdisciplinary Stakeholder Engagement Workshop Report*, London School of Hygiene and Tropical Medicine, UK, 2019.

doi:<https://doi.org/10.17037/PUBS.4654610>, Brousselle, Astrid and Jim McDavid. "Evaluation for Planetary Health." *Evaluation*, vol. 27, no. 2, 2021, pp. 168-83, doi:10.1177/1356389020952462.

¹¹⁶ Anderson, Warwick. "Toward Planetary Health Ethics? Refiguring Bios in Bioethics." *Journal of Bioethical Inquiry*, vol. 20, no. 4, 2023, pp. 695-702, doi:10.1007/s11673-023-10285-0, Timmermann, Cristian et al.

"Responding to the Climate Crisis – Bridging the Gap between Public Health Ethics and Environmental Ethics." *Public Health Forum*, vol. 30, no. 1, 2022, pp. 37-40, doi:doi:10.1515/pubhef-2021-0141.

¹¹⁷ Gardiner, Stephen M. and Paul Tubig. "Climate Change, Global Health and Planetary Health." *Handbook of Philosophy of Climate Change*, edited by Gianfranco Pellegrino and Marcello Di Paola, Springer, 2023, pp. 1-21. https://doi.org/10.1007/978-3-030-16960-2_76-1.

¹¹⁸ For a critical discussion of this term, see Bonneuil, C. "Capitalocène: Réflexions Sur L'échange Écologique Inégal Et Le Crime Climatique À L'âge De L'anthropocène." *EcoRev*, vol. 1, no. 44, 2017, pp. 52-60, doi:10.3917/ecorev.044.0052.

3.4 Indigenous and non-Western perspectives

Summary: There are many different Indigenous and non-western perspectives that are central to consider in relation to climate and health. Three common ethically important areas include: (i) the concept of biocultural heritage, acknowledging the strong ties between the environment and local cultures, (ii) being in harmonious relationships with the natural environment, and (iii) the decolonisation movement and demands for self-determination and recognition of traditional knowledges. These are only a selected and limited number of approaches. Of the three approaches included, the central aim of many Indigenous and non-Western perspectives is to improve well-being while avoiding ways of life and interactions that systemically destroy, or make sick, the environment and other community members.

Introduction

In this section, three common ethical concepts within Indigenous and non-Western perspectives that speak to the relationship between ethics, health and the environment are provided. These provide a necessarily brief and limited overview of ethical concepts that sit within a wide range of rich and highly diverse philosophical traditions. The analysed literature on Indigenous and non-Western perspectives generally use a broad concept of health, often tied to notions of well-being. The central aim of many Indigenous and non-Western perspectives is to improve well-being while avoiding ways of life and interactions that systematically destroy, or make sick, the environment and other community members.¹¹⁹

Biocultural heritage

The concept of biocultural heritage acknowledges strong ties between the living environment and local cultures, particularly among Indigenous communities.¹²⁰ For example, the natural living environment supports Indigenous peoples' and traditional communities' livelihood as it enables the cultivation of crops, the keeping of domesticated animals, the gathering of medicinal plants and the transmission of traditional knowledge and culture.¹²¹ Environmental destruction and deterioration threatens this relationship, as it can result in a loss of opportunities to secure livelihood and difficulties in passing on traditional knowledge and culture to the next generation. Specifically for health, biodiversity loss can drive food insecurity, particularly nutrient deficiencies, and the loss of foods of cultural significance.¹²² In terms of mental well-being, the loss of biodiversity and major seasonal changes can

¹¹⁹ Gudynas, Eduardo. "Buen Vivir: Today's Tomorrow." *Development*, vol. 54, no. 4, 2011, pp. 441-47, Kelbessa, Workineh. "Can African Environmental Ethics Contribute to Environmental Policy in Africa?" *Environmental Ethics*, vol. 36, 2014, pp. 31-61.

¹²⁰ Rozzi, Ricardo. "Biocultural Ethics: From Biocultural Homogenization toward Biocultural Conservation." *Linking Ecology and Ethics for a Changing World: Values, Philosophy, and Action*, edited by Ricardo Rozzi et al., Springer, 2013, pp. 9-32. https://doi.org/10.1007/978-94-007-7470-4_2, ---. "Biocultural Ethics: Recovering the Vital Links between the Inhabitants, Their Habits, and Habitats." *Environmental Ethics*, vol. 34, no. 1, 2012, pp. 27-50.

¹²¹ Nyéléni Forum for Food Sovereignty. *Declaration of NyéLéNi*. Nyéléni Forum for Food Sovereignty, 2007.

¹²² Rozzi, Ricardo. "Biocultural Ethics: Recovering the Vital Links between the Inhabitants, Their Habits, and Habitats." *Environmental Ethics*, vol. 34, no. 1, 2012, pp. 27-50, ---. "South American Environmental Philosophy: Ancestral Amerindian Roots and Emergent Academic Branches." *Environmental Ethics*, vol. 34, no. 4, 2012, pp. 343-66.

undermine traditional culture, and lead to the loss of cultural identity.¹²³ For example, in Mexican Indigenous communities, the cultivation of local maize varieties has huge cultural importance and plays a key role in their nutritional diversity.¹²⁴ The loss of local maize varieties due to climate change adds to centuries of plight and cultural losses for Mexican Indigenous communities, affecting the well-being of an already overburdened population group.¹²⁵ The concept of biocultural heritage therefore acknowledges the irreducible interdependence of the environment and local cultures.

Being in harmony with nature

Many Indigenous and non-Western perspectives value harmonious relationships with nature.¹²⁶ Relations between human and non-human entities need to maintain a healthy balance.¹²⁷ Nature should not and cannot be reduced to its economic value or to a mere commodity.¹²⁸ For example, in Latin America, the concept of 'buen vivir' (living well/good) inspired by Indigenous knowledges and values promotes harmonious relationships between humans and nature.¹²⁹ According to this approach human well-being is only possible within a community and most approaches to 'buen vivir' understand community in an expanded sense that includes nature.¹³⁰ Accordingly, this requires recognition that human existence is relational, with human interdependencies (i.e. during childhood, sickness and age) inseparable from planetary interdependencies (i.e. ecosystems as complex networks).¹³¹

These perspectives of living in harmony with nature have begun to address environmental harms that have adverse effects for well-being and health. For example, recognizing our interconnectedness and interdependence with ecosystems provides ample grounds for protecting them.¹³² For instance, Keown argues that '*Buddhism would tend to regard today's ecological problems as having a psychological basis, for example as stemming largely from greed, selfishness, ignorance, and apathy.*'¹³³ In other words, humanity would not have suffered the health consequences of environmental degradation if people exercised prudence and were considerate of others. In African environmental ethics, particularly in

¹²³ Whyte, Kyle. "Too Late for Indigenous Climate Justice: Ecological and Relational Tipping Points." *WIREs Climate Change*, vol. 11, no. 1, 2020, p. e603, doi:10.1002/wcc.603.

¹²⁴ Rodríguez López, Héctor Vinicio. "La Protección Del Maíz Criollo En México: Un Análisis Desde La Relación Entre La Bioética Y El Derecho Ambiental." vol. PhD, Universidad Nacional Autónoma de México, 2023.

¹²⁵ Martínez-Cruz, Tania Eulalia et al. "Resilient Food Systems in the Context of Intersectional Discrimination: Successful Strategies of Women and Indigenous Peoples in Mesoamerica." *Creating Resilient Landscapes in an Era of Climate Change*, edited by Amin Rastandeh and Meghann Jarchow, Routledge, 2022, pp. 75-93.

¹²⁶ Cf. Chan, Kai MA et al. "Why Protect Nature? Rethinking Values and the Environment." *Proceedings of the National Academy of Sciences*, vol. 113, no. 6, 2016, pp. 1462-65, doi:10.1073/pnas.1525002113.

¹²⁷ McGregor, Deborah et al. "Indigenous Environmental Justice and Sustainability." *Current Opinion in Environmental Sustainability*, vol. 43, 2020, pp. 35-40, doi:10.1016/j.cosust.2020.01.007.

¹²⁸ Gudynas, Eduardo. "Buen Vivir: Today's Tomorrow." *Development*, vol. 54, no. 4, 2011, pp. 441-47.

¹²⁹ Turquet, Laura et al. *Feminist Climate Justice: A Framework for Action*. UN Women, 2023.

¹³⁰ Gudynas, Eduardo. "Buen Vivir: Today's Tomorrow." *Development*, vol. 54, no. 4, 2011, pp. 441-47.

¹³¹ Turquet, Laura et al. *Feminist Climate Justice: A Framework for Action*. UN Women, 2023.

¹³² Kelbessa, Workineh. "African Environmental Ethics, Indigenous Knowledge, and Environmental Challenges." *Environmental Ethics*, vol. 37, no. 4, 2015, pp. 387-410.

¹³³ Keown, Damien. "Buddhism and Ecology: A Virtue Ethics Approach." *Contemporary Buddhism*, vol. 8, no. 2, 2007, pp. 97-112, doi:10.1080/14639940701636083.

Ubuntu philosophy, human interdependence with our environment and non-human animals provides a reason to care about the environment and value nature.¹³⁴

Decolonisation and the environment

Indigenous and non-Western perspectives on the environment commonly incorporate elements we find in decolonisation movements. Two elements are strongly visible in the literature: demands for self-determination and recognition of traditional knowledges. There is considerable frustration with governments and others for failing to consult on environmental policies with local communities, particularly among Indigenous and local groups.¹³⁵ Large-scale land deals with foreign investors for agricultural and conservation purposes are often perceived by local populations as land grabs and new forms of colonialism that imperil local livelihoods and cultural practices.¹³⁶ Consultations should instead follow the principle of free, prior and informed consent and secure benefit sharing.¹³⁷ There is also a lack of recognition of the importance and value of traditional knowledges, particularly when others benefit from such knowledges, either practically or financially, such as in the use of Indigenous agricultural knowledges for climate change mitigation and adaptation.¹³⁸ The disavowal of Indigenous knowledges can also lead to the imposition of agricultural systems that are not suitable for the local socioecological context with negative effects on the nutrition of local populations.¹³⁹

How can these approaches inform policy and practice?

Indigenous and non-Western perspectives typically highlight the inseparable interdependence of humans and the environment. However, nature is valued for very different reasons within these highly diverse traditions, which can result in significantly

¹³⁴ Behrens, Kevin. "Exploring African Holism with Respect to the Environment." *Environmental Values*, vol. 19, no. 4, 2010, pp. 465-84, doi:10.3197/096327110x531561, Chemhuru, Munamoto. "Approaching Covid-19 as an Environmental Ethical Problem: A Perspective from African Relational Animal Ethics." *Public Health Ethics*, vol. 16, no. 1, 2023, pp. 53-63, doi:10.1093/phe/phad007, Jecker, Nancy S. "Ubuntu and Bioethics." *Handbook of African Philosophy*, edited by Elvis Imafidon et al., Springer International Publishing, 2023, pp. 161-80. https://doi.org/10.1007/978-3-031-25149-8_6, Kelbessa, Workineh. "African Environmental Ethics, Indigenous Knowledge, and Environmental Challenges." *Environmental Ethics*, vol. 37, no. 4, 2015, pp. 387-410, Terblanché-Greeff, Aïda C. "Ubuntu and Environmental Ethics: The West Can Learn from Africa When Faced with Climate Change." *African Environmental Ethics: A Critical Reader*, edited by Munamoto Chemhuru, Springer, 2019, pp. 93-109. https://doi.org/10.1007/978-3-030-18807-8_7.

¹³⁵ Schlosberg, David and David Carruthers. "Indigenous Struggles, Environmental Justice, and Community Capabilities." *Global Environmental Politics*, vol. 10, no. 4, 2010, pp. 12-35.

¹³⁶ Corson, Catherine and Kenneth Iain MacDonald. "Enclosing the Global Commons: The Convention on Biological Diversity and Green Grabbing." *Journal of Peasant Studies*, vol. 39, no. 2, 2012, pp. 263-83, doi:10.1080/03066150.2012.664138, De Schutter, Olivier. "How Not to Think of Land-Grabbing: Three Critiques of Large-Scale Investments in Farmland." *Ibid.* vol. 38, 2011, pp. 249-79.

¹³⁷ Ashukem, Jean-Claude N. "Included or Excluded: An Analysis of the Application of the Free, Prior and Informed Consent Principle in Land Grabbing Cases in Cameroon." *Potchefstroom Electronic Law Journal/Potchefstroomse Elektroniese Regsblad*, vol. 19, no. 1, 2016, doi:10.17159/1727-3781/2016/v19i0a1222.

¹³⁸ Koohafkan, Parviz et al. "Green Agriculture: Foundations for Biodiverse, Resilient and Productive Agricultural Systems." *International Journal of Agricultural Sustainability*, vol. 10, no. 1, 2012, pp. 61-75.

¹³⁹ Shiva, Vandana. *Staying Alive: Women, Ecology and Development*. Zed Books, 1988.

varied applications and conclusions.¹⁴⁰ This makes the application of such ethical approaches complex, as it is difficult to represent the plurality of such approaches within single policy documents. Therefore, it is crucial to consider context, and to work with Indigenous and non-western communities to ascertain how these approaches can be adopted.¹⁴¹

There are several important reasons for including Indigenous and Non-Western perspectives in policy discussions: (1) climate change has a disproportionate negative impact on Indigenous communities and people in the Global South,¹⁴² (2) Indigenous and non-Western perspectives seldom receive the attention they deserve in academic and policy discussion,¹⁴³ (3) Indigenous perspectives contain a wealth of important practical knowledge about local environments, the impacts of climate change, and local forms of adaptation.¹⁴⁴

There are several examples where Indigenous and Non-Western perspectives have enriched philosophical discussions. At the intersection of integrated concepts of health and non-Western perspectives are approaches that emphasize the virtues of care and considerations of others, including future generations, in relation to living in harmony with nature. This has been coined as *Earth Ethics*¹⁴⁵ and notions of love¹⁴⁶ and hope¹⁴⁷ have been introduced into the field. Recently these approaches have been discussed in relation to medical and public health ethics, providing promising foundations for further development for environmental health ethics. Another example that illustrates how dialogue and a common agenda can lead to a successful incorporation of diverse forms of knowledge and concerns for the environment is offered by peasant organisations in their declarations for food sovereignty.¹⁴⁸

¹⁴⁰ Behrens, Kevin. "Exploring African Holism with Respect to the Environment." *Environmental Values*, vol. 19, no. 4, 2010, pp. 465-84, doi:10.3197/096327110x531561, Kelbessa, Workineh. "The Rehabilitation of Indigenous Environmental Ethics in Africa." *Diogenes*, vol. 52, no. 3, 2005, pp. 17-34, Cambridge Core, doi:10.1177/0392192105055167.

¹⁴¹ Cf. Cahill, Caitlin et al. "Participatory Ethics: Politics, Practices, Institutions." *ACME: An International Journal for Critical Geographies*, vol. 6, no. 3, 2007, pp. 304-18.

¹⁴² McMichael, Anthony. *Climate Change and the Health of Nations: Famines, Fevers, and the Fate of Populations*. Oxford University Press, 2017.

¹⁴³ Álvarez, Lina and Brendan Coolsaet. "Decolonizing Environmental Justice Studies: A Latin American Perspective." *Capitalism Nature Socialism*, vol. 31, no. 2, 2020, pp. 50-69, doi:10.1080/10455752.2018.1558272.

¹⁴⁴ Koohafkan, Parviz et al. "Green Agriculture: Foundations for Biodiverse, Resilient and Productive Agricultural Systems." *International Journal of Agricultural Sustainability*, vol. 10, no. 1, 2012, pp. 61-75, Martínez-Torres, María Elena and Peter M. Rosset. "Diálogo De Saberes in La Vía Campesina: Food Sovereignty and Agroecology." *The Journal of peasant studies*, vol. 41, no. 6, 2014, pp. 979-97, doi:10.1080/03066150.2013.872632.

¹⁴⁵ Callicott, J. Baird. "The Land Ethic and the Earth Ethic(S)." *Ethics, Policy & Environment*, vol. 24, no. 1, 2021, pp. 27-43, doi:10.1080/21550085.2021.1904532. There is also debate about whether the concept of "Land ethic" was inspired by Indigenous American philosophies, see Wardrope, Alistair. "Health Justice in the Anthropocene: Medical Ethics and the Land Ethic." *Journal of Medical Ethics*, vol. 46, no. 12, 2020, pp. 791-96, doi:10.1136/medethics-2020-106855.

¹⁴⁶ Devall, Bill and George Sessions. *Deep Ecology: Living as If Nature Mattered*. G.M. Smith, 1985.

¹⁴⁷ Prescott, Susan L. and Alan C. Logan. "Larger Than Life: Injecting Hope into the Planetary Health Paradigm." *Challenges*, vol. 9, no. 1, 2018, p. 13, doi:10.3390/challe9010013

¹⁴⁸ Nyéléni Forum for Food Sovereignty. *Declaration of NyéLéNi*. Nyéléni Forum for Food Sovereignty, 2007, Patel, Raj. "Food Sovereignty." *The Journal of peasant studies*, vol. 36, no. 3, 2009, pp. 663-706, doi:10.1080/03066150903143079.

3.5 Professional responsibilities

Summary: Professional responsibilities are acquired by individuals who work within or support certain professions. These responsibilities are acquired over time for a number of reasons, including because members of a profession require unique skills, or professionals are required to make informed and significant decisions on behalf of others. In some cases, these professional responsibilities can be included within codes of practice to guide professional decision making. This is one way in which ethical considerations around climate change and health could be embedded into practice.

Introduction

Professional responsibilities are acquired by individuals who work within or support certain professions. Four major factors are often used to justify the ethical obligations that arise with membership of a profession: (i) the skills and knowledge are unique to members of the profession, (ii) the professional group has a social status that makes them the sole providers of certain defined skills or activities, (iii) the professional group has acknowledged credentials that gives them certain exclusive privileges for which they should provide a service back to society, and (iv) the professional group wants to gain or maintain a positive reputation within society for which members of that profession have to assume certain responsibilities.¹⁴⁹ In practice many, sometimes all, of these factors are active simultaneously.

These professional responsibilities are often assumed voluntarily by professions (rather than required by law, for example). In some cases, these professional responsibilities can be included within codes of practice. Professional codes of practice can also have an impact on the way laws are interpreted or, in some cases, drafted. This can be important for professions to maintain a positive relation with society, uphold trust and ensure that professions are promoting ethical practice. Due to the threat of climate change, some professions have begun to assume professional responsibilities that seek to minimise the adverse outcomes of the climate crisis.

Healthcare

Healthcare is one area where professional responsibilities are assumed. Healthcare professionals must acquire a particular set of skills through undertaking relevant training and gaining qualifications to practice various types of medicine and healthcare. These qualifications allow healthcare professionals, such as doctors, nurses and dentists to care for patients and assume responsibility for protecting and promoting their health. Well-known ethical obligations in the healthcare profession include ensuring that patients provide informed consent to treatment and that unnecessary harm is minimised.¹⁵⁰ This is essential

¹⁴⁹ Cf. Gusmano, Michael K. "Physician Advocacy for Public Health." *Journal of Health Politics, Policy and Law*, vol. 44, no. 1, 2019, pp. 5-41, doi:10.1215/03616878-7206707, UNESCO. *Engineering: Issues, Challenges and Opportunities for Development*. UNESCO, 2010, van Gils-Schmidt, Henk Jasper and Sabine Salloch. "Taking a Moral Holiday? Physicians' Practical Identities at the Margins of Professional Ethics." *Journal of Medical Ethics*, 2022, pp. jme-2022-108500, doi:10.1136/jme-2022-108500.

¹⁵⁰ Beauchamp, Tom L. and James F. Childress. *Principles of Biomedical Ethics*. 8th ed., Oxford University Press, 2019.

to ensure that patient-healthcare professional relationships are maintained, and that the healthcare profession can be trusted.

Internationally, professional responsibilities for physicians have been codified within the World Medical Association (WMA) 'International Code of Medical Ethics' (ICoME).¹⁵¹ This Code sets out ethical principles for members of the medical profession worldwide including obligations towards individual patients, other health professionals, global and public health.¹⁵² They also include obligations relating to self-care. In the UK, doctors' professional responsibilities have been codified by the General Medical Council's (GMC's) 'Good Medical Practice' guidelines and its supporting documents.¹⁵³ These guidelines set out the standards of care and behaviour expected of all medical professionals. Healthcare professionals can be held to account by invoking these standards.

Professional organisations in healthcare have started to recognise climate-related responsibilities and standards as awareness of the adverse impacts of climate change on health increases.¹⁵⁴ In a 2022 update of the ICoME, the WMA included principles of environmentally sustainable practice to minimise environmental health risks to current and future generations.¹⁵⁵ Additionally, in the most recent 2024 'Good Medical Practice' standards included that medical professionals have a duty to choose sustainable solutions.¹⁵⁶

A need to recognise professional responsibilities related to climate change is also gaining traction among nurses, physiotherapists and health researchers. Nurses are promoting environmental protection measures by educating patients on climate change effects and

¹⁵¹ WMA. "Wma International Code of Medical Ethics." 2022. <https://www.wma.net/policies-post/wma-international-code-of-medical-ethics/>.

¹⁵² Parsa-Parsi, Ramin Walter. "The International Code of Medical Ethics of the World Medical Association." *JAMA : the journal of the American Medical Association*, vol. 328, no. 20, 2022, pp. 2018-21, doi:10.1001/jama.2022.19697.

¹⁵³ General Medical Council. "Good Medical Practice." General Medical Council, 2024. <https://www.acs.org/content/acs/en/global/international/regional/eventsglobal/global-chemists-code-of-ethics.html>.

¹⁵⁴ Foo, Rebecca. "The Role of Physiotherapy in Climate Change Mitigation." *Physiotherapy*, vol. 102, no. 3, 2016, p. e5, International Council of Nurses. "The Icn Code of Ethics for Nurses." International Council of Nurses, 2021. https://www.icn.ch/sites/default/files/2023-06/ICN_Code-of-Ethics_EN_Web.pdf, WMA. "Why Doctors Need to Join the Fight against Climate Change." World Medical Association <https://www.wma.net/news-post/why-doctors-need-to-join-the-fight-against-climate-change/>. Accessed 17 July 2024, ---. "Wma Declaration of Delhi on Health and Climate Change." World Medical Association <https://www.wma.net/policies-post/wma-declaration-of-delhi-on-health-and-climate-change/>. Accessed 17 July 2024, ---. "Wma Resolution on Climate Emergency." World Medical Association <https://www.wma.net/policies-post/wma-resolution-on-climate-emergency/>. Accessed 17 July 2024, ---. "Wma Resolution on Protecting the Future Generation's Right to Live in a Healthy Environment." World Medical Association <https://www.wma.net/policies-post/wma-resolution-on-protecting-the-future-generations-right-to-live-in-a-healthy-environment/>. Accessed 17 July 2024.

¹⁵⁵ Parsa-Parsi, Ramin Walter. "The International Code of Medical Ethics of the World Medical Association." *JAMA : the journal of the American Medical Association*, vol. 328, no. 20, 2022, pp. 2018-21, doi:10.1001/jama.2022.19697.

¹⁵⁶ General Medical Council. "Good Medical Practice." General Medical Council, 2024. <https://www.acs.org/content/acs/en/global/international/regional/eventsglobal/global-chemists-code-of-ethics.html>.

mitigation, reducing waste, and engaging in advocacy efforts.¹⁵⁷ Psychotherapists are studying ways to reduce the environmental footprint of psychotherapy, engaging in advocacy and climate education, and working on health promotion to empower people in lifestyle changes that reduce the environmental footprint.¹⁵⁸ Health researchers are being asked to critically reflect on the public value of their research and implement measures to reduce its environmental footprint.¹⁵⁹

Addressing these new ethical responsibilities may require some adaptations of medical curricula and training. There are several calls to integrate awareness of the climate impacts of healthcare into training for students studying to become healthcare professionals¹⁶⁰ and greater awareness among practising healthcare professionals to improve practice.¹⁶¹

Professional responsibilities in relation to environment and health in other professions

There are also professions outside health that assume responsibilities towards environmental protection. For example, among engineers there have been attempts to build codes of conduct or declarations to discourage their professional participation in high carbon industries.¹⁶² In so far as engineers have obligations to serve the public, they are called upon to use their skills to address the climate crisis, rather than support polluting industries. There are also wider calls to put professional skills to the service of the public, for

¹⁵⁷ American Nurses Association. "Nurses' Role in Addressing Global Climate Change, Climate Justice, and Health." 2023. <https://www.nursingworld.org/practice-policy/nursing-excellence/official-position-statements/id/climate-change> June 2024, Anderko, Laura et al. "Climate Change, Health, and Nursing: A Call to Action." Alliance of Nurses for Healthy Environments. <https://envirn.org/wp-content/uploads/2017/04/Climate-change-health-and-nursing-1-11-17.pdf>.

¹⁵⁸ World Psychotherapy. "Climate Change and Health: Policy Statement." 2022. <https://world.physio/sites/default/files/2022-07/PS-2022-Climate-change-FinalDraft.pdf>.

¹⁵⁹ Pratt, Bridget. "Defending and Defining Environmental Responsibilities for the Health Research Sector." *Science and engineering ethics*, vol. 30, no. 3, 2024, p. 25, doi:10.1007/s11948-024-00487-z, Samuel, Gabrielle and Cristina Richie. "Reimagining Research Ethics to Include Environmental Sustainability: A Principled Approach, Including a Case Study of Data-Driven Health Research." *Journal of Medical Ethics*, vol. 49, no. 6, 2023, pp. 428-33, doi:10.1136/jme-2022-108489, Smith, Pamina et al. "Advancing Environmentally Sustainable Health Research." Wellcome Trust, 2023. https://cms.wellcome.org/sites/default/files/2023-08/Research_Sustainability_Report_RAND_Europe_August_2023.pdf.

¹⁶⁰ Nieberle, Lisa Jasmin et al. "Planetare Gesundheit Im Medizinstudium: Praxisbeispiel ,Klimasprechstunde 'Und Curriculare Perspektiven." *Zeitschrift für medizinische Ethik*, vol. 69, no. 4, 2023, pp. 620-41, doi:10.30965/29498570-20230055, Wortzel, Joshua R. et al. "Climate Change and the Professional Obligation to Socialize Physicians and Trainees into an Environmentally Sustainable Medical Culture." *Academic Psychiatry*, vol. 46, no. 5, 2022, pp. 556-61, doi:10.1007/s40596-022-01688-z.

¹⁶¹ Campos, Luís et al. "Physicians' Responsibility toward Environmental Degradation and Climate Change: A Position Paper of the European Federation of Internal Medicine." *European Journal of Internal Medicine*, vol. 104, 2022, pp. 55-58, doi:10.1016/j.ejim.2022.08.001, Faergeman, Ole. "Climate Change and Preventive Medicine." *European journal of cardiovascular prevention and rehabilitation*, vol. 14, no. 6, 2007, pp. 726-29, doi:10.1097/HJR.0b013e3282f30097, Leaf, Alexander. "Potential Health Effects of Global Climatic and Environmental Changes." *New England Journal of Medicine*, vol. 321, no. 23, 1989, pp. 1577-83, doi:10.1056/nejm198912073212305, Wabnitz, Katharina and Verina Wild. "Ärztliches Ethos Im Anthropozän: Einführende Überlegungen." *Heidelberger Standards Der Klimamedizin*, edited by C. C. Nikendei et al., HeiCuMed, 2023, pp. 191-98.

¹⁶² Lawlor, Rob and Helen Morley. "Climate Change and Professional Responsibility: A Declaration of Helsinki for Engineers." *Science and engineering ethics*, vol. 23, no. 5, 2017, pp. 1431-52, doi:10.1007/s11948-017-9884-4, Watterson, Andrew. "Professionals Must Refuse to Work on New Fossil Fuel Projects." *BMJ*, vol. 382, 2023, p. p2008, doi:10.1136/bmj.p2008.

instance by helping to address the Sustainable Development Goals.¹⁶³ Chemists have also included environmental sustainability standards in their code of ethics. The Global Chemists' Code of Ethics demands that chemistry professionals use their expertise to '*ensure the safety and health of coworkers and the community, and to protect the environment for future generations.*'¹⁶⁴ Although rarely with an explicit reference to health, craftworker associations are also calling for awareness of the contribution of their profession to mitigate climate change and address sustainability concerns by insulating buildings and repairing products.¹⁶⁵

How can these approaches inform policy and practice?

Different professional groups are starting to respond to the climatic and environmental crises through the acknowledgement of various ethical responsibilities. These are often undertaken voluntarily but may also be embedded into guidance or codes of practice that can guide and inform practice. The professional responsibilities of different professions are likely to differ and be interpreted differently in various contexts.

¹⁶³ UNESCO. "Engineering for Sustainable Development: Delivering on the Sustainable Development Goals." UNESCO, 2021.

¹⁶⁴ American Chemical Society. "Global Chemists' Code of Ethics." <https://www.acs.org/content/dam/acsorg/global/international/scifreedom/global-chemists-code-of-ethics-fi-2016.pdf>. Accessed 17 July 2024, Kovac, Jeffrey. "American Chemical Society Codes of Ethics: Past, Present, and Future." *HYLE – International Journal for Philosophy of Chemistry*, vol. 24, 2018, pp. 79-95.

¹⁶⁵ ZWH. "Nachhaltiges Wirtschaften Schafft Zukunft!" Zentralstelle für die Weiterbildung im Handwerk e. V. <https://nachhaltiges-handwerk.de/>. Accessed 17 July 2024.

3.6 Principlism

Summary: Principlism is characterized by the application of normative principles to guide ethical decision-making and practice. Although best known as an approach to identifying and resolving ethical conflicts in health care and biomedical research, a range of principles are cited in relation to the ethical aspects of climate change and health such as principles of sustainability, stewardship and solidarity.

Introduction

Principlism is characterized by the application of normative principles to guide ethical decision-making and practice. It tries to find the middle ground between top-down approaches (e.g. ethical theories such as utilitarianism) and bottom-up approaches (e.g. casuistic approaches, starting from real world cases).¹⁶⁶

The best-known approach in health care and biomedical research ethics is ‘the four principles of biomedical ethics’ first systematised by Beauchamp and Childress in 1979.¹⁶⁷ They propose a universal framework of four ‘prima facie’ – i.e. non-absolute – moral principles as a means of analysing and resolving ethical problems: (1) *Respect for autonomy* is concerned with informing patients, acknowledging their informed choices and respecting their views or decisions; (2) *beneficence* speaks to the health professional’s duty to improve the health and well-being of their patients; (3) *non-maleficence* demands that health professionals refrain from actions that harm the patient’s interests; and (4) *justice* requires fairness to others when treating individual patients.¹⁶⁸ The moral principles are supposed to be weighed against each other in individual, unique and often unforeseeable cases.

It is widely acknowledged that principlism is a clear approach that makes it possible to analyze medical ethical dilemmas. The well-structured approach with its combination of top-down and bottom-up elements is seen as a real strength in dealing with ethical questions in healthcare.¹⁶⁹

The four principles approach has also been the subject of various criticisms since the first edition of Beauchamp and Childress’s book. According to Clouser and Gert, each principle summarizes its own well-developed and universal ethics, but combining them counteracts the power of the individual principles.¹⁷⁰ They criticize the lack of practical applicability in the case of conflicting principles as well as the arbitrariness by which the principles can be applied: ‘The four main principles are reduced to four principles from which agents are told

¹⁶⁶ See “Method and Moral Justification” in Beauchamp, Tom L. and James F. Childress. *Principles of Biomedical Ethics*. 8th ed., Oxford University Press, 2019. and Flynn, Jennifer. "Theory and Bioethics." *The Stanford Encyclopedia of Philosophy (Winter 2022 Edition)*, edited by Edward N. Zalta and Uri Nodelman, 2022, <https://plato.stanford.edu/archives/win2022/entries/theory-bioethics/>.

¹⁶⁷ Beauchamp, Tom L. and James F. Childress. *Principles of Biomedical Ethics*. 8th ed., Oxford University Press, 2019.

¹⁶⁸ *Ibid.*

¹⁶⁹ Steinkamp, Norbert and Bert Gordijn. "Ethical Case Deliberation on the Ward. A Comparison of Four Methods." *Medicine, Health Care and Philosophy*, vol. 6, no. 3, 2003, pp. 235-46, doi:10.1023/A:1025928617468.

¹⁷⁰ Clouser, K. Danner and Bernard Gert. "A Critique of Principlism." *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, vol. 15, no. 2, 1990, pp. 219-36, doi:10.1093/jmp/15.2.219.

to pick and choose as they see fit, as if one could sometimes be Kantian and sometimes Utilitarian and sometimes something else, without worrying whether the theory one is using is adequate or not.¹⁷¹ Casuistry, or case-based ethical reasoning, has been proposed as a better suited approach, as it may do more justice to the complexity of individual situations, leading to more appropriate solutions.¹⁷²

A substantial body of literature that criticizes Beauchamp and Childress four principles' focus on the individual person, setting or interaction. Despite the original emphasis on avoiding any prioritization of single principles, it has been noted that respect for autonomy has turned into the guiding principle.¹⁷³ This should be assessed critically. The 'place of honor' of autonomy leads to the potential acceptance of *any* personal decision, with the risk that more subtle or searching ethical exploration of decision making is ignored.¹⁷⁴ Above all, feminist-oriented care ethics and relational ethics criticize the absence of considerations about relationships, the situational, social and broader environmental context, and (socio-) cultural diversity, oppression and injustices, that may well be relevant to individual cases.¹⁷⁵

Arguably therefore, with the exception of the principle of justice, the four classic bioethical principles, with their emphasis on biomedical interactions and hyper-individual focus, may not be suited to identifying and resolving ethical challenges in climate change¹⁷⁶ and public health interventions.¹⁷⁷ This shortcoming however does not undermine the success principlism has had in mainstreaming ethics in medical education and helping to identifying key problems in clinical practice and biomedical research.

Adapting the four principles of biomedical ethics for environmental conditions

The founding literature on bioethics by Fritz Jahr (1927)¹⁷⁸ and Van Rensselaer Potter (1971)¹⁷⁹ prominently included an environmental component that has been left aside with

¹⁷¹ Ibid.

¹⁷² Toulmin, Stephen. "The Tyranny of Principles." *Hastings Center Report*, vol. 11, no. 6, 1981, pp. 31-39.

¹⁷³ Gillon, Raanan. "Ethics Needs Principles—Four Can Encompass the Rest—and Respect for Autonomy Should Be "First among Equals"." *Journal of Medical Ethics*, vol. 29, no. 5, 2003, pp. 307-12, doi:10.1136/jme.29.5.307, Slowther, Anne-Marie. "The Concept of Autonomy and Its Interpretation in Health Care." *Clinical Ethics*, vol. 2, no. 4, 2007, pp. 173-75, doi:10.1258/147775007783560166.

¹⁷⁴ Callahan, Daniel. "Individual Good and Common Good: A Communitarian Approach to Bioethics." *Perspectives in biology and medicine*, vol. 46, no. 4, 2003, pp. 496-507, Tong, Rosemarie. "Teaching Bioethics in the New Millennium: Holding Theories Accountable to Actual Practices and Real People." *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, vol. 27, no. 4, 2002, pp. 417-32, doi:10.1076/jmep.27.4.417.8609.

¹⁷⁵ Behrens, Kevin. "A Critique of the Principle of 'Respect for Autonomy', Grounded in African Thought." *Developing world bioethics*, vol. 18, no. 2, 2018, pp. 126-34, doi:10.1111/dewb.12145, Edwards, Steven D. "Three Versions of an Ethics of Care." *Nursing Philosophy*, vol. 10, no. 4, 2009, pp. 231-40, doi:10.1111/j.1466-769X.2009.00415.x.

¹⁷⁶ Sheather, Julian et al. "Ethics, Climate Change and Health ? A Landscape Review." *Wellcome Open Research*, vol. 8, no. 343, 2023, doi:10.12688/wellcomeopenres.19490.1.

¹⁷⁷ Coughlin, Steven S. "How Many Principles for Public Health Ethics?" *The Open Public Health Journal*, vol. 1, no. 1, 2008, doi:10.2174/1874944500801010008.

¹⁷⁸ Jahr, Fritz. "Bioethik: Eine Übersicht Der Ethik Und Der Beziehung Des Menschen Mit Tieren Und Pflanzen." *Kosmos*, vol. 24, 1927, pp. 21-32.

¹⁷⁹ Potter, Van Rensselaer. *Bioethics: Bridge to the Future*. Prentice-Hall, 1971.

the wide adoption of the four principles of biomedical ethics.¹⁸⁰ As such, the traditional four principle approach has largely ignored environmental factors in their application.

One option that has been proposed in the literature to promote the inclusion of ethical issues of climate change, health and environmental degradation within principlism is to adapt the established four principles of biomedical ethics.

It has been argued that a very broad concept of justice could be utilised to incorporate environmental concerns.¹⁸¹ For instance, this could be achieved by balancing individual benefits from healthcare with the environmental impact of hospitals on neighbouring communities. Yet the application of this principle requires an extensive understanding of the relevant issues in justice associated with ethical reflection on the environment including the capacity to identify them.¹⁸² This may also require knowledge about historic injustices, awareness of the multiple forms of justice, and the ability to put oneself in the position of others. It has been noted that established bioethics research and training has done little to shift the attention away from interpersonal health ethics towards environmental injustices, particularly those affecting racialised and other minorities.¹⁸³ In the context of climate change and health, it is probably more helpful to think of justice less as a single principle and more as a requirement to reflect on the diverse ways in which a family of concepts related to questions of justice and fairness – of what is owed to whom and by whom – need to be addressed in decision making. (For a fuller account of justice, see section 3.2.)

Despite these problems, there are attempts to adapt principles-based ethical approaches to address environmental concerns for health. For example, it has been proposed that a new principle of ‘sustainability’ should be introduced to assist clinical decision-making.¹⁸⁴ Another approach has been to revise principlism by introducing a new set of principles – distributive justice, resource conservation, simplicity, and ethical economics – to work towards a new green bioethics, for example, to provide professionals with guiding principles in individual health care.¹⁸⁵

¹⁸⁰ Rincic, Iva et al. "The Eco-Ethical Contribution of Menico Torchio – a Forgotten Pioneer of European Bioethics." *Philosophy, Ethics, and Humanities in Medicine*, vol. 18, no. 1, 2023, p. 20, doi:10.1186/s13010-023-00145-5.

¹⁸¹ Sheather, Julian et al. "Ethics, Climate Change and Health ? A Landscape Review." *Wellcome Open Research*, vol. 8, no. 343, 2023, doi:10.12688/wellcomeopenres.19490.1.

¹⁸² Voisard, Anthony and Ivo Wallimann-Helmer. "Towards a Practical Climate Ethics: Combining Two Approaches to Guide Ethical Decision-Making in Concrete Climate Governance Contexts." *Ethics, Policy & Environment*, 2023, pp. 1-17, doi:10.1080/21550085.2023.2236504.

¹⁸³ Ray, Keisha and Jane Fallis Cooper. "The Bioethics of Environmental Injustice: Ethical, Legal, and Clinical Implications of Unhealthy Environments." *The American Journal of Bioethics*, vol. 24, no. 3, 2024, pp. 9-17, doi:10.1080/15265161.2023.2201192.

¹⁸⁴ Munthe, Christian et al. "Sustainability Principle for the Ethics of Healthcare Resource Allocation." *Journal of Medical Ethics*, vol. 47, no. 2, 2021, pp. 90-97, doi:10.1136/medethics-2020-106644.

¹⁸⁵ Richie, Cristina. *Principles of Green Bioethics : Sustainability in Health Care*. Michigan State University Press, 2019.

Despite substantial scepticism about its theoretical underpinnings,¹⁸⁶ there have been several attempts to adapt principlism to make it suitable to address ethical issues in public health. For example, it has been suggested that the traditional four principles could be interpreted more widely. In accordance, for example, with the liberal tradition associated with John Stuart Mill, the principle of non-maleficence can be understood as a harm principle.¹⁸⁷ In this sense the principle suggests that 'coercive, liberty-infringing state interference can be acceptable where the purpose is to prevent harm to others.'¹⁸⁸ A large number of public health interventions to control, for example, air pollution could be justified when unsafe thresholds are reached. Other bioethicists have preferred to introduce new principles such as 'health maximisation', 'efficiency', and 'proportionality'.¹⁸⁹ The principle of 'equity' is also evoked widely in both climate change¹⁹⁰ and health discourses.¹⁹¹ Care should be taken not to confuse equity with 'equality' as it seeks to advance fairness and impartiality, rather than equal treatment of all. An additional principle that has received wide interest in public health ethics is 'solidarity'.¹⁹²

Another strategy is to introduce established principles from environmental ethics and climate ethics in the analysis of environmental health issues. For example, the precautionary principle is likely to limit activities that raise potentially serious threats of harm to human health, even if causes and consequences are not fully established scientifically.¹⁹³ The precise meaning of this principle has been subject to much discussion, and therefore has also been referred to as an *approach* in public health ethics.¹⁹⁴ It is argued that the approach would seek to halt the spread of chemicals and biological materials where there is some evidence they cause serious harm, particularly where the potential scale of the harm is

¹⁸⁶ Grill, Kalle and Angus Dawson. "Ethical Frameworks in Public Health Decision-Making: Defending a Value-Based and Pluralist Approach." *Health Care Analysis*, vol. 25, 2017, pp. 291-307, doi:10.1007/s10728-015-0299-6.

¹⁸⁷ Versions of such principle are common in public health ethics frameworks, see Childress, James F. et al. "Public Health Ethics: Mapping the Terrain." *The Journal of Law, Medicine & Ethics*, vol. 30, no. 2, 2002, pp. 170-78, doi:10.1111/j.1748-720X.2002.tb00384.x, Kass, Nancy E. "An Ethics Framework for Public Health." *American journal of public health*, vol. 91, no. 11, 2001, pp. 1776-82, doi:10.2105/ajph.91.11.1776, Upshur, Ross. "Principles for the Justification of Public Health Intervention." *Canadian Journal of Public Health*, vol. 93, no. 2, 2002, pp. 101-03, doi:10.1007/BF03404547.

¹⁸⁸ Nuffield Council on Bioethics. *Public Health: Ethical Issues*. Nuffield Council on Bioethics, 2007.

¹⁸⁹ Schröder-Bäck, Peter et al. "Teaching Seven Principles for Public Health Ethics: Towards a Curriculum for a Short Course on Ethics in Public Health Programmes." *BMC medical ethics*, vol. 15, no. 1, 2014, p. 73, doi:10.1186/1472-6939-15-73.

¹⁹⁰ Klinsky, Sonja et al. "Why Equity Is Fundamental in Climate Change Policy Research." *Global Environmental Change*, vol. 44, 2017, pp. 170-73, doi:10.1016/j.gloenvcha.2016.08.002.

¹⁹¹ Chang, Wei-Ching. "The Meaning and Goals of Equity in Health." *Journal of Epidemiology & Community Health*, vol. 56, no. 7, 2002, pp. 488-91.

¹⁹² Coughlin, Steven S. "How Many Principles for Public Health Ethics?" *The Open Public Health Journal*, vol. 1, no. 1, 2008, doi:10.2174/1874944500801010008, Dawson, Angus and Bruce Jennings. "The Place of Solidarity in Public Health Ethics." *Public Health Reviews*, vol. 34, no. 1, 2012, p. 4, doi:10.1007/BF03391656, Prainsack, Barbara and Alena Buyx. *Solidarity: Reflections on an Emerging Concept in Bioethics*. Nuffield Council on Bioethics, 2011, Pratt, Bridget. "Sustainable Global Health Practice: An Ethical Imperative?" *Bioethics*, vol. 36, no. 8, 2022, pp. 874-82, doi:10.1111/bioe.13071.

¹⁹³ Sandin, Per. "The Precautionary Principle and the Concept of Precaution." *Environmental Values*, vol. 13, no. 4, 2004, pp. 461-75.

¹⁹⁴ Nuffield Council on Bioethics. *Public Health: Ethical Issues*. Nuffield Council on Bioethics, 2007.

great.¹⁹⁵ Another principle that is used in environmental health ethics is stewardship.¹⁹⁶ Principles of good stewardship have a strong tradition in agricultural and environmental ethics (also referred to in terms of good husbandry)¹⁹⁷ and in African ethics in relation to obligations to past and future generations.¹⁹⁸ Other ethical approaches specifically address issues of distributing costs of climate measures, such as the 'polluter pays' or the 'ability to pay' principles.¹⁹⁹

There have also been attempts to introduce new principles specifically tailored for public health ethics. To justify public health interventions, Ross Upshur, for example, introduces four principles: the harm principle, the principle of least restrictive means, the reciprocity principle, and the transparency principle.²⁰⁰ It is argued that it is within the scope of such principle-based approaches, to analyse population-level ethical issues and tensions in the area of climate change and health.

Principles used by governing bodies to address the climate and environmental crises

There have been several attempts by United Nation Organisations and independent organisations to introduce new principles. An early example is the publication 'Environment and Health: The European Charter and Commentary' introducing 14 principles, such as 'prevention is better than cure' and longer statements such as 'Development assistance should promote sustainable development and the safeguarding and improvement of human health as one of its integral components.'²⁰¹ In addition, United Nation organizations continuously recall the core human rights principles of 'progressive realization of human rights' and 'international cooperation'.²⁰² The UNESCO has also introduced a series of principles ranging from the high level, such as 'prevention of harm' and 'solidarity' to the more focussed principle of 'scientific knowledge and integrity in decision-making'.²⁰³

¹⁹⁵ Ibid.

¹⁹⁶ Resnik, David B. *Environmental Health Ethics*. Cambridge University Press, 2012.

¹⁹⁷ Thompson, Paul B. *The Spirit of the Soil: Agriculture and Environmental Ethics*. Routledge, 2017.

¹⁹⁸ Kwasi Wiredu cited in Behrens, Kevin. "An African Relational Environmentalism and Moral Considerability." *Environmental Ethics*, vol. 36, no. 1, 2014, pp. 63-82.

¹⁹⁹ Caney, Simon. "Climate Justice." *The Stanford Encyclopedia of Philosophy (Winter 2021 Edition)*, edited by Edward N. Zalta, 2021, <https://plato.stanford.edu/archives/win2021/entries/justice-climate/>.

²⁰⁰ Upshur, Ross. "Principles for the Justification of Public Health Intervention." *Canadian Journal of Public Health*, vol. 93, no. 2, 2002, pp. 101-03, doi:10.1007/BF03404547.

²⁰¹ World Health Organization. *Environment and Health: The European Charter and Commentary: First European Conference on Environment and Health, Frankfurt, 7–8 December 1989*. World Health Organization. Regional Office for Europe, 1990. *Who Regional Publications, European Series*; 35.

²⁰² UN Committee on Economic Social and Cultural Rights. "General Comment No. 17: The Right of Everyone to Benefit from the Protection of the Moral and Material Interests Resulting from Any Scientific, Literary or Artistic Production of Which He or She Is the Author (Art. 15, Para. 1 (C) of the Covenant, E/C.12/GC/17)." 2006, www.unhcr.org/refworld/docid/441543594.html, UN Committee on Economic, Social and Cultural Rights. "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Article 12 of the International Covenant on Economic, Social and Cultural Rights)." United Nations Economic and Social Council, 2000. <http://www.unhcr.ch/tbs/doc.nsf/%28symbol%29/E.C.12.2000.4.En>.

²⁰³ UNESCO. *Declaration of Ethical Principles in Relation to Climate Change*. UNESCO, 2017, UNESCO and COMEST. "Ethical Principles for Climate Change: Adaptation and Mitigation." <https://unesdoc.unesco.org/ark:/48223/pf0000234529>. Accessed 18 July 2024.

In a recent report on 'Health, climate change and ethics'²⁰⁴ the Nuffield Council on Bioethics has introduced principles for the assessment of ethical considerations arising from the impact of climate change on health. These are:

- **Justice:** this addresses the just division, fair sharing and equitable distribution of the benefits and burdens of climate change, and the identification and allocation of responsibilities to address that distribution.
- Consideration of extending moral concern – including concepts of rights – to the **non-human world**, and how these can be balanced with competing (or perhaps compatible) human rights and interests.
- **Solidarity**, in the sense of shared practices reflecting a collective commitment to carry 'costs' (financial, social, emotional or otherwise) to assist others. This recognises the global context of climate change. It may also extend to solidarity with (aspects of) the non-human world.
- **Intergenerational responsibility** – which seeks to identify what is owed to future and hypothetical generations and on what basis, and how to act when this conflicts with supporting and advancing the interests of those currently living.

Related principle

The principle (or concept) of 'Our Common Home' seeks to create awareness among people that we share our world with others, including other species, and we have stewardship responsibilities towards future generations. This approach has been recently widely propagated by the Vatican through an encyclical letter²⁰⁵ in terms of 'caring for our common home' and has encouraged interreligious dialogue²⁰⁶ and cooperation with scientific institutions.²⁰⁷

How can these approaches inform policy and practice?

Principlism approaches have the advantage of being widely used as tools of biomedical ethics and more or less successful attempts have been made to transfer these approaches to other disciplines,²⁰⁸ including climate ethics.²⁰⁹ Health professionals with basic ethical training are therefore likely to be open to adding new principles to their ethical reasoning.

²⁰⁴ Nuffield Council on Bioethics. "Health, Climate Change and Ethics – an Overview." Nuffield Council on Bioethics, 2023.

²⁰⁵ Pope Francis. *Praise Be to You-Laudato Si': On Care for Our Common Home*. Ignatius Press, 2015.

²⁰⁶ Organization of American States. "Our Common Home: A Platform for Dialogue."

<https://www.oas.org/en/sg/commonhome/our-common-home.asp>. Accessed 3 July 2024.

²⁰⁷ Dicastery for Promoting Integral Human Development and Stockholm Environment Institute. *Our Common Home: A Guide to Caring for Our Living Planet*. 2023.

²⁰⁸ Atenas, Javiera et al. "Reframing Data Ethics in Research Methods Education: A Pathway to Critical Data Literacy." *International Journal of Educational Technology in Higher Education*, vol. 20, no. 1, 2023, p. 11, doi:10.1186/s41239-023-00380-y, Véliz, Carissa. "Three Things Digital Ethics Can Learn from Medical Ethics." *Nature Electronics*, vol. 2, no. 8, 2019, pp. 316-18.

²⁰⁹ Voisard, Anthony and Ivo Wallimann-Helmer. "Towards a Practical Climate Ethics: Combining Two Approaches to Guide Ethical Decision-Making in Concrete Climate Governance Contexts." *Ethics, Policy & Environment*, 2023, pp. 1-17, doi:10.1080/21550085.2023.2236504.

However, applying principles is not trivial, as it requires some skill to identifying and weighing the different principles.²¹⁰ Furthermore, some principles, particularly 'justice' are complex, multifaceted and should be seen rather as a rich philosophical theory and concept, than as a principle (see section 3.2).

²¹⁰ Ibid.

4. Discussion and Conclusion

This review presents brief accounts of ethical approaches that are commonly used to analyse ethical issues in relation to climate, environment and health. These are deliberately intended to be short and suggestive, rather than exhaustive. We provide a selection of footnotes to the rich and complex scholarship that lies behind them.

This short review cannot capture the richness of, for example, Indigenous and non-Western perspectives and other approaches and perspectives that are primarily used in environmental ethics, such as utilitarianism, virtue ethics and deep ecology.²¹¹ It has also not engaged with the criticism of how capitalism is affecting health and climate,²¹² new interpretations of the concept 'land ethic' in relation to health,²¹³ or concepts to condemn environmental destruction, such as 'ecocide.'²¹⁴ As there is greater recognition of the impact of environmental and climate crises on health, we are witnessing an exponential increase in research attention.²¹⁵

Although the ethical approaches are presented separately, they overlap and are often combined when applied. There are also some noteworthy similarities between the different approaches. Integrated concepts of health and the Indigenous and non-Western perspectives, for example, share the view that humans and the environment are an interconnected whole. Within these perspectives there is a move toward valuing the environment and other species in and of themselves, along with other, more instrumental interpretations that emphasise the value of such systems for human well-being.

Rights-based and justice approaches aim at establishing institutional orders that are conducive to the securing of environmental conditions for healthy human lives. While these approaches clearly address States, they have become such an important part of our public lives that individuals and other, non-state institutions often seek to do their share in securing these rights and fulfilling the demands of justice.

Principlism and professional responsibilities often provide individual professionals with some degree of orientation on how to behave ethically in their practice including values and

²¹¹ Brennan, Andrew and Norva Y.S. Lo. "Environmental Ethics." *The Stanford Encyclopedia of Philosophy (Summer 2024 Edition)*, edited by Edward N. Zalta and Uri Nodelman, 2024, <https://plato.stanford.edu/entries/ethics-environmental/>, Palmer, Clare et al. "Environmental Ethics." *Annual Review of Environment and Resources*, vol. 39, no. Volume 39, 2014, 2014, pp. 419-42, doi:10.1146/annurev-environ-121112-094434.

²¹² Fraser, Nancy. "Climates of Capital for a Trans-Environmental Eco-Socialism." *New left review*, no. 127, 2021, pp. 94-127, Leff, Enrique. *Political Ecology: Deconstructing Capital and Territorializing Life*. Palgrave Macmillan, 2021, Moore, Jason W. "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis." *The Journal of peasant studies*, vol. 44, no. 3, 2017, pp. 594–630.

²¹³ Wardrope, Alistair. "Health Justice in the Anthropocene: Medical Ethics and the Land Ethic." *Journal of Medical Ethics*, vol. 46, no. 12, 2020, pp. 791-96, doi:10.1136/medethics-2020-106855, ---. "Medical Ethics and the Land Ethic." *Encyclopedia of Business and Professional Ethics*, edited by Deborah C. Poff and Alex C. Michalos, Springer International Publishing, 2023, pp. 1320-25. https://doi.org/10.1007/978-3-030-22767-8_1317.

²¹⁴ Neira, Hermán et al. "Ecocidio." *Revista de Filosofía*, vol. 76, 2019, pp. 127-48, doi:10.4067/S0718-43602019000200127.

²¹⁵ Sheather, Julian et al. "Ethics, Climate Change and Health ? A Landscape Review." *Wellcome Open Research*, vol. 8, no. 343, 2023, doi:10.12688/wellcomeopenres.19490.1.

principles that should drive interactions and decisions. Where ethical principles are endorsed by institutions and professional responsibilities are spelled out in codes of conduct, these approaches can contribute to a variety of legal, and structural changes to promote environmental sustainability and healthy environments.

Applying these ethical approaches, or deciding to prioritise one or another, can also lead to some tensions or conflicts.

First, while environmental protection and climate action are crucial for human survival, there are other urgent health problems, such as securing reproductive healthcare services or controlling opioid addictions, which may be of higher priority in some circumstances.²¹⁶ It is therefore important to also compare the issue of environmental health with other areas of concern and to strengthen the arguments for recognising its urgency and priority.

Further, it is feared that environmental measures may disadvantage individual patients.²¹⁷ Such ethical tensions need to be acknowledged and discussed in a prudent manner. Additionally, failure to incorporate some of these ethical approaches, such as Indigenous and non-Western perspectives, may lead to harmful shortcomings and violate epistemic justice.

Narrow interpretations of certain approaches, such as understanding justice solely as a principle for fair allocation of resources, may undermine the much richer potential of identifying structural injustices that are a result of aggregate actions and institutional failures.²¹⁸ It also risks failing to do justice to the interests of other species, future generations and historically marginalised population groups.

This as a dynamic document. The sheer scale of published literature in this area on the one hand and the difficulty to categorize them as distinct approaches on the other hand makes an exhaustive and static document impossible. Sadly, we have had to omit many details and much complexity. In our view, the most substantial omissions had to be made in the sections on justice and Indigenous and non-Western perspectives, as the literature in the background is vast. Further, more detailed reviews on these two approaches would be recommendable. This review cannot therefore do full justice to the richness of the work we are discussing. We also had to pool approaches with very different understandings of what 'health' means. Furthermore, there are certainly other ways of structuring these approaches. Therefore, we underline that these ethical approaches are not set in stone and welcome further discussions on the application of these and other ethical approaches for this urgent topic.

Policy makers and bioethicists need to navigate these types of potential tensions or conflicts. A starting point is to be aware of the different ethical approaches used in the discussion and

²¹⁶ Cf. Chimonas, Susan et al. "The Future of Physician Advocacy: A Survey of U.S. Medical Students." *BMC Medical Education*, vol. 21, no. 1, 2021, p. 399, doi:10.1186/s12909-021-02830-5.

²¹⁷ Wiesing, Urban. "Climate Change and the Different Roles of Physicians: A Critical Response to" a Planetary Health Pledge for Health Professionals in the Anthropocene." *Medicine, Health Care and Philosophy*, vol. 25, no. 1, 2022, pp. 161-64, doi:10.1007/s11019-021-10051-2.

²¹⁸ Kortetmäki, Teea. *Agriculture and Climate Change: Ethical Considerations*. Federal Ethics Committee on Non-Human Biotechnology, 2022.

thereby understanding why stakeholders may have difficulties agreeing on certain points while sharing the same overall goal of improving environmental health.²¹⁹

²¹⁹ Cf. *ibid.*, Korthals, Michiel. *Before Dinner: Philosophy and Ethics of Food*. Springer, 2004.

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