D diálogos

Revista del Departamento de Filosofía Universidad de Puerto

Año LV

Número 114

Febrero 2024

Diálogos es la revista del Departamento de Filosofía
de la Facultad de Humanidades
de la Universidad de Puerto Rico

diálogos

Revista del Departamento de Filosofía Universidad de Puerto Rico

Año LV

Número 114

Febrero 2024

ISSN 0012-2122
ISSN 2693-2339

Tipografía y montaje
Revista Diálogos
Universidad de Puerto Rico

diálogos
Revista del Departamento de Filosofía
Universidad de Puerto Rico

Sumario

Diálogos 114, 2024, pp. 9-16.

INTRODUCTION

Shawn Simpson
University of Pittsburgh
shawnsimpson.primary@gmail.com

Environmental philosophy plays an important role, directly and indirectly, in many parts of society, including land and wildlife management (Leopold, 1949; Minteer, 2015), political activism (Abbey, 1968; Malm, 2020), and technological research and development (Baum & Owe, 2022; Donhauser et al., 2021). Environmental philosophy uncovers the ethical relationships existing between humans and the living and non-living world. It reveals the nuances of our scientific ecological concepts. And it tries to tell us how we might act – individually or collectively – to better achieve our environmental goals. The aim of this special issue is to explore the limits and ever-expanding outer edges of this increasingly important area of philosophical thought.

Environmental philosophy arguably goes back at least as far as Plato, who considered the issue of resource overuse in his work the *Republic* (Erck, 2022). The writings of Henry David Thoreau and John Muir are also central to the literature. However, modern environmental philosophy might reasonably be marked by the publication of Aldo Leopold's 1949 work *A Sand Country Almanac*. The focus in *Sand County* was on the destruction of wilderness and wildlife in the American West and on the development of a "land ethic" – a principle for how to determine what is right or wrong with respect to our interactions with the environment. "A thing is right," writes Leopold, "when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise"

(1949, p. 224-225). The publication of *Sand County* ushered in a new era of public concern for nature, and it paved the way for a new approach to environmental philosophy.

Another paradigm shift of sorts occurred in the 1960s, when a variety of different ways of thinking about environmental issues converged. In 1962, Rachel Carson published her book *Silent Spring*. In there, Carson detailed how pesticides like DDT were poisoning the environment *and* people, effectively bringing environmental concerns out of the wild and into people's homes. In 1968, Edward Abbey published his book *Desert Solitaire* (1968), highlighting what he saw as the imminent threat posed by "Industrial Tourism" to natural places and at the same time subtly advocating for civil disobedience as an appropriate response to environmental destruction. That same year, ecologist Garrett Hardin published a paper highlighting the tragedy of the commons from a game-theoretic and economic perspective, and Anne and Paul Ehrlich published their book *The Population Bomb*, predicting mass famine due to the human population boom. In 1969, Apollo 10 landed on the moon, and with "one small step for man..." our ecological footprint now extended literally even to the stars.

After the 60s, things moved fast. In the 70s and 80s, feminist perspectives started to gain traction in mainstream environmental discussions (d'Eaubonne, 1974; Merchant, 1980). During that same period, the "Deep Ecology" movement emerged (Næss, 1973, 1989). In the 80s and 90s, non-Western voices began to find purchase in modern debates (Guha, 1989; Burnett and wa Kang'ethe, 1994). And today, thanks to us humans *not* doing what we do best, our world is now ripe with a plethora of environmental issues, all in dire need of direct on-the-ground action and deep philosophical analysis. There are good questions about the nature of climate change and how we ought to respond to it – individually and collectively; concerns about the use of

robots, drones, and other new technology in nature; worries about the future of places like the oceans, the moon, and other planets; and unease about the role of governments and international legal systems in large-scale conservation and climate efforts. The contributors to this special issue have a shared interest in these recent developments, and a shared hope of using philosophy to better understand and care for our world.

One major theme of the special issue is the challenge of using the *law* to protect the environment. In recent years, several works have come out looking at the legal side of environmental issues (Friskics, 2008; Tenen, *forthcoming*). Welchman's (2024) paper looks at the case of the United Nations *High Seas Treaty*, a critical proposal that would effectively establish protected marine areas in international waters. Using the situation of the American eel as a case study, Welchman highlights the gaps present in current multi-nation marine governance frameworks and argues that adding the *High Seas Treaty* would give us a mechanism that allows us to protect the eels' important spawning grounds. Key to her analysis is the implementation of Jonathan Wolf's (2009) "layers of justice" approach to norms of international cooperation.

Rodeiro's (2024) article takes on a different aspect of the law. Channeling a definition of genocide developed by Card (2002), Rodeiro calls our attention to a seldom recognized form of genocide called "social death" – the destruction of a people's culture or way of life. Genocide of this form can be committed via the destruction of the ecosystems to which a culture is intimately connected. When that occurs, Rodeiro contends, this is a violation of core liberal principles, and as such, belongs to a class of environmental harms best addressed by mechanisms of Transitional Justice. Rodeiro considers several such mechanisms, including *lustration* – the removal of those in

civil service and political office who were complicit in wrongdoing.

The article by Simpson (2024) considers several definitions of wilderness including the one found in the Wilderness Act of 1964. In the case of the Wilderness Act, he argues that the law is inadequate for a number of reasons. One is that the language of the law is too imprecise, allowing for multiple interpretations. Another is that the definition of wilderness at the heart of the law doesn't appear to cover all cases of wilderness. Simpson argues that instead we might benefit from the adoption of a "spectrum" account of wilderness, one which he suggests might allow for the protection of more wild places.

Another major theme of the special issue is the relevance of different *levels of analysis* for problems in environmental philosophy. By "levels" we mean the different *points of view*, *layers*, or *perspectives* that have been relevant to various environmental concerns. Atkins (2024) looks at whether focusing on the *species* level or the level of *individual members* of a species matters for answering certain ethical questions. His paper addresses Purves and Hale's (2016) rather surprising argument that if some non-human animals owe their existence to climate change, then we can't really say that those animals are harmed by it.

Haramia (2024) argues that a significant difference has been overlooked between Singer's (1972) *shallow pond* ethical dilemma and other seemingly similar cases – namely a difference in the presence of *immediate* vs. *systemic* threats. This has implications, she argues, for our decisions about whether to endorse certain environmental movements or not, as it could turn out that those movements endorse all the right individual-level actions while at the same time supporting or maintaining systemic-level threats.

Beit-Arie's (2024) paper looks at a different kind of *levels* question. Beit-Arie asks whether we shouldn't think of

climate change as something more than just wrong – that is, if we shouldn't think of it as *evil*. They're not the first to tackle this question (Norlock, 2004). However, they do appear to be the first to look at it in depth and to consider what it might mean in practical terms.

Naturally, as new crises emerge, and as we extend our physical reach and presence into new and unfamiliar places, it makes sense to wonder how well the core concepts of environmental philosophy fare in new contexts. The last three papers of this special issue address this question. Lindquist (2024) considers our concepts of "litter" and "pollution" and asks whether they apply to various cases of space debris. He looks at objects such as satellites, intentionally crashed probes, and debris left on the moon, and he ultimately argues that the concepts of "litter" and "pollution" do not apply.

Kassaye's (2024) paper looks at the philosophy of the Ubuntu people of Africa. In trying to understand African environmental philosophy, Kassaye argues that we can see it as the blending of two seemingly contradictory ideas from Western environmental thought – anthropocentrism and relational ethics. A view like this, Kassaye believes, meshes well with Arne Næss's "total field image" of the environment (Næss, 1973), and paves the way for a new approach to environmental ethics that he dubs *relational anthropocentrism*.

The paper by Roman (2024) focuses on uncovering the conceptual origins of ecology. Roman looks at the work of naturalist Ernst Haeckel and argues that Haeckel set up his early theory of ecology with Darwin's theory of evolution and a version of natural monism as starting axioms. Understanding these foundational assumptions of ecology, Roman argues, helps us see how closely intertwined ecology is with environmental ethics.

Our hope with this special issue has been to bring together a diverse collection of authors from a variety of backgrounds whose work covers a wide range of environmental issues of contemporary importance. The authors in this issue range in experience from philosophers, to lawyers, to rangers, to historians. They also range from professors at major universities to PhD students and undergraduates. As you'll see, some of the articles in this edition are also published in Spanish. Our goal has been to present a special issue that not only covers the cutting-edge of environmental philosophy but that is accessible to a wide audience and has broad appeal.

We hope that philosophers, scientists, policy-makers, rangers, students, and anyone with an interest in environmental philosophy will find a wealth to ponder in this special issue. The issue offers new accounts of *ecocide* and *wilderness*; new analyses of *litter* and *pollution*; new insights into the roles of various *levels of analysis* in environmental philosophy; and much to consider when it comes to how we might try to live in harmony with nature in an increasingly interconnected and technologically advanced world.[1]

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References

Abbey, E. (1968). *Desert Solitaire*. New York: McGraw-Hill.

Baum, S. D. & Owe, A. (2023). "Artificial Intelligence Needs Environmental Ethics". *Ethics, Policy and Environment* 26 (1):139-143.

[1] I'd like to thank Gabriel Vasquez Peterson, Seth Goldwasser, and Susan Erck for their help as reviewers on this issue.

Burnett, G. W., and K., wa Kang'ethe. (1994) "Wilderness and the Bantu Mind." Environmental Ethics 16(2), 145-160.

Card, C. (2002). *The Atrocity Paradigm: A Theory of Evil*, Oxford: Oxford University Press.

Carson, R. (1962). *Silent Spring*. Houghton Mifflin Company.

d'Eaubonne, F. (1974). *Le Féminisme ou La Mort*, Paris: Pierre Horay.

Donhauser, J., van Wynsberghe, A., & Bearden, A. (2021). "Steps toward an ethics of environmental robotics". *Philosophy & Technology*, 34, 507-524.

Erck, S. (2022). "The Ecological Sustainability of Plato's Republic". *Polis* 39 (2):213-236.

Friskics, S. (2008). "The Twofold Myth of Pristine Wilderness: Misreading the Wilderness Act in Terms of Purity". *Environmental Ethics* 30 (4):381-399.

Guha, R (1989). "Radical American Environmentalism and Wilderness Preservation: A Third World Critique." *Environmental Ethics* 11: 71-83.

Hardin, G. (1968). "The Tragedy of the Commons". *Science*. 162 (3859): 1243-1248.

Leopold, A. (1949). *A Sand County Almanac and Sketches Here and There*. Oxford University Press, New York.

Malm, A. (2021). *How to blow up a pipeline*. Verso Books.

Merchant, C., (1980). *The Death of Nature: Women, Ecology and the Scientific Revolution*, San Francisco: Harper and Row.

Minteer, B. A. (2015). "The perils of de-extinction". *Minding Nature*, 8(1), 11-17.

Naess, A. (1973). "The shallow and the deep, long-range ecology movement. A summary". *Inquiry: An Interdisciplinary Journal of Philosophy* 16 (1-4):95-100.

Naess, A. (1989). *Ecology, Community, Lifestyle*, trans. and ed. D. Rothenberg, Cambridge: Cambridge University Press.

Norlock, K. (2004). "The atrocity paradigm applied to environmental evils". *Ethics and the Environment* 9 (1):85-93.

Norton, B. G. (1995). "Caring for nature: A broader look at animal stewardship". In *Ethics on the Ark: Zoos, Animal Welfare and Wildlife Conservation*, eds. B. Norton et al. (Washington, DC: Smithsonian Institution Press, 1995) 102-122.

Purves, D. & Hale, B. (2016). "Non-Identity for Non-Humans". *Ethical Theory and Moral Practice* 19 (5):1165-1185.

Singer, P. (1972). "Famine, affluence, and morality". *Philosophy and Public Affairs* 1 (3):229-243.

Tenen, L. (*forthcoming*). "How much land can be included in a national monument?" *Environmental Law.*

Wolff, J. (2009). "Global justice and norms of co-operation: the 'layers of justice' view". In Stephen De Wijze, Matthew H. Kramer & Ian Carter (eds.), *Hillel Steiner and the Anatomy of Justice: Themes and Challenges.* Routledge. pp. 16-34.

Diálogos 114, 2024, pp. 17-45.

Intergenerational Stewardship and the New High Seas Treaty, or, How to Stop Worrying and Learn to Love Polycentric Marine Governance

Jennifer Welchman
University of Alberta
welchman@ualberta.ca

Abstract

Recently a new High Seas Treaty (officially titled an Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction) was adopted by the United Nations General Assembly in June 2023, after nearly twenty years of what have been described as "The most important talks no one has heard of." If ratified, it would offer important new tools for marine conservation. Yet little notice has been taken either of the negotiations or their conclusion in the environmental ethics literature, especially in North America.

I discuss possible reasons why the High Seas treaty has garnered so little attention from environmental philosophers. I then go on to illustrate the gaps in current polycentric marine governance regimes with the plight of the American Eel. After discussing a mechanism the High Seas Treaty provides that would permit protection of the eels' spawning grounds in the Sargasso Sea, I will go the objection that the High Seas Treaty does too little to unify our current polycentric nature of ocean governance and thus

too little to ensure just and equitable marine stewardship. I will argue that on Jonathan Wolf's 'layers of justice' approach to norms of international cooperation, it need not be. Assuming the High Seas Treaty is ratified, we could stop worrying and learn to love (or at least live with) polycentric marine governance.

Keywords

Marine Stewardship, Environmental Justice, Ethics, High Seas Treaty, Sargasso Sea, American Eels

Resumen

Recientemente, la Asamblea General de las Naciones Unidas adoptó un nuevo Tratado de Alta Mar (titulado oficialmente Acuerdo en el marco de la Convención de las Naciones Unidas sobre el Derecho del Mar relativo a la conservación y el uso sostenible de la diversidad biológica marina de las zonas situadas fuera de la jurisdicción nacional) en junio de 2023, tras casi veinte años de lo que se ha descrito como "Las conversaciones más importantes de las que nadie ha oído hablar". Si se ratificara, ofrecería nuevas e importantes herramientas para la conservación marina. Sin embargo, en la literatura sobre ética medioambiental, especialmente en Norteamérica, se ha prestado poca atención a las negociaciones o a su conclusión.

Analizo las posibles razones por las que el Tratado de Alta Mar ha suscitado tan poca atención entre los filósofos del medio ambiente. A continuación ilustraré las lagunas de los actuales regímenes policéntricos de gobernanza marina con la difícil situación de la anguila americana. Tras analizar el mecanismo que ofrece el Tratado de Alta Mar para proteger las zonas de desove de la anguila en el Mar de los Sargazos, plantearé la objeción de que el Tratado de Alta

Mar hace muy poco para unificar la actual naturaleza policéntrica de la gobernanza de los océanos y, por tanto, muy poco para garantizar una gestión marina justa y equitativa. Argumentaré que, según el enfoque de Jonathan Wolf de las "capas de justicia" de las normas de cooperación internacional, no tiene por qué ser así. Suponiendo que se ratifique el Tratado de Alta Mar, podríamos dejar de preocuparnos y aprender a amar (o al menos a convivir con) la gobernanza marina policéntrica.

Palabras clave

Gestión marina, justicia medioambiental, ética, Tratado de Alta Mar, Mar de los Sargazos, anguilas americanas

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When Singapore's Ambassador for Oceans and United Nation's Conference president, Rena Lee, announced the successful conclusion of negotiations on a new treaty to update the United Nations Convention on the Law of the Sea with the heartfelt words, "The ship has reached the shore," her delight was palpable. This treaty, officially titled an Agreement under the United Nations Convention on the Law of the Sea on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction (henceforth the High Seas Treaty), was adopted by the United Nations General Assembly in June 2023 after nearly twenty years of what were described as "The most important talks no one has heard of."[1] Currently open

[1] Karen McVeigh, "High seas treaty: historic deal to protect international waters finally reached at UN," *The Guardian* (online): https://www.theguardian.com/environment/2023/mar/05/high-seas-treaty-agreement-to-protect-international-waters-finally-reached-at-un. Posted Sun 5 Mar 2023 04.38.

for signatures, the Treaty will come into effect 120 days after receiving its 60th official national ratification or approval, acceptance, or accession.

Yet little notice has been taken either of the negotiations or their conclusion in the environmental ethics literature, especially in North America.[2] This is particularly surprising as we are now several years into the United Nations Educational, Scientific and Cultural Organization (UNESCO)'s global initiative, a Decade of Ocean Science for Sustainable Development (2021-2030), intended to focus researchers' attention on maritime issues. It would be reasonable if the Treaty's provisions were insignificant, environmentally or philosophically. But nothing could be further from the truth. If ratified, this Agreement would make the hitherto impossible possible – creation of marine protected areas anywhere in the area of the High Seas. And it does so in a conceptually interesting way, invoking notions of stewardship and intergenerational equity to amend what up to now has been the single most comprehensive treaty governing human exploitation of the marine environment, the 1982 United Nations Convention for the Law of the Sea (UNCLOS). The new treaty would protect marine species and ecosystems for anthropocentric reasons rather than respect for nature or concern for marine species welfare, which some will find objectionable. But if it comes into force, it will offer important new tools for marine conservation.

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[2] See the United Nations General Assembly, Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Text available at https://treaties.un.org/doc/Publication/CN/2023/CN.203.2023-Eng.pdf . Posted 20 July 2023.

This is vital because the health of the world's oceans is critical for sustaining all life on earth. Ocean plankton is the source of 50 percent of the world's oxygen. Ocean waters absorb 25 percent of emitted carbon dioxide and store 90 percent of the heat that greenhouse gases, such as carbon dioxide, are adding to the global climate.[3] Oceans are also crucial for human food security and employment. Marine resources provide billions of people with employment and at least 20 percent of their annual intake of animal protein.[4] Yet the oceans remain largely unexplored. Some estimate that less than 10 percent of marine species have been classified.[5] But while we do not know precisely how much damage careless human exploitation is doing to marine ecosystems, it is becoming clear that we are doing a great deal.

Agricultural runoff is polluting coastal zones, causing imbalances in their microbial life, which may cause "dead" (i.e., hypoxic) zones where marine life dies for lack of oxygen. Dumping and marine shipping are contributing to the pollution of ocean waters, driving up rates of heavy metal and microplastic contamination of fish and other marine life. Climate change is warming ocean waters, damaging coral reefs which are crucial nurseries for many species of fish on which humans depend. Accidental species introductions, damage from mineral and petrochemical exploration, overfishing and destructive fishing practices are further threats. Many important fisheries are in decline, which is

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[3] United Nations, "The ocean – the world's greatest ally against climate change." https://www.un.org/en/climatechange/science/climate-issues/ocean.

[4] Spalding, Mark J. (2016) "The New Blue Economy: the Future of Sustainability," *Journal of Ocean and Coastal Economics:* 2#2 (2016) Article 8.

[5] U.S. National Ocean and Atmospheric Administration, "How Many Species Live in the Ocean?", https://oceanservice.noaa.gov/facts/ocean-species.html (Last updated: 08/24/23)

increasing inequality in access to them by small and developing coastal nations, who are often more reliant on fishing to feed their populations and less able to support ocean-going vessels capable of chasing remaining stocks around the world.[6] These same communities are often most effected by contaminants introduced into the flora and fauna on which they rely by plastic and chemical pollution. The social inequities created by declining ocean health have led to calls for "rapid, systemic and transformative actions ...at all scales, of different types, and by all actors to address environmental justice in the ocean."[7]

In what follows, I will discuss some possible reasons why the High Seas treaty has garnered so little attention from environmental philosophers. I will then go on to illustrate the gaps in current polycentric governance regimes by examining threats to the survival of the American Eel. After discussing how the High Seas Treaty provides a mechanism that may substantially promote eel conservation, I will go on to consider whether the polycentric nature of ocean governance, which the High Seas Treaty does not eliminate, is as disadvantageous for achieving just and environmentally effective outcomes as is sometimes suggested. I will argue that on Jonathan Wolf's 'layers of justice' view of the norms of international cooperation, it need not be. Assuming the High Seas Treaty is ratified, we can stop worrying and learn to love (or at least live with) polycentric marine governance.

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[6] Chris Armstrong, "Ocean justice: SDG 14 and beyond," *Journal of Global Ethics*: 16#2 (2020) 239-255.

[7] N. J. Bennett, et al, "Environmental (in)justice in the Anthropocene ocean," *Marine Policy*: 147#105383 (2023) 1-19, 10-11.

Apathy towards Ocean Governance

Why then have most North American environmental philosophers shown so little interest in this treaty or in lobbying for its adoption? A number of reasons suggest themselves. One may be the long-standing association of North American environmentalism with aesthetically pleasing scenic landscapes and the charismatic megaflora and fauna that traditionally inhabited them. A second may be the absence of what Roger Scruton calls *oikophilia*, and which others call attachment to place, from most North Americans' attitudes towards the seas and oceans bordering the continent, which relatively few North Americans think of as 'home."[8] The magnitude of human ignorance of the biota living beneath the waves is very likely a third obstacle to developing an appreciation comparable to appreciation for their terrestrial counterparts. A fourth may be a sense of powerlessness when surveying the bewildering array of institutions, regional, national, transnational, and international, that govern human exploitation of marine species and resources. So even when people do become knowledgeable and concerned about threatened marine species, identifying practical ways by which to express that concern, let alone take action to protect them, may seem depressingly difficult or impossible. No single treaty or

[8] Scruton, Roger, *Green Philosophy: How to Think Seriously about the Planet*. (London:Atlantic Books 2012); Bryan G. Norton and Bruce Hannon, "Environmental Values, A Place-Based Approach", *Environmental Ethics* 19#3(1997)227-245; Anja Kanngieser and Zoe Todd, "From Environmental Case Study to Environmental Kin Study," *History and Theory: Studies in the Philosophy of History*: 59#3 (2020), 385-393.

institution governs their use. [9]

This would matter less if ocean environments were not interconnected in ways that allow fish and marine mammals to move among and across them so freely. Take the case of the American Eel, a fresh water fish whose remarkable life cycle ends with migration to the Sargasso Sea, where adult eels spawn and presumably die. Their larvae slowly drift towards the river mouths of Caribbean coastal nations and the Eastern Atlantic Seaboard, arriving as tiny transparent 'glass eels' or 'elvers,' to recolonize fresh water bodies from which their predecessors came.[10] Until recently, there was no significant fishing for glass eels in these regions. American eels faced all the usual pressures migratory fresh water fish encounter pollution, habitat disruption, and dams blocking their passage, but not overfishing. This changed after populations of freshwater eels began crashing in other parts of the world, reducing the availability of their young to Asian aquaculture facilities. These facilities raise the eels to adulthood to be marketed as sushi. And since they will not normally breed in captivity, these facilities are continually seeking fresh stock. As fresh stock becomes increasing scarce, prices go up. American Glass Eels are now the world's most expensive fish per pound. As they are easy to catch, poaching has become rampant. The Canadian government was forced to close its Glass Eel fishery entirely for a period during the 2023 season, due in part to violent

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[9] Catharine Blanchard, Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach," *Marine Policy* Volume 84, October 2017, Pages 327-332

[10] José Benchetrit, James D. McCleave, "Current and historical distribution of the American eel Anguilla rostrata in the countries and territories of the Wider Caribbean," *ICES Journal of Marine Science*, 73#1 (2016) 122–134.

clashes among fishers and poachers.[11]

What can concerned citizens do to help conserve the American Eel? As with any other fresh water fish, lobbying for tighter restrictions on water pollution, habitat restoration, and removing or reconfiguring dams to improve free passage are possibilities worth pursuing. But there is one important intervention no one can now pursue, i.e., protection of their spawning grounds in the Sargasso Sea, because of the nature of our current decentralized, polycentric system of marine governance.

The single most comprehensive international agreement on the subject, UNCLOS, distributes governance of different regions of the oceans to different actors, ranging from coastal nations to transnational cooperatives and treaty organizations.[12] Coastal nations are assigned sovereignty over their territorial waters, which extend twelve miles beyond their shore lines. Coastal nations are also accorded sovereign rights over an exclusive economic zone, extending a further 200 miles beyond their shores, a distance typically including the continental shelf or in the case of archipelagos, such as Japan and the Philippines, all the region within their outermost islands.

The area of the High Seas begins where nations' exclusive economic zones leave off. This area is designated a global commons that states are free to exploit, provided they do so peacefully and in a manner consistent with two broad principles. One is the Freedom of the High Seas, i.e.,

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[11] Paul Withers, "DFO halts baby eel fishery in N.S., N.B for 45 days over escalating conflict," CBC News online, https://www.cbc.ca/news/canada/nova-scotia/dfo-halts-elver-fishery-nova-scotia-45-days-1.6811971. Posted: Apr 15, 2023.

[12] David Freestone, "International governance, responsibility and management of areas beyond national jurisdiction," *International Journal of Marine and Coastal Law*: 27#2 (2012) 191-204.

freedom of peaceful navigation and transit, fishing, cable-laying, and marine research by fleets of any nation willing and able to put ships to sea. The second principle is that the seafloor and its resources are "the Common Heritage of Mankind;" to be developed for the benefit of all in ways that do not (unduly) impede other nations' peaceful exercise of the High Seas Freedoms. The justification for these two governing principles was equity. The Freedom Principle meant that more powerful and coastal nations could not legitimately bar less powerful or landlocked nations from making use of desirable shipping routes, fishing grounds, sites for telecommunications cables, and so forth. And the Heritage of Mankind Principle meant that more powerful, developed nations with the capacity for deep water mining or research could not legitimately benefit from exploiting their capacities in ways destructive or detrimental to the interests of other nations nor withhold the results of scientific research regarding resources on the ocean floor.

Not long after UNCLOS was adopted, it became apparent that the framers had been short-sighted in three key respects. The first was that the framer's conception of 'equity' was narrowly geographical. All nations were to have the opportunity to share in the 'common heritage' of the high seas, "irrespective of the geographical location of States whether coastal or land-locked, and taking into particular consideration the interests and needs of developing States and of peoples who have not attained full independence or other self-governing status recognized by the United Nations."[13] On this understanding of equity, provided no nation was barred by geography from participating in the collapse of a High Seas fishery through overfishing or in the

[13] See UNCLOS Article 140(1), text available at https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

depletion of non-renewal resources of the ocean floor, the present generation's exploitation of the marine environment at the expense of future generations would not be inequitable under UNCLOS.

A second was their failure to foresee the need for protecting environmentally sensitive areas in the area of the High Seas. It is now widely recognized that marine environments need protection. At the tenth Conference of the Parties to the international Convention on Biodiversity (COP), the parties agreed it was necessary to aim to protect 10 percent of the oceans by 2020. More recently, at COP 15 (2022), the parties agreed to the Kunming-Montreal Global Biodiversity Framework, which sets the more ambitious target of protecting at least 30 percent of marine and terrestrial environments.[14] Almost all of these created to date are in the territorial waters or exclusive economic zones of coastal nations. Only a handful have been established anywhere in the two-thirds of the oceans that comprise the High Seas. The largest of these, in Antarctica's Ross Sea, was established by the Commission for the Conservation of the Antarctic Marine Living Resources (CCAMLR), a multinational partnership of 26 states and the European Union.[15] Nevertheless, illegal fishing continues in the region, as fishers can land their catches in ports of non-CCAMLR countries that do not enforce the CCAMLR agreements.[16] CCAMLR's effectiveness is further limited because it

[14] For the text, visit https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf. Last accessed November 16, 2023.

[15] For information about CCLAR, visit https://www.ccamlr.org.

[16] The only other such organization is OSPAR Convention the Protection of the Marine Environment of the North-East Atlantic, which is another such regional agreement for cooperation on environmental protection that protects sensitive areas. It has a mere fifteen nations as signatories in addition to the European Union.

operates on consensus. As unanimity is rarely achievable, it has succeeded in protecting only two areas in the Antarctic.

The third was their failure to anticipate the value marine genetic resources might come to have, especially the genetic resources of biota whose exploitation was not covered by provisions related to fishing. [17] One might suppose that these would be resources to which the Common Heritage Principle would apply. However, UNCLOS defines those resources as solid, liquid, or gaseous minerals on or below the ocean floor. Governance of the development of what it henceforth collectively refers to as 'minerals' is assigned to the International Seabed Authority, to ensure benefits accrued would be mutual and/or shared. Consequently, countries competing to do research into marine genetic materials are currently able to do so free of any oversight and without obligation to practice conservation or share the results of their bio-prospecting, not even with nearby nations whose people had traditionally relied on the resources.

This is not to say that states have no conservation obligations under UNCLOS. On the contrary, UNCLOS requires coastal nations to conserve marine species within their territorial waters, archipelagos and exclusive economic zones. All nations are exhorted to cooperate with other states "in the conservation and management of living resources in the areas of the high seas."[18] The most effective action this provision has brought about has been the adoption of a sub-convention to UNCLOS in 1994, which allows states to create Regional Fisheries Management Organizations with the authority to establish catch limits for

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[17] Penelope Ridings, "Redefining environmental stewardship to deliver governance frameworks for marine biodiversity beyond national jurisdiction," *ICES Journal of Marine Science*: 75#1 (2018) 435–443.
[18] UNCLOS, Article 118.

valuable migratory species, such as tuna, in areas of the High Seas adjacent to their exclusive economic zones and to ban fishing by fleets from nations that do not respect their catch limits. But such measures only protect a few commercially valuable fish, not environmentally sensitive regions beyond nations' exclusive economic zones. Unfortunately for American eels, they have not proved effective means for protecting the eels' spawning grounds in the Sargasso Sea.

The Sargasso Sea

The Sargasso Sea is a distinct body of salt water, hence a 'sea,' located within the North Atlantic Ocean, the majority of which is located in the High Seas east of Bermuda's exclusive economic zone. Unlike other seas, ocean currents rather than coastlines form its boundaries. These currents form a gyre which keeps the sargassum weed growing within it from drifting away, forming the extensive mats for which the sea is named. The Sargasso Sea supports many endangered species of birds, fish, and marine mammals, albeit in ways not yet fully understood.[19] It is a spawning ground for commercially valuable species of fish, such as albacore tuna, swordfish, wahoo, dolphin fish, freshwater eels, and blue and white marlin. [20] The mats also act as nurseries for these and other species, including endangered

[19] Laffoley, D.d'A., et al. *The protection and management of the Sargasso Sea: The golden floating rainforest of the Atlantic Ocean. Summary Science and Supporting Evidence Case*. (Washington, D.C.: Sargasso Sea Alliance, 2011.)

[20] See, e.g., M. Béguer-Pon, et al. "Direct observations of American eels migrating across the continental shelf to the Sargasso Sea." *Nature Communications:* 6 #8705 (2015) 1-9, and B.E. Luckhurst and F. Arocha 2016. "Evidence of Spawning in the Southern Sargasso Sea of Fish Species managed by ICCAT – Alabacore Tuna, Swordfish and White Marlin," *Collective Volume of Scientific Papers, ICCAT*, 72#8 (2016): 1949-1969.

Loggerhead, Hawksbill, Green, and Kemp's Ridley sea turtles. Several shark species appear to pup there, including porbeagle sharks, whose Northeast Atlantic populations are critically endangered. Twenty-four species of birds make regular use of the biotic richness of the Sargasso Sea, as well as thirty species of whales, dolphin, and other migratory species who use the area to fuel their peregrinations. It's likely that its deep-water corals are supported in part by biotic material falling from sargassum mat communities down to the ocean floor. It's certain that sargassum mats sequester significant amounts of carbon, making the region an important carbon sink. So great is its ecological significance that a multinational association, the Sargasso Sea Commission, successfully campaigned for its recognition as an Ecologically or Biologically Significant Area by the parties to the UN Convention on Biodiversity.[21]

Where does this leave the Sargasso Sea in terms of environmental protection? Not much better off. Recognition as an Ecologically or Biologically Significant Area has no standing when it comes to UNCLOS. Two Regional Fisheries Management Organizations have limited authority over portions of the Sargasso Sea; the Northwest Atlantic Fisheries Organization (NAFO) and the International Commission for the Conservation of Atlantic Tuna (ICCAT). NAFO has agreed that a series of underwater seamounts within its jurisdiction are ecologically important habitat for the commercial fish stocks it manages and has closed them to trawling and other fishing techniques that could harm the sea mounts' biotic communities. To date ICCAT has not agreed to impose any special restrictions on the fishing of tuna and or related

[21] David Freestone, "The Sargasso Sea Commission: An Evolving New Paradigm for High Seas Ecosystem Governance?," *Frontiers in Marine Science:* 8 (2021)1-10.

species within its jurisdiction. This leaves the bulk of the Sargasso Sea unprotected.

The High Seas Treaty

The ship which Ambassador Lee helped steer to the shore was developed to address the oversights of UNCLOS' framers by providing legally binding means of protecting ecologically sensitive marine areas and ensuring equitable development of marine genetic resources. But their options were limited by the United Nations General Assembly's preference that the new treaty amend UNCLOS rather than replace it. This meant any solutions devised had to be consistent with the central principles of the original treaty, including the two High Seas principles. The simplest solution would be to let one take precedence over the other when conflicts arose. But there was no agreement about which this should be.

Understandably, nations already equipped to commercialize the results of marine genetic research resisted giving priority to the Common Heritage Principle, as this would require their developments contribute to 'the benefit of mankind as a whole,' not merely their own private industries. For similar reasons, they were disinclined to approve of the creation of protected zones in the High Seas if these would be off limits to shipping, fishing, and scientific research. They argued that the High Seas principle should govern. Pacific, small island states, and developing coastal states argued instead that the Common Heritage principle should govern. Being heavily reliant on small scale artisanal fisheries for food security, it was in these states' interest to limit High Seas Freedoms in order to protect marine habitat on which their fisheries relied. It was also in their interest to ensure that richer nations better able to conduct and quickly commercialize successful bio-prospecting would be obliged

to share what they discovered as humanity's common heritage. As neither side was willing to agree to the other's preferred principle taking precedent, the pragmatic solution adopted was to import a principle from other widely accepted UN conventions that could provide a framework for balancing the two High Seas principles should they conflict. As it was the Pacific, Small Island, and developing coastal states that had the greatest interest in seeing that High Seas Freedoms should not prevail, their ambassadors argued repeatedly, and ultimately successfully, for adoption of principles of intergenerational equity and recognition of states as stewards of the ocean environment. [22]

Interestingly, although the point of the whole endeavor was to create an enforceable treaty "on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction," early draft language did not define 'sustainability.' And some parties continued to advocate for understanding 'equity' in purely geographic terms, with no requirements to consider the interests of future generations. Presumably they would also have been resistant to incorporation of a commitment to 'stewardship,' as to be a steward is to be a trustee or fiduciary charged with the care of things or persons in the interests of others. Earlier drafts often have as little to say about what stewardship involves as about "sustainable" use of marine resources. But gradually, the parties came to see the value of invoking a duty of equity owed to future generations as providing a principled basis for limiting High Seas Freedoms.

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[22] This began with the first Preparatory Committee meetings in 2016, through development of the final text of the new High Seas Treaty. See Ridings, and the Chair's overview of the first and subsequent Preparatory Committee meetings, as well as preliminary drafts of the Treaty at https://www.un.org/bbnj/.

This at any rate is the position taken in the preamble of the new treaty, in which the parties declare themselves:

> *Desiring* to act as stewards of the ocean in areas beyond national jurisdiction on behalf of present and future generations by protecting, caring for and ensuring responsible use of the marine environment, maintaining the integrity of ocean ecosystems and conserving the inherent value of biodiversity of areas beyond national jurisdiction.[23]

Similarly, in the statement of the agreement's general objective, they declare their desire to "ensure the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, for the present and in the long term."[24] And sustainability is defined accordingly:

> "Sustainable use" means the use of components of biological diversity in a way and at a rate that does not lead to a long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

The generations in question are clearly human and the needs to be protected are their needs for "food security and other socioeconomic objectives, including the protection of cultural values."[25] To protect these, the Treaty includes new provisions for Environmental Impact Assessments prior to large scale development projects in the area of the High Seas, requiring consultation with indigenous peoples, a mechanism to ensure that monitoring results are centrally collected and shared, and a Scientific and Technical

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[23] High Seas Treaty, Preamble.
[24] High Seas Treaty, Article 2: General Objective.
[25] High Seas Treaty, Article 14.

committee to assess proposals for marine protected areas in areas of the High Seas. These provisions would be established at conventions of the parties to the new treaty. These decisions would be made by consensus if possible, or failing that, a two-thirds vote, which would ensure no single nation could block the creation of protected areas.

Concerns

From a pragmatic point of view, these seem like excellent reasons for environmentalists and environmental ethicists to champion the High Seas treaty to their respective audiences, despite what many will consider its regrettably speciesist conception of the future generations for whose welfare we are supposed to act as stewards. That said, ocean governance would remain decentralized, with multiple actors making decisions for particular regions or particular kinds of ocean exploitation, only weakly constrained by requirements to coordinate their efforts with others. They would not even be constrained to make use of the new mechanism for creating High Seas marine protected areas for ecologically sensitive areas such as the Sargasso Sea. This remains purely voluntary. To some this will suggest that the treaty is not the kind of improvement we need. It would leave the current system of polycentric marine governance still "hopelessly fragmented" and "suffering from dysfunctionality arising not only from regulatory lacunae, but also from a lack of coordination and coherence across instruments and institutions shaping the regime."[26] Christopher Armstrong has argued that "justice

[26] Lucia Fanning & Robin Mahon (2020) "Governance of the Global Ocean, Commons: Hopelessly Fragmented or Fixable?," *Coastal Management*, 48:6, 527-533; 527, and Catherine Blanchard, Fragmentation in high seas fisheries: Preliminary reflections on a global

likely requires that we transcend, rather than treating as inviolate, the fragmented nature of governance on the ocean."[27] Lucia Fanning & Robin Mahon take a different view, that what many refer to as "fragmented ocean governance" would be better interpreted as "an outcome of poorly managed polycentrism."[28] Their solution is not to do away with the multiplicity of institutional arrangements currently responsible for ocean governance, but to coordinate their activities into "a single interconnected system, with vertical and lateral linkages," under the auspices of a "lead UN-Oceans agency with the mandate and resources needed to coordinate this initiative."[29]

I can well believe that a single global agency would do a better job of overseeing human exploitation of the oceans and coordinating environmental protections, if it were impartial, science driven, took the precautionary approach, and if it could displace what Armstrong decries: "the exclusive role of states as the primary – or even sole – enforcers of the Law of the Sea on the High Seas."[30] But I cannot believe that nation states are likely to agree to their authority being displaced anytime soon. If, however, the new High Seas treaty comes into effect, I believe it will be possible to love, or at least live with, the polycentric system we would then have.

While coordination poses ongoing challenges, polycentric governance can be advantageous when it provides more than one source of guidance for equitable environmental decision making and more than one source of

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oceans governance approach, *Marine Policy*, Volume 84, 2017, Pages 327-332,

[27] Armstrong, 250.

[28] Fanning & Mahon,

[29] Fanning & Mahon,

[30] Armstrong, 249

authority to which to appeal for relief. And while the different sources may offer conflicting guidance, often they will overlap. Let us return to the question of whether and why any state should feel bound as a matter of equity to make the effort to see some or all of the Sargasso Sea become a marine protected area.

Applying Wolf's Layers of Justice View

In theory, any party can propose an area of the High Seas for protection. Realistically, the burdens of doing studies and assembling sufficient data to make a case for protecting sensitive areas and of designing management plans for maintaining them will be onerous, time-consuming, and costly; and thus beyond the means of many nations, even assuming they have the technical capacity required. Of the signatories to the Declaration that established the Sargasso Sea Commission (the Azores, the Bahamas, Bermuda, the British Virgin Islands, Canada, the Cayman Islands, the Dominican Republic, the United Kingdom, and the United States), three stand out as being better equipped financially, politically, and scientifically to bear the burdens involved. But does it follow any or all of these three nations should step up if others do not or cannot?

We should resist the temptation to make this an occasion for debating the merits of the principles of distributive justice that cosmopolitan theorists of justice will want to use to settle this question, non-anthropocentric or anthropocentric, egalitarian or non-egalitarian. Interesting as such philosophical debates are, they can have no practical application to this situation because there is currently no incentive for any nation to endorse the application of a global principle of distributive justice with which it disagrees. But this state of affairs does not entail the conclusion some anti-cosmopolitan statists may want to draw; that duties of

distributive justice are always and only duties owed by members of political states to one another. On the contrary, because the ocean governance is polycentric, there are many, often overlapping, 'centres' of authority – nation states, transnational unions, and treaty organizations -- each bound to distributions of resources in accordance with its own standards.

The most suitable approach to take, in the circumstances, is a version of what Jonathan Wolf calls the 'layers of justice' view. On the layers of justice view, what counts as just and equitable in any given context is understood to be "relative to norms of co-operation, and norms of co-operation differ in the contexts of domestic and global cooperation."[31] He illustrates his view with the example of the European Union. The European Union is a confederation whose policies enjoin some redistribution of resources from richer to poorer members. But what counts as a just distribution among the member states is not necessarily what counts as a just distribution, domestically, within those states. The different norms of cooperation yield different principles of distributive justice for these different spheres of action.

The High Seas Treaty specifies norms of cooperation for its members that commit them to doing more for each other than enlightened self-interest might suggest. Like many other UN agreements, this one is (relatively) egalitarian regarding recognition of human rights, including the rights of indigenous peoples, and the right of people to form states entitled to determine for themselves what domestic principles of justice to adopt. Regarding welfare,

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[31] Jonathan Wolff, 2009. "Global Justice and Norms of Co-operation: The 'Layers of Justice' View" in De Wijze, Stephen, Matthew H. Kramer, and Ian Carter. 2009. *Hillel Steiner and the Anatomy of Justice: Themes and Challenges*. New York: Routledge. 34-50.

this, like many other broad UN agreements, is broadly speaking sufficientarian. It does not propose that states should benefit equally from their agreements, rather they recommend assistance to states whose economic development is insufficient to sustain a decent level of welfare for all their citizens.

Being signatories to the new Treaty, Canada, the United Kingdom, and the United States would each have obligations to assist disadvantaged nations in ensuring their citizens have access to sufficient ocean resources to satisfy their needs. As there are underdeveloped communities all around the Atlantic whose tenuous food security relies in part on American eels and their European cousins (which also spawn in the Sargasso Sea), all three nations would have some obligation to cooperate in ensuring the survival of this resource. Canada and the United States would have further obligations given other norms of cooperation to which they are subject as a member of the Organization of American States (OAS). According to the norms expressed in the Charter of the OAS, members are committed to "eradicate extreme poverty" within their own and other member states and to *prioritize* "relatively less-developed countries" through "technical and financial cooperation that seeks to promote regional economic integration ...on the principle of harmonious, balanced, and efficient development."[32] The norms of cooperation here add weight to the case for Canada and the United States to take action specifically to protect the American Eels (as opposed to all eels spawning in the Sargasso Sea), as a means of satisfying their duty to prioritize the interest of any underdeveloped American states which

[32] Articles 2 and 44 of the Charter of the Organization of American States, available at https://www.oas.org/en/sla/dil/docs/inter_american_treaties_A-41_charter_OAS.pdf. Last accessed November 14, 2023.

rely on American Eels to address extreme poverty suffered by their citizens.[33] This layer of justice would not apply to the United Kingdom, although counterpart obligations to protect the European eels spawning in the Sargasso Sea might arise from the United Kingdom's other transnational collaborations.

Canada and the United States are each subject to a third layer of obligations of justice and equity relevant to the question of whether to accept the burden of acting to protect the Sargasso Sea; duties of reconciliation with the indigenous first nations within their borders. Indigenous communities are already economically and politically challenged in the United States and Canada thanks to oppressive colonial practices which have yet to be wholly eradicated. As such they may have the most to lose if eel populations in North America were to go the way of their European and Asian cousins. Eels were an important part of traditional diets of the Mi'kmaq, Innu, Abenaki, Passamaquoddy, Maliseet, Haudenosaunee, Wampanoag, Piscataway, and Delaware peoples, among many others. [34] Many communities continue to rely on eels for food security and maintain their cultures.[35] If a sustainable glass eel trade cannot be established, indigenous communities, who had never been guilty of overfishing the species themselves,

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[33] Daniela Quintero Díaz, "From a Caribbean Island to Sushi Plates: The Million-dollar Business of Eel Fishing," Earth Journalism Network, at https://earthjournalism.net/stories/from-a-caribbean-island-to-sushi-plates-the-million-dollar-business-of-eel-fishing. posted February 9 2022.

[34] Cecilia Engler-Palma, et al., "Sustaining American Eels: A Slippery Species for Science and Governance," *Journal of International Wildlife Law &Policy: 16# #2-3*, (2013) 128-169.

[35] CBC News, "Ottawa 'Eel Walk' advocates for endangered American Eel" at https://www.cbc.ca/news/canada/ottawa/ottawa-eel-walk-endangered-1.4671966. Last Updated: May 21, 2018

would be unjustly denied the opportunity to improve the welfare of their members.

In light of the damage done to indigenous communities by the colonization of what is now Canada and the United States, both nations have special duties of restorative justice as well as distributive justice to indigenous peoples who have had a historical relation with American Eels. There is much that Canada and the United States can do within their own borders and in cooperation with one another to reduce pressures on eels. These include clearing culverts, modifying dams, and creating eel ladders to increase free passage along eel migration routes. Pollution of lakes, rivers, and streams should be reduced. As much as possible, riparian and coastal eel habitat disrupted by industrialization and other forms of development should be restored. And sustainable management plans incorporating traditional environmental knowledge of indigenous peoples along the Atlantic seaboard should be developed in order to create a sustainable fishery in which indigenous fishers can safely participate.

But we know that eels face other threats during their migration to and from the Sargasso Sea among these are pollution, ocean acidification, and the effects of climate change. Maritime shipping plowing through the sargassum mats disrupting these nurseries for young of many species spawning is yet another. Both nations have contributed and continue to contribute to creating the challenges eels face beyond their national borders as well as within them. So each has duties of justice and equity, owed to the present and future generations of the native and first nations within their own borders, to reverse this state of affairs. Obtaining marine protected status for the Sargasso Sea would fulfill all these overlapping layers of obligation, so both Canada and

the United States ought to take action to achieving global protection for the Sargasso Sea once this becomes possible.

Conclusion

The layers of justice view apply to individuals as well as nation states. Each of the three layers of justice and equity just discussed applies to Canadian and North American philosophers as well as their governments. We also have duties to ensure present and future generations have enough for their needs as well as to assign priority to the present and future needs of least developed countries in Americans over the most developed, and to take steps to rectify past injustices from which indigenous communities within our borders have suffered. Some philosophers of the environment will be subject to yet more layers of obligation, depending on their philosophical commitments. If one believes that eels have intrinsic value in their own right or that they are constituents of natural systems that possess this value, then one would have reason to consider oneself obliged to take appropriate steps to reduce threats to their present and future generations' survival and welfare.

Very likely many are already doing so, albeit indirectly, through supporting anti-pollution measures, river clean ups, reducing plastic waste, and so forth. Awareness of the threats to ocean species and environments is growing, as is interest in marine justice and stewardship. But for our polycentric system of marine governance to allow us to fulfill our obligations appropriately, the High Seas Treaty, or something like it, must come into effect. Public support will be necessary. Garnering that support requires the public to become informed about this most important treaty that "no one has heard of." As educators with the skills to communicate the importance of the High Seas Treaty, philosophers are surely under yet another layer of obligation

to help ensure that people at least *hear* about this Treaty and ideally come to appreciate the reasons they themselves may have to support its passage in order to protect sensitive marine areas such as the Sargasso Sea.

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Works cited

Armstrong, C. (2020), "Ocean justice: SDG 14 and beyond," *Journal of Global Ethics*, *16*(2). 239-255.

Articles 2 and 44 of the Charter of the Organization of American States . https://www.oas.org/en/sla/dil/docs/inter_american_treaties_A- 41_charter_OAS.pdf.

Béguer-Pon, M. et al. (2015). "Direct observations of American eels migrating across the continental shelf to the Sargasso Sea." *Nature Communications*, *6*(8705). 1-9

Benchetrit, J. and McCleave, J. D. (2016). "Current and historical distribution of the American eel Anguilla rostrata in the countries and territories of the Wider Caribbean," *ICES Journal of Marine Science*, *73*(1). 122–134.

Bennett, N. J. et al. (2023), "Environmental (in)justice in the Anthropocene ocean," *Marine Policy*, *147*(105383). 1-19, 10-11.

Blanchard, B. (2017). "Fragmentation in high seas fisheries: Preliminary reflections on a global oceans governance approach", *Marine Policy*, Volume 84. 327-332.

CBC News, (May 21, 2018). "Ottawa 'Eel Walk' advocates for endangered American Eel" at https://www.cbc.ca/news/canada/ottawa/ottawa-eel-walk-endangered-1.4671966.

CBD (2019). The Kunming-Montreal Global Biodiversity Framework Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES Secretariat). https://www.cbd.int/doc/decisions/cop-15/cop-15- dec-04-en.pdf. Last accessed November 16, 2023.

Díaz, D. Q. (2022). "From a Caribbean Island to Sushi Plates: The Million-dollar Business of Eel Fishing," *Earth Journalism Network* https://earthjournalism.net/stories/from-a-caribbean-island-to-sushi- plates-the-million-dollar-business-of-eel-fishing. posted February 9, 2022.

Engler-Palma, C., et al., (2013). "Sustaining American Eels: A Slippery Species for Science and Governance," *Journal of International Wildlife Law & Policy*: *16*(2-3). 128-169.

Fanning, L. & Mahon, R. (2020) "Governance of the Global Ocean, Commons: Hopelessly Fragmented or Fixable?," *Coastal Management*, *48*(6), 527-533

Freestone, D. (2012). "International governance, responsibility and management of areas beyond national jurisdiction," *International Journal of Marine and Coastal Law*, *27*(2). 191-204.

Freestone, D. (2021). "The Sargasso Sea Commission: An Evolving New Paradigm for High Seas Ecosystem Governance?," *Frontiers in Marine Science*, *8*. 1-10.

Kanngieser, A. and Todd, Z. (2020), "From Environmental Case Study to Environmental Kin Study," *History and Theory: Studies in the Philosophy of History*: *59*(3). 385-393.

Laffoley, D.d'A., et al. (2011), "The protection and management of the Sargasso Sea: The golden floating

rainforest of the Atlantic Ocean. Summary Science and Supporting Evidence Case." Washington, D.C.: Sargasso Sea Alliance.

Luckhurst, B.E. and Arocha, F. (2016). "Evidence of Spawning in the Southern Sargasso Sea of Fish Species managed by ICCAT – Alabacore Tuna, Swordfish and White Marlin," *Collective Volume of Scientific Papers, ICCAT, 72* (8), 1949-1969.

McVeigh, K. (March 5, 2023), "High seas treaty: historic deal to protect international waters finally reached at UN," The Guardian (online). https://www.theguardian.com/environment/2023/mar/05/high-seas- treaty-agreement-to-protect-international-waters-finally-reached-at-un.

Norton, B. G. and Hannon, B. (1997) "Environmental Values, A Place-Based Approach", *Environmental Ethics, 19* (3). 227-245.

OAS, General Assembly. (1948). "Charter of the Organization of American States." A-41.

Ridings, P. (2018). "Redefining environmental stewardship to deliver governance frameworks for marine biodiversity beyond national jurisdiction," *ICES Journal of Marine Science, 75* (1). 435–443.

Scruton, R. (2012). *Green Philosophy: How to Think Seriously about the Planet*. London: Atlantic Books.

Spalding, M. J. (2016) "The New Blue Economy: the Future of Sustainability," *Journal of Ocean and Coastal Economics, 2* (2).

U.S. National Ocean and Atmospheric Administration, "How Many Species Live in the Ocean?",

https://oceanservice.noaa.gov/facts/ocean-species.html (Last updated: 08/24/23)

United Nations General Assembly, Agreement under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, text available: https://treaties.un.org/doc/Publication/CN/2023/CN.203.2023- Eng.pdf . Posted 20 July 2023.

United Nations, (n.d.). "The ocean – the world's greatest ally against climate change." https://www.un.org/en/climatechange/science/climate-issues/ocean.

Withers, P. (April 15, 2023). "DFO halts baby eel fishery in N.S., N.B for 45 days over escalating conflict," *CBC News* online, https://www.cbc.ca/news/canada/nova-scotia/dfo-halts-elver-fishery- nova-scotia-45-days-1.6811971.

Wolff, J. (2009). "Global Justice and Norms of Co-operation: The 'Layers of Justice' View" in De Wijze, Stephen, Matthew H. Kramer, and Ian Carter. 2009. *Hillel Steiner and the Anatomy of Justice: Themes and Challenges*. New York: Routledge. 34-50.

Diálogos 114, 2024, pp. 47-79.

RESPONDING TO ECOCIDE THROUGH TRANSITIONAL JUSTICE

Manuel Rodeiro
Mississippi State University
mr2482@msstate.edu

Abstract

This paper analyzes how Transitional Justice mechanisms might be deployed to redress injustices resulting from the perpetration of ecocide. It develops the notion of *ecocide as social death* as a class of environmental harms severe enough to trigger a Transitional Justice response. If a state authorizes ecological destruction in a way that demonstrates wanton disregard for the cultures intimately connected to those ecosystems, then it has violated core liberal principles of respect for pluralism. Transitional Justice can be effectively utilized in overcoming these harms to transform societies from ones that tolerate grave forms of environmental destruction to eco-friendly states that further environmentalist aims. This paper explores how the four kinds of transitional justice mechanisms can aid in abating and mitigating environmental problems: (1) punitive justice mechanisms (criminal trials, lustration, and sanctions); (2) reparative justice mechanisms (reparations, rehabilitation, memorialization, apologies, and guarantees of non-repetition); (3) truth-oriented mechanisms (truth commissions, reports, and education programs); and (4) institutional reform mechanisms (changing laws and amending constitutions).

Keywords

Transitional Justice, Ecocide, Social Death, Genocide, Transitional Justice Mechanisms, Human Rights, Environmentalism

Resumen

Este artículo analiza cómo podrían desplegarse los mecanismos de Justicia Transicional para reparar las injusticias resultantes de la perpetración de ecocidio. Desarrolla la noción de *ecocidio como muerte social* como una clase de daños medioambientales lo suficientemente graves como para desencadenar una respuesta de Justicia Transicional. Si un Estado autoriza la destrucción ecológica de una manera que demuestra un desprecio gratuito por las culturas íntimamente relacionadas con esos ecosistemas, entonces ha violado los principios liberales básicos de respeto al pluralismo. La Justicia Transicional puede utilizarse eficazmente para superar estos daños y transformar las sociedades que toleran graves formas de destrucción medioambiental en Estados respetuosos con el medio ambiente que promuevan los objetivos ecologistas. Este artículo explora cómo los cuatro tipos de mecanismos de justicia transicional pueden ayudar a reducir y mitigar los problemas medioambientales: (1) mecanismos de justicia punitiva (juicios penales, depuración y sanciones); (2) mecanismos de justicia reparadora (reparaciones, rehabilitación, conmemoración, disculpas y garantías de no repetición); (3) mecanismos orientados a la verdad (comisiones de la verdad, informes y programas educativos); y (4) mecanismos de reforma institucional (cambio de leyes y modificación de constituciones).

Palabras clave

Justicia transicional, Ecocidio, Muerte social, Genocidio, Mecanismos de justicia transicional, Derechos humanos, Ecologismo

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Introduction

Humans suffering the increasingly adverse effects of ecological degradation has prompted calls for a "green turn" in the discipline of Transitional Justice. Theorists urge for the recognition of environmental harms as severe enough to trigger a Transitional Justice response. In a recent paper, I develop the notion of "ecocide as social death" as a class of environmental harms to be included within a modestly expanded purview of Transitional Justice (Rodeiro 2023).[1] In this paper, I will continue to develop the model of ecocide as social death by analyzing how Transitional Justice mechanisms might provide redress for this exceeding unjust form of environmental destruction and help transform states into eco-friendly governments that further environmentalist aims. Before turning to the extended discussion of Transitional Justice mechanisms in post-ecocide settings, I will begin by reviewing why a successful green turn for the discipline requires careful specification of a class of

[1] The paper further suggests that a green Transitional Justice might offer a solution to the institutionalized anti-environmentalism problematized within Critical Environmental Justice. Critical Environmental Justice is a recent turn in Environmental Justice (i.e., the movement to address environmental inequities) scholarship that rejects the state-centered and reformist approach of conventional Environmental Justice. See David Pellow's book, *What is Critical Environmental Justice?* (Pellow 2018, 23).

environmental harms egregious enough to trigger a transitional response.

Transitional Justice was developed as a judicial and political approach to the securement of human rights in the aftermath of the atrocities of WWII and the Holocaust. It was further tested and refined during decolonization and after the collapse of the Soviet Bloc. In essence, it is an area of theory and practice concerned with moving states from failed socio-political systems, which engaged in and/or permitted grave social harms (e.g., genocide), toward societies that respect the rule of law, afford fair and equal treatment to all citizens, and strive to establish reciprocal trust institutionally and individually (Murphy 2017).

The Journal of Genocide Research recently published a special issue exploring the "genocide-ecocide nexus" (Crook and Short 2021, 155-161). Numerous authors within this issue advocate for radical social transformation to disrupt the "treadmill of production" (Schnaiberg 1980) which they characterize as a "genocide machine" (Davis and Zannis 1973) and "worldeater" (Dunlap and Jakobsen 2020). Based on the arguments of these theorists, one might conclude that living up to the "never again" motto of Transitional Justice demands the complete economic restructuring of any society based on a capitalist system.

But just as some scholars were hesitant to expand the discipline to confront socio-economic inequalities (Waldron 1992),[2] there are comparable reasons for refraining from such a broad inclusion of environmental harms. As Frank

[2] Zinaida Miller explains that criticisms of including broader socio-economic issues in Transitional Justice commonly rely on the premise that such systemic economic issues are inherently more complex than civil and political rights abuses. Consequently, including them would overburden the discipline (Miller 2008).

Haldermann and Rachelle Kouassi discuss, "advocates of a narrow reading of transitional justice usually make an instrumental case for excluding [various economic, social, and cultural] rights. By expanding transitional justice to broad social and economic concerns, they argue, we risk freighting it with expectations so overstretched and impractical as to make the whole project meaningless" (Haldermann and Kouassi 2014, 514). I maintain that for Transitional Justice to undergo a successful green turn, it must do so in a manner that is persuasive, politically useful, and accommodating to the aims of the discipline. This entails considering how best to balance the (dis)advantages of enacting established but limited responses to confronting the present ecological crisis with adopting more far-reaching but untested approaches.

Polly Higgins defines ecocide as "the extensive damage to, destruction of or loss of ecosystem(s) of a given territory, whether by human agency or by other causes, to such an extent that peaceful enjoyment by the inhabitants of that territory has been severely diminished" (Higgins 2010, 63). Higgins' activism and theorizing are at the heart of the proposed amendment to the Rome Statute of the International Criminal Court seeking to make the Crime of Ecocide the fifth recognized and prosecutable Crime Against Peace. Her conception of ecocide, although useful in other contexts, is not suitable for usage in Transitional Justice for several reasons. Foremost is that it focuses on individual liability rather than collective state responsibility. Second, is that it is broad enough to include environmental catastrophes caused by non-human actors like floods or earthquakes. Conceptualizing ecocide as an injustice that rises to the level of demanding transitional political restructuring must entail defining it specifically in terms of how it is a failure of the state.

According to Ruti Teitel's influential account of Transitional Justice, a fully adequate response to large-scale abuses of human rights must include transition to liberal democracy (Teitel 2000). The goal of (re)establishing liberal democracy is regarded as the quintessential feature that separates Transitional Justice from more general human rights approaches (Arthur 2009). A difficulty for including ecocide within the purview of Transitional Justice is that it must constitute a grave social harm that rises to the level of requiring the (re)establishment of a democratic state and (re)affirmation of its commitment to liberal principles.

Recent scholarship investigates how natural resource depletion can lead to human rights violations that trigger Transitional Justice mechanisms and processes (Zimmerer 2014).[3] Other research explores how, once transitional processes have already been initiated, it is important to consider issues of environmental justice to overcome and prevent human rights abuses (Ong 2017). Neither of these research projects analyze whether there are any kinds of environmental harms grave enough to engender responses in their own right. Instead of identifying environmental harms indirectly as either factors to consider during transition or as causes of violence, I aim to articulate when grave environmental harms themselves might trigger the need for Transitional Justice.

Ecocide as Genocide

A straightforward and uncontroversial way of greening Transitional Justice is to include within its purview cases of ecocide perpetrated as a means of genocide, ethnic cleansing, and mass murder. History is replete with

[3] Jurgen Zimmerer documents how environmental destruction is one of the main driving forces of collective violence (Zimmerer 2014).

instances of environmental harm committed for the purpose of killing the ecosystem's inhabitants. A paradigmatic illustration of human eradication via ecocide is the apocryphal tale of the Roman legions in the Third Punic War. The Romans leveled Carthage and sowed the land with salt to prevent regrowth. Henceforth, I will refer to such cases of environmental destruction deployed as a tactic to exterminate peoples as "ecocide as genocide." Sadly, not all cases of ecocide as genocide are legends; a contemporary example is Saddam Hussein's extermination of the Ma'dan, also known as the Marsh Arabs (Dellapena 2007).

After the defeat of the Iraqi army in the Gulf War, the Ma'dan and other Shiite Arabs in southern Iraq, spurred on by President Bush's calls to overthrow the Hussein Regime, rebelled (Dellapena 2007, 402-403). Hussein responded with overwhelming airpower and artillery fire. He poisoned the Ma'dan's wells and electrocuted the marshes in which they lived to end the rebellion and force the Ma'dan to abandon their ancestral home (Dellapena 2007, 403). Hussein succeeded this onslaught with a comprehensive plan to destroy the habitat, preventing the Ma'dan from returning home, by draining the marshes, dredging their canals, and constructing dams that left 90% of their wetlands destroyed via desiccation (Dellapena 2007, 403).

Draining the marshes represents a clear example of ecocide as genocide. It was a deliberate plan to destroy the environment as a means of ending the Ma'dan and their way of life. The result was essentially the eradication of the Marsh Arabs from their homeland, with only a few thousand of the approximately half a million original inhabitants remaining (Dellapena 2007, 403). The violence committed against the Ma'dan falls squarely within the Transitional Justice framework, as it presents a case of state-directed genocide, ethnic cleansing, and mass murder.

Transitional Justice has well-established and actionable socio-political and legal tools, policies, mechanisms, and procedures for confronting such situations. But there is a drawback to the ecocide as genocide model in that it may be too narrow. If Transitional Justice employs a restrictive conception of the injustice of ecocide, then it is unlikely it will be able to significantly contribute to confronting our present ecological crises, which is driven in large part by economically motivated forms of ecocide. Moreover, it appears that any theorists and practitioners of Transitional Justice would prefer a more robust green turn that is able to include a wider set of environmental harms within the discipline's purview.

Helpfully, genocide studies emphasize cultural eradication as a key component of the wrongness of genocide. This opens the possibility for expanding Transitional Justice to include the harm of cultural eradication as it occurs through ecological destruction. I contend that if genocide via ecocide is to be recognized by the discipline as requiring a transitional response then it follows that social death via ecocide should be as well.

Ecocide as Social Death

Genocide is defined as the death of a people (*genos*), such as those belonging to a particular religion, ethnicity, or culture. Raphael Lemkin, the lawyer and activist who coined the term "genocide" and initiated the Genocide Convention, emphasizes the annihilation of a particular culture/way of life as central to the immorality of genocide. Lemkin aspired to explicitly include "Cultural Genocide," i.e., acts that undermine peoples' way of life, as part of the United Nations Genocide Convention (Moses 2010, 37). Claudia Card similarly conceives of the distinct harm committed in genocide as the severing of groups' vital social interests, such

as their cultural identity, inter-and-intra-generational connectedness, and social relations (Card 2003). She states, "In my view, the special evil of genocide lies in its infliction of not just physical death (when it does that) but social death, producing a consequent meaninglessness of one's life and even of its termination" (Card 2003, 73). I employ Card's concept of social death in articulating an environmentally responsive Transitional Justice.

The gravity of the issue of social death is perhaps more urgent than ever. Humanity is amid the greatest acceleration of cultural disappearance in history. The UN estimates that within one hundred years, 90% of worlds 7,000 languages will disappear. While the loss of language does not necessarily imply the end of a culture or the "death of a people," it is the best indicator currently available (United Nations, *State of the World's Indigenous Peoples* 2010). As Wolfgang Sachs laments, "with the demise of languages, entire cultures are vanishing from the history of civilization, never to be lived again. For each tongue contains its own way of perceiving man and nature, experiencing joy and sorrow, and finding meaning in the flow of events...once languages die out, cultures falter" (Sachs 1999, 93). Countless cultures have been lost or are in the process of losing their cultural identity, traditional means of survival, social relations, autonomy, and connection to their past.

Most of these cases of social death via cultural disappearance are not caused by state-sponsored ecocide aiming to achieve *mass death*, but rather by state-sponsored ecocide aiming to achieve *economic growth and development*. If Transitional Justice scholars and practitioners recognize that communities suffering from social death deserve normative consideration, then there are compelling reasons to expand the discipline's purview to include deliberate state-sponsored/permitted acts of

environmental destruction that directly result in such outcomes. These deliberate acts include any state practice, plan, or policy that approves, supports, or advocates for ecocidal activity with adequate knowledge of the resulting ecological harms. State officials, institutions, or apparatuses are involved as primary authors of the harm, a central party that could have knowingly acted otherwise to prevent the ecocide.

Well-documented and vivid examples of state-sponsored ecocide that have resulted in social death include: (1) The Canadian government's decision to dam the La Grande River to provide urban communities electricity at the expense of the Northern Cree (Churchill 2002); (2) the British and Australian governments' authorizing nuclear testing at Maralinga that devastated the local Anangu people (Mattingley and Edwards 2016); (3) the Bolsonaro administration's decision to incentivize the clearing of the Amazonian rainforest in Brazil for agricultural development, which threatens the 400-500 indigenous groups who call the region home (Solly 2019); (4) Carbocol (a Colombian state-run company) and Exxon strip mining the Cerrejon Mountain for coal to the detriment of the indigenous Wayúu people and surrounding Afro-Colombian villages (Redner 2014), and (5) the government sponsored extermination of the buffalo in western North America to force the Plains Indians (e.g., The Crows, Cheyennes, Arapahos, Atsinas, and Sioux) to relocate to reservations (Isenberg 2000)[4]. In

[4] There is evidence that a central aim of the federal government in exterminating the buffalo was to starve the Plains Indians and end their way of life, in which case it could be argued that this is as an instance of ecocide as genocide. This genocidal goal is expressed in the statement of Colonel Dodge, who commanded the operation to prevent hunters from crossing into indigenous hunting territory, when he told local hunters to, "kill every buffalo you can...every buffalo dead is an Indian gone" (Isenberg 1992, 237).

each of these cases, the ecocidal activity was carried out without the consent of negatively impacted communities.[5]

Some may worry that such an extension goes beyond the proper purview of Transitional Justice. Unlike more canonical Transitional Justice settings, such as post-authoritarian Argentina and Chile or post-conflict Bosnia and Rwanda, many of the states mentioned above are generally considered well-ordered liberal democratic regimes, including Canada, Australia, and the United Kingdom, and thus are not recognized as requiring drastic social transformation. Furthermore, none of the examples of state directed ecocide cited above include loss of human life anywhere near the magnitude of state-governed tragedies like the Holocaust or Stalin's Great Purges (1936-1938). Moreover, in the above cases (with possible exception of the government sponsored extermination of the buffalo in western North America), the states were not explicitly aiming to exterminate the local communities. For these

[5] The understanding of "consent" in this context is based on international law and precedent, such as United Nations notion of "free prior and informed consent" (FPIC) from Article 10 of *The Declaration on the Rights of Indigenous Peoples* (2007). Vexing challenges remain for adequately establishing consent. For instance, how can it be certain that the will of a community is accurately being expressed or that persistent minorities are not being oppressed? Often, well positioned political actors (e.g., chiefs, elites, vocal minorities) make determinations that appear to express the community consenting but in fact are contrary to the group's interests. For example, in the case of the decision to dam the La Grande River, the Canadian government established a development-friendly committee of Cree (comprised of predominantly southern members of the tribe who were further integrated into mainstream Canadian society) called the "Grand Council of the Crees of Quebec" to negotiate on "behalf" of the Cree still inhabiting James Bay region (Churchill 2002, 299). This group had no historical precedent or traditional role in Cree culture; it did not even exist prior to the negotiation (Churchill 2002, 299).

reasons, one might argue that it seems normatively hyperbolic to compare examples of state driven ecocide resulting in the social death of a people to such atrocities as those committed by the Nazis.

However, if a state demonstrates a wanton disregard for a group of citizens' way of life by deliberately taking actions that result in the group's social/cultural annihilation, it seems plausible to argue *the state's basic structure is in need of reform*. For one, such a state has failed to live up to the basic liberal ideals of respecting, tolerating, and preserving reasonable pluralism and allowing citizens to pursue their own reasonable life-plans.[6]

For those who feels this expansion is too broad, I propose that the environmental harms under consideration may be limited to cases where the impacted community *objected* to the proposed ecocidal activity. Per my model, for an act to constitute ecocide rising to the level of concern for Transitional Justice requires three conditions be met: (1) the ecocide was commissioned directly by state agencies or with the state's blessing (i.e., legally); (2) without consent of impacted group(s); and (3) it resulted in significant social death of impacted group(s).

It is worth explaining at this point that Transitional Justice has a history of addressing oppressions perpetrated by non-state actors. For example, the International Criminal Tribunal for Rwanda and Gacaca courts' prosecution of the *interahamwe* (the Hutu civilian groups that killed Tutsi) after the Rwandan genocide, and the International Criminal Court's investigation of atrocities committed by the *janjaweed* (nomadic Sudanese Arabs that targeted non-Arab sedentary communities) in Darfur. In these and similar

[6] A central tenet of liberalism espoused by prominent thinkers (e.g., John Rawls and Joseph Heath) is that states ought to remain neutral in their treatment of various reasonable life plans (Rodeiro 2021).

examples, Transitional Justice practitioners and institutions exhibit responsiveness to, and concern for, injustices committed by state sponsored militias, gangs, and civilian movements, acting outside of state bureaucratic apparatuses (e.g., military, police force, and other official agents). What matters is that the state is complicit in endorsing, supporting, or authorizing non-state agents' actions.

Potential Environmental Benefits of Transitional Justice Mechanisms

I have now defended my model for the inclusion of certain environmental harms (ecocide as social death) in the class of wrongs warranting a Transitional Justice response. Such analysis assumes that transitional mechanisms and processes can serve to abate and mitigate environmental problems. While this seems a reasonable assumption, it would be helpful to conceptualize how environmentalist goals might be accomplished through specific Transitional Justice mechanisms. There is abundant literature conceptualizing the ways in which Transitional Justice mechanisms balance the competing goals of ending hostility, promoting social stability, increasing democracy, dispensing punitive justice to perpetrators, providing reparations to victims, establishing the rule of law, memorializing the past, seeking the truth, and transforming social structures. This section will contribute to this literature by investigating how Transitional Justice mechanisms might further environmentalist aims, including the preservation of habitats, environmental restoration, and the promotion of ecologically sustainable subsistence practices.

What might be done to address grave injustices resulting from ecocide? Although I will focus on post-ecocide settings, insights gleaned are broadly applicable to any transitional setting interested in environmentalist aims.

The analysis of Transitional Justice mechanisms is divided into four categories: (1) *punitive justice mechanisms* designed to bring perpetrators of mass atrocities to justice and to punish them for the crimes committed (e.g., criminal trials, lustration, and sanctions); (2) *reparative justice mechanisms* designed to offer redress to victims of atrocities for harms suffered, individually and collectively, in both material and symbolic ways (e.g., reparations, rehabilitation, memorialization, apologies, and guarantees of non-repetition); (3) *truth-oriented mechanisms* designed to allow the society to have a full accounting and documentation of what occurred and why, by investigating who suffered and how they were harmed, scrutinizing who committed the atrocities and how they benefited, and determining the root causes and structures that led to the injustice (e.g., truth and reconciliation commissions, reports, and education programs), and (4) *institutional reform mechanisms* designed to democratize and liberalize public institutions and the structure of society in order to prevent such atrocities from reoccurring and enable society to move forward to a brighter future (e.g., changing laws, amending constitutions, and modifying institutions). This four-part categorization of Transitional Justice processes is fairly standard in the international community, endorsed by the United Nations Office of the High Commissioner for Human Rights, the United Nations Peacebuilding Commission, and the United States Department of State Transitional Justice Initiative (United Nations 2014).

Punitive Justice Mechanisms

Punitive justice is carried out in transitional settings for various purposes: as means of retribution re-balancing the moral scales by treating perpetrators harshly; as a means of deterrence discouraging behavior by instilling fear that the

consequences will be detrimental if the act is performed; as a means of having a pedagogical effect on society, expressing through harsh treatment of perpetrators that certain actions are wrong and will no longer be tolerated; as a socio-political means of upholding victims' rights by enacting punishment on behalf of victims, and, lastly, as means of signaling a break from the past by repudiating the injustices of the prior regime and enacting punishment, which affords the new state an opportunity to (re)establish the rule of law and strengthen civil society. In post-ecocide states, punishment of perpetrators can serve all these purposes. But how can these punitive measures further environmentalist aims?

One of the central punitive mechanisms employed by Transitional Justice is the use of trials and criminal punishment. These juridical processes potentially offer environmental benefits when responding to instances of ecocide. For one, trials provide an opportunity to gain information and establish a public record of harms to the ecosystem (e.g., what species were lost, the scope and scale of the damage, and how the local communities were impacted). The environmental evidence gathered though fact-finding over the course of litigating criminal cases may unearth a rich set of biological, ecological, and anthropological information, which might never have been discovered, documented, and publicized, absent the legal proceedings. This data could prove valuable in planning how to preserve comparable ecosystems or it might provide insight relevant for creating guidelines for restoring the affected habitat.

Beyond the prospects of learning relevant environmental information, criminal trials and punishments can assist environmental causes by incarcerating or socially isolating actors who have demonstrated they have little respect for nature, thereby restricting their ability to

detrimentally engage with the natural world. The legal punishment of ecocidal actors and organizations can furthermore function as a deterrent and pedagogical tool to express to the wider society that wanton disregard for the ecological health of habitats on which communities rely will no longer be tolerated.

A potential difficulty of prosecuting offenders for the perpetration of ecocide is that the ecocidal acts may have been legal at the time they were committed. *Ex post facto* application of the law may undermine the perceived legitimacy of proceedings and hinder transition. Fortunately, Transitional Justice has employed putative measures that may evade this problem by holding the state's decision-making apparatus to account.

Lustration, for example, can remove those in civil service and political positions who were associated with or complicit in wrongdoing. The term 'lustrate' has historically meant to "'purify ceremonially as a means of removing blood-guiltiness and cleansing a house,' as such it has consistently been concerned with coming to terms with the past" (Cepl 1997, 230). The term became a more commonly recognized concept after the widespread purge of government officials that occurred during the Revolutions of 1989 in Central and Eastern Europe, which resulted in the end of communist rule in the Eastern Bloc (Letki 2002). Lustration can avoid some of the legitimacy issues posed by *ex post facto* application of the law by framing such terminations as employment decisions rather than criminal punishments.

Alternatively, the state could pursue fines and legal takings, such as the confiscation of assets obtained through ecocide. Seizing pecuniary funds from actors who have demonstrated a propensity to exploit natural resources would weaken their ability to finance other ecocidal projects. The procured funds could then be utilized to finance

environmental projects such as conserving comparable ecosystems or working to restore the harmed ecosystem to its prior functioning. However, such measures may also trigger *ex post facto* legitimacy concerns if the initial acquisition and profit was carried out legally. The benefit of such an approach is that states can explicitly mandate the return of specific property such as the lands an impacted community was forced to abandon. This may present a more straightforward remedy to post-ecocide problems than monetary damages awarded in civil cases. For instance, Germany was mandated to return the artwork and cultural artifacts the Nazis had plundered in their attempt to create a super museum to reflect Hitler's personal tastes and supposedly glorify the Aryan race (Nicholas 1994). More recently, after the Persian Gulf War, the U.N. Security Council forced the Iraqi government to return the cultural property they had looted in their invasion of Kuwait (Sandholtz 2008).

For punitive measures to be effective, it is important that harsh treatments reflect the perpetrator's culpability and are proportional to the gravity of the harm. If too many citizens are censured, then the general population may turn against the transitional process before it is complete, or worse, trigger a backlash against these policies, which may lead to further environmental destruction and the entrenchment of anti-environmentalist sentiments.

Reparative Justice Mechanisms

Reparative justice serves various functions in transitional settings. It serves as: a material and moral corrective re-balancing scales by assisting victims; a means of rehabilitation by restoring victims' sense of agency, self-respect, and other capabilities necessary for purposeful self-development; a means of having a pedagogical effect on

society by fostering social recognition that victims are equal citizens deserving of respect and moral consideration as members of the political community; a means of overcoming pervasive structural inequality by providing aid and support, both material and psychological, to ensure that victims' life prospects are comparable to the rest of society, and as a means of acknowledging the past, by memorializing the injustice and its impact on the victims. In post-ecocide states, repairing the harms done to victims can serve all these functions. But how can these reparative measures further environmental aims in particular?

For simplicity's sake, reparative mechanisms can be divided into two main categories: *direct reparation* (i.e., material compensation to those who have been wronged) and *symbolic memorialization* (i.e., processes designed to change victims' and societies' relationship with past wrongs). For instance, if a group who has suffered grave human rights violations receives a small sum from the state that is nowhere near commensurate to the harm experienced or the material losses the community endured, then this compensation might be viewed as an act of symbolic memorialization, in that the allotment is intended as a public acknowledgement and apology for past injustice. If, however, the intention behind the payment was to meaningfully assist victims in materially rebuilding their lives, then it would constitute a direct reparation, even if the payment proves inadequate for such purposes.

Direct reparations can be further subdivided into three categories: (1) *financial restitution* offering monetary payments aimed at making victims whole; (2) *"in-kind" compensation* restoring and returning specific entities or objects that victims lost, and (3) *rehabilitative service* offering support to assist victims in overcoming impediments resulting from past injustice. Recall the above-

mentioned example involving nuclear testing in the Anangu people's ancestral land. In 1995, the British government paid the Anangu peoples $13.5 million dollars as compensation for the loss of their land at Maralinga. Such payment constitutes financial restitution (Korff 2017). But the state also assisted a few survivors (only five to be exact) by providing them medical care to treat their illnesses caused by exposure to radiation, which constitutes a rehabilitative service (Korff 2017). Additionally, in 2009, the Australian government returned most of Maralinga to the Anangu as a place safe for walking, building, camping, and hunting (Korff 2017). By 2014, the state had returned all the land, including the weapons testing range. Such acts constitute "in-kind" compensation (Korff 2017). There are thus various ways in which direct reparations have been implemented as remedies after ecocide.

A problem with financial restitution through monetary reimbursement is that many victims of ecocide may be unable to convert monetary funds into well-being because their way of life is not dependent on purchasing goods and services from the market system. Furthermore, victims of such grave harms may require massive financial allocation to even begin approaching the life they would have had had they not been unjustly burdened by ecocide. In-kind resource-compensation can avoid these problems by providing victims with things that money cannot buy, such as access to their ancestral lands. An environmental benefit of such measures is that they will likely require the state to undertake environmental cleanup projects to repair the damaged ecosystem and restore habitat to its prior functioning, or as close as possible, before transferring it back to its rightful owners. For instance, the British and Australian government attempted to decontaminate

Maralinga of hazardous radiation three times before it was returned to the Anangu (Korff 2017).

The environmental advantages of in-kind compensation measures are obvious in that they can restore habitats to their prior ecological functioning. Sadly, however, while returning communities and habitats to their pre-harm condition is an optimal reparative outcome, it is likely unfeasible in many instances of ecocide.

A problem with all forms of direct reparations is that their aim of making victims whole (i.e., returning victims to the state they would have been in had the wrongs never transpired) is likely doomed to fail in the wake of grave injustices such as ecocide. The reasons for pessimism are manifold: (1) the commensurate compensation for such grave injustices and injuries may be impossible to calculate; (2) circumstances and constraints may make restoring victims to their prior state impossible, and (3) competing justice concerns may make it unjustifiable to pursue making victims whole. How much financial compensation do victims of ecocide deserve for the loss of their way of life and connection to their ancestral home? Should rehabilitative measures be pursued if expanding the economy to pay for these services could lead to further environmental destruction? Lastly, how can victims be made whole in cases of ecocide so devastating that the impacted community has effectively disappeared? These and similar questions show the inherent difficulties and limitations of trying to pursue direct reparations in response to ecocide.

Fortunately, Transitional Justice has other reparative mechanisms such as *memorialization*, designed to symbolically respond to grave injustices. Memorialization measures include the establishment of museums, parks, memorials, exhibitions, demonstrations, ceremonies, and days of remembrance, which are designed to publicly

commemorate victims, raise awareness of past abuses, apologize, and help prevent reoccurrence. Unlike reparations, memorialization may accept that the harms of the past can never be entirely corrected, in that they may be forgotten or overcome but not undone. As such, memorialization instead aspires to provide victims, perpetrators, and society as a whole with opportunities to change their relationship with past wrongs.

There are already many examples of memorialization in response to environmental harms, such as Earth Day. Earth Day is a holiday celebrated on the first day of Spring in the Northern Hemisphere to demonstrate support for environmental protections and celebrate the Earth. It began in 1970 in response to an oil well blowout off the coast of Santa Barbara, California (Wheeling and Ufberg 2017). The oil spill spewed over three million gallons of oil and killed seabirds, seals, dolphins, sea lions, fish and other marine life over an 800 square-mile expanse of the Pacific (Wheeling and Ufberg 2017). More recently, Iceland memorialized Okojokull, the first glacier lost to climate change in the country, by holding a public ceremony to install a monument where the glacier once stood (Luckhurst 2019).

Another powerful instance of memorialization after an environmental harm is Alberto Banuelos-Fournier's monolithic memorial sculpture entitled, *The Wound*, commissioned by the Galician government in Spain to commemorate the sinking of a structurally deficient oil tanker off the coast in 2002 (Varona 2020, 669). The spill is considered the worst in the history of Europe and was responsible for spewing close to 80,000 tons of oil over two-thousand kilometers of the Spanish, Portuguese, and French coast (Varona 2020, 667). The monolithic statue (the largest in all of Spain) commemorates the wounded ecological landscape that resulted in the death of over

200,000 seabirds and countless other marine creatures. It also acknowledges the thousands of volunteers who helped to clean the spill up (Varona 2020, 667). Interestingly, since ecosystem functioning has been reestablished in the region and the beauty of the coast has been restored, the monument serves to remind present visitors of past ecological harm (Varona 2020, 669).

Memorialization efforts could include constructing museums, monuments, and exhibits to commemorate lost cultures and habitats. Zoological reserves, botanical gardens, and national parks may serve important memorialization functions post-ecocide. While they may not directly assist in environmental conservation or restoration, they could preserve valuable ecological information about lost habitat (e.g., taxonomies of the flora and fauna, food chains, and energy flows), which could provide insights into how best to protect or restore other comparable habitats. Memorialization efforts could also offer opportunities to teach eco-friendly practices to the public. For instance, victims of ecocide could be commissioned to offer tutorials, lessons, and reenactments in celebration of their traditional ecologically sustainable subsistence practices. There could also be days of remembrance that directly further environmentalist aims by including rituals such as planting trees or picking up trash in wildlife habitats.

Truth-Oriented Mechanisms

Truth serves various functions in transitional settings: a means of understanding and reconciling injustice; a means of publicly and privately acknowledging the past; a means of establishing and demarcating culpability for wrongs; a means of justifying and motivating the need for social change, and a means of educating the public so such harms are less likely to occur in the future. Generally, truth-oriented

mechanisms in transitional settings can be divided into three interconnected processes: (1) *truth-seeking* (investigating past abuses); (2) *truth-documenting* (collecting and recording past abuses), and (3) *truth-disseminating* (reporting on past abuses). Transitional Justice has developed mechanisms to further each of these aims. For instance, the standard veridical process in transitional settings involves: first, enacting truth commissions and offering amnesty to assist in discovering the truth; then commissioning reports to document findings, and finally releasing, publishing, publicizing, and broadcasting the information to the public. But how can these truth-oriented activities further environmentalist objectives?

Truth-oriented mechanisms (e.g., truth commissions and offers of amnesty in return for information) generally aim at examining the root causes and patterns of violence. In post-ecocide states this may include establishing a truth and reconciliation commission as a venue in which victims can share their experiences with the public and perpetrators can offer information and take responsibility for their involvement in exchange for amnesty from criminal prosecution.

Employing truth-oriented mechanisms can serve reparative purposes in that the process of truth-seeking, truth-documentation, and truth-dissemination can itself be a form of reparation, reconciliation, and rehabilitation. Pursuing and propagating truth through these non-juridical institutions could further both punitive justice by publicly punishing perpetrators and reparative justice by publicly honoring victims, memorializing their harms, and rehabilitating their sense of agency. For instance, the act of establishing a truth and reconciliation commission signals to society that ecocide is an impermissible wrong. Moreover, motivating those involved to divulge information and admit

what happened could offer insights into the pervasive structures, institutions, norms, and policies that made such harms possible and that must be changed to prevent similar injustices. Since non-juridical truth-seeking mechanisms allow actors to divulge information without the threat of it being used against them, it is reasonable to assume that employing these mechanisms will assist post-ecocide societies in gathering valuable data and developing a more complete understanding regarding environmental harms than by relying exclusively on punitive justice mechanisms which suppress actors' desire to volunteer information.

A further epistemic benefit of non-juridical truth-oriented proceedings is that they likely enable and encourage a wider segment of society to testify. Those actors who might not have been directly involved with the commission of the ecocide may nonetheless feel obligated to volunteer information regarding their role in establishing the background conditions and social context that made the ecocidal activity possible. Moreover, permitting impacted citizens to testify regarding how they were harmed could provide a wealth of ecological information that might never have been discovered, documented, and publicized, absent a venue for victims to share their experiences. This ecological information could prove valuable in efforts to preserve comparable ecosystems or restore affected habitat. Likewise, if impacted citizens publicly describe their former way of life, it would afford the general public an opportunity to learn of alternative modes of subsistence (i.e., eco-friendlier practices) and to reflect on ways they might change their treatment of nature.

Institutional Reform Mechanisms

As Colleen Murphy succinctly states, "transformation is the key overarching moral aim of responses to wrongdoing

in transitional contexts" (Murphy 2017, 112). But this social transformation must be conducted *justly* by dealing with the wrongs of particular perpetrators that were committed against particular victims.

Essentially, institutional reform mechanisms aim to transform public institutions from instruments of oppression into institutions that generate social trust, respect the rule of law, foster hope, further social capabilities, spread acknowledgment of equality and reciprocity between moral agents, restore confidence, and strengthen social stability. Institutional reform may take the form of amending constitutions, enacting legislation, restructuring institutions, increasing civilian oversight and involvement, and providing educational opportunities. Importantly, institutional reform must aim to democratize and liberalize the basic structure of society to prevent future injustice. To achieve this, the reform measures combat the pervasive structural inequities that facilitated and produced the injustice. It is thus imperative for post-ecocide states to end normalized and collective wrongdoing against impacted communities by altering the institutional structures that persistently prioritize certain relationships with the natural world over others.

In recent work, I have defended a notion of *eco-relational pluralism* which delineates when the pursuit of economic growth and development at the expense of local ecosystems violates the basic principles of respect and toleration undergirding liberal societies (Rodeiro 2021 and 2024). Post-ecocide states, in attempting to promote democratic and liberal values and social stability, must replace ecocidal social structures with forms of governance that respect peoples' ability to maintain an ecologically sustainable relationship with the natural world. Without such structural change and social reform, the state risks

illiberally prioritizing certain reasonable conceptions of the good over others and as such fails to achieve Transitional Justice's aspiration of liberal democratic social transformation.

For institutional reform to be successful, it must transform *de jure* social conditions (the officially codified legal apparatus) and *de facto* social conditions (the hearts and minds of citizens). Both kinds of reform are intertwined and mutually reinforcing. Explicitly amending the written constitution, enacting legislation, and restructuring institutions will likely affect people's behaviors and attitudes. Conversely, changing the culture and subjective sentiments of the citizenry will likely spur legal reform.

Constitutional reform is a key mechanism for driving *de jure* social change in transitional settings. Constitutions embody the supreme law of the state, establish the formal rules that direct and constrain government power, and define the relationship between the government, institutions, and individuals. As constitutional scholar, Patrick Monahan explains, "a country's constitution is the set of fundamental principles that together describe the organizational framework of the state and the nature, the scope of, and the limitations of the exercise of state power" (Monahan 1997, 5). Hence, constitutional reform represents an important mechanism for changing the political order and basic structure of society.

Over the past few decades, there has been a groundswell of pro-environmental constitutional restructurings and amendments. David Boyd's thoroughly researched book, *The Environmental Rights Revolution: A Global Study of Constitutions, Human Rights, and the Environment*, documents the countries that have incorporated "some form of environmental protection provisions" in their constitutions. The number of countries

has grown from zero in the year 1975 to 147 out of the 193 countries with codified constitutions in 2012 (Boyd 2012, 76). For instance, "the right to live in a healthy environment" is now explicitly recognized in ninety-two constitutions. This is remarkable, since, as Boyd notes, "no other human right has achieved such a broad level of constitutional recognition in such a short period" (Boyd 2012, 76).

To ensure environmental constitutional reforms are effective in post-ecocide contexts, it is necessary for them to contain both substantive and procedural elements. The substantive component necessitates the constitutional amendment entitles impacted actors (citizens whose habitats have been deliberately destroyed without their consent) to bring claims against perpetrators and the state. The procedural element obligates state actors to involve and consult with potentially impacted citizens and communities before enacting policies or activities that may affect their environment.

I have already specified how punitive, reparative, and truth-oriented mechanisms each play an important pedagogical role in changing the hearts and minds of the citizenry in transitional settings. For instance, truth and reconciliation hearings, criminal trials, museums, public memorials, and monuments represent informal educational spaces that provide citizens opportunities to learn about, interpret, and reconcile with the past. As such, educational programs play a vital part in directly encouraging *de facto* social transformation in transitional contexts.

Public education programs can ensure the public understands how the transitional mechanisms work, why they are being implemented, and what they aim to achieve. To prevent backlash against environmental laws and policies that may force citizens to change their daily consumer behaviors, it is imperative for the state to explain *why*

promoting more sustainable social practices is necessary for preventing unjust ecocidal harms. Formal education programs can further aim to instill the liberal value of tolerance for different kinds of relationships with the natural world, with emphasis on the legitimacy of the desire to maintain an intimate and sustainable relationship with one's local habitat.

Conclusion

This paper has built on my research exploring how Transitional Justice might include environmental harms in the class of wrongs severe enough to trigger transitional mechanisms and processes. A case has been made that the discipline may undertake a successful green turn by remaining focused on comparable kinds of harm (social death) and their causes (deliberate state actions) that are the traditional concerns of the discipline. I have proposed a model of ecocide as social death to be included in the purview of Transitional Justice.

The preceding discussion has attempted to clarify the environmental benefits of employing Transitional Justice mechanisms in response to ecocide. This has hopefully further illuminated the potential intersections between the goals of Transitional Justice and environmentalism by demonstrating how promoting the reparative, reconciliatory, transformative aims of Transitional Justice can further environmental sustainability, habitat restoration, and ecological conservation.

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Works Cited

Arthur, Paige. 2009. "How 'Transitions' Reshaped Human Rights: A Conceptual History of Transitional Justice." *Human Rights Quarterly* 31 (2): 321-367.

Boyd, David. 2012. *The Environmental Rights Revolution: A Global Study of Constitutions, Human Rights, and the Environment*. Vancouver, B.C.: UBC Press.

Card, Claudia. 2003. "Genocide and Social Death." *Hypatia* 18 (1): 63-79.

Cepl, Vojtech. 1997. "The Transformation of Hearts and Minds in Eastern Europe." *Cato Journal* 17 (2): 229-234.

Churchill, Ward. 2002. *Struggle for the Land: Native North American Resistance to Genocide, Ecocide, and Colonization*. San Francisco, CA: City Lights Books.

Crook, Martin and Short, Damien. 2021. "Introduction: Special Issue on the Genocide-Ecocide Nexus." *Journal of Genocide Research* 23 (2): 155-161.

Davis, Robert and Zannis, Mark. 1973. *The Genocide Machine in Canada*. Montreal, Canada: Black Rose Books.

Dellapena, Joseph. 2007. "Ecocide and Genocide in the Iraqi Marshlands." *WIT Transactions on Ecology and the Environment*, 104: 401-409.

Dunlap, Alexander and Jakobsen, Jostein. 2020. *The Violent Technologies of Extraction: Political Ecology, Critical Agrarian Studies and the Capitalist Worldeater*. New York, NY: Palgrave Pivot Cham.

Haldemann, Frank and Kouassi, Rachelle, 2014. "Transitional Justice without Economic, Social and Cultural Rights?" in *Economic, Social, and Cultural Rights:*

Contemporary Issues and Challenges, eds. Eibe Riedel, Gilles Giacca and Christophe Golay. Oxford, UK: Oxford University Press.

Higgins, Polly. 2010. *Eradicating Ecocide: Exposing the Corporate and Political Practices Destroying the Plant and Proposing the Laws Needed to Eradicate Ecocide*. London, UK: Shepheard-Walwyn Publishers.

Isenberg, Andrew. 2000. *The Destruction of the Bison: An Environmental History 1750-1920*. Cambridge, U.K.: Cambridge University Press.

Isenberg, Andrew. 1992. "Toward a Policy of Destruction: Buffaloes, Law, and the Market, 1803-83." *Great Plains Quarterly* 12 (Fall): 227-241.

Korff, Jens. 2017. "Maralinga: How British Nuclear Tests Changed History Forever." *Creative Spirits*. https://www.creativespirits.info/aboriginalculture/history/maralinga-how-british-nuclear-tests-changed-history-forever (7/8/2023).

Letki, Natalia. 2002. "Lustration and Democracy in East-Central Europe." *Europe-Asia Studies* 54 (4): 529-552.

Luckhurst, Toby. 2019. "Iceland's Okjokull Glacier Commemorated." BBC NEWS https://www.bbc.com/news/world-europe-49345912 (9/18/2019).

Mattingley, Christobel and Edwards, Yvonne. 2016. *Maralinga's Long Shadow: Yvonne's Story*. Crows Nest, Australia: Allen & Unwin.

McCutcheon, Sean. 1991. *Electric Rivers*. Montreal, Canada: Black Rose Books.

Miller, Zinaida. 2008. "Effects of Invisibility: In Search of the 'Economic' in Transitional Justice." *International Journal of Transitional Justice* 2 (3): 266-291.

Monahan, Patrick. 1997. *Constitutional Law*. Toronto, ON: Irwin Law.

Moses, Anthony. 2010. "Raphael Lemkin, Culture, and the Concept of Genocide." in *The Oxford Handbook of Genocide Studies*, eds. Donald Bloxham and Anthony Moses. Oxford, UK: Oxford University Press.

Murphy, Colleen. 2017. *The Conceptual Foundations of Transitional Justice*. New York, NY: Cambridge University Press.

Nicholas, Lynn. 1994. *The Rape of Europa: The Fate of Europe's Treasure in the Third Reich and the Second World War*. New York, NY: Alfred A. Knopf, Inc.

Ong, David. 2017. "Prospects for Transitional Environmental Justice in Socio-Economic Reconstruction of Kosovo." *Tulane Environmental Law Journal*, 20 (2): 217-272.

Pellow, David. 2018. *What is Critical Environmental Justice?* Cambridge, UK: Polity Press.

Redner, Erica. 2014. "In the Name of Development: Moving Cerrejon Mountain, Its Coal, and Its People." *ReVista: Harvard Review of Latin America* 13 (2): 54-57.

Rodeiro, Manuel. 2024. "Eco-relational Pluralism: Political Liberalism's Challenge to the Economic Growth Imperative." *Ethics, Policy and Environment*, forthcoming.

Rodeiro, Manuel. 2023. "A Green Turn in Transitional Justice: Ecocide as Social Death." *Environmental Justice*, forthcoming.

Rodeiro, Manuel. 2021. "Justice and Ecocide: A Rawlsian Account." *Environmental Ethics* 43 (3): 261-279.

Sachs, Wolfgang. 1999. *Planet Dialectics Explorations in Environment and Development*. London, UK: Zed Books, 1999.

Sandholtz, Wayne. 2008. "Dynamics of International Norm Change: Rules Against War Time Plunder." *European Journal of International Relations* 14 (1): 101-131.

Schnaiberg, Allan. 1980. *The Environment: From Surplus to Scarcity*. New York, NY: Oxford University Press.

Solly, Meilan. 2019. "Three Things to Know About the Fires Blazing Across the Amazon Rainforest." *The Smithsonian Magazine*.
https://www.smithsonianmag.com/smart-news/three-things-know-about-fires-sweeping-through-amazon-rainforest-180972962/ (7/13/2023).

Teitel, Ruti. 2000. *Transitional Justice*. Oxford, UK: Oxford University Press.

United Nations (Human Rights Office of the High Commissioner). 2014 *Transitional Justice and Economic, Social, and Cultural Rights*. New York, NY: United Nations Publication.

United Nations (General Assembly). 2007. *Declaration on the Rights if Indigenous Peoples*. New York, NY: United Nations Publication.

Varona, Gema. 2020. "Restorative Pathways after Mass Environmental Victimization: Walking in the Landscapes of Past Ecocide." *Oñati Socio-legal Series* 10 (3): 664-685.

Waldron, Jeremy. 1992. "Superseding Historic Injustice." *Ethics* 103 (1): 4-28.

Wheeling, Kate and Ufberg, Max. 2017. "'The Ocean is Boiling': The Complete Oral History of the Santa Barbara Oil Spill." *Pacific Standard* (4/18/2017). https://psmag.com/news/the-ocean-is-boiling-the-complete-oral-history-of-the-1969-santa-barbara-oil-spill (7/12/2023).

Zimmerer, Jurgen. 2014. "Climate Change, Environmental Violence, and Genocide." *The International Journal of Human Rights* 18 (3): 265-280.

Diálogos 114, 2024, pp. 81-115.

LIMITS OF WILDERNESS

Shawn Simpson
University of Pittsburgh
shawnsimpson.primary@gmail.com

Abstract

Few debates in environmental philosophy have been more heated than the one over the nature of wilderness. And yet, when one surveys the present scene, one finds that a variety of different conceptions of wilderness are still quite popular – some more so in certain professions than others. In this paper, I look at three popular conceptions of wilderness with an eye toward sussing out the good and the bad them. I look at what I call (1) the folk view of wilderness, (2) Leopold's conception of wilderness, and (3) the legal conception of wilderness (as found in the Wilderness Act of 1964). In the final part of the paper, I sketch out a sort of spectrum account of wilderness, one that I argue allows us to capture more cases of wilderness and might serve as a useful tool in future conservation efforts.

Keywords

wilderness, Wilderness Act, spectrum, Leopold, pluralism

Resumen

Pocos debates en la filosofía medioambiental han sido más acalorados que el de la naturaleza de los espacios naturales. Y, sin embargo, cuando se analiza el panorama actual, se comprueba que siguen siendo muy populares diversas concepciones de los espacios naturales, algunas más que otras en determinadas profesiones. En este artículo, examino

tres concepciones populares de los espacios naturales con el fin de identificar las buenas y las malas. Analizo lo que yo llamo (1) la visión popular de los espacios naturales, (2) la concepción de Leopold de los espacios naturales y (3) la concepción legal de los espacios naturales (tal y como se recoge en la Ley de Espacios Naturales de 1964). En la última parte del artículo, esbozo una especie de espectro de los espacios naturales que, en mi opinión, nos permite abarcar más casos de espacios naturales y podría ser una herramienta útil para futuras iniciativas de conservación.

Palabras clave

espacios naturales, Ley de vida silvestre, espectro, Leopold, pluralismo

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Introduction[1]

On a cool September day, looking down at my map, I see that I am 16 miles into the boundary of the John Muir Wilderness of the Sierra Nevada mountains of California. It took me a 16-mile hike, starting from the dock at the far end of Lake Edison, to get to this point. To get to the dock, it took me roughly a 4-mile boat ride from the launching pad on the far side of the lake. To get to the lake, our crew had to drive 8 miles on a one-lane mountain road, starting at the High Sierra Ranger Station. And to get to the High Sierra Ranger Station, it was an 84-mile drive from the nearest large town – Fresno. Up here in the Sierras, I'm surrounded

[1] Thank you to members of the 2021 meeting of the Canadian Society for Environmental Ethics for comments on a previous draft. Thank you also to members of the Mississippi State University Philosophy & Religions Department Works-in-Progress Group and to two anonymous reviewers.

by red fir, white fir, lodgepole pine, and hemlock trees. The wild blueberries – a favorite of the California black bear – are bursting with their sweet reward. I can hear the pleasant "cheese-bur-ger" call of the mountain chickadee. And a gorgeous orange and black monarch butterfly flutters by, landing on a peculiarly shaped crimson columbine flower. As we approach "Beetle Bug Lake" the trees recede, and I see an osprey swoop down to catch a trout from the lake's waters. "Surely, out here", I think, "I must finally be in wilderness. Surely this is wilderness if anything is."

And yet, as I settle down on a big rock of granite and look around with a keen eye, I start to realize that even out here, perhaps in wilderness I am not. Across the lake, I see the aluminum shimmer of a deflated birthday balloon caught in some blueberry bushes. I'm told by my lead ranger that these aren't as uncommon around here as one might think. Apparently, the wind tends to bring them up from Fresno. As I look into the water, I see the remnant of a fishing wire, the hook captured on the underside of a submerged log. I'm told the trout in this lake aren't native to it either – they were dropped in by airplane months ago. On a nearby tree are what appear to be the marks of some uncaring backpacker simply having "fun" with an ax. And then, when I think about it more, well, there is after all a developed and maintained *trail* leading to this lake – it's not literally "off the beaten path". There's a tree nearby with a sign tacked to it reading "no camping" – probably placed there by a previous ranger. And then, what's more, this lake is named and marked on a map. As we walk to the other side of the lake, we find the remains of an old campfire ring with some tinfoil pieces and scraps of paper left inside. Rangers here dub these small pieces of foil, plastic, and other refuse "micro trash". Micro trash is a persistent problem, as these tiny pieces of litter break up and become smaller over time, eventually becoming too small to

be extricated practically from the environment, effectively becoming a part of that place forever.

"Perhaps I should have known better," I think to myself. The Sierra Nevada after all is only a short drive from the heavily populated San Francisco, with its many hiking enthusiasts and nature lovers. It has also been explored by European colonists at least since fur trapper Jedediah Smith crossed north of the Yosemite area in 1827. Theodore Roosevelt even rode through the Sierra Nevada in 1903. And the area I'm in isn't named the John Muir Wilderness for nothing – the famous naturalist John Muir explored this neck of the woods extensively. Of course, even before all that, indigenous peoples such as the Mono and Paiute lived in and explored the Sierra – hunting game, foraging, and making their lives there.[2]

"So, what is wilderness then?" I wonder, "*True* wilderness – if there is such a thing? And where can I find it?"

The first question to ask in any discussion of wilderness, of course, is "What is it?" Perhaps it's no surprise that there is no widely agreed upon answer to that question. Many authors have had different opinions about what counts as wilderness. Some have even argued that wilderness as traditionally conceived doesn't exist or that the concept should be abandoned (Cronon, 1983, 1996; Callicott, 2008). Others have pointed out that versions of the concept reek of imperialism or Euro-centrism (Plumwood, 1998; Guha, 1989). Add to it that there are legal definitions of wilderness, scientific definitions, and a variety of other definitions or conceptions of wilderness, and it becomes easy

[2] I was once told by a US Forest Service archeologist that he'd even found an ancient spearhead frozen in some ice near the crest of the Sierra. So, it appears the early peoples of the region explored the area quite extensively!

to see why the debate surrounding wilderness has been such a heated one.

What I'll do in this paper is look at a few popular conceptions of wilderness – ones that still hold sway in certain professions and circles – and try to tease out the good and the bad of them. I'll consider three views of wilderness in particular: what I'll call (1) the *folk* view of wilderness, (2) *Leopold's* conception of wilderness, and (3) the *legal* conception of wilderness, as presented in the Wilderness Act of 1964. I'll end the paper by sketching out a sort of *spectrum* model of wilderness, one couched within a larger deflationary and pluralist outlook. A spectrum account like the one I provide, I'll argue, captures more cases of nature that we'd intuitively like to call wilderness and might serve as a more useful tool in future conservation efforts.

The Folk View

The first view I'll discuss is what I'll call the *folk* view of wilderness. What I mean by the folk view is roughly what the typical person on the street might have in mind when they talk about wilderness. Now, of course, how the person on the street got that concept of wilderness is an important story, and the origin story of our everyday concept of wilderness is a long and complicated one. One of the most famous and often quoted works on the origins of the concept of wilderness is Roderick Frazier Nash's 1967 book *Wilderness and the American Mind*. According to Nash, the very notion of wilderness came into existence when humans started to separate themselves from other parts of the world in particular ways. Humans started to create permanent settlements and villages in effect creating a division between those places settled and those that were not and those places under our control and those that were not. Humans also started to domesticate animals, creating a division between

animals under our control (to some extent) and those that were not. Wilderness then became in effect the place where wild beasts lived and we did not. As Nash points out, however, not all peoples appear to have created this distinction, especially nomadic peoples. Chief Standing Bear of the Oglala Sioux, for example, once said that his people "did not think of the great open plains, the beautiful rolling hills and the winding streams with their tangled growth as 'wild'. Only to the white man was nature a 'wilderness' and... the land 'infested' with 'wild animals' and 'savage' people" (Standing Bear, 1933, p. xix). We seem to find another example of this lack of separation between humans and nature in some Buddhist philosophy. For example, the Japanese Buddhist monk Myōe born in 1173 seems to have held that all things were one, all a part of the Buddha. In a letter he wrote to an island, he writes, "It is certainly true that the physical substance of a country is but one of the ten bodies of the Buddha. There is nothing apart from the marvelous body of the radiant Buddha... your physical form as an island consists of the land of this nation, which is one part of the body of the Buddha." (Tanabe, 2015, p. 90).[3]

So much for the origin of the rough idea of wilderness. Now as far as the *word* 'wilderness' goes, according to Nash 'wilderness' has a fairly long history, though, perhaps not as long as the *concept* of wilderness or something very much like it. The English word wilderness has its beginnings in the Norse and Teutonic languages. Here 'will' is important in the sense of "self-willed". Wilderness was a place with a will of its own. Later 'willed' led to 'wild'. Later 'wild' was added to the Old English word 'dēor', which meant *animal*, giving us 'wildēor' or *wild animal*. We see the first use of this in

[3] Thank you to Audrey Yap for pointing out this work to me.

Beowolf. Later on, 'wildēor' was turned to 'wilder', and then we got 'wildern' and finally 'wilderness'. The result being that 'wilderness' (conceptually *wild-dēor-ness*) in effect means a place of self-willed animals. Professor of Native American culture Jay Hansford C. Vest, suggests a similar origin story for the word. According to Vest, in early Celtic tradition, wilderness was conceived as land governed by its own "will" (Vest, 1985). Henry David Thoreau is even noted to have repeated this general idea of wilderness as the self-willed in his personal journals.[4]

And yet, nowadays, Nash's account of the origins of the word 'wilderness' is disputed (Henderson, 2014). The root word of wilderness, 'wild' is found in Common Germanic. It is also found in Old English as 'wilde'. As early as c.725, 'wilde' was used as an adjective for plants and animals that were not tamed or domesticated and by c.893 'wilde' was applied to areas and not just the animals or plants within them. The Oxford English Dictionary suggests that the word's likely origin is the pre-Germanic *ghweltijos*. There are also potential parallels in the root of the Latin and Greek words for wild beast.

Nash, going off the idea that the word wilderness seems to have its origins in Northern Europe and that in these places wild animals tended to live in the woods, argues that the *concept* or *idea* of wilderness should be understood as originally encompassing primarily forested land. He sees as further evidence for this interpretation the lack of a single word serving the purpose of wilderness is the Romance languages. So, for example, in Spanish the closest thing to wilderness is *immensidad* (immenseness) or *falta de cultura* (lack of cultivation). In French, there is *lieu desert* (a

[4] See Turner, 1996, p. 82. for an account regarding the following quote apparently scribbled by Thoreau in a
notebook in 1852: 'Wild—past participle of to will, self-willed.'

deserted place) and *solitutde inculte* (the lonely and uncultivated). Italian's closest expression seems to be *scene di disordine o confusion* (scene of disorder and confusion). And yet, despite not having a single word for wilderness, it does seem, contrary to Nash, that these languages *are* getting at something very similar, if not at basically the same thing. Perhaps this is merely a difference of intuition. However, if not, then to say that the idea of wilderness was early on at heart an idea purely about forested land, would seem to be a bit of hopeful interpretation. Indeed, as Nash points out, the first use of the *word* 'wilderness' appears in the 13th century English priest Layamon's poem *Brut* and it does appear in this work to be used to refer to wooded areas. This lends some credence to the claim that the *word* 'wilderness' early on connoted primarily wooded areas. But in the case of the *idea* of wilderness, this is not so obvious. Perhaps in Italy a *scene di disordine o confusion* and in France a *solitude inculte* or *lieu desert* could be a mountainous area like the Alps, where high up enough there are very few, if any, trees. In Spain, there is the Tabernas Desert, famous from so-called spaghetti westerns such as the 1966 film *The Good, the Bad, and the Ugly.* Also in Spain, there is the Timafaya volcanic lands and the lands surrounding Mount Teide on the Canary Islands. These places are excellent candidates for the word *immensidad*. Nash in his own work even mentions that later on in the 14th century John Wycliffe used 'wilderness' to refer to uninhabited and arid land in the Near East. William Tyndale used the word similarly in his 1526 translation of the Bible, as have many translations of the Bible since. Why would these early authors use the word this way if the idea of wilderness hadn't been broader than that of forested land? Of course, people apply old words to new contexts and the meanings of words change over time. But to go from using 'wilderness' to talk about forested areas to using it to talk

about *deserts* – places often without any trees and sometimes without any apparent animal life – is a rather bold move, especially if Nash's account of the word's origin and core meaning is the right one. What's more, consider that humans have engaged in settlement building, land cultivation, and the domestication of animals – the creation of a "separation" between themselves and the "wild" – in many different contexts throughout history, and many of those environments were *not* forested ones (e.g., the Middle East and the deserts of the American Southwest). With all this in mind, to say that the idea, the bare primitive *concept* of wilderness, of a place wild and separate from us in some significant sense, must have or probably did start out in and about forested regions seems rather optimistic.

The question of the true origin of the concept of wilderness is an empirical one and one not likely to be answered anytime soon for a number of reasons – ones I won't spend time on here. In any case, the *word* wilderness eventually did come to be used in time, in English, to refer simply to any place that was – roughly – wild and uninhabited by man. The standard definition for quite some time was Samuel Johnson's from his 1755 Dictionary of the English Language: "a desert; a tract of solitude and savageness". Note the emphasis in Johnson's definition on "desert" – there's no explicit mention of woods or wild animals. Today, the Merriam-Webster Dictionary defines wilderness as "a tract or region uncultivated and uninhabited by human beings" and "an area essentially undisturbed by human activity together with its naturally developed life community". This definition too seems to leave room for deserts and makes no mention of forests.[5]

[5] Someone might ask "Isn't your discussion here about wilderness really just a discussion about *nature* more generally?" I think that the answer to that question is *no* and for the simple reason that people often do use

And nowadays, when one looks around, one finds that the word wilderness has taken flight and that its application has been expanded to new contexts. Now, not just forests and deserts count as wildernesses, but the seas and oceans appear to count too.[6] Rainforests and jungles are now often described as wildernesses.[7] And since the 20th century, outer space, the moon, and the surface of other celestial bodies have all been referred to as wildernesses (Johnson, 2020). And where wilderness once referred only to thoroughly wooded areas or areas nearly completely devoid of vegetation, now spaces somewhere between count too – for example, the Badlands of North Dakota or the Great Plains of the Midwest.[8]

How far does the modern version of the folk concept of wilderness go? How much can the concept be stretched and how many cases does it really cover? There are some cases outside the standard canon of examples that seem like plausible fits, others not so much.

Consider deep, expansive caves such as Mammoth Cave in Kentucky. Mammoth Cave has about 365 miles of explored labyrinth with many more miles still to go. There's also the Son Doong Cave in Vietnam, a cave that happens to be home to an untouched jungle growing more than 600 feet beneath the Earth's surface. As I said a moment ago, the

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those two words in different ways and with different meanings. Sometimes there is overlap, but they do have different connotations, uses, and appropriate contexts such that there are cases where one word can't simply be swapped out in conversation for the other. It seems fair to say, for example, "I love going out in nature but I'm really not into going into the wilderness." There seems to be a difference between nature and wilderness being captured in this sentence here.

[6] See Langston Hughes' poem "Long Trip" for an example of the seas as wilderness.

[7] See Joseph Conrad's novella *Heart of Darkness* (1899) for a case of jungle as wilderness.

[8] See the Theodore Roosevelt Wilderness.

rough and tumble seas have been described as wildernesses, but we might wonder if it isn't fair to describe the aquatic worlds *beneath* their surfaces as wildernesses too. The Great Barrier Reef in Australia, for example, covers an area of roughly 134,634 square miles and is host to a menagerie of wild creatures. If not perfect cases of wilderness, these do seem at least to be somewhere in the ballpark.

In the 21st century, we can also ask about *virtual* wildernesses – wildernesses in computer games and simulations.[9] Of course, this proposal is a bit of a stretch – do we really want to call a virtual wilderness "wilderness" in some strong sense? However, suppose that it turns out we really are in a simulation as some philosophers have suggested. Then the extension of the word wilderness to this new context presents us with a dilemma. Do we say that the places we called wildernesses are not really wildernesses after all – since it turns out they're now digital? Or do we simply accept that it turns out wildernesses can be digitally grounded? I suspect we might ultimately accept the latter.

Some stretch the concept of wilderness even further. It's not uncommon to hear talk about the "urban wilderness" or the "urban jungle".[10] And conceivably, if we could shrink people down to microscopic scale, as in the 1966 film *Fantastic Voyage*, we might hear some people describe the insides of bodies as wildernesses too. I'd wager, however, that most people on the street would not acknowledge these latter cases as rightly described as wilderness in any strict or deep sense of the word. Rather, some uses of the word simply are metaphorical.

Where does this get us? What we seem to get is that the *folk* concept of wilderness is a bit murky – in its origins

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[9] For examples of video games with digital "wildernesses" consider *No Man's Sky*, *The Long Dark*, *Astroneer*, and *Red Dead Redemption*.
[10] See Upton Sinclair's 1906 novel *The Jungle*.

and in its original meaning. The concept has been extended – in many cases, seemingly fairly, in other cases, probably not. What counts as a "fair" use of wilderness is likely to vary to some extent from person to person, but there does seem to be a vague amorphous core to the everyday concept that is fairly or unfairly applied in certain cases. What I'd like to do now is set that thought aside for a moment and shift instead to looking at a different point of view of wilderness, one provided by a former ranger.

Leopold's View

The second view of wilderness that I'll discuss is one provided by Aldo Leopold. Leopold is sometimes considered the father of environmental ethics. He was by profession a ranger in the United States Forest Service, and he started his career in the forests of Arizona and New Mexico. Leopold was one of the key voices in the push for the protection of large wilderness areas in the United States. Thanks in part to his efforts, the United States established the first federally designated wilderness area in 1924 – the Gila Wilderness in New Mexico.

A major turn in Leopold's thinking occurred when he was a young ranger. In the early 1900s, rangers were tasked with, among other duties, killing large predators such as wolves and grizzly bears. In his book *A Sand County Almanac* (1949), Leopold tells the story of the time he followed this policy and fired upon a mother gray wolf and her pups. As he recalls it, when he reached the wolf mother, he could see a "fierce green fire" dying in her eyes, and it was at that moment that he realized what he and the other rangers were doing was wrong – that they hadn't yet learned how to "think like a mountain".

Leopold's ideas are distilled in *Sand County*, which is now required reading for most environmental ethics courses.

And although some of the general themes from that work are relevant here, they're not the focus of this article. Instead, I'd like to home in on a definition of wilderness Leopold provided in an article published in the *Journal of Forestry* in 1921 titled "The Wilderness and Its Place in Forest Recreation Policy".

Leopold offered a few renderings of wilderness throughout the course of his life. At one point, he described wildernesses as "roadless, with roads built only to their edges" (1949, p. 289). But his 1921 definition has remained the most associated with his name and has retained the most popularity. In that paper, Leopold defines wilderness the following way:

> ...a continuous stretch of country preserved in its natural state, open to lawful hunting and fishing, big enough to absorb a two-week pack trip, and kept devoid of roads, artificial trails, cottages or other works of man. (p. 719)

In many ways, this is a decent definition of wilderness. It seems to capture a good number of the places we typically call wilderness – parts of the Sierra, Alaska, and South America for example. It seems to accord with many of our common intuitions about wilderness – that it is usually devoid of roads and works of man. The definition also provides a clear set of criteria for inclusion in the category of wilderness and a method of measurement – "big enough to absorb a two-week pack trip". And yet, the 1921 definition has a number of significant flaws.

First, the definition doesn't seem to capture any of the "extended" cases of wilderness that we discussed in the previous section. It doesn't seem to capture the oceans or space, for example, as it doesn't seem that pack animals will be conducting trips in space or underwater anytime soon. The definition also won't cover places such as the Son

Doong Cave or Mammoth Cave, as these places aren't suitable for pack trips either. This reveals one potential problem with Leopold's definition – the implicit reliance on horses and mules in its articulation – or on any stock animals (such as lamas, sled dogs, or camels) for that matter.

Another problem comes from the "two-week" condition of the definition. What sort of pack trip in the backcountry will take two weeks will vary greatly and depend on many factors. It will depend on things like the riders involved, their experience, the animals they're using, the cargo they're hauling, the weather, and, most importantly, the *terrain*. A pack trip conducted through the Badlands of the Dakotas is very different than a pack trip through the North Cascades, which in turn is very different than a pack trip through the sand dunes of the Middle East. Whether a pack trip in some area takes two weeks will also depend on whether the path taken is roughly a straight line or some other configuration and whether the trip is a there-and-back trip or a one-way journey. Leopold isn't clear on any of this – on whether straight lines are required or one-way trips – and that's a problem. Presumably he meant to include routes that are far from straight lines given how unusual straight-line paths are in most wilderness areas and given that many wildernesses physically rule out the construction of straight-line passages. He also probably meant to include some there-and-back trips. But he also presumably meant to rule out trips involving someone going round in circles or some other bizarre pattern of travel just to make a trip long enough for two weeks. His definition doesn't explicitly rule out such "bizarre" routes.

Now consider the size of land possibly required by Leopold's definition. In the backcountry, a rider with a horse or mule going on an extended trip can plausibly travel around 10-20 miles per day – maybe near 30 miles per day in extreme cases. If we go with 15 miles per day as a safe

estimate and multiply that by two weeks (14 days), we get a total of 210 miles. If we take 210 miles and combine that with a straight-line one-way journey, that's something like a 210-mile length requirement for wilderness areas – or 44,000 square miles. If we assume more generously that Leopold meant for the pack trip requirement to permit trips that cross the length of a wilderness and come back, then the requirement instead becomes an area of land roughly at least 105 miles wide – or 11,000 square feet. This is a rather large area of land in some respects, but the requirement would seem to rule out a number of places we already recognize as wilderness – Petrified Forest National Wilderness Area, for example, is only roughly 79 square miles and the El Toro Wilderness is only roughly 16 square miles.

Of course, all this assumes, that wildernesses have clear boundaries and that it's a simple matter to measure them. And yet, this too is debatable. It's not obvious that outside of lines on maps and artificially constructed borders there really are any deep metaphysical hard lines marking out where wilderness ends and "non-wilderness" begins. What's more, even if there were clear boundaries, Leopold isn't clear on which stock animals should be used for taking our measurements. Plausibly, he meant horses and mules. But camels, for example, have a quite different range than standard equine, especially in harsh desert environments. The same goes for sled dogs in snow. Without a more precise definition, we're left with a situation where a wilderness may take two weeks to traverse by one method of stock travel but less time by another.[11]

Perhaps Leopold could have been more precise. Maybe he could have said something roughly like that

[11] Bactrian camels, for example, can travel about 25-35 miles per day while carrying loads up to 1,000lbs. See US Army Field Manual (FM) 3-05.213 (FM 31-27).

wilderness is "an area that will on average take a two-week pack trip by horse or mule, weather assumed to be good, animals assumed to be in good condition, riders competent and healthy, trails assumed to be standard grade and quality, and all else being equal". It's an attractive route, but I don't think a patching-up like this will work. Qualified in this way, Leopold's definition would still be too vague to be used without some doubt about its limits – each part of it still seems in significant need of more details. And even if we did somehow make the definition more precise, did fill in those little details, such a revision would still plausibly rule out many places we otherwise feel comfortable placing in the wilderness category. It would rule out, for example, those places where stock travel is physically impractical or impossible, and those cases don't have to be controversial such as space or the oceans. Certain wildernesses just are not suitable for travel by stock – e.g. some swamps and dense jungles. Add to it that some wildernesses – for example, Mount Rainier National Park – *do* have suitable areas for stock use but are such that stock use is prohibited as a matter of Park policy, and this makes Leopold's definition of wilderness even more problematic.

One might wonder "Why focus on pack trips and stock? Doesn't that seem a bit arbitrary?" One might also wonder if perhaps there isn't a more charitable interpretation of Leopold's view – for example, roughly something like that a wilderness is any suitably large bit of land open to traditional recreation where humans and their structures do not remain. One reason I've focused on the part about stock is that so many rangers, especially packers and mounted rangers in the United States Forest Service and the National Park Service, take that part so seriously. This is something I've observed personally while working for these organizations. Packers and rangers will quote Leopold's definition of wilderness in conversation by heart. Packers

especially will wax poetic about the two-week pack trip aspect of Leopold's view. Obviously, many of these packers and rangers are a bit biased in their preference for Leopold's definition – they think stock animals should be permitted in wilderness areas, and so some likely emphasize the stock use aspect in order to defend their favorite practice.[12] Nevertheless, certain relevant professional circles do lean on and emphasize Leopold's definition, especially the stock animal part, and so even just for that reason it seems worth revisiting. Another reason for preferring a more literal interpretation of Leopold's definition is that we just don't know how literally Leopold intended his definition to be taken. Leopold wasn't a trained philosopher, and from his other writings it's just not clear how literal the clauses in his various principles and definitions, especially this one, should be interpreted. But for the sake of argument, let's suppose we do go with a more charitable interpretation. Would this help? I don't think so. If we go that route, we'll still need to know what counts, for example, as a "suitable" size of land and how to measure it – a tricky issue, and precisely the issue the two-week pack trip clause seemed designed to handle. What's more, if we go the more charitable route, we also in some way seem to be simply considering a *new* definition of wilderness, one that ditches the unique contribution that was the two-week pack trip clause of Leopold's account.

The packing aspect of Leopold's definition isn't the only part that leads us into problems. Leopold is also not clear on what exactly counts as the "natural state". Is it the land before Europeans showed up? Or does he mean perhaps even before any people arrived? Leopold seems to

[12] There is a heated policy debate that has been going on for some time now about whether the use of stock animals should be phased out of wilderness areas or even out of service in the National Park Service and US Forest Service completely.

think that hunting and fishing should be allowed in wildernesses, but then how do those activities not count as violating the natural state, especially in cases where hunting has been done for purposes of extermination – as in the case of the native gray wolves in Eastern Arizona? Leopold hedges by using the word 'lawful' when describing the hunting and fishing involved in wilderness, and yet even the eradication of the gray wolves in Arizona was lawfully ordered. Then consider that some federally administered wildernesses are set up such that hunting or fishing are *not* permitted within their boundaries. Places like these would seem to be ruled out by Leopold's definition.

The requirement that wilderness be in a "natural state" is also problematic on a broader interpretation of the expression. Consider that since the writing of Leopold's article, atomic radiation has been spread all over the world. In fact, engineers and scientists who need steel that isn't irradiated (so-called "low background steel") have had to source it from shipwrecks at the bottom of the ocean that occurred before the bombings of Hiroshima and Nagasaki (Lynch 2007). Radiation is everywhere, even in those wildernesses that today might in other ways count as in their natural state. Similar worries arise when we consider the effects that air and water pollution have had on most places and the effects of global warming. Reports of plastic being found at the highest and lowest reaches of Earth, in the stomachs of fish and mammals, and even in human placentas, doesn't bode well for the "natural state" either (Napper et al., 2020; Chiba et al., 2018; Azevedo-Santos, 2019; Collard & Ask, 2021; Ragusa et al., 2021). One might wonder if the eradication of a native species might matter for whether something still counts as a wilderness on Leopold's view. For example, do the White Mountains of Arizona still count as wilderness despite brown bears having been hunted to extinction in the area by the 1940s? For many places,

intuitively, the removal of one species doesn't seem to be enough to say that the area is no longer a wilderness. And yet, it's not clear how far that can go.

Leopold's definition also suggests that wildernesses are places "devoid of roads, artificial trails, cottages or other works of man". If what we care about is an "idealized" or "pristine" version of wilderness, then I can see why we might care about including such a clause. However, "pristine" or "virginal" conceptions of wilderness have been shown to be problematic for several reasons, and intuitively "pristineness" doesn't seem to be necessary for something to count as a wilderness. It seems fair to say that the Southwest and Pacific Northwest of America had plenty wilderness at the time of initial European contact, but at that time there were also already indigenous peoples living in and using many of those places, having built communities and structures, or having established hunting grounds, and, no, maybe not built roads, but, built trails.[13] In Europe, many places also still seem to count as wildernesses in the common understanding of the term – for example, many of the old growth forests – despite those wildernesses having been influence by humans for centuries.

Of course, one might revise the definition so that it's extremely restrictive. One could say, for example, that what really matters is that no humans have *ever* set foot in some place, not just that there are no "works of man" there. But notice that if we were to make the definition this restrictive, it seems we'd end up with the result that perhaps there are very few places left on Earth that count as wilderness, since so much of the Earth has experienced at least some form of human footprint. Although wilderness might be

[13] See Cronon (1983, 1996) and Plumwood (1998) for critical discussions of traditional concepts of wilderness and the status of indigenous peoples.

disappearing and in need of protecting, it doesn't seem to be that far gone. Going this route also seems problematic for a more fundamental reason. If it's human presence that turns a place from wilderness into non-wilderness, then it seems that once the first human evolved, wherever that happened, that place suddenly became non-wilderness. And that just seems like the wrong position to take on the matter.

Setting aside extreme revisions of Leopold's definition, Leopold's view still seems to make wilderness disappear rather quickly. Once a place no longer meets one of the criteria of his definition, it would appear it no longer counts as wilderness at all. The moment just one "work of man" is put in place – one trail, one sign, one cave painting – or the moment the "natural state" is disturbed in any way, the area is no longer wilderness full stop. Once one log cabin, for example, is placed way out in some part of the arctic, it is no longer wilderness – or maybe at least just the surrounding 10, 15, 100 square kilometers around it? And yet, intuitively it seems that some places can fairly be described as wilderness despite having *some* history of human presence in them, some permanent structures. Maybe those places no longer count as "untouched" or "pristine" wilderness, but they still seem to count as wilderness in some worthwhile sense of word.

The Legal View

The third view of wilderness that I'll look at is the one set out by the United States government's Wilderness Act of 1964. The definition of wilderness found in the Act is due to American environmental activist Howard Zahniser. It's a landmark piece of legislation in the protection of wild areas and has garnered perhaps more supporters and critics than any other definition of wilderness or piece of environmental law. The definition is fairly simply:

> A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. (16 U.S.C. Ch. 23 § 1131 et seq.)

This definition, like Leopold's, seems capable of capturing most of what we intuitively consider wilderness. Also, like Leopold's, however, it seems to rule out many places we'd want to include in the category. This definition would rule out places such as space and other celestial bodies, for example, given that it specifies it is about the "earth". This might not seem problematic at first, but if we want to extend wilderness protections to space, as some have started to suggest (Johnson 2020), then this is indeed a live issue.

Now consider the clause reading "where man himself is a visitor who does not remain". What is meant by this? It's not clear. The Forest Service and National Park Service – even the administrations of different Parks and Forests – have interpreted this part of the law very differently. Most Parks and Forests do not allow anyone to buy land or set up permanent structures within their wilderness boundaries. However, many do have permanent ranger cabins or fire lookouts positioned within them – Mount Rainier National Park, for example, even has Camp Sherman and Camp Muir at roughly 10,000 ft up the mountain. Some Parks and Forests have grandfathered in some private cabins and structures created before the Wilderness Act was passed and even allow the families that own them to continue to use those places. Other federally designated wildernesses permit ranchers to graze cattle within their boundaries – this is the case for some wildernesses in the Sierra National Forest for example. The Grand Canyon is another unique case of

wilderness. It has an autonomous Native American community living within its boundaries – the Havasupai.

There is another way we might interpret the clause about man being a visitor who "does not remain". Consider that many wildernesses seem to have an almost constant human presence – think of places along the popular Pacific Crest Trail, or the South rim of the Grand Canyon. Although one person in particular might not be in some exact spot at all times, there might be different people in that spot or going through that same spot at all times. That campsite might be booked every night, even if you are not using it every night. Someone who sits on the side of the Pacific Crest Trail at the height of the busy season might see a visitor walk by every few minutes or so, whereas a hiker walking the trail might not notice nearly as many people. There's something to consider here, as this sort of presence, this foot traffic, has a big impact on the land and wildlife.

Now let's consider the clause reading "an area where the earth and its community of life are untrammeled by man". 'Untrammeled' means roughly unhindered and free from the intentional control and intervention humans. This part of the Wilderness Act is also imprecise and has been interpreted in many ways. Most Parks and Forests have at minimum a fenced or patrolled boundary – this is in effect a form of "controlling" of the wilderness. All also have laws and consequences behind those laws. Other Parks and Forests are more controlled. Many have rangers regularly monitoring and intervening on animal and plant populations, maintaining water sources, performing patrolled burns, and more. In many ways, the wildernesses of the US are quite trammeled – though, arguably not nearly as trammeled as their non-federally designated counterparts.

So much for the first part of the definition provided by the Wilderness Act. Let's take look now at the second part:

> An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Each of the conditions presented in the second part of the definition are rather vague and open for interpretation, and each has gained its fair share of controversy. The first part discussing "primeval character", "permanent improvements", and "human habitation", along with Condition (1), brings us back to the issue of "pristine" wilderness that we encountered earlier. Many wildernesses, and many places in the US that have been federally designated as wilderness, have not completely and without any blemishes maintained their "primeval character", or, to borrow an expression from the last section, their "natural state".[14] Many have had indigenous or other communities living in or using them. They've historically been "trammeled" or influenced to some extent. And yet, it seems that these places can still count as wilderness.

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[14] See Turner (2012) and Woods (1998) for good overviews of the debate surrounding strict interpretations of the Wilderness Act. See Friskics (2008) for more on the "pristine" issue.

Condition (2) of the definition is also tricky. First, what counts as having "outstanding opportunities"? For example, it's not clear what it means for a wild place to have "outstanding" as opposed to merely "ordinary" opportunities, or how many opportunities a place should have. It's also not clear whether an opportunity must be available *in principle* or *in practice*. Presumably it is in principle. As I said in the last section, in principle, many Parks have opportunities for stock use but in practice have outlawed it. Then there is the notion of "solitude". Although, solitude is often associated with wilderness, even something people stereotypically go into wilderness to seek, it is not always something one can find there. As we saw, apparently the John Muir Wilderness still counts as wilderness even though the PCT runs through it, greatly diminishing solitude opportunities. In fact, nowadays many wildernesses are probably such that you have non-trivial odds of running into or finding evidence of another person there.

Condition (2) also mentions "primitive and unconfined recreation". Like other parts of the law, the limits of this clause too have been largely left under-specified. However, one major clarification of the condition found in Section 4, Part C is the prohibition on the use of "motorized" or "mechanical" equipment in wilderness areas, especially for the purpose of "transport". This part of the law has been interpreted and applied in different ways. Most Parks and Forests seem to agree on restrictions that should be in place regarding the use of motorized and mechanized equipment by the *public* – no drones, no mountain bikes, no motorbikes, etc. – however, there is significant disagreement regarding how the policy should be applied to Forest and Park *employees* engaged in agency operations. Mount Rainier National Park's administration, for example, interprets the law such that they allow the Park's helicopter to touch the ground within the Park on a regular basis. Other Parks and

Forests require that helicopters only ever get as close as hovering so many feet above the ground while never actually touching it. Agencies will often point to the so-called "minimum requirements" clause of Part C of the Act, which permits exceptions "as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area)". The problem is that different administrations interpret the "minimum requirements" clause differently, leading to another layer of uncertainty.[15]

Despite much agreement on the public side, there are cases of public use that push the law's limits. Consider mountaineering and traditional climbing. They're usually considered major forms of "primitive" outdoor recreation, and they're often permitted within federal wilderness areas. We could even assess a candidate wilderness area for its outstanding mountaineering or traditional climbing opportunities. And yet, during mountaineering and traditional climbing, it's extremely common for climbers to use not just rope but various sophisticated tools such as belaying devices, ascenders, and anchoring systems. Plenty of these tools nowadays have mechanical parts to them and these tools are being used, arguably, for the purpose of transport – albeit mostly up and down. The updated *Forest Service Manual* clarifies that mechanical transport includes "Any contrivance for moving people or material in or over land, water, or air, having moving parts, that provides a mechanical advantage to the user, and that is powered by a living or nonliving power source." (2021, FSM 2300, Ch

[15] The "minimum requirements" clause has also been used by various Parks and other agencies to justify the use of chainsaws. Chainsaws are plausibly otherwise banned by the Wilderness Act, given that they can be considered "motorized".

2320.5, p. 10). Given this clarification, why the mechanical devices used in climbing and mountaineering should be allowed isn't obvious.[16]

Condition (3) of the Wilderness Act suggests that 5,000 acres is the appropriate minimum size requirement for wilderness. And yet, it has an additional clause – "or is of sufficient size as to..." – that effectively loosens the minimal requirement. Because of the additional clause, this condition has naturally been more of a guide than a restriction. To some extent this makes sense. Plenty of wild places, such as the Garden of the Gods Wilderness in the Shawnee National Forest of Illinois, are less than 5,000 acres. If we stuck to the 5,000-acre minimum, many small island wildernesses wouldn't count either.

Condition (4) suggests that a wilderness area should have features of "scientific, educational, scenic, or historical value". This part of the law is peculiar because it appears that just about any part of Earth might be construed as having some scientific, educational, scenic, or historic value. It's not clear how the condition is really that limiting. The condition is also potentially problematic due to its apparent human-centric nature. That is, the laws seems to be written such that we are supposed to see whether a piece of land under consideration has features of scientific, educational, scenic, or historical value for *us.* We're not necessarily supposed to consider whether it might have any sort of value for someone else, some other species.[17]

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[16] Both climbing gear and mountain bikes, for example, can accidentally leave behind "unnatural" parts likes gears and bolts, both can make "unnatural" noises, and both can visually distract from the natural beauty. Recently, the NPS drafted a memo banning the use of "fixed anchors" in climbing conducted in wilderness areas, arguing that anchors left behind in the rock fit the definition of a prohibited "installation" per Section 4, Part C.

[17] See Foreman (1998) for more on this subject.

I'll finish this section by discussing one more general problem for the Wilderness Act. We can see the human-centric nature of the Wilderness Act from another angle. The language of the Wilderness Act focuses on *human* structures, *human* presence, and *human* intervention. Suppose scientists find intelligent life on another planet and they find that this species lives in cities and towns similar to our own. It seems odd to say that some part of that alien planet containing a medium-sized alien city comparable to, say, Pittsburgh, Pennsylvania would count as a wilderness simply because there are no permanent *human* settlements there, no *human* influence, and no *human* presence. And yet, if we were to find a settlement constructed by non-human intelligence here on Earth, the Wilderness Act would presumably categorize that area a wilderness too so long as no human influence was found. Intuitively, that just seems like the wrong move. Of course, it's doubtful that we'll ever find any such settlement here on Earth, especially on US soil. But the language of the Wilderness Act does seem to ignore the possibility that wilderness status might depend on more than just *human* presence, intervention, or settlement. If our goal is to develop a more all-encompassing concept of wilderness, one that covers all possible situations and can be extended even to the stars, then it seems that perhaps the definition found in the Wilderness Act might not be our best hope.

A Spectrum Model of Wilderness

So far, we've looked at three conceptions of wilderness. Each account highlighted some stereotypical features of wilderness and in a way provided some insight into how, for lack of better words, a *paradigm* or *ideal* case of wilderness might look. Ideal or paradigm cases of wilderness seem to be, among other things, devoid of any human presence or

influence, to be large in size, and to enjoy the preservation of their native plant and wildlife. Many places we've historically felt comfortable calling wilderness, however, have not lived up to such high standards. Many wildernesses have been, for lack of better terminology, "less ideal" or "borderline" cases of wilderness, and yet despite their imperfections we've still felt fine calling them wilderness to some degree.[18] We've also seen that despite the good of the various definitions of wilderness considered in this article, each has had their fair share of problems. And what's more, none of the definitions seems up to the task of handling new cases of wilderness such as space.

Naturally, this raises a question. What should we do with the concept of wilderness? Should we abandon it as nonsense and outdated? Should we become wilderness *skeptics* and doubt the existence of wilderness – maybe even go so far as become wilderness *eliminativists* and erase the word from our vocabulary? My way of handling this issue is not to become a wilderness skeptic or a wilderness eliminativist but rather to accept that there probably isn't a single correct meaning of the word 'wilderness' that we should all be trying to discover or get a hold on. There is no "transcendental", so to speak, sense of wilderness out there for anybody to get right. The word 'wilderness' is a hand-me-down, and its meaning has shifted and changed over time. It has varied in the details of its use from community to community and from person to person. Instead of wasting our time searching for some will-o'-the-wisp in the form of "true" wilderness, I suggest that we take a sort of deflationary and pluralist approach. Anyone – the ranger, the scientist, the policymaker, the person on the street – can use any concept of wilderness they like as long as they are clear about

[18] See Godfrey-Smith (2009) and (2013) respectively for a similar handling of the concepts of evolution and signaling.

which one they're using. Of course, some conceptions or definitions of wilderness will turn out to be more useful than others, especially for certain practical purposes such as conservation and wildlife management; some concepts will also turn out to be less harmful in various respects – to indigenous peoples and other groups; and some concepts will accord better with our intuitions. We should use more useful, less harmful, and more intuitive concepts where we can. But that some conception of wilderness has any of these properties – is more useful, less harmful, more intuitive – should not be taken as a sign that that conception is the "right" conception of wilderness in some strong sense – that is, that it accurately depicts the deep metaphysical reality of that aspect of nature. When it comes to wilderness, there just isn't anything like that be found.[19]

I'd like now to sketch out what I'll call a *spectrum* model of wilderness. In some ways this is not a new way of understanding wilderness. Nash (1968, 1981) has suggested that wilderness might be best thought of as coming in degrees.[20] Other authors have defended similar perspectives (Lesslie & Taylor, 1985). Here's my twist on the idea.

We can think of wilderness as coming on a series of *sliding scales* or as coming in various *degrees*. There are *paradigm* cases of wilderness like we mentioned earlier – which, given the history of mass human influence on Earth, arguably don't exist on our planet anymore. Then there are cases of wilderness that are a bit "away" from the paradigm yet still intuitively count as wilderness to some degree – places like Yosemite and Death Valley. Finally, there are cases that are so far from the paradigm of wilderness that

[19] This sort of deflationary pragmatic approach is inspired by Carnap (1950). See Simpson (2021) and Cao (2022) for the application of a similar approach to the issues of communication and representation.

[20] See in particular Nash (1968), pages 6 and 384-386.

they seem to be clearly something else entirely – things like heavily populated cities. Here's one way we might try to illustrate the idea of a spectrum model of wilderness.

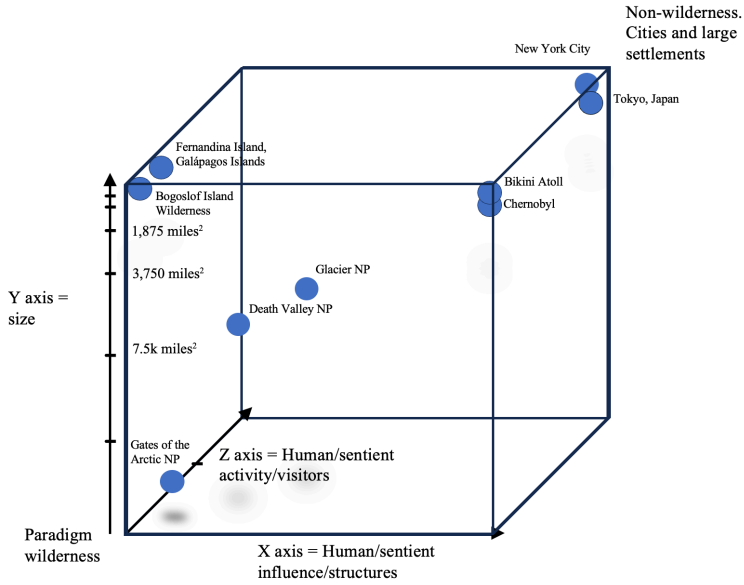

Figure 1. A 3-axis representation of wilderness character.[21]

On this rendering, the Y-axis serves as a rough measure of the *size* of the area under consideration – the smaller the area, the further away from paradigm wilderness and the farther from the intersection of the X, Y, and Z axes.[22] The X-axis is a sliding scale representing influence on the environment in a broad sense – permanent structures, exterminated native species, etc. In effect, the X-axis is a measure of the *pristineness* of a wilderness. The Z-axis is a

[21] This model is based on a model appearing in Godfrey-Smith (2009), page 64.

[22] The maximum size allowed could, of course, be extended – for example, if we want to include whole moons or planets in the model.

sliding scale measuring the amount of human or sentient activity (things like noise, satellites in the sky, foot traffic). In a way, we might consider this a measure of *solitude*. What we get is that the closer a case of wilderness is to the paradigm, the closer it appears on the diagram to the intersection of the X, Y, and Z axes.

Of course, there are other aspects of wilderness we might want to add to a spectrum model. People often say that wilderness has a certain *feel* to it – a feel of danger or fear. In paradigm cases of wilderness, you're also usually far from help and far from means of communication with the outside world. We can add characteristics such as these easily to a spectrum model. For example, we can add a W-axis representing ease of access to cell, radio, or other service. Here's one way we might represent wilderness with the W-axis added.

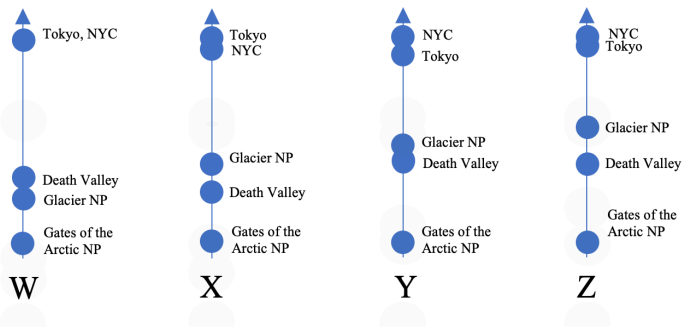

Figure 2. A set of spectrum bars representing a measurement of wilderness character.

A spectrum account of wilderness might be helpful in several respects. A model like this can be useful for tracking changes in the character of a wilderness over time or for comparing one wilderness to another. In fact, the US Forest Service already regularly tracks wilderness character like this to some extent. A spectrum model might also be preferable

for certain aspects of conservation policy. Policy based on a spectrum model of wilderness might allow for the classification of more wild areas as wilderness, and so in effect bring about the protection of more wild places. Grades of wilderness could be introduced rather than relying on one single wilderness category, making room for more nuanced management of various shades of nature.[23] A spectrum model is also attractive for big-picture reasons. It reminds us that wilderness isn't something that has a clear boundary. We can't just care about wilderness and not care about the "other stuff". The other stuff, and what happens there, is still connected to and still affects the more paradigm cases. And, what's more, that other stuff is really only "other stuff" to a degree.

Wilderness comes in many forms and many sizes. It exists on many spectrums and in many shades of grey. To think that there is one unique capture-all definition or account of wilderness, one fits-all measure, seems overly optimistic. Whether some place counts as wilderness is not a simple black-and-white matter. Sometimes the answer to the question of whether some place is a wilderness will seem obvious. Other times, the best we might be able to say is "Well, it is wilderness to some degree". Either way, our answer to the "Is it wilderness?" question will always ultimately rest on the concept or model of wilderness that we're using when we answer that question. And which concept or model of wilderness we use is ultimately a up to us.

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[23] Nash (1981) makes a similar proposal, suggests that we break wildernesses into various "levels" distinguished by features such as degree of wildness, difficulty level, and recreational opportunities.

References

Azevedo-Santos, V. M. et al. (2019). Plastic ingestion by fish: A global assessment. *Environmental pollution* (Barking, Essex: 1987), 255 (Pt 1), 112994. https://doi.org/10.1016/j.envpol.2019.112994

Callicott, J. (2008). Contemporary criticisms of the received wilderness idea. In P. Nelson & J. Callicott (Eds.), *The wilderness debate rages on: Continuing the great new wilderness debate* (pp. 355–377). The University of Georgia Press.

Cao, R. (2022). Putting representations to use. *Synthese*, 200(2), 151.

Carnap, R. (1950). Empiricism, semantics, and ontology. Revue internationale de philosophie, 20-40. Chicago

Chiba, S., et al. (2018). Human footprint in the abyss: 30 year records of deep-sea plastic debris. *Marine Policy*, 96, 204-212.

Collard, F., & Ask, A. (2021). Plastic ingestion by Arctic fauna: a review. *Science of the Total Environment*, 786, 147462.

Cronon, W. (1983). *Changes in the Land: Indians, Colonists, and the Ecology of New England*. New York: Hill & Wang.

Cronon, W. (1996). The Trouble with Wilderness: Or, Getting Back to the Wrong Nature. *Environmental History*, *1*(1), 7-28.

Foreman, D. (1998). Wilderness: from scenery to nature. Pages 568- 584 in Callicott and Nelson, editors. *The great new wilderness debate*. University of Georgia Press, Athens.

Friskics, S. (2008). The Twofold Myth of Pristine Wilderness: Misreading the Wilderness Act in Terms of Purity. *Environmental Ethics* 30: 381-99.

Godfrey-Smith, P. (2009). *Darwinian populations and natural selection*. United Kingdom: OUP Oxford.

Godfrey-Smith, P. (2013). Signals, icons, and beliefs. *Millikan and her critics*, 41-62.

Henderson, D. (2014) American Wilderness Philosophy. In J. Fieser & B. Dowden (Eds.), *Internet Encyclopedia of Philosophy.* https://iep.utm.edu/am-wild/.

Johnson, A. (2020). Extending the Concept of Wilderness Beyond Planet Earth. *Ethics and the Environment*, *25*(1), 69-83.

Leopold, A. (1921) The Wilderness and Its Place in Forest Recreation Policy, *Journal of Forestry*, *19*(7): 718-721.

Leopold, A. (1949). *A Sand County Almanac, and Sketches here and there*. New York: Oxford University Press.

Lesslie, R. G., & Taylor, S. G. (1985). The wilderness continuum concept and its implications for Australian wilderness preservation policy. *Biological Conservation*, 32(4), 309-333.

Lynch, T. P. (2007). A historically significant shield for in vivo measurements. *Health physics*, 93(2 Suppl), S119–S123. https://doi.org/10.1097/01.HP.0000259867.85459.b2

Napper, I. E. et al. (2020). Reaching new heights in plastic pollution—preliminary findings of microplastics on Mount Everest. *One Earth*, 3(5), 621-630.

Nash, R. (1967). *Wilderness and the American Mind*. New Haven: Yale University Press.

_____. (1981). Protecting the wilderness from its friends. *Backpacker*. (Feb./March, 1981): 15-16.

Plumwood, V. (1998). Wilderness Skepticism and Wilderness Dualism [in:] J. Baird Callicott and Michael Nelson,(eds.) *The Great New Wilderness Debate*, Athens.

Ragusa, A. et al. (2021). Plasticenta: First evidence of microplastics in human placenta. *Environment international*, 146, 106274.

Simpson, S. (2021). *Essays on Communication*. [Doctoral Dissertation, CUNY Graduate Center]. CUNY Academic Works. https://academicworks.cuny.edu/gc_etds/4469/

Standing Bear (1933). *Land of the Spotted Eagle*. Boston: Houghton Mifflin Company.

Vest, J. H. C. (1985). Will of the Land: Wilderness Among Primal Indo-Europeans. *Environmental History Review*, *9*(4), 323-32.

The Wilderness Act of 1964, Public Law 88-577 (16 U.S.C. §1131-1136) 88th Congress, Second Session September 3, 1964.

Tanabe Jr, G. J. (2015). Myoe's Letter to the Island. *Buddhism in Practice*: Abridged Edition, 29, 88.

Turner, J. (1996) *The Abstract Wild*. Tucson: University of Arizona Press.

US Forest Service Manual. 2000. FSM 5100, Chap. 5140, R3 Supplement No. 5100- 2000–2. Available online at www.fs.fed.us/ im/directives/dughtml/fsm.html; last accessed Apr. 1, 2009.

Diálogos 114, 2024, pp. 117-145.

Species' Wellbeing, Counterfactual Comparative Harm, and the Non-Identity Problem

J. Spencer Atkins
Binghmanton University
jatkins4@binghamton.edu

Abstract

The non-identity problem raises problems for many versions of the counterfactual comparative account of harm. If an individual's existence depends on climate change, then we cannot say that climate change makes this individual worse off than they would be otherwise, since otherwise they would not exist. However, I argue that consideration for species' wellbeing avoids the non-identity problem: the species can be worse off than it would have been otherwise because the species existence does not depend on climate change. I first examine several views of counterfactual comparative harm and argue that they are subject to the non-identity problem. Then I survey a number of views of species, showing that they are consistent with my argument. I, then, offer a novel account species' wellbeing and species' harm. Species harm and wellbeing is the aggregate projected aggregate welfare of all the individual members over time. I then argue that this account of species' wellbeing avoids the non-identity problem. In the last section, I answer objections.

Keywords

Non-Identity Problem; Counterfactual Comparative Account of Harm; Species' Wellbeing; Biotic Welfare; Species

Resumen

El problema de la no identidad plantea problemas a muchas versiones del análisis comparativo contrafáctico del daño. Si la existencia de un individuo depende del cambio climático, entonces no podemos decir que el cambio climático hace que este individuo esté peor de lo que estaría en caso contrario, ya que de lo contrario no existiría. Sin embargo, en este artículo sostengo que la consideración del bienestar de las especies evita el problema de la no identidad: las especies pueden estar peor de lo que estarían si no existieran porque su existencia no depende del cambio climático. En primer lugar, examino una serie de visiones del daño comparativo contrafactual y argumento que están sujetas al problema de la no identidad. A continuación, examino una serie de puntos de vista sobre las especies, mostrando que son coherentes con mi argumento. A continuación, ofrezco una nueva explicación del bienestar y el daño de las especies. El bienestar y el daño de las especies es el bienestar agregado proyectado de todos los miembros individuales a lo largo del tiempo. A continuación, argumento que esta explicación del bienestar de las especies evita el problema de la no identidad. En la última sección, respondo a las objeciones.

Palabras clave

Problema de la no identidad; Reporte comparativo contrafáctico del daño; Bienestar de las especies; Bienestar biótico; Especies

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Introduction

Duncan Purves and Benjamin Hale (2016) argue that nonhuman organisms are subject to the non-identity problem. The non-identity problem proposes that many nonhuman organisms' existence is dependent upon climate change, a source of harm. Thus, they cannot really said to have been harmed, since their existence is contingent the allegedly harmful phenomena. Their argument threatens many versions of the counterfactual comparative view of harm (hereafter, counterfactual comparative).[1] The counterfactual comparative account states, broadly, that S is harmed if and only if S is made worse off than S would have been otherwise, e.g., without the harmful event. I argue that consideration for species harm avoids the non-identity problem. The existence of a species is not contingent upon the policies that, for example, caused climate change. A species might exist without being dependent upon climate changing policies, even if some members of the species are. Even if we cannot say climate change harms individual members of a species, we could say that the species overall is harmed. A single species, regardless of which individual members exist, might fare better or fare worse. We can, therefore, use the counterfactual comparative view to assess species harm ensuing from climate change. The species is not subject to the non-identity problem.

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[1] By no means are they the only ones who argue against the counterfactual comparative account of harm. McMahan (2013) argues that the counterfactual comparative account cannot be a full account of a harm because it lacks explanation for non-comparative or intrinsic harms. Bradley (2012) argues that the counterfactual comparative account cannot make sense of omissions and failures to benefit. These objections, though interesting, are not the focus of this paper; I will focus exclusively on Purves and Hale's argument for Non-Identity for Nonhumans.

In the second section, I lay out Purves and Hale's argument against counterfactual comparative and briefly explain the non-identity problem. I then offer several versions of counterfactual comparative, showing that each of them is subject to Purves and Hale's argument. The third section explains the difficulty in defining *species*. After offering several views about the nature of species, I argue that each of them is consistent with my way around the non-identity problem. Next, I argue that species' wellbeing, i.e., species harm and benefit, is best understood as aggregate welfare of the individual members of the species plus the projection of wellbeing in the near to medium future. This plausible view of species' wellbeing, I argue in section five, gives us the tools to avoid non-identity for nonhumans. Purves and Hale's threat to counterfactual comparative fails. In section six, I address objections to my argument: (1) my argument cannot make sense of species who exist in virtue of climate change—the non-identity problem is still a problem—and (2) there is another version of counterfactual comparative that sidesteps the non-identity problem, so my argument is not necessary. I then conclude in section seven.

Purves and Hale and the Counterfactual Comparative Threat of Non-Identity

Many philosophers have argued that the counterfactual comparative account of harm is likely the most plausible view of harm available.[2] Duncan Purves and Benjamin Hale, however, challenge this conviction for nonhuman animals. In "Non-Identity for Non-Humans," they construe Derek Parfit's (1984) non-identity problem for nonhuman animals. The non-identity problem points out

[2] Among these philosophers are Hanna (2016), Fiet (2015), Bradley (2012), and Feldman (1991).

that I exist due to certain events leading up to my parents meeting; had these not happened, I may not have existed. The same applies to nonhumans too. For example, some birds have had to adjust or change migration patterns due to the effects of climate change.[3] These birds would presumably procreate with different mates than they would have otherwise, and consequently, this would lead to a different population of individual birds than would have existed had the climate not been changing.

The collection of individuals in the above example only exist *because of* climate change: this is non-identity for nonhumans. Purves and Hale attempt to show that non-identity for nonhumans threatens what they call "patient-affecting principles." According to such principles, an act is wrong only if it either harms some moral patient or wrongs some moral patient. But what is harm? Purves and Hale think that patient-affecting principles assume a *counterfactual comparative view of harm*. Proponents of this view think that making an individual or moral patient worse off than they otherwise would have been is harm. For example, suppose my enemy, Jacob, pushes me off of my front porch, breaking my leg. Jacob has decreased my wellbeing. I'm worse off with a broken leg than I am with a good one. Counterfactual comparative indicates that Jacob has harmed me because, had I not been pushed off the porch, I would not have broken my leg. This view compares a possible scenario with the actual scenario and determine in which scenario I am better off.

Let's clarify counterfactual comparative before proceeding. Consider a slightly modified construal of counterfactual comparative from Erik Carlson:

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[3] For more information on this topic see Seebacher and Post (2015) "Climate change impacts on animal migration"

> Carlson's *Counterfactual Comparative Account of Harm*: An event e or an action a harms [moral patient] S overall if and only if S would have been on balance better off if e had not occurred, or a had not been performed. (Carlson 2018: 2)

For the purposes of this paper, I have tweaked Carlson's rendition of the principle to include *moral patients* rather than *persons*. This modification makes counterfactual comparative applicable to persons and as well as morally concern-worthy non-persons, which are the focus of this paper. Notice further this rendition's focus on *overall* harm. This principle assesses all of the consequences of actions and events and then determines if the individual is overall harmed. Of course, if by saving your life, I accidently break your leg then I think I have harmed you, but not in an overall sense. Consider another version of counterfactual comparative Carlson entertains:

> *Maximizing Account*: An action a harms a [moral patient] S if and only if there is an alternative action, a`, open to the agent in the situation, such that S would have been better off if the agent had done a`. An action benefits S if and only if there is no such alternative action a` (Carlson 2018: 6)

The maximizing account identifies optimizing possible actions. It is important to note, moreover, that counterfactual comparative is often construed in terms of nearby possible worlds. Justin Klocksiem's version of counterfactual comparative appreciates this relevant difference:

> Klocksiem's *Counterfactual Comparative Account of Harm*: a possible event, e (or action, a), would harm [moral patient] S if and only if S is worse off in the nearest relevant possible world in which e occurs (or a

> is performed), W_e (W_a), than she is in the possible world nearest W_e (W_a) in which e does not occur (or a is not performed). (Klocksiem 2012)

All of these versions of counterfactual comparative are problematic, however. For one, they fail to distinguish harms from failures to benefit. Consider a case:

> Suppose that Batman purchases golf clubs with the intention of giving them to Robin, but the Joker persuades him to keep them for himself. Had Batman not kept the clubs he would have given them to Robin (Bradley 2012: 397).

It is clear that Robin is better off with the clubs than without the clubs. According to these accounts of counterfactual comparative, Batman has harmed Robin by not making him better off than he would have been otherwise. Batman appears to be well within his rights to keep the clubs in this case. These versions of counterfactual comparative give us a counterintuitive ruling, a reason to think it misclassifies cases like this. Nathan Hanna (2015) argues that this ruling is not a misclassification at all. Rather, he thinks counterfactual comparative gets cases of failed benefit right. Duncan Purves (2019) disagrees with Hanna. He thinks there is version of counterfactual comparative that distinguishes *allowing* and *making*. With this distinction in mind, he gives us the following counterfactual comparative version of harm:

> *Harming as Making*: An event e is a harm for [moral patient] S if and only if (1) e makes S occupy S's wellbeing level in the e-world and (2) S's wellbeing level is higher in the nearest world in which e does not occur. An event e is a failure to benefit S if and only if (3) e does not make S occupy S's wellbeing level in the e-world, and (4) S's wellbeing level is higher in the

> nearest possible world in which e does not occur. (Purves 2019: 2643-2644)

While this version of counterfactual comparative avoids categorizing failure to benefit as a harm, all of these versions of counterfactual comparative are subject to the non-identity problem. My point here is that the non-identity problem threatens any of these plausible versions of counterfactual comparative. We, therefore, need a response to the non-identity problem.

To return to our discussion, what about the animals who exist because of climate change? Purves and Hale write that if climate change diminishes these animals' welfare, climate change has not harmed them. This claim is puzzling. Why should we think that animals are not worse off? Purves and Hale argue that counterfactual comparative is silent in this case, since we won't find the animals who are worse off in the possible scenarios where the source of "harm" is absent. In possible worlds where the climate is not changing, we see that these animals do not exist there because, as I said above, their existence is contingent upon the changing migration patterns *due to climate change*. Note here that this is only a problem if these animals have lives worth living. If they did not have lives worth living, then it actually would be better that they not exist because their biotic welfare would be zero rather than something negative. So, assuming that these animals have lives worth living, we cannot argue that these animals have been made worse off than they would have been otherwise because otherwise they wouldn't have existed. This, according to Purves and Hale, is a problem for a number of versions of counterfactual comparative.

It is important to notice that patient-affecting principles need not assume counterfactual comparative, so Purves and Hale's argument fails to defeat these principles. For example, as Purves and Hale note, these principles

might assume a "non-comparative" view of harm. Alternatively, if one maintains Nolt's (2018) view of harm, i.e., an individual I is harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred, we see that many single negative consequences of an action constitutes a harm, such as death, injury, or illness. I will address this account later. My present point is that Purves and Hale's argument, though it fails to defeat patient-affecting principles, successfully challenges counterfactual comparative. I'll focus on Purves and Hale's threat to counterfactual comparative. But before responding to Purves and Hale, we need to get clearer on the concept *species*.

What is a Species?

Species is an ambiguous concept; the definition of *species* is, therefore, controversial among biologists and philosophers of biology. For example, Phillip Kitcher (1984) and Ernest Mayr (1982) distinguish between morphological conceptions of species from genetic conceptions of species. Morphological conceptions of species categorize members into a species based on anatomical features; genetic conceptions, evolutionary lineages and genetic makeup. Ernest argues that while morphology is an indicator of species distinctness, it is not sufficient for distinctness. He writes, "In spite of the variability caused by the genetic uniqueness of every individual, there is a species-specific unity to the... (DNA) of nearly every species" (297). By implication, if we artificially create an orangutan in lab, it may be a member of Bornean orangutan according to morphological accounts but not categorize as a member of B. orangutan on genetic views. This is because this particular orangutan was not part of the same genetic lineage but has the same anatomical features as the rest of the

members of B. orangutan. In short, *species* is controversial. My argument is not limited to any one of these conceptions of species; one might think any number of these views are plausible but still find my argument convincing. I will briefly outline a number of views of the definition of species and argue that each one is consistent with my argument.

First, pre-Darwinian, essentialist accounts of species viewed species as natural kinds with unalterable features. Such accounts fail to recognize the various sorts of evolutionary alterations species can go through.

Hull (1978) offers an alternative account of species, in which species are individuals and not classes. Species, according to Hull, are the units of evolution because generations of species are the entities of various hereditary and selection relations. Species are continuous and have spaciotemporal relations. Because classes are not spatiotemporally located, Hull concludes that species are individuals, as opposed to classes. For Hull, the relationship between species and its members is a part whole relation. Ghiselin (1974) warns that "individual" is not synonymous to "biological organism" (573). He thinks there are four features of species as individuals: (1) The species name is a proper name; (2) They do not have defining properties (intensions); (3) There cannot be instances of them; (4) Individual organisms are parts of a species, not members. I think this view is consistent with wellbeing aggregation because the parts of a whole can fare poorly or well. My leg, for example, may not be functional, while my other parts are. At least in principle, we might think welfare aggregation is consistent with this view. I address one version of this view from Holmes Rolston who argues against welfare aggregation.

Kitcher (1984) argues that while some species can be understood as individuals, this is not the case with all species. Biologists use the term *species* in two distinct ways.

First, following Hull, Kitcher suggests that biologists think of species as individuals, which we have seen is consistent with welfare aggregation. Second, biologists sometimes conceive of species as a set of organisms. Kitcher thinks that both senses of *species* are plausible. Both conceptions, I think, are consistent with aggregating welfare. The various members of a set might be doing well. For example, each Koi fish might be doing well in my pond; we then might reasonably say that set of Koi fish is faring well.

Richard Boyd (1999) offers an intuitive account of species that defines a "natural kind" as a "homeostatic property cluster." According to this view, an individual is a member of a species in virtue of having *many* of the same characteristic as the other members of the species, rather than all of the same characteristics. He thinks that, so long as an individual member of a species has the relevant number of characteristics that the other members have, then the individual can be correctly characterized as a member of that species. This view has problems: first, it is unclear how many characteristics are sufficient for membership in a species; second, if two distinct species share nearly all characteristics in common, then it seems that they should be the same species. There might be other relevant criteria for distinguishing species other than characteristics. In any case, this view is consistent with aggregate welfare because we can look at all of the members of a species and determine how each is faring and then determine is the whole species is faring well.

There are wide range of views available in the literature. It strongly seems to me that each of these views is consistent with present and future welfare aggregation, my view of species wellbeing. I do not think I need to take a stance here on which of these views is the correct one; we should let a thousand flowers bloom.

Species' Harm, Species' Benefit, and Species' Wellbeing

I argue that the wellbeing of a species is the aggregate wellbeing of the present members of the species plus the projection of wellbeing in the near to medium-term future. An endangered species is a species at risk of extinction. They are faring poorly presently such that we can reasonably expect it to fare poorly in the near to medium-term future. But what is faring poorly or faring well? I want to focus on the aggregate *biotic* welfare of the species as opposed to aggregate *experiential* welfare. Biotic welfare is a controversial concept among environmental ethicists.[4] For the sake of argument, I will not assert any one of these conceptions as the right view of biotic welfare. So long as the view of biotic welfare is aggregable, it will fit with what I am arguing here, and as far as I can tell, any of the mentioned conceptions is consistent with welfare aggregation.

Why merely track biotic welfare of a species, as opposed to just experiential welfare or experiential welfare and biotic welfare? John Nolt (Forthcoming) writes that both dimensions of welfare influence species wellbeing: "Given measures of the biotic and (where relevant) hedonic welfare of individuals, it would be possible to determine an average individual welfare for a species" (7). I disagree.

I have two reasons for thinking we should focus exclusively on biotic welfare. First, tracking just biotic welfare allows us to track species welfare for both sentient and non-sentient organisms. By using just biotic welfare to track species wellbeing, we can track both animals and

[4] Rolston (1998) argues that biotic welfare is the achievement of normative goals as determined by genetic set, while Nolt (2009) argues that biotic welfare is autopoietic functioning. Nicholas Agar (2001), moreover, thinks biotic welfare is the satisfaction of biotic preferences.

plants. Second, how are we to know what the experiential welfare of an entire species is? I don't think we ever could know that, unless we had a species with only a few members. This concern is augmented when we think about future experiential welfare. How could we ever predict the experiential welfare for future generations? Perhaps we could try, but I do not think we would be very accurate. I am also not sure how prevalent experiential welfare is for species welfare. I suppose that there might be a species that could not reproduce because its members are in a perpetual state of experiential pain but that does not seem plausible. But perhaps we could track experiential value insofar as experiential welfare correlates with biotic welfare: high biotic welfare may track medium to high experiential welfare and low biotic welfare may correlate to low experiential welfare, where we are considering a species with experiential wellbeing. Still, biotic welfare and experiential welfare often come apart. For the sake of simplicity, I merely consider present and projected *biotic* welfare.

Perhaps some may object to this move. Consider that we periodically make claims about the experiential welfare of groups of people, e.g., *Millennials, for the most part, are doing well*. This is a claim, an objector might argue, about the *experiential* welfare of the members of this generation. If this is right, we might think that both biotic welfare and experiential welfare are required for an account of species' wellbeing. The account laid out here, even in light of this consideration, will consider only biotic wellbeing. This is because there are relevant differences between members of a non-human species and members of a generation, e.g., the ability to testify about their welfare, etc.

Species' wellbeing and individual wellbeing are distinct. Something that makes the species worse off does not necessarily make the individual worse off. For example,

consider a species with low population numbers and little genetic diversity. The members of this species could conceivably fare well in the present, but this present wellbeing does not imply that the species fares well. If we project what the species might look like in the coming generations, it strongly seems that welfare would be lower for this species.

A species might benefit from an individual's suffering. Suppose wolves kill and eat a sick and aging caribou. Even though that particular caribou's wellbeing is diminished, its death might benefit the species because its weaker genes do not continue in the gene pool, making for a more advantageous future generation.[5] This case suggests that the species can benefit in virtue of an individual's harm. But, is this consistent with thinking that species' wellbeing is the aggregated welfare of individuals? I believe so. The individual caribou's suffering lowers the present aggregate welfare of the species, but it (potentially) raises the aggregate welfare of the species in the long term by raising genetic fitness. When we project what the species' population might look like without that individual's genes, we find a slightly stronger, slightly better off species in the future. That projected future good, I think, outweighs the present suffering of the individual. So it's reasonable to think that the species is better off without that individual, even if that individual lowers aggregate welfare in the present.

If a species can benefit in virtue of individual harm, it also seems that the species can be made worse off by individual benefit. Consider overpopulation. Overpopulation might raise the aggregate good for present members of a species, especially if there are enough resources to go around for the present population. Overpopulation,

[5] This example comes from Nolt (forthcoming) and Rolston (1988).

however, is not a good for the species because it reduces resources for future generations. So overpopulation might be bad for the species but good for the individual and even present aggregate welfare.

These cases show that species' wellbeing and individual wellbeing can come apart although they needn't. We might say that the suffering of an individual is bad for the individual and the species, especially if the species has very few members and if the individual has advantageous genes. We can, therefore, conceive of species' wellbeing as aggregate wellbeing over time. Even if the aggregate welfare of the species is worse off when the caribou is eaten, the species is better off in the long term because of the genetic benefits for future generations.

Holmes Rolston, III (1988, 2012) disagrees; he argues that species' wellbeing is not mere aggregate welfare. In Rolston's view, species are a kind of "super organism" (Nolt, forthcoming). Species do not exist as a class or category of individuals, rather a species is a "corporate individual" as well as a "discrete entit[y] in time as well as space" (Eldredge and Craft 1980: 92). Species as super-individuals can value things, such as "defending a particular form of life, pursuing a pathway through the world, resisting death (extinction), [and] regeneration maintaining a normative identity over time" (Rolston, 151). Rolston thinks that this conception of a species is not compatible with aggregate welfare. He writes:

> Duties to a species are not to a class or category, not to an aggregation or average of sentient interest, but to a life line. An ethic about species needs to see how the species *is* a bigger event than the individual interests or sentience. Making this clearer can support a conviction that the species ought to continue. (Rolston 1988: 147)

Even though Rolston's focus is on duties, he thinks aggregating species welfare is problematic. He thinks the wellbeing of a species is something over and above aggregate welfare of the present and future members. My argument depends on the notion that individual wellbeing contributes to the aggregate wellbeing of species; however, if Rolston is right, then aggregate welfare is not the way to assess species wellbeing. Species welfare must be something other than aggregate welfare.

Rolston's view has strengths; it makes sense of the above cases. We might think that the reason species good and individual good come apart is that species good is something over and above individual good. Perhaps a species as a living, historical lifeline has goods that are distinct from the good of its members. Similarly, what is bad for the species might be good for its members; think of the overpopulation example. Rolston's view makes a lot of sense of this asymmetry between species and individual goods. My view also makes sense of this asymmetry because present and future-term aggregate good can look different from individual good. For example, it is bad for the individual elk that it is eaten but benefits the projected aggregate good of future generations.

If we think that a species is an individual as Rolston does, then it is plausible that species have interests. According to this view, a species would presumably have an interest in all the things it can value, such as defending its form of life and pursuing a pathway through the world. Clare Palmer (2011) suggests that one (and perhaps the most) plausible species interest is not becoming extinct. She notes that such an interest is not always obvious though. Suppose that a species in order to continue existing, "all the individual organisms that would compose it, present and future, would have such extremely painful, distressing lives that, as

individuals, they would be better off dead, since their lives are not worth living" (Palmer, 277). As my account of species welfare does not include experiential welfare, we should read Palmer's concern a low biotic welfare. It is not clear that it would still be in the interest of a species to continue existing. Yet Rolston's account implies that the species as a "corporate individual" would still have such an interest because the individual has an interest in not becoming extinct over and above its members. This seems implausible in light of Palmer's concern. Aggregating welfare is the best way to get around Palmer's worry. If we can reasonably predict that the species will not fare well in the future, then it is possible to say that it no longer has an interest in continuing itself.

If we think about species harm as aggregate welfare of the present population plus future populations, we can make better sense of the non-identity problem's threat to counterfactual comparative harm relative to climate change. The existence of the *species* is not contingent upon the effects or causes of (anthropogenic) climate change because the emergence of many (perhaps all) present-day species preceded the policies that led to climate change. Thus, we can still talk about climate change's harm to a species in the counterfactual comparative sense. [6] The species as a whole might have been better without climate change. I lay out this argument in detail in the next section.

Species' Wellbeing and the Non-Identity Problem

In this section, I respond to Purves and Hale's argument that counterfactual comparative fails to make sense of nonhuman suffering. Recalling the non-identity

[6] Consideration for the *human* species might have some interesting implications for the anthropocentric non-identity problem. Since this issue is beyond the scope of this paper, I merely flag it for future work.

problem, we might think that particular polar bears, for example, might not exist if it were not for climate change.[7] As the climate changes, polar bears would meet different mates from those they would have otherwise. So, their existence could be contingent upon climate change. Suppose this is true and suppose that climate change diminishes welfare for these polar bears. According to the non-identity problem, we cannot argue that they were harmed in the counterfactual sense because they would not exist without climate change. If we were to think about what would happen "otherwise," we find most would not exist at all.

Most (or all) species that exist now would have existed even if climate change were not occurring. Even though individual members of a species might owe their existence to climate change or industrialism, the species itself does not. The species of polar bear is much older than climate change and the events leading up to climate change. Suppose now that, due to climate change, the aggregate wellbeing of the polar bear species goes down and the prospective wellbeing of future generations looks low; perhaps the polar bear species becomes endangered such that there are few members and the projection of their future wellbeing is low. Overall biotic welfare is low for these critters. In this case, it is reasonable to think that the species is harmed in the counterfactual sense (on any one of the views I have offered above). Why? We can reasonably talk about what the polar bear species might look like had climate change never happened because there is an *otherwise* to examine. In other

[7] This is the example from Purves and Hale, but I have modified it here slightly. They assert that different polar bears *have actually* come to exist than otherwise had the climate not been changing. This claim is not verifiable and, consequently, implausible. I, therefore, change their argument to a hypothetical in order to bolster it.

"nearby" possible worlds where the climate is not changing, for example, the species exists and strongly seems to be better off. Because the polar bear species' existence does not depend on climate change, we can think about what it would be like for that species to exist without climate change. In short, we can look at counterfactuals where the polar bear species is better off.

Species' welfare, I have argued, obtains in virtue of both the welfare of its current individuals and prospective future generations. To use Purves and Hale's example, suppose some polar bear (whose existence is contingent upon climate change) experiences welfare degradation as an effect of climate change. Let's call him Knut. Since climate change is responsible for Knut's existence, following the non-identity problem, we can't say he was harmed in the counterfactual sense, at least on the views that I have mentioned above. We could, however, look at the effect his suffering has caused to the aggregate welfare of his species. Knut's welfare degradation probably reduces the overall welfare of the polar bear species, especially if Knut has advantageous genes. Knut's welfare degradation might also reduce wellbeing of future generations because, perhaps, he is not able reproduce. This would constitute a harm to the species. So even if we cannot say that Knut's suffering makes him worse off, it is plausible that the species is worse off in virtue of Knut's suffering on my view of species welfare. And if the species as a whole is better off than they would have been otherwise, then the counterfactual comparative account applies to species wellbeing. Thus, we can really say that Knut's species was harmed on counterfactual comparative in virtue of Knut's being a member of the species.

But if it would be better for the species that Knut did not suffer from the harmful effects of climate change, it must

also be better for the species that Knut never existed. In the scenario where climate change does not occur, Knut does not exist so if we say the species is better off without climate change we must also say that the species is better off without Knut. This seems like a problem. But I think this is consistent because the welfare of the species is not contingent on the wellbeing or existence of any particular member. As long as there are more polar bears with greater amounts of welfare in the scenario where Knut does not exist, then it seems right that the species as a whole is better off.

Objections

Objection 1

What about a species whose existence is contingent upon climate change? It's plausible that the changing climate could influence new evolutionary patterns that will occur in the future, such that a new species (who would not otherwise have existed) emerges. Harm done to that species as a result of climate change would fall prey to a collective version of the non-identity problem because this species would otherwise not exist.

I have two responses: first, since this species evolved as a result of climate change, it is also reasonable to think that it will have advantageous features that resist the harmful effects of climate change. This isn't certain, but it is a viable possibility at least. Creatures that are more resilient to climate change have less of a chance of being harmed by it.

Second, in regard to complex mammalian, bird, or reptilian species with long lifespans, this would only happen *way* in the future because the evolutionary process for these critters takes a very long time. This possibility is so far in the future that it probably should not enter our present ethical deliberation. In the event that this does happen, however,

the counterfactual comparative view would be silent about that species' welfare diminishment. That is, if the climate change were to accelerate the evolutionary process and generate new species, then those new species—according to the non-identity problem—would not be harmed by climate change.

Consider a natural rejoinder from my objector: The lifespans of microorganisms are substantially shorter than the lifespans of complex mammalian species. Because of their condensed lifespans, genetic modification and natural selection occur much more quickly than mammalian organisms. Consequently, new species can occur in microorganisms much faster than mammalian species. Here's the problem for my response: I assert that new species will come about much later in the future. But it is likely that new species of microorganisms appear in the near future. Many of these new species may occur as a result of the changing climate, which would result in a kind of non-identity for these microorganisms. Assuming that they are made worse off by climate change, the counterfactual comparative account would be silent about their detriment, i.e., counterfactual comparative could not say that they are harmed.

This objection identifies an authentic weakness in my defense of counterfactual comparative. A microorganism species that exists, in the present or near future, as a result of climate change would not be made worse off by climate harm *per* the non-identity problem. Recall that the non-identity problem undermines a harm assessment in cases where the subject's existence is contingent upon the source of harm. This is because in the counterfactual scenario where the harm does not occur—in this case climate change—that person or species would not exist at all. The question *should we care*, though it lies beyond the scope of this paper, might

offer some way out. For example, the different accounts of counterfactual comparative focus on the betterment or worsening of moral patients. If microorganisms are not moral patients in the relevant sense, perhaps their wellbeing should be of little concern for us. So, maybe it does not really matter that we cannot say these microorganisms are made worse off by climate change. Moreover, to draw from my first response, we might think that these microorganisms have genetic resistance to climate change. Again, this is merely a viable possibility.

Objection 2

An objector could argue that the fact that individual wellbeing and species' wellbeing can come apart is actually a weakness of my account. My argument suggests that we can make sense of counterfactual harm for individuals by looking at harms to the species. But consider the following scenario: suppose only aging and sick polar bears that lack advantageous genetic codes are affected negatively by climate change. If this is true, then (since the death of weak individuals is a good for the species) the species is actually benefitted by climate change substantially. We would expect future generations with greater fitness in this scenario. So, assuming these weaker polar bears' existence is contingent on climate change, the changing climate would not harm any individual according to counterfactual comparative. We cannot make sense of individual harm by looking at the species in this case, given the benefits to the species.

Response: Though this scenario points to a weakness in my defense of counterfactual comparative, I am not sure climate change actually works this way. It appears that climate change could harm any number of fit individuals in addition to weaker, less fit individuals. If climate change affects both weak individuals as well as fit individuals, then

it seems like the species would still be worse off. Thus, we can track individual harm with species harm and use counterfactual comparative to track the harm.

Besides, even if it is sometimes beneficial for a species to have weaker members die, surely it is not always beneficial. Suppose that climate change kills *all* weaker members of a given species, such that there are few fit individuals left. This would clearly make the species worse off, even though only weaker members of the species are affected. Thus, even though most of the time the death of weaker individuals is beneficial, it does not follow that this is true in all cases.

Objection 3

Consider yet another objection. There's a version of counterfactual comparative that the non-identity problem does not threaten, which Atkins (2018) has argued in favor of. John Nolt (2018) offers another version of counterfactual comparative. He thinks that so long as at least one of the consequences of an action makes an entity worse off, this counts as harm: "People are harmed (in a comparative sense) by an action or policy only if at least one of its consequences makes them worse off than they would have been had that consequence not occurred" (5). Consider what I am calling principle H:

> *Principle H*: an individual I is harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred.

Note that principle H offers a necessary condition of harm. The strength of this account is that it leaves open the possibility of simultaneous harm and benefit. Rather than aggregating *pro tanto* harms and *pro tanto* benefits to

determine if a moral patient is harmed or benefited *overall*, Nolt thinks an action is harmful or beneficial so long as it has at least one beneficial or harmful consequence. But first, what is a *pro tanto* harm as opposed to an *overall* harm? A *pro tanto* harm is a specific consequence of an action that must be considered alongside other *pro tanto* harms and *pro tanto* benefits. *Pro tanto* harms can be outweighed by a sufficient number of *pro tanto* benefits and vice versa. In a case where I break your leg to save your life, I would, according to this view, both harm and benefit you rather than benefit you overall.

On this view, we can make sense of the non-identity problem. For example, climate change in some cases harms and benefits those who exist in virtue of climate change. We would not need to look to an alternative state of affairs to see if a moral patient is harmed; rather, we examine each individual consequence of climate change to see if harm has been done. Presumably, if your life is worth living, you're better off existing (if you exist because of climate change), even if climate change *pro tanto* harms you. The non-identity problem is only a problem when we aggregate *pro tanto* harms and benefits to determine if a moral patient is better or worse off overall; this version of counterfactual comparative avoids aggregation and, consequently, the non-identity problem. We can, therefore, make sense of the non-identity problem *and* keep at least one version of counterfactual comparative. The argument of this paper, therefore, misses this important reconciliation of the non-identity problem and counterfactual comparative; my argument isn't necessary.

In response, Nolt's account of harm doesn't take seriously the possibility of being harmed in an *overall* or all-things-considered sense. The counterfactual comparative account needs the distinction between *overall* harm and *pro*

tanto harm. A *pro tanto* harm is a single consequence of an action that might be outweighed by a set of *pro tanto* benefits that are consequences of a given action. So a person can experience a *pro tanto* harm but still not be worse off *overall*. In addition, we cannot make sense of certain statements without this distinction. Consider, for example, the following news headline from Bradley (2012): New studies show surgery is harmful! There are plenty of *pro tanto* harmful consequences of surgery: pain, bodily dismemberment, cutting, etc. These all make the person worse off to some degree. It would be odd, however, if all this statement referred to were these *pro tanto* harms. After all, we expect these sorts of harms after a surgery, since they are obvious consequences of many surgeries. The headline would be trivial if it refers *only* to *pro tanto* harms. This statement is interesting and meaningful only if it asserts that surgery makes you worse off *overall*. Suppose that new data emerges that suggests certain surgeries shorten life expectancy. Even though your ailment is cured, you cannot expect to live very long. This new finding would only make sense if we consider harming *overall*. Because Nolt's account fails to distinguish between overall and *pro tanto* harm, it cannot make sense of the above statement.

Let's construe principle H with the distinction between overall and *pro tanto* harm. I'll argue that one version of the account is false and the other is obvious:

> H*: an individual I is *overall* harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred.

This reading of H is false. Consider again the surgery case. Even if I experience some minor pain briefly after the surgery, I would not be worse off overall because, say, I

would have died if I had not had the surgery. Now let's think about a second reading of the principle:

> H**: an individual I is *pro tanto* harmed by an action A only if I is made worse off by some consequence of A than I would have been had that consequence not occurred.

H** is clearly true. This construal of the principle does not, however, have much bite; it's obvious. Again, consider the surgery case. It seems odd to think that surgery harms me, even if there is some minor welfare reducing outcome.

Could Nolt reject this distinction? Perhaps every *pro tanto* harm is a harm. This response is problematic because by rejecting this distinction, we significantly broaden the harmful too widely. Broadening harm this widely is counterintuitive. *Anything* with at least one welfare-reducing consequence would count as harmful. Thus, a surgery, while beneficial in many ways, is harmful according to this account so long as there is one welfare-reducing consequence. We would have to say that surgery is both harmful and beneficial. Again, we could not make much sense of the headline I mentioned above because it makes the most sense under an all-things-considered account of harm.

On Nolt's account, it seems that every surgery is harmful simply in virtue of having *at least one* welfare-reducing consequence. But it seems wrong to conclude that surgery *just is* harmful. We need to aggregate the number of harmful consequences and beneficial consequences and then determine if there is overall more harm or more benefit. But when we do that, I think that the appeal of this account diminishes.

Conclusion

In this paper, I have argued that the non-identity problem does not threaten counterfactual consideration of species welfare. Because entire species existed before climate change, the existence of the species is not contingent on it. It's, therefore, plausible to use the counterfactual comparative account of harm to assess the harm done to an entire species. Although individual welfare degradations are subject to the non-identity problem, I have argued that individual welfare degradations are harm to the species.

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Bibliography

Atkins, J. 2018. "Have You Benefited from Carbon Emissions? You May Be a 'Morally Objectionable Free Rider.'" *Environmental Ethics*. 40 (3): 283-296.

Bradley, B. 2012. "Doing Away with Harm." *Journal of Philosophy and Phenomenological Research*. 85 (2) 390-412.

Boyd, R. 1999a, "Homeostasis, species, and higher taxa", in R. Wilson (ed.), *Species: New Interdisciplinary Essays*, 141–185. Cambridge: MIT Press.

Carlson, E. 2018, "More Problems for the Counterfactual Comparative Account of Harm and Benefit." *Ethical Theory and Moral Practice*. 22 (4): 795-807.

Eldredge, N. and J. Cracraft, 1980. *Phylogenetic Patterns and the Evolutionary Process*, Columbia University Press.

Feit, N. 2015. "Plural Harm." *Philosophy and Phenomenological Research* 90 (2): 361–388. doi:10.1111/phpr.12033.

Feldman, F. 1991. "Some Puzzles About the Evil of Death." *Philosophical Review* 100 (2): 205–227. doi:10.2307/2185300.

Ghiselin, M. 1974. "A Radical Solution to the Species Problem." *Systematic Zoology* 23: 536-44.

Hanna, N. 2016. "Harm: Omission, Preemption, Freedom." *Philosophy and Phenomenological Research* 93 (2): 251–273. doi:10.1111/phpr.12244.

Hull, D. 1978, "A Matter of Individuality", *Philosophy of Science*, 45: 335–360.

Kitcher, P. 1984, "Species", *Philosophy of Science*, 51: 308–333.

Klocksiem, J. 2012. "A Defense of the Counterfactual Comparative Account of Harm." *American Philosophical Quarterly.* 49:285-300.

Mayr, E. 1982. *The Growth of Biological Thought: Diversity, Evolution, and Inheritance*. Belknap Press of Harvard University Press.

McMahan, J. 2013. "Causing People to Exist and Saving People's Lives." *Journal of Ethics*, 17 5-35.

Nolt, J. (Forthcoming). "Climate Change and the Welfare of Life." In *Climate Change Ethics and the Non-human World*, Brian G. Henning and Zack Walsh, (eds.). Routledge.

——. 2018. "Long-term Clime Justice." In *Climate Justice: Integrating Economics and Philosophy*, Ravi Kanbur and Henry Shue, eds., Oxford: 230-246.

Palmer, C. 2011. "Does nature matter? The place of the nonhuman in the ethics of climate change." In *The Ethics of Global Climate Change*. Denis Arnold (ed.) Cambridge: Cambridge University Press, 272-291.

Parfit, D. 1984. *Reasons and Persons*, Oxford University Press.

Purves, D. 2019. "Harm as making worse off." *Philosophical Studies*, 176: 2629-2656.

Purves, D. and B. Hale, 2016. "Non-Identity for Non-Humans," *Ethical Theory and Moral Practice* 19:1165–1185, doi 10.1007/s10677-016-9752-3

Rolston, III, H. 1988. *Environmental Ethics: Duties to and Values in the Natural World*, Temple University Press.

——. *A New Environmental Ethics: The Next Millennium for Life on Earth*, Routledge.

Seebacher, F., Post, E. 20125. "Climate change impacts on animal migration." *Climate Change Responses* **2,** 5 doi:10.1186/s40665-015-0013-9

Diálogos 114, 2024, pp. 147-167.

Asymmetric Threats and Ethical Movements

Chelsea Haramia
Spring Hill College / University of Bonn
charamia@shc.edu / haramia@uni-bonn.de

Abstract

Many movements are built on the proposal that individuals ought to change their behavior in order to achieve certain goals. Whether it is saving human lives, other species, or the environment, individuals are told that their personal decisions can make a moral difference. However, I contend that we ought to abandon such ethical movements to the extent that their focus on individual action upholds systemic threats while we nonetheless accept the movements' claims of what individuals ought to do. I do so by drawing a distinction between immediate threats and systemic threats and arguing that movements that uphold systemic threats can be rightly criticized for that failure, even if they include correct assessments about what individuals ought to do. I conclude that these movements ought to be replaced with movements that aim to remove not only immediate, individual threats but also overarching, systemic threats to innocent lives and the environment.

Keywords

Environmental Ethics; Effective Altruism; Applied Ethics; Systemic Threats

Resumen

Muchos movimientos se basan en la propuesta de que los individuos deben cambiar su comportamiento para alcanzar determinados objetivos. Ya se trate de salvar vidas humanas, otras especies o el medio ambiente, se dice a los individuos que sus decisiones personales pueden marcar una diferencia moral. Sin embargo, sostengo que deberíamos abandonar estos movimientos éticos en la medida en que su enfoque en la acción individual sostiene amenazas sistémicas mientras que, no obstante, aceptamos las afirmaciones de los movimientos sobre lo que los individuos deberían hacer. Lo hago estableciendo una distinción entre amenazas inmediatas y amenazas sistémicas, y argumentando que los movimientos que defienden las amenazas sistémicas pueden ser criticados con razón por ese fallo, incluso si incluyen valoraciones correctas sobre lo que los individuos deberían hacer. Llego a la conclusión de que estos movimientos deberían ser sustituidos por otros que tengan como objetivo eliminar no sólo las amenazas inmediatas e individuales, sino también las amenazas globales y sistémicas a las vidas inocentes y al medio ambiente.

Palabras clave

Ética medioambiental; altruismo efectivo; ética aplicada; amenazas sistémicas

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Introduction

According to climate scientists, a human-caused climate catastrophe looms over our future. One of the major culprits is our carbon emissions. Recognizing this, many environmental movements call on individuals to take actions

aimed at reducing their carbon footprints. In fact, there are many ethical movements built on the proposal that individuals ought to change their behavior in order to achieve certain goals. Whether it is saving human lives, other species, or the environment, individuals are told that their personal decisions can make a moral difference. These proposals are not without their critics. For example, proponents of effective altruism have been charged with taking the state of the world as-it-is and focusing excessively on individual choices that fail to affect the larger systems and structures at work that create inequality.[1] Similar charges arise in environmental ethics debates, as seen, for example, in greenwashing critiques.[2] Movements that focus on individual choices are criticized for ignoring the way in which this overly narrow focus can reinforce the status quo and the powerful parties that benefit from it. One response is to embrace this charge. Perhaps we should be focused, at least in part, on what the right thing to do is here and now, with conditions on the ground as-they-are.[3] After all, if the question at hand is 'What should I do?,' then it's reasonable to focus on an individual's action at this time. Yet, if an entire movement ultimately protects and promotes the very systems and structures that threaten lives or destroy environments, then it may be right for individuals to abandon the movements, even if they don't abandon the individual decisions that the movements call for.

In order to make sense of this proposal to abandon movements without rejecting the movements' claims of what individuals ought to do, I begin by exploring the original thought experiments of the Singerian effective altruism

[1] See, for example, Nussbaum 1997 and Srinivasan 2016.
[2] See Stoll 2017.
[3] McMahan (2016) embraces such a response in defense of critiques against Unger (1996).

movement. In these thought experiments, distinct cases are presented as morally analogous, but a puzzle arises because the cases don't seem morally analogous to those who are asked to consider them. I show that, despite the claims of effective altruists, the cases in question are not in fact morally analogous. There is a morally relevant difference arising from an asymmetry of the threats involved, and this critique can be extended to other ethical movements, such as those in environmental ethics debates. To see why this is so, let us look to the roots of effective altruism movements.

Effective altruists have offered highly influential arguments that have led to real-world movements.[4] Their arguments lead to calls for individual action. They claim that individuals are ethically required to donate excess resources—such as money they would have spent on luxuries or non-necessities—and even to choose professions that will enable them to donate maximally over the course of a lifetime.[5] At the same time, these arguments show that failing to donate threatens lives. Debates in environmental ethics have similar features. They lead to calls for individual actions. Individuals are arguably ethically required to recycle their waste, purchase electric vehicles, ride their bicycles, reduce air travel, avoid red meat, and the like. And these arguments conclude that failing to choose such actions threatens the environment. Such is the basis for many environmental movements.[6]

It has not gone unnoticed that this focus on individual action may be unduly myopic. At best, it is an incomplete

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[4] See, for example, www.effectivealtruism.org and www.thelifeyoucansave.org.

[5] See MacAskill 2015.

[6] See, for example, www.connect4climate.org , www.mondaycampaigns.org/meatless-monday, and fridaysforfuture.org.

approach to solving problems such as unequal resource distribution, environmental degradation, or climate disaster. At worst, it is an intentional effort by those who benefit from the status quo to distract from the deeply unethical systems in place and to allow them to continue with business-as-usual. My aim in this paper is to show that, regardless of the intentions of those behind these movements, such distractions arise when they conflate systemic threats with more immediate, individual threats. This conflation is baked-in to the original arguments for effective altruism, so I will begin my analysis there.

The original argument from analogy

Arguments from analogy populate the call for effective altruism. The cases presented all share some common, morally relevant features. Innocent lives are threatened. Individual agents can save those lives. But saving those lives requires that the agents must sacrifice something of monetary value. I will focus on a Singer-style shallow pond case as my baseline case for the purposes of this paper.[7] Consider the following:

> *Shallow Pond*: A child has wandered into a shallow pond and is drowning. You are walking by after purchasing and donning a pair of expensive shoes. You see that the child is drowning and that you are in a position to wade into the pond and save this child's life. However, you also recognize that wading into the pond will ruin your shoes. You continue on your way, and the child dies.

Virtually everyone has the intuition that you have made the morally wrong decision in this case. It is obvious that you

[7] Singer 1972.

should wade into the pond and save the child, even though it will ruin your shoes. So, morality requires that we sometimes sacrifice what we possess and value in order to save lives, which leads to the following purportedly morally analogous case.

> *Starving Child:* You are invited to donate money that will save at least one child from starvation in a famine-stricken part of the world. You decline to donate, and later you purchase a pair of expensive shoes with money that you could have donated. The child whose life you could have saved dies.

Most people have a different reaction to this kind of case. Buying things for yourself and failing to donate that money to charity is commonplace. Few people are horrified to discover that you purchased a new, unnecessary item with money you could have donated. Intuitively, it is far worse to walk away from a drowning child than it is to spend extra money on something you value.

Singer, Unger, and their followers argue, however, that such intuitions in the *Starving Child* case are misguided.[8] They claim that these cases are morally on par, and that failing to donate to charity in order to effectively save lives is equally as bad as walking away from the drowning child. I agree that most candidate differences don't hold up to close moral scrutiny. If there are no morally relevant differences at all, then, insofar as you agree that walking away from the child in Shallow Pond in a monstrous act, you should, on pain of consistency, find it equally monstrous to fail to donate extra money to effective charities.

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[8] Singer 1972; Unger 1996

Immediate versus systemic threats

But there is in fact a morally relevant difference between the two cases, and it arises from an analysis of the threats at play. One case involves an immediate threat to innocent life, whereas the other involves both immediate and systemic threats. To see this difference, we must consider a slightly bigger picture. We must look at the *reasons why* the agent is faced with the choices in question. In the *Shallow Pond* case, the reason why you must choose between an innocent life and your shoes is that the child was hapless. Your inaction is a direct threat to that child's life, and only you are to blame if that child dies. The threat to the child's life disappears the moment you save their life. But consider another case.

> *Developers*: Developers have built a shallow retention pond near a children's school knowing that this will greatly increase the likelihood that children could drown in it. However, it would be expensive to build the pond anywhere else, and their concern for the bottom line has led the developers to prioritize financial benefit over risks to children's lives. A child walking home from school wanders into the pond and drowns.

The developers' choices created a threat to innocent children's lives, and, intuitively, the developers are partly to blame here. Their business practices predictably and impermissibly led to the death of an innocent child. Now consider a slightly modified case.

> *Developers Plus*: Developers have built a shallow retention pond near a children's school knowing that this will greatly increase the likelihood that children might drown in it. However, it would be expensive to build the pond anywhere else, and their concern for the

> bottom line has led the developers to prioritize financial benefit over risks to children's lives. You are walking by after purchasing and donning a pair of expensive shoes. You see the child is drowning and that you are in a position to wade into the pond and save this child's life. However, you also recognize that wading into the pond will ruin your shoes. You continue on your way, and the child dies.

Your inaction threatened this child's life, and you are clearly to blame for the child's death. But so are the developers who built the pond in the first place and created the overarching threat that existed before you arrived. And this case is more appropriately analogous to the *Starving Child* case than the original *Shallow Pond* case. The metaphorical child in the *Starving Child* case is not merely hapless. That child represents real children in the real world who are starving or whose lives are otherwise threatened by preventable, poverty-related circumstances. Put simply, there is a reason why the child's life is at risk in the first place. Famine does not arise in a vacuum, and neither does affluence. Historical, political, and economic analyses demonstrate that other rich and powerful agents have enacted systems that predictably threaten innocent lives, leaving the less powerful to grapple with decisions about life, death, luxury, and sacrifice that are actually avoidable.[9] And so we don't want merely to ask whether an individual should save the child's life. We must ask whose actions created a threat to innocent lives in the first place.

By modifying the features so that they are more fully morally analogous, we may discover two distinct moral issues that are easily conflated because of the benign nature

[9] Pogge 2010.

of the original *Shallow Pond* case.[10] The two moral questions at stake are 'What should *you* do?' and 'What *should be done*?' The answers to these questions are coextensive in the *Shallow Pond* case because your inaction was the *only* relevant threat to innocent life. You should have saved the child's life, and that is all that should be done. However, these answers *diverge* in the *Developers Plus* case because both you and the developers present distinct threats. The threat of your inaction is an *immediate* threat to this child's life, whereas the developers' choices generate a more *systemic* or overarching threat. This difference between immediate and systemic threats makes a moral difference because it informs questions of blameworthiness, persistence, and prescriptive claims about how to prevent the loss of innocent life.

The individual is to blame if their inaction leads to innocent deaths, but so too are those who create and sustain the systemic threats that result in innocent lives lost. Importantly, it should be noted that, in such cases, individual actions do little or nothing to remove the systemic threats, even if they remove the immediate threat. Thus, systemic threats are persistent and largely unaffected by the individual action in question. Ultimately, the more robust conclusion one should draw from such thought-experiments is that there is excellent moral reason to remove both immediate and systemic threats. And to the extent that the individual is both not responsible for the systemic threat and

[10] To make the original case less benign, one could also modify the Shallow Pond scenario by stipulating that the shallow pond is part of a housing development, and the person walking by also resides nearby. They voted to have the pond installed, and their HOA payments helped to fund it. This, then, makes the Shallow Pond case more analogous to the Starving Child case insofar as the shoes and the agent's ability to afford those shoes are products of systemic exploitation. Thanks to an anonymous reviewer for pointing this out.

unable to remove the systemic threat with their individual action, there are moral imperatives that fall outside the scope of the individual agent's action. But insofar as various ethical movements preserve systemic threats by directing collective focus onto immediate threats, these movements are morally flawed.

So, what should you do in the *Developers Plus* case? You should save the child's life at the cost of your shoes, of course. But what should be done to prevent the loss of innocent life? Those who created the pond and the larger threat itself should take on the costlier option and remove the overarching threat that they ought not to have created. Likewise, those who create or sustain conditions of poverty and famine in the *Starving Child* case (and in the real world) should end the systemic and structural oppression and exploitation that create life-threatening conditions, even if this costs them financially. Insofar as they fail to do this, they too are morally responsible for the loss of innocent life.

Likewise, those who create and sustain conditions that threaten, say, climate disaster, should be held responsible for that systemic threat, even though there is also reason to take individual actions that avoid, say, individual carbon consumption. So, while not perfectly analogous, a similar lesson arises in environmental cases. Individuals can and should make certain personal decisions that would allow them to avoid contributing to pollution, environmental degradation, climate disaster, and the like. But environmental movements that ignore or minimize the systemic threats ensure that such threats are preserved, even as the individuals address the more immediate threats. While actions such as recycling, avoiding air travel, or purchasing electric vehicles often do not by themselves remove immediate threats in the same way that donating to an effective charity can, they are nonetheless constitutive of

what an individual *can* do to *mitigate* immediate threats and to help save lives and the environment. Though these environmental cases may require more focus on collective action than typical effective altruism cases, such environmental movements nonetheless call for a collection of ground-up *individual* actions rather than direct structural change coming from the top down. In the same way, then, these issues focus the solution on the ways in which individuals can and should act *given* the conditions on the ground, instead of focusing on the ways in which conditions on the ground could and should be changed.

Challenging the purported analogy

Notably, if you do what you should do in *Starving Child* case, then the cycle of moral dilemmas for everyday agents perpetuates. This is in contrast to the *Shallow Pond* case wherein the conditions that threaten the child's life disappear the moment you pull the child out of the pond. In the real world, there are myriad and seemingly endless opportunities to save innocent lives by donating our excess resources.[11] The threat does not disappear the moment you save a life as it does in the *Shallow Pond* case. This difference has not gone unnoticed even by Singer, but Singer focuses on the implications it carries for the question of how much *more* the individual should be asked to give.[12] He does not

[11] Travis Timmerman (2015) notes this perpetuation of threats and uses it to challenge Singer's analogy in a different way, though he does not acknowledge the distinction between immediate and systemic threats and instead focuses primarily on justifications for individual inaction in the face of perpetuating immediate threats.

[12] See Singer 1999. Nussbaum (1997) and others have also highlighted this issue and the related worry of the overdemandingness of utilitarianism, however, that particular issue is beyond the scope of this paper.

acknowledge that this concern exposes asymmetric systemic threats to innocent lives that create a cycle of moral dilemmas for the agent that do not arise in the original *Shallow Pond* case.

We see the same cycle of moral dilemmas arise in environmental cases. If the economic systems and political structures that uphold massive environmental degradation, carbon consumption, and the like are not changed, it's hard to see how any realistic amount of morally correct individual choices could remove the threat of climate disaster. My challenge highlights the fact that an individual saving an impoverished child's life or reducing their carbon footprint does not remedy the systemic conditions that threaten children's lives or the environment. This does not mean that the individual agent is not to blame if they allow the immediate threat of starvation or poverty-related illness to take a child's life, or if they ignore the ways in which their unnecessary actions contribute to climate disaster. But the individual is often not to blame for the systemic threats that continue unabated even as individuals do more and more to make a moral difference where they can. If there were no systemic threat, then, in the *Developers Plus* case, both the children and your shoes would be safe. Removing the systemic threat eliminates both the risk of harm and the moral dilemma the individual agent would have faced.

In sum, there is a morally relevant difference between the *Shallow Pond* case and the *Starving Child* case. The *Shallow Pond* case presents only an immediate threat, whereas the *Starving Child* case presents both an immediate threat and a systemic threat and therefore brings more to the table in terms of moral considerations. With no systemic threat in the *Shallow Pond* case, you are the only one to blame if the child dies. In the *Starving Child* case, the greater threat to children's lives is systemic, and you are not to blame

for this overarching threat to innocent lives. This may therefore qualify as a "Preservationist" solution to the dilemma Singer and Unger highlight.[13] Preservationist solutions preserve our divergent intuitions about the two original cases and allow that these intuitions track relevant moral values. I have uncovered a morally relevant difference that justifies our competing intuitions and preserves them to a certain extent. It explains why we have stronger moral reactions to moral failings in cases where the threat is immediate and arises from misfortune than we do to the moral failings in cases where the threat is both immediate and systemic, and where the systemic threat arises from the avarice of powerful others who are also to blame for innocents dying—a threat which does not disappear after the action of the individual. I do not deny that both cases involve moral failings. But our assessment of personal moral failing is intuitively, and, I argue, justifiably, stronger when unjust systems are not also part of the equation—unjust systems upheld by those who are unconscionably perpetuating systemic threats and preserving their power to do so.

Individual complicity in systemic threats

One objection to this analysis arises from my distinction between immediate threats and systemic threats. I have argued that rich and powerful others force common people in industrialized countries into the kind of moral dilemma we see in the *Starving Child* case, and this explains divergent intuitions regarding wrongdoing. However, this implies that common people in developed parts of the world are not to blame for the conditions faced by those in poverty-stricken parts of the world. Yet, insofar as industrialized peoples' choices and our consumerism indirectly contribute

[13] This Preservationist option was outlined by Unger 1996: pp. 10-11.

to the harm and death of innocents, they may bear some portion of blame for the fact that an innocent life is threatened. Suppose I purchase items made with palm oil. Suppose this not only financially supports the environmental degradation and climate risk of monoculture businesses but also leads to the death of innocent children who were forced into extremely dangerous labor for the palm oil industry. In these ways, members of industrialized countries as individuals contribute to both immediate threats and systemic threats, and the justification for preserving our original intuitions is at risk of dissolving. One quick response is to note that we are probably not recognizing our own complicity when encountering *Starving Child*-style cases, and so this feature likely had little effect on our original intuitions. But more importantly, this facet highlights precisely the problem I wish to demonstrate, and it highlights that this problem is not restricted to famine relief cases.

Reliably, the reason that wealthy and powerful others directly or indirectly threaten the lives of those in underdeveloped parts of the world is that it benefits them.[14] Where do those benefits come from? They often come from consumers and citizens in the developed world whose everyday choices support a system that is oppressing and exploiting underprivileged people, their land, and their resources. In this way, the agent in the *Starving Child* case may be part of the reason that a child is starving to death, and therefore may be part of the systemic threat. Increasingly, people are realizing that their everyday choices have ethical and global ramifications. Interestingly, this leads to precisely the moral conundrum we have already seen in this paper. Common people are in a good position to endorse or reject

[14] Cf. Shiva 1992 and Shue 1999.

various practices and their underlying moral implications with their individual decisions and purchases. Yet, the options available for endorsement and rejection are still dictated primarily by those who wield most of the decision-making power. And these powerful people can and do make immoral choices that carry sweeping effects, even though common people nonetheless contribute to the harms in question in much smaller ways through their individual choices.

Part of the way that this happens is through the control that current systems and structures exercise over what *choices* are made available for individual consumers. For example, there is good reason to think that climate change is anthropogenic and systemic. Members of industrialized countries contribute vastly more to carbon consumption than others in the world. If you are a member of an industrialized country, then you are part of this systemic threat. You are partially to blame insofar as your carbon consumption contributes to this threat. What should you do? As we have seen, the individual choices you can make to cut back on your individual carbon consumption are arguably the right choices. But the extent to which an individual even can cut back is determined by systems and structures outside of their control. If you purchase an electric vehicle in a place where the electricity available comes from coal, then you are guaranteed to be less effective than someone who made the same choice but whose electricity comes from renewable resources. More importantly, this worry does not address the entirety of the moral picture, as many have noted.[15] One's individual choices will not remove

[15] Walter Sinnot-Armsrtong (2005), for example, argues that the focus on individuals' environmental choices is largely unjustified. No individual caused climate change, and none can fix it. This threat is so large that the moral focus should be on governments, not individuals.

the systemic threat. Drastic, policy-level change needs to occur in order to effectively mitigate threats to the environment or human life and increase the availability of more morally appropriate choices.[16] Most individual people are not in a position to alter the threats to this degree.[17] It must come from those in power, working together.[18]

So, even though your role as a member of a developed country means you are likely not blameless when it comes to contributing to systemic threats, the lion's share of the blame still falls on the shoulders of those whose large-scale decisions create and sustain threatening conditions and also serve to severely limit the everyday choices available to the individual. Importantly, morality is not merely for the common folk. The moral choices faced by those in power are far more pressing—in part because they shape the threats at play and determine which moral choices individuals commonly face. Focusing excessively on the actions of individuals distracts from this fact.

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[16] IPCC 2018.

[17] This is not to say that individuals cannot have significant effects. Structural inequalities are part of most everyday decisions, but, as Iris Marion Young (2011) notes, there are areas where certain individuals may have greater power to change harmful structural processes, and focusing on those specifically will still be morally important for those individuals. But this is a distinct concern from the one outlined in this paper.

[18] Notably, individuals in at least some countries are in a position to alter the actions of those in power insofar as their votes affect the choices and policies of those in power and affect who specifically represents them. Thanks to an anonymous reviewer for pointing this out. Moreover, those individuals who vote for policies or representatives that preserve or promote systemic threats may then be exercising this individual power—insofar as it is effective—in ways that may be legitimately morally criticized. However, if and when governments and representatives fail to provide any meaningful pathways for combating systemic threats, more radical changes may be needed in order to protect innocent lives and the environment.

Shifting the focus of the moral discussion

This connects to a second type of objection. While I preserve the intuitively disparate intensity of our moral reactions to individual decisions in the original two cases, I maintain that it is nonetheless wrong not to save lives in both cases. One may interject here and note that this analysis is not Preservationist *enough*. That is, it does not alter the moral lesson of the *Shallow Pond*-style cases. I maintain that individuals are still obligated to sacrifice resources to save lives in many circumstances.

I reply that my contribution nonetheless alters the moral lesson insofar as the proponents of the original cases posit *no* moral difference between them and then use this conclusion as the basis for entire movements focused excessively on individual actions and immediate threats. This doesn't mean that their conclusions of individual wrongdoing were incorrect. Instead, their presentation of the cases as morally analogous ignores the risks of building movements primarily or only on the basis of immediate threats. These risks include effectively supporting and further entrenching systemic threats. Such analyses narrow the moral focus onto individual behaviors and choices while occluding the systemic threats that persist even when individuals make altruistic, life-saving choices. Excessive focus on individual actions in the face of systemic threats is itself a kind of moral failing, and movements that fail in this way ought to be either abandoned or integrated into movements that effectively aim for systemic change.

Consider the following example. In the early 1950s, litter was piling up in the United States, and state legislators were poised to enact regulations on the amount of

disposable packaging companies were allowed to generate.[19] But producing more sustainable packaging would have been much less profitable than producing disposable packaging. In response, litter-producing companies came together to start the Keep America Beautiful campaign. This campaign successfully shifted the moral focus away from the systemic threats that companies and production policies were entrenching and instead put the spotlight on the more immediate threat of the individual citizen who was villainized for littering. The opportunity to reduce a systemic threat and to require those with wealth and power to make the appropriately altruistic choices was lost. Supporting the Keep America Beautiful movement was the wrong thing to do, even though rejecting the movement doesn't make littering the right thing to do.

Shifting the focus and blame allowed for the unchecked proliferation of harmful conditions and systemic threats by companies with the power to control the discourse and unduly amplify individual choices. And the damaging effects of this lost opportunity have been significant, whereas the beneficial effects of individuals not-littering pale in comparison. By allowing litter-producing companies to control the moral discourse and place the burden of moral responsibility primarily on the individual, the much more significant moral action of creating new systemic threats was ignored. While we should take seriously our obligations to save lives and the environment, we should also recognize ways in which a focus on our individual choices helps to perpetuate the very threats we wish to remove.

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[19] Rogers 2005.

Retaining the moral choice, rejecting the movement

I conclude that individuals have good moral reason to reject many environmental and effective altruism movements to the extent that they uphold systemic threats. This does not mean that such movements have drawn incorrect conclusions about what individuals ought to do in discrete cases. Rather, they are drawing insufficiently narrow conclusions focused only or excessively on what individuals ought to do in discrete cases. As we saw with the example of the Keep America Beautiful campaign, this overly narrow scope can counteract the moral improvements that individuals make by empowering those who create increasingly-damaging systemic threats and enabling greater reliance on the systems that maintain and perpetuate such threats. Whether intentional or not, these movements are effectively complicit in supporting the systemic threats to lives, to the environment, and to our species' future. It is more morally appropriate and arguably more effective to create or endorse movements that refuse to conflate systemic and individual threats. If an ethical movement addresses only what an individual can do to mitigate or remove immediate threats and simultaneously ignores the question of what ought to be done to mitigate or remove systemic threats, it seriously risks reinforcing the very harm it purports to want to avoid. Ethical movements should openly expose and challenge the damaging and unjust systems and structures in which individual decisions are necessarily situated. Those movements that fail to critically expand their moral scope and account for the role of systemic threats ought to be replaced.

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References

IPCC, 2018: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.

MacAskill, William. 2015. *Doing Good Better: Effective Altruism and How You Can Make a Difference*. Penguin Random House: New York.

McMahan, Jeff. 2016. "Philosophical Critiques of Effective Altruism" in *The Philosophers' Magazine*, 73:92-99.

Nussbaum, Martha (1997)."If Oxfam Ran the World" in *London Review of Books*, Vol. 19, No. 17.

Pogge, Thomas. 2010. "Responses to the Critics" in *Thomas Pogge and His Critics*, ed. Alison Jaggar, Polity Press: Cambridge, 175-250.

Rogers, Heather. 2005. *Gone Tomorrow: The Hidden Life of Garbage*. The New Press: New York.

Shiva, Vandana. 1992. "Women's Indigenous Knowledge and Biodiversity Conservation," in *India International Centre Quarterly*, Vol. 19, No. 1/2, 205-214.

Shue, Henry. 1999. "Global Environment and International Inequality," in *International Affairs*, Vol. 75, No. 3, 531-545.

Singer, Peter. 1972. "Famine, Affluence, and Morality" in *Philosophy and Public Affairs*, Vol. 1, No. 3, 205-214.

Singer, Peter. 1999. "The Singer Solution to World Poverty" in *The New York Times Magazine*, Sept. 5.

Sinnott-Armstrong, Walter, 2005. "It's Not My Fault: Global Warming and Individual Obligations," in *Perspectives on Climate Change*, eds. Walter Sinnott-Armstrong and Richard Howarth, Elsevier, 221-253.

Stoll, Mary Lyn. 2017. "Greenwashing and Green Marketing Virtues" in *Handbook of Virtue Ethics in Business and Management*, eds. Alejo José G. Sison, Gregory R. Beabout, and Ignacio Ferrero, Springer, 1057-1066.

Srinivasan, Amia. 2015. "Stop the Robot Apocalypse" in *London Review of Books*, Vol. 37, No. 18.

Timmerman, Travis. 2015. "Sometimes There Is Nothing Wrong with Letting a Child Drown" in *Analysis*, Vol. 75, No. 2, 204-212.

Unger, Peter. 1996. *Living High and Letting Die: Our Illusion of Innocence*, Oxford University Press: Oxford.

Young, Iris Marion. 2011. *Responsibility for Justice*, Oxford University Press: Oxford.

Diálogos 114, 2024, pp. 169-193.

Is Anthropogenic Climate Change Evil?

The Application of the Atrocity Paradigm to Climate Change

Yali Beit-Arie
University of Pittsburgh
YAB23@pitt.edu

Abstract

Why differentiate between evils and mere wrongs? Evils require more immediate and profound action than other wrongs. Evils must be counteracted and addressed head-on; they cannot be merely recognized without deliberate efforts to stop them. In this paper, I argue that human-caused climate change is indeed one of those evils. To argue this, I employ Claudia Card's theory of evil, termed the Atrocity Paradigm, which defines evil as "reasonably foreseeable intolerable harm, produced by inexcusable wrongdoing." This paper thus examines each of the three elements of the Atrocity Paradigm as it relates to climate change and shows that it meets each of the three measures. As a result, I conclude that human-caused climate change is indeed an evil rather than a mere wrong, which suggests a dire need to promptly prevent its continuation. For the purposes of this paper, the discussion of the adverse effects of human-caused climate change is narrowed to the evaluation of rising sea levels and more frequent, unpredictable, and severe storms in coastal and island areas. Anthropogenic climate change, thus, is treated and subsequently judged as a moral evil. Since it is human-caused, the effects of climate change

studied in this paper are not deemed natural evils and must be prevented through human (re)action.

Keywords

Atrocity Paradigm, evil, climate change, environmental philosophy, environmental evil

Resumen

¿Por qué distinguir entre males y meros daños? Los males requieren una acción más inmediata y profunda que otros daños. Los males deben ser contrarrestados y abordados de frente; no pueden ser simplemente reconocidos sin esfuerzos deliberados para detenerlos. En este artículo sostengo que el cambio climático provocado por el hombre es uno de esos males. Para argumentar esto, empleo la teoría del mal de Claudia Card, denominada Paradigma de la Atrocidad, que define el mal como "un daño intolerable y razonablemente previsible, producido por una mala acción inexcusable". Este artículo examina cada uno de los tres elementos del Paradigma de la Atrocidad en relación con el cambio climático y demuestra que cumple cada una de las tres medidas. Como resultado, concluyo que el cambio climático provocado por el ser humano es realmente un mal y no un mero daño, lo que sugiere la necesidad imperiosa de impedir con prontitud que continúe. A los efectos de este artículo, el debate sobre los efectos adversos del cambio climático de origen humano se limita a la evaluación de la subida del nivel del mar y la mayor frecuencia, imprevisibilidad y gravedad de las tormentas en las zonas costeras e insulares. El cambio climático antropogénico, por tanto, se trata y posteriormente se juzga como un mal moral. Al ser provocado por el hombre, los efectos del cambio climático

estudiados en este documento no se consideran males naturales y deben evitarse mediante la (re)acción humana.

Palabras clave

Paradigma de la Atrocidad, mal, cambio climático, filosofía medioambiental, mal medioambiental

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Introduction

This essay will assess whether climate change is evil according to Card's theory of evil termed the Atrocity Paradigm. The Atrocity Paradigm posits that evil is "reasonably foreseeable intolerable harm, produced by inexcusable wrongdoing" (Card, 2010 p. 16). As such, I will examine each of the three elements of the Atrocity Paradigm as it relates to climate change. For the purposes of this paper, I focus on a single ramification of climate change; namely, the life-threatening impact of rising sea levels and more frequent, unpredictable, and severe storms on people who live in coastal and island areas.[1] I begin with an argument that these effects of climate change are foreseeable. Next, I discuss how rising sea levels and severe storms consequently result in the death or forced displacement of coastal inhabitants, which I argue fits Card's definition of intolerable harm. I consider an objection to this point but ultimately maintain that forced displacement constitutes intolerable harm. This will then give way to a discussion about inexcusable wrongdoing and culpability. Here I

[1] I treat this single manifestation as indicative of climate change as a whole. I do not mean to imply that this is the only evil effect of climate change. I merely use it as a case study to narrow the scope, and allow for a more specific analysis in my evaluation that climate change is evil.

consider several objections on the grounds that the adverse effects of climate change are not wholly inexcusable and that it is difficult to assign blame. However, I contend that the intolerable harm suffered by victims of anthropogenic climate change is not mitigated by any other moral reason, and thus that those intolerable harms are produced by inexcusable wrongdoing. Accordingly, having confirmed that each component of the Atrocity Paradigm applies to this case of climate change, I conclude that climate change is indeed evil according to Card's theory of evil.

My purpose is twofold. First, I seek to condemn anthropogenic climate change as evil in order to make clear just how dire the situation is for the victims of human-caused climate change. Evils, as opposed to mere wrongs, require our greater attention and more immediate remedy. Anthropogenic climate change does not have a simple solution, and reducing its catastrophic ramifications takes significant resources and shared commitments globally. By prescribing the label of evil (rather than mere wrongness), I also aim to highlight the degree of importance in collectively securing preventative measures to halt the continuation and exacerbation of anthropogenic climate change. I also would like to make clear that in discussing climate change, I refer explicitly and solely to changes in climate that are a result of human activity. The climate changes naturally, and severe storms may result from atmospheric changes irrespective of human activity. Those storms and other naturally occurring climate events may cause suffering and harm, indeed, sometimes even deadly harm. But those events that result naturally are not the kind of evil I wish to examine (what may be termed "natural evils"). In my discussion of "evils," I mean only *moral* evils. Therefore, when I say I focus on rising sea levels and more frequent severe storms, I mean those that

result unnaturally from a climate that *humans* have changed through anthropogenic pollution.

The first component of the Atrocity Paradigm requires that an evil be reasonably foreseeable (Card, 2010). According to Russell and Bolton (2019), awareness of climate change is widespread. It is common knowledge that rapidly increasing greenhouse gas (GHG) emissions contribute to climate change, which manifests in catastrophic effects such as "melting icecaps, rising sea levels...extreme weather events, [un]inhabitable dead zones" and so on (*ibid* p. 3), and particularly for coastal and island nations who are disproportionately impacted (IPCC, 2023). Knowledge about the harmful, even deadly, impacts of dangerous levels of GHG emissions in the atmosphere is ubiquitous, as is knowledge that those emissions are the result of human (rather than natural) activity.[2] It is undeniable, then, that the life-threatening consequences of anthropogenic climate change on inhabitants of coastal and island areas are foreseeable. Therefore, climate change adheres to the first requirement of the Atrocity Paradigm.

The second component of Card's theory of evil mandates that the evil must be or cause intolerable harm. According to Card (2010), a harm is intolerable if it makes life not worth living from the viewpoint of the person whose life it is. In other words, "intolerable" signifies the deprivation of basic necessities (such as reliable access to food, drinking water, clean air, and social contact) needed to sustain a tolerable life. "Tolerable," in turn, is a life minimally worth living for the person whose life it is (which, again, means that the person has access to basic necessities and is free from

[2] For example, the IPCC begin their 2023 report on climate change with the blunt statement: "human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming" (p. 4). See the report for more details.

severe physical or mental suffering).[3] As mentioned, excessive GHG emissions cause ocean levels to rise, leading to the submergence and increased vulnerability of inhabitable coastal land to life-threatening weather. In the simplest terms, climate change endangers human life. People who live in coastal areas or on islands face the very real possibility of death because of climate change. Patently, if people are unable to survive, then they cannot access basic necessities (since, rather obviously, they will be dead). For Sen (1999 p. 18), a tolerable life includes "the 'capabilities' of persons to lead the kind of lives they value—and have reason to value." When people are deprived of basic freedoms (like physical security) that eliminate their "capability to escape premature mortality or preventable morbidity," such as is the case with the climate events considered in this paper, they suffer what Card would call intolerable harm (*ibid* p. 17). Therefore, the deadly effects of climate change cause people to lose rudimentary access to basic necessities and physical safety critical for their survival, and so, on Card's account, are intolerable harms.

However, one may object to the claim that this constitutes intolerable harm on two grounds. First, one may say that facing existential threat does not necessarily entail inevitable death, as people can flee to inland areas where rising sea levels do not pose the same dangers. Second, one may object that a mere *threat* of harm is not tantamount to the intolerable harm Card requires of evils. I reply to both objections by drawing on de Shalit (2011).

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[3] See Card (2010). For the purpose of this paper and its space limitations, I apply Card's theory of evil to the case of climate change without arguing for her theory myself. Though I admit that one may object to Card's vague definitions of tolerable and intolerable life, my purpose in this paper is not to evaluate Card's Atrocity Paradigm. My aim is only to assess whether climate change is evil on her account.

First, de Shalit (2011) explains that rising sea levels cause people living in coastal and island communities to become climate refugees, resulting in their forced displacement. Card (2010 p. 29) states that an inability to make choices independent of constraints or compulsions counts as intolerable harm. Forced displacement means that coastal inhabitants are compelled to flee from deadly climate events. They are unable to make any other choices (since *not* fleeing is not an option)[4]; therefore, their forced displacement is an intolerable harm. Sen (1999 p. 76) agrees, saying that having the freedom to choose is a valuable right, and so being compelled into something beyond one's control violates this right.[5]

Moreover, as de Shalit (2011) expounds, rising sea levels submerge coastal and island areas, meaning that displaced inhabitants' homes altogether cease to exist. In essence, the displaced climate refugees lose their sense of place. De Shalit argues further that the *permanence* of losing one's sense of place through forceful displacement is commensurate to losing an integral piece of one's self-identity and connection to others. Indeed, Sagoff (1992 p. 358) notes that a place "functions as a center of felt value because human needs, cultural and social as well as

[4] Of course, technically speaking the option of not fleeing is available. Despite the inevitability of a certain death in these cases, people can choose to not flee, but this choice would mean succumbing to certain death. Accordingly, I do not treat this as a choice in the way Card uses it, since it is not a choice free from compulsion.

[5] The UN's department of human rights recognizes that being compelled to relocate often results in migrants' inability to "make choices about when and how they move," which means "they are therefore more likely to migrate in conditions that do not respect the dignity of the human being" (OHCHR, 2018). Not only does this indicate that forced displacement makes people migrate beyond their will, but they are also often denied the ability to make choices in the process of migration itself.

biological, are satisfied in it." This means, as Anderson (2004 p. 47) states, that our self-identities are inextricably linked with our place identities. Further, Sagoff (1992 p. 389-390) writes that "a sense of place depends as well upon a sense of temporal community—a consistency with the past and continuity with the future." So when displaced climate refugees permanently lose their homes and places, they also lose that temporal community, too. Additionally, the process of forced displacement itself is a significant "source of fear and anxiety" (de Shalit, 2011 p. 315). Card's (2010 p. 29) definition of intolerable harm includes severe suffering (including "debilitating fear") and loss of social contact, which are entailed in forced displacement and the subsequent loss of one's sense of identity.

Identity, in the sense that de Shalit communicates it, refers to the multifaceted social vitality integrated with one's connection to their physical community and to others. It is reasonable to assume, then, that in losing one's home, one does indeed lose a compelling piece of their identity. That is to say, a person's identity is composed in part of various aspects of their social life, such as their relationships and connections to their community, home, and other people. These social aspects together play a crucial role in shaping a person's sense of who they are (succinctly summarized by Anderson's (2004 p. 47) aphorism, "*who* you are is dependent on *where* you are"). Since forced displacement causes one to lose those social aspects, forcefully displaced climate refugees essentially lose a piece of themselves in the process. According to Card, social contact is a basic necessity, the absence of which can make life intolerable. If we extend the basic necessity of social contact to include the sense of belonging to a physical place (which on de Shalit's account is a paramount facet of self-identity), then we can conclude that losing one's sense of place, and thus a part of

one's identity, is an intolerable harm. Indeed, Sen (1999 p. 75) helps make this connection. Sen defines functionings as "the things a person may value doing or being," such as being free from avoidable death and "being able to take part in the life of the community," i.e., social vitality. Capability, meanwhile, refers to what one is able to do and what one has the opportunity to do. Forceful displacement (and losing one's social ties and aspects of their identity) deprives one of those basic functionings, and thus deprives them of certain capabilities to realize those functionings.

I therefore reply to the first objection above (which objected to the point that rapidly rising sea levels and more frequent storms entail certain death) by agreeing that death is not invariably the only consequence for victims of climate change. As de Shalit (2011) explains, the emergence of climate refugees is extant, which indicates that (at least some) people flee submerging coastal land. Thus, victims of climate change considered in this paper face forced displacement, not only death. Nevertheless, I argued that forced displacement resulting from rising sea levels and severe storms in coastal areas, like death, is an intolerable harm and hence maintain that climate change is an intolerable harm.

The second objection above questions whether the mere threat of harm is enough to be considered "intolerable" according to the Atrocity Paradigm. In response, I draw on de Shalit (2011) once more, who asserts that even the mere threat of death or forced displacement causes people to suffer from extreme anxiety and a sense of peril. Even more compellingly, he argues that the threat itself forces one to lose the positive "psychological ties to one's place and therefore to one's identity;" and thus does not enable one to sustain the "positive sense of identity that the place engendered" for them (*ibid* p. 322). In other words, de Shalit

argues that such a considerable existential threat can cause one's perception of their home, and subsequently their identity, to reverse from a positive one to a gloomy, dejected one. Again, de Shalit argues that the forceful displacement from one's physical home (due to permanent climate change events) is a type of identity loss. But more than that, he implies that the threat of such displacement is enough to cause one to have negative associations like fear toward their home—something that ought to be an otherwise positive facet of one's identity. Essentially, it seems de Shalit argues that harboring negative psychological associations toward a part of one's identity alters one's identity in harmful ways.

Again, according to de Shalit (2011), facing legitimate existential threat or legitimate threat of forced displacement causes psychological torment including extreme fear, anxiety, and stress which can then presumably foster profound trauma. If one is living in an area where rising sea levels and severe storms threaten the permanent destruction or loss of the land, then one is subjected to an existence marred by extreme unease and concern. Further, since rising sea levels and severe storms threaten not only death but forced displacement, and since forced displacement (as earlier argued) constitutes a form of identity loss, climate change threatens the loss of identity, in addition to mental and physical harm. This, as mentioned, can alter one's association to their place, and thus alter parts of their identity in detrimental ways. Taken together, those living in coastal and island areas must live in a state of constant uncertainty; in a state of fear of losing their lives, their homes and homeland, and subsequently, pieces of their identity and social connection to others in their community.

Moreover, as aforementioned, Card (2010) asserts that "debilitating fear" and severe mental suffering are intolerable harms. Although existential threat is not an action (or even a

deliberate nonaction), the trauma and extensive suffering it causes is real and legitimate. Put simply, those living in coastal and island areas suffer actual harm from the threat of climate change events. That threat includes the threat of physical harm (including death) as well as the threat of forced displacement and the loss of one's place and thus identity. That harm includes severe mental suffering in the form of fear, anxiety, and trauma, which, on Card's account, is intolerable harm. Therefore, I argue that the threat of impending catastrophic consequences of anthropogenic climate change produces actual, real suffering and not only the threat of suffering. That suffering is severe mental anguish, fear, and trauma which Card identifies as intolerable. And since the threat of forced displacement results in the actual felt harms of mental suffering and the actual (adverse) changes to one's identity perceptions, the threat itself is in fact intolerable harm.

Furthermore, Bell's (2011) analysis explains how victims of anthropogenic climate change suffer basic human rights violations (such as forced displacement). In discussing whether a mere risk to human rights (such as the risk of forced displacement) constitutes a violation of one's basic human rights, he argues that having rights does not merely mean being free from violations that are presently hindering those rights. Rather, for Bell, human rights must be extended to ensure adequate protection from threats of violations of one's rights— that is, to possess our rights, we must have an assurance that we can enjoy our rights. Effectively, inadequate protection from human rights violations can itself be a violation. However, Bell (2011 p. 111) makes clear he is not talking about just any possible threat to human rights, only what he calls a "social guarantee" against "standard threats," meaning that we ought to be protected from reasonably predictable threats. Anthropogenic climate

change is one of those "standard," or reasonably predictable, threats according to Bell. In other words, Bell offers a further argument for why the threat of forced displacement is intolerable harm. The argument can be stated as follows: Forced displacement is a human rights violation. A failure to protect against reasonably predictable threats to human rights is also a human rights violation. Anthropogenic climate change is one of those reasonably predictable threats.[6] Therefore, those who face the threat of forced displacement due to anthropogenic climate change have their basic human rights jeopardized (and thus violated according to Bell), since adequate measures are not in place to prevent forced displacement for people living in coastal or island areas. And since intolerable is defined as a deprivation of basic rights, this threat is an intolerable harm.

When considering the deadly consequences of climate change considered in this essay, it is important to note that this is not a question of *potential* threat. It is commonly known that sea levels are continually rising and that there are areas that were once coastal but are now fully submerged. In other words, climate change is not merely a threat; it has already resulted in the deaths and forced displacement of many coastal and island inhabitants, and will result in many more if ocean levels continue to rise. Therefore, the threat here considered is not one that may or may not happen. Unless profound changes are made to slow the emissions of GHGs into the atmosphere, ocean levels will continue to rise and storms will be more frequent and more severe. The question, then, is not whether there is a threat, or even whether the threat will be realized. Rather, it is a question of when it *will* happen. The threat facing people who live in coastal and island areas is palpable and legitimate. The

[6] See also the earlier argument about reasonable foreseability.

intolerable harm resulting from that threat is likewise palpable and legitimate.

I therefore maintain that forced displacement can indeed make one lose an important psychological aspect of themselves and their identity. And, as noted earlier, since Card admits that a loss of social contact can be an intolerable harm, I readily assume that she would allow that losing a compelling aspect of one's identity also constitutes an intolerable harm. Indeed, in her discussions on genocide, Card puts forward a concept of what she terms "social death" (Card, 2003; 2010). Though my discussion here differs from her analysis of cultural genocide, the concept is useful in my own analysis. According to Card (2003 p. 63), social death is a loss of social vitality that can have profound consequences for individuals and communities, including "a loss of identity and consequently a serious loss of meaning for one's existence." As earlier argued, permanently losing one's place also means losing the social vitality that the place fostered. Therefore, the permanence of a loss of place may be a type of social death.

Card (2003 p. 76) further asserts that a mere memory of one's place is "insufficient to create social vitality" since all that is left for the person is the *memory* of the social relations they once had rather than their *actual* full participation. This is reminiscent, too, of Sagoff's notion of temporal community described earlier in the paper. For Card, our relationships are what give meaning to our lives (Snow, 2016). Since people have strong relationships with their place, homes, and homelands, losing those relationships deprives people of a compelling and meaningful aspect of their lives (and surely having meaning in life is requisite for life to be tolerable). A mere memory of that is not the same as having those relationships. I do not mean to suggest that forced displacement due to anthropogenic climate change is

synonymous with cultural genocide, but the concept of social death seems to shed additional light on just how intolerable the harm is for these victims of anthropogenic climate change who are forcefully displaced.

While what is meant by a life not worth living remains vague (see earlier footnote), I argue from a position that accepts Card's theory of evil. Thus, using her definitions, I contend that a loss of identity and sense of place, coupled with severe suffering through the manifestations of fear, anxiety, and an inability to make decisions free from compulsion (all of which are present in the case of forced displacement), satisfies the intolerable harm condition in Card's theory of evil. In other words, I argue that the effects of climate change considered here adhere to Card's definition of intolerable harm, which is the second component of the Atrocity Paradigm.

Thus far, I have argued that the first two conditions of the Atrocity Paradigm (that evil is reasonably foreseeable and an intolerable harm) apply to the case of climate change I consider in this essay. I argued that since the anthropogenic causes of climate change and its dangerous consequences are widely understood, it is clearly reasonably foreseeable. I then argued, by use of de Shalit and others, that the ramifications of climate change considered in this paper result in the forced displacement and death of inhabitants of coastal land, which are intolerable harms according to Card's definitions. Next, I will evaluate how those intolerable harms are produced by inexcusable wrongs, which is the final component of the Atrocity Paradigm.

Norlock (2004) examines the Atrocity Paradigm's application to environmental evils against ecosystems. Although her aims differ from those considered in this paper,

she offers a useful point that calls for greater attention.[7] She suggests that climate change is evil on an intuitive level because it is human-caused, and because it has resulted, and will continue to result in, irreversible consequences (*ibid* p. 90; 91). Not only does this build on the previous point that the effects of climate change constitute intolerable harm, but it offers some reasoning as to why it is inexcusable. More specifically, it seems to suggest the following argument. Human activity emits dangerous levels of GHGs into the atmosphere, causing the Earth's climate to change. The changing climate, in turn, has caused sea levels to rise and more severe storms to occur, which has submerged what was once inhabitable land. That outcome is irreversible—those submerged lands cannot be returned. And since, as argued earlier, that loss of land conveys intolerable harm for the people who once inhabited that land, the intolerable harm is likewise irreversible. Furthermore, anthropogenic emissions are causing sea levels to continue to rise, which means that these intolerable and irreversible harms will surely continue to occur. At the very least, then, that the effects of climate change are human-caused and irreversible seems to offer an intuitive explanation for why it is inexcusable wrongdoing.

However, more needs to be said about what exactly is meant by inexcusable wrongdoing before it can be adequately assessed whether or not the effects of anthropogenic climate change adhere to the final component of the Atrocity Paradigm. Card (2010 p. 37) clarifies that calling evil "inexcusable" means that there

[7] See Norlock (2004). Her line of inquiry focuses on whether Card's definition of intolerable harm applies to nonhuman and insentient beings. Though she does not offer an in-depth discussion of inexcusable wrongs or culpability, I derive the following interesting point from her arguments.

cannot be a "morally appropriate and defensible reason in favor of the deed or practice." In other words, if a harm can be morally justified in some way (i.e., in that it is for the so-called greater good), then that harm is not evil (though on Card's account, it can still be morally wrong). In the case of anthropogenic climate change, one can argue that although human action results in harm, those actions contribute to an overall higher quality of life. That is, although human activity releases emissions that cause the aforementioned intolerable harms, they are not wholly inexcusable because there is some good that results from it (i.e., we can fly all over the world, get same-day delivery, and so on).

I acknowledge that there are myriad human actions that indeed cause climate change, but simultaneously provide goods and services that improve quality of life. However, I argue that those are not morally justifiable reasons. The fact that people have access to increasingly convenient and efficient goods and services that improve the overall quality of their lives does not warrant the kind of suffering that people living in coastal or island areas face as a result of those same goods and services. Indeed, Card (2010 p. 34) says that although there are reasons why evil occurs, those reasons "do not count morally in favor of the deed. They carry no moral weight."

There are doubtless many who do not face intolerable harm due to anthropogenic climate catastrophe, and who benefit from an improved quality of life. But that benefit by no means constitutes what Card (2010 p. 39) calls a "good moral reason" for allowing those beneficial actions (that concomitantly put others in peril) to continue. Quality of life may indeed be greater, but the actions that improve some people's lives release emissions which in turn cause others intolerable harm. Essentially, the fact that people are benefited from a more comfortable and convenient lifestyle

does not carry moral weight in the case of climate change, and thus cannot justify in any way the intolerable harm that it produces. Indeed, Bell (2011 p. 115-116) says that we have a duty not to accept benefits that arise out of human rights violations. Since anthropogenic climate change violates its victims' human rights (as argued earlier regarding intolerable harm), we ought not to accept benefits (i.e., goods and services) that contribute to anthropogenic climate change, and which thus violate people's human rights. Therefore, the argument that anthropogenic climate change is not inexcusable because it has benefits is not apt, since accepting those benefits, on Bell's account, is wrong.

To underscore this point I invoke Ross's theory of moral pluralism, which offers another appealing explanation as to why those goods and services are morally unjustifiable on Card's account. In basic terms, Rossian pluralism argues that we have multiple moral principles that guide our actions and tell us how we ought to act and what we ought to do, generally speaking (Ross, 1930). In situations in which there is moral conflict—when two or more of our behavior-guiding moral principles are conflicting, Ross says we must examine the specific situation to determine which principle holds the most moral weight and thus which principle ought to guide our action (McNaughton, 1988 p. 199-200; Ross, 1930 p. 18,46). In Rossian terms, we have a set of action-guiding prima facie principles that determine our prima facie duty, whereas what we actually do in specific instances is our duty proper (McNaughton, 1988 p. 197-198; Ross, 1930). In the inevitable cases of moral conflict, then, we determine which properties of the situation are morally relevant, and thus determine which of the prima facie principles carries the most moral weight (in the particular instance) and act accordingly (this is then our duty proper).

It is useful to evaluate the case of anthropogenic climate change in this paper through the Rossian lens. I readily accept that we have a utilitarian-like moral principle to promote overall happiness and goodness for the greatest number of people. As such, we would like to have convenient, comfortable lives and moderate luxuries. Generally speaking, the goods and services discussed earlier fall into this category, and thus, according to this (prima facie) principle, we ought to promote those actions that produce happiness and convenience for people. However, we similarly have a (prima facie) principle by which we ought to avoid actions that produce harmful consequences for people. Since the goods and services that exacerbate anthropogenic climate change both generally enable more convenient lifestyles *and* cause intolerable harm, we are at a moral impasse; we are facing moral conflict.

To alleviate the conflict, Ross would say we ought to examine the situation to determine which of these two prima facie principles carries moral weight in this situation. Assuming the goods and services I discuss refer to convenience factors such as offering same-day delivery for non-essential items and increasing the number of flight options to give greater flexibility for travel, it is undeniable that the principle of avoiding actions that cause people intolerable harm carries far more moral weight in this case. This is reinforced by the fact that the most vulnerable communities (such as the coastal and island communities considered in this paper) suffer the most from, but have contributed the least to, anthropogenic climate change (IPCC, 2023; UNHCR, 2022). In other words, generally speaking, it is beneficial to have procedures in place that promote our well-being by increasing our overall quality of life, and we ought to pursue those procedures. But when those procedures conflict with an opposing prima facie

principle to not produce intolerable harm, the quality of life principle is not morally relevant in determining the duty proper. In the instance of anthropogenic climate change, our duty proper is to avoid actions that produce intolerable harms. Therefore, as Card says, there is no "morally appropriate and defensible reason in favor of" continuing the actions that contribute to the anthropogenic climate change effects of rising sea levels and severe storms. For that reason, the intolerable harm produced by human-caused climate change is inexcusable and thus is evil on Card's account.

However, my discussion of an improved lifestyle remains vague and is thus in need of greater explication. Same-day delivery, for example, is a non-essential service we can do without and still live comfortably. The difference between receiving the shoes I ordered online later today and later this week is not significant, and certainly not on moral grounds. Yet a question arises of where to draw the line. Where do technologically advanced goods and services stop being non-essential luxuries and begin to be nuisances or even impede healthy (medico-social) development? I would like to make it very clear, then, that I am not advocating an extreme position contrary to technological advancement. I do not even advocate a position that rejects any non-essential goods and services, since I assume that we have a prima facie principle to promote well-being which includes reasonable non-essential luxuries. The line I draw is that, as a collective, we ought to divest and avoid actions (both individual and societal) that release significant GHG emissions and consequently exacerbate climate change.

A complex and multifaceted package of policy efforts aimed at decreasing overall emissions would be most effective at mitigating the intolerable harms of anthropogenic climate change without threatening contemporary technological advances. More specifically, I

advocate for policy efforts and governance that divest from fossil fuels and invest instead in renewable energy; that disincentivize individual consumption of single-use plastics; that incentivize and invest in green infrastructure and green public transport; that promote the reduction of individual and national carbon footprints; and so on. A detailed discussion of these efforts and their ramifications is beyond the scope of this paper. I merely seek to make clear that in condemning anthropogenic climate change as inexcusable, I do not claim that all goods and services that release GHG emissions are inexcusable, only that there ought to be more cognizance and intentionality in effective mitigation efforts.

Indeed, Ross (1930 p. 30) himself concedes that in every one of our actions, we are taking a "moral risk," since there will always be good and bad consequences resulting from our actions. What I call inexcusable (on Card's account) is the continual reliance on easily avoidable goods and services that exacerbate anthropogenic climate change. Russell and Bolton (2019) underscore how despite increasing awareness that climate change is human-caused, nothing is being done to change course. They succinctly state that "humankind's collective response has been little more than to continue contributing to the problem" (*ibid* p. 3). Therefore, in order for anthropogenic climate change to not be utterly inexcusable (and thus evil on Card's view), mitigation efforts must be implemented, anthropogenic GHG emissions must be hindered, and intolerable harms must be reduced.

Still, the Atrocity Paradigm mandates that the intolerable harm not only be morally inexcusable, but that it is *produced* by inexcusable *wrongdoing*. "Wrongdoing" implies that there is some responsibility involved. Yet, Russell and Bolton (2019 p. 7) point out that climate change contains "responsibility ambiguity," or the diffusion of responsibility which makes it difficult to assign blame and

point to who is most culpable for the harm inflicted by anthropogenic climate change. Effectively, there are too many agents implicated in the release of GHG emissions that it is impossible to determine who is "most" blameworthy for exacerbating climate change and hence causing the mentioned intolerable harms. However, Card (2010 p. 37) explains that though something like climate change is not an individual or institution, and thus does not have easily identified culpable parties, it does in fact involve responsibility. For Card, responsibility is more about a general failure to control against or mitigate intolerable harm. This means that people "can suffer intolerable harm as a result of a practice that is indefensible (even unjust), even though no one is culpable" (*ibid* p. 41).

While it certainly can be argued that in the case of climate change, there are some who are more culpable than others,[8] that argument is not needed here. It is sufficient that climate change is a result of indefensible (inexcusable) human action and that people suffer intolerable harm because of it. In other words, despite there being responsibility ambiguity, we know the effects of climate change discussed in this paper are anthropogenic, not natural, and so we know there is responsibility involved. Again, I refer to responsibility in the way that Card does; in that there is a collective human responsibility to mitigate (human-caused) intolerable harm. Anthropogenic climate change fails in that regard and thus it is produced by inexcusable wrongdoing.

Before I conclude that climate change is evil, however, I want to refute a last potential objection. The ramification of climate change I have considered in this paper, which is indicative of climate change's catastrophic consequences

[8] See, for example, Russell and Bolton (2019), who argue that profit-driven energy companies are the most blameworthy.

more broadly, is the threat of rising sea levels and more severe storms for coastal and island areas. The submergence of land from rising sea levels and severe storms are natural events. Thus, it might be contended that these natural catastrophes are not evil, since "they are not produced, aggravated, and so on by" inexcusable wrongdoing (Card, 2010 p. 6). This is a weak objection, however, as it is indisputable that these "natural" events are caused by overtly human actions. Therefore, these "natural" events *are* precisely produced and aggravated by inexcusable, human-caused wrongdoing. The evil I am assessing, as noted at the onset of the paper, is moral, not natural, evil, since the changing climate is the result of anthropogenic (not natural) activity. For that reason, then, the Atrocity Paradigm applies to climate change. The earlier suggestion that climate change is intuitively evil because it is caused by human activity and results in irreversible (intolerable) harm thus seems to hold.

This essay sought to evaluate whether Card's Atrocity Paradigm applies to climate change to see whether anthropogenic climate catastrophe is indeed evil. The Atrocity Paradigm determines that for something to be considered evil, it must first, be reasonably foreseeable; second, cause intolerable harm; and third, be produced by inexcusable wrongdoing. I argued that all three components apply to climate change; thus, I conclude that climate change is evil, and not merely wrong. This distinction is an important one, and not only for semantic reproach. One reason why it is important to differentiate evils from lesser wrongs is that it helps "set priorities when resources are limited for preventing wrongs and repairing harms" (Card, 2010 p. 7). Calling climate change evil is important not only for the forceful condemnation evoked by the label of "evil," but in order to make addressing it a priority. Evils require

immediate attention since their victims suffer intolerable harm. Therefore, condemning anthropogenic climate change as evil means that as a collective we ought to prioritize the mitigation of greenhouse gas emissions. Also, in line with Card, the aspiration is that in identifying an evil, the upshot will be that people stop supporting evil practices (*ibid* p. 8). Thus, another reason for calling climate change evil rather than wrong is that it will hopefully induce a greater cognizance of the consequences of human actions, and hence push people to make the choice to limit their contribution to anthropogenic climate change.

I began this essay by showing that the effects of climate change are reasonably foreseeable. I then argued that the victims of the effects of climate change suffer intolerable harm. I used de Shalit's discussion on the impact of forced displacement for climate refugees to put forth an argument that forced displacement is an intolerable harm. Finally, I argued that since those intolerable harms result from anthropogenic climate change, they are utterly inexcusable. I considered the argument that increased quality of life might mitigate the intolerable harms suffered by victims of climate change, but ultimately refuted this objection. Therefore, I concluded that climate change causes reasonably foreseeable intolerable harm and that it is produced by inexcusable (human) wrongdoing, thus condemning climate change as evil according to Card's Atrocity Paradigm. I then ended the discussion by underscoring the import of labeling climate change evil, rather than merely wrong.

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References

Anderson, Jon. 2004. "The Ties that Bind? Self- and Place-identity in Environmental Direct Action." *Ethics, Place and Environment*, 7(1-2), 45-57.

Bell, Derek. 2011. "Does Anthropogenic Climate Change Violate Human Rights?" *Critical Review of International Social and Political Philosophy*, 14(2), 99-124.

Card, Claudia. 2003. "Genocide and Social Death." *Hypatia*, 18(1), 63-79.

Card, Claudia. 2010. Confronting Evils: Terrorism, Torture, Genocide. Cambridge University Press.

de Shalit, Avner. 2011. "Climate Change Refugees, Compensation, and Rectification." *The Monist*, 94(3), 310-328.

IPCC. 2023. 'Summary for Policymakers' in Core Writing Team, H. Lee and J. Romero (eds.) *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC, Geneva, Switzerland. https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

McNaughton, David. 1988. Moral Vision: An Introduction to Ethics. Blackwell Publishers Ltd.

Norlock, Kathryn. 2004. "The Atrocity Paradigm Applied to Environmental Evils." *Ethics and the Environment*, 9(1), 85-93.

OHCHR. 2018. "Key messages" in *Human Rights, Climate Change and Migration*. OHCHR. https://www.ohchr.org/sites/default/files/Documents/Issu

es/ClimateChange/Key_Messages_HR_CC_Migration.pdf

Ross, William D. 1930. 'What Makes Right Acts Right?' in *The Right and the Good*. Oxford University Press.

Russell, Nestar and Annette Bolton. 2019. "Climate Catastrophe and Stanley Milgram's Electric Shock 'Obedience' Experiments: An Uncanny Analogy." *Social Sciences*, 8(6), 178.

Sagoff, Mark. 1992. "Settling America or the Concept of Place in Environmental Ethics." *Journal of Energy, Natural Resources, & Environmental Law*, 12(2), 349-418.

Sen, Amartya. 1999. Development as Freedom. Alfred A. Knopf, Inc.

Snow, James. 2016. "Claudia Card's Concept of Social Death: A New Way of Looking at Genocide." *Metaphilosophy*, 47(4/5), 607-626.

UNHCR. 2022. Climate Change, Displacement and Human Rights. UNHCR. https://www.unhcr.org/uk/sites/uk/files/legacy-pdf/6242ea7c4_0.pdf

Diálogos 114, 2024, pp. 195-226.

Space Debris: Litter or Pollution?

Michael Aaron Lindquist
Northland College
mlindquist@northland.edu

Abstract

In this paper, I undertake a conceptual analysis of ordinary usages of the concepts of "litter" and "pollution." If "litter" or "pollution" applies to space debris in its various contexts, then in dealing with space debris as an ethical concern, we may more neatly apply arguments for the wrongness of litter and pollution to these new contexts. After engaging in a conceptual analysis of "litter" and "pollution," I consider whether these concepts apply to space debris, examining three contexts: (1) surface debris on Moon and Mars, (2) intentionally crashing objects into gas giants, ice giants, and stars, and (3) the pressing issue of orbital space debris. I conclude by finding that neither "litter" nor "pollution" cleanly applies to any of these three contexts.

Keywords

Space Debris, Environmental Philosophy, Litter, Pollution, Ethics

Resumen

En este artículo, emprendo un análisis conceptual de los usos ordinarios de los conceptos de "basura" y "contaminación". Si "basura" o "contaminación" se aplican a los desechos espaciales en sus diversos contextos, entonces, al tratar los

desechos espaciales como un problema ético, podremos aplicar con mayor claridad los argumentos sobre la ilicitud de la basura y la contaminación a estos nuevos contextos. Tras realizar un análisis conceptual de la "basura" y la "contaminación", me planteo si estos conceptos son aplicables a la basura espacial, examinando tres contextos: (1) los desechos superficiales en la Luna y Marte, (2) los objetos estrellados intencionadamente contra gigantes gaseosos, gigantes de hielo y estrellas, y (3) el acuciante problema de los desechos espaciales orbitales. Concluyo concluyendo que ni "basura" ni "contaminación" se aplican claramente a ninguno de estos tres contextos.

Palabras clave

Desechos espaciales, Filosofía medioambiental, Basura, Contaminación, Ética

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Introduction

A primary challenge one encounters when applying the tools of environmental philosophy to the context of outer space is its radical difference from our earthly environments; when engaging with the world beyond Earth's atmosphere, things look profoundly different – even where some similarities persist, the scale and material is radically dissimilar. It's easy to lose oneself in the wonders of the universe when looking at other celestial objects, even the ones in our own solar system: basic questions children may ask, such as "what's it like on Jupiter?" lead us in incredible directions. Alien worlds like Jupiter, Mars, or Moon present us with special philosophical problems when approached from the standpoint of environmental ethics by stretching

philosophical and conceptual resources. Anthony Weston makes this point, arguing that some of our concepts may simply not be up to the task of leaving our own atmosphere. Weston asks:

> How much of our existing conceptual equipment–how many of our moral and environmental categories–are up to the trip? ...there is a certain "escape velocity" from the conceptual and ethical environment of Earth as well: not an escape from ethics as such–that had better be emphasized right away–but an invitation to rethink everything in a vastly different and larger context. (Weston 2009, 165–166)

The space environment presents a challenge for the project of environmental ethics by straining presuppositions and notions with which philosophers are used to conducting their work. Insofar as language develops for use and successful communication in relation to specific communities, cultures, environments, and ways of life, the alienness of the world beyond Earth is sure to continue to challenge ordinary conceptual resources in surprising ways.

The goal of this paper is to diagnose whether certain concepts, namely those of "litter" and "pollution", can make the journey to outer space. Approaching space ethics, or astroethics,[1] from the point of view of environmental ethics,

[1] Space ethics and astroethics might be thought of in two distinct ways: first, as an area of "applied" ethics concerned with concrete ethical problems related to space exploration, and so as similar to other applied areas like business ethics, engineering ethics, etc., and second, as an emerging theoretical tradition in ethics. As Milligan and Schwartz note, the area of space ethics emerged out of the advancing activities associated with space exploration, and so its genesis is tied more directly to the applied concerns (Milligan & Schwartz 2023). The theoretical side may, instead, approach space exploration as giving rise to an originary stage of ethical theorizing as posed by Weston (2009), and thereby

it is my intention to explore the applicability of "litter" and "pollution" as environmental concepts to space. Exploring the potential application of these concepts to the issue of space debris may expose where they are limited, further determining where conceptual expansion or generation may be needed for contending with philosophical problems associated with space exploration.

It is taken for granted that littering is wrong – even a paradigmatic wrong for which many may offer environmental reasons to explain. Generally, we also tend to have negative associations with pollution, and may find that polluting acts are morally wrong with reference to environmental reasons. If instances of activity in outer space can be classified as either littering or polluting, then we may apply readymade reasoning to explain the wrongness of those particular actions and their wrong-making features; however, if there are cases where we cannot do so, it appears we will need some innovation in our conceptual or moral resources to deal with them, perhaps through redefinition or the generation of new terminology.

In considering outer space and the application of the concepts of litter and pollution, I will evaluate three distinct contexts of increasing level of challenge to our conceptual resources, and each constituting a kind of "space debris." The first case concerns the leaving of trash on other celestial bodies with definite surfaces; for example, we have things we have left on both Moon and Mars (Weston 2009; Kilic 2022;

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engage with the issues that arise for developing ethical theory and related concepts (see, for example, Lindquist 2022); in this way, the theorizing begins to realize the predicted direction of ethics outlined in Nash's (1989) *The Rights of Nature*, though one need not maintain that the historical, extensionist project is the proper method for such theorizing (contrast Nash's idealized and projected history (1989) with Weston's arguments for a multicentric approach (2004)).

Maki 2022). The second is that of intentionally crashing objects such as probes and satellites into gas and ice giants, such as the outer four planets of our solar system: Jupiter, Saturn, Uranus, and Neptune (See, for example, the ends of both the Cassini and Galileo spacecraft in Siddiqi 2018). The second set of cases may also apply beyond gas and ice giants to stars as well. The third is that of orbital space debris–the debris that sits in orbit around a celestial body–often in the form of defunct satellites, small pieces of metal, flecks of paint, exploded rocket boosters, and other remains from space exploration. As defined in the United States' *National Orbital Debris Implementation Plan*, "Orbital debris, sometimes referred to as 'space junk,' is defined as human-made, non-functional, objects–including fragments and elements thereof–that exist in Earth orbits or are re-entering Earth's atmosphere" (2022, 7).

In Section II, I will provide a conceptual analysis of litter, pollution, and related concepts (e.g., littering, pollutants, etc.) to make explicit their basic structure for then applying them to the outer space cases. In Section III, I will examine the variety of space contexts listed above, while highlighting historical cases of these sorts of activities, focusing most on the third set of cases. Section IV will serve as a conclusion, summarizing the findings of the preceding analysis.

Conceptual Analysis: A Theory of Litter & Pollution

Curiously, little philosophical literature can be found dealing explicitly with the concept of littering. In some ways, littering may be taken to be such an obvious case of wrongdoing that it needs no in-depth analysis, and as such there does not yet exist a "theory of litter." However, a much larger focus on pollution as a concept does exist in the philosophical literature, especially related to work on climate

change. In this section, I will provide a comparative analysis of both the concept of litter and the concept of pollution, using paradigmatic cases to tease out some broad conditions for the proper application of these concepts. I do not take the following analysis to be one of trying to distill necessary and sufficient conditions for the proper application of these concepts. The conditions for proper application outlined below are rather common threads among instances of appropriate application of the concepts of litter and pollution in ordinary speech and contexts. Since ordinary language admits of a certain significant degree of imprecision, borderline cases for proper application are to be expected. Thus, judgments of degree and fit need to be applied in difficult cases, and as such, each potential instance of litter or pollution under consideration may not strictly fit the conditions identified below. First, I will consider litter, and then next pollution.

On one hand, we have litter. For litter, consider the following case, which I take to be paradigmatic:

> A parent and small child are at a local park. An ice cream truck arrives, and the parent takes the child to get a popsicle. The child, receiving their popsicle, opens the wrapper, drops it on the ground, and begins enjoying their treat. The parent chastises the child for their littering, explaining why littering is wrong and is something that they should not do.

The case itself exemplifies some standard aspects of ordinary littering that one can attend to in exploring the concept. Further, the reasons given by the parent may be investigated for their ability to extend to outer space contexts. The case highlights that litter tends to be a concrete object to which one can point as constituting the litter. Second, litter tends to be localized; it appears to be

more small scale. While it's difficult to say precisely what the boundaries of "localized" or "small scale" are in reference to some ordinary conception of litter, it might be given some rough boundaries in line with ordinary sense perception, thereby being perceptible, or understandable in a scale befitting human comprehend-ability. Another paradigmatic case of litter with these features would be tossing cigarette butts on the ground.

In paradigmatic cases of littering, one can often point to the physical objects of litter, which can also be relatively easily removed, and they appear in a particular place.[2] Litter tends to take the state of a physical solid in ordinary usage. It might be a stretch of usage to say that someone spraying aerosols in a park (for whatever reason) is littering, or that a boy scout who improperly disposes of some dish soap in the woods is littering. Litter often appears to refer to solids in ordinary usage, allowing for fairly clean ostension (this is also not to say that the aerosol-sprayer or the boy scout are thereby polluting in each case instead). Further, that there are cases where one term – either litter or pollution – applies and the other does not, provides reason to believe that litter is not simply a kind of pollution.

There are at least three common arguments for the wrongness of littering on offer. Some reasons may be better than others and some may only apply under particular ethical

[2] In considering micro-trash, such as microplastics, etc., i.e., those things that break apart into smaller and smaller pieces rather than decompose into some other substance, it may be noted that they often, though still being perhaps formally solid, appear to us as something more diffuse and dispersed like a gas in the water, rather than as a solid. The diffuseness may play a part in our using the language of plastic *pollution* in the oceans, in addition to the actual negative ecological impacts. So, it appears that litter can *become* pollution, but it isn't so clear that litter and pollution are themselves on a spectrum, such that something can be, say, thirty percent litter and seventy percent pollution.

frameworks; however, it is not my intention here to weigh these against one another to say something definitive about what kinds of reasons are good ones for condemning acts of littering and which are not, as the current analysis is more straightforwardly descriptive about the operation of particular ordinary concepts. The three common types of arguments offered are: (1) possible ecological harm, (2) aesthetics, and (3) viciousness.

First, in terms of possible consequences, one might point to something like the possibility a bird mistaking a discarded bendy straw as a worm and choking on it. Sometimes such concerns are born out in gory reality, such as the number of birds, especially sea birds, found dead with plastic trash left in their bodies (Parker 2015). In such cases, insofar as these concerns rely on broadly consequentialist reasoning, it seems that the litter is made wrong only if it actually harms some animal or other. But further, insofar as the act presents a distinct threat to animals who may not know better, potential for harm is non-negligible – it is, perhaps, too risky to litter as the probability and severity of harm are significant. The objection could also be framed in a more deontic fashion as some duty or other to avoid creating particular kinds of risky situations. The notion of a "potential" for harm, especially in this environmental context, is indeed vague, but I take this to be an emblematic feature of many ordinary concepts, including "potential." While one could perhaps attempt to further refine the boundaries of something's having the "potential for ecological harm" as a theoretical development, pinning down the ordinary notion would, I think, be antithetical to the methodological orientation of the current project. At the very least, it seems reasonable to suppose such usages of "potential" have in mind some more temporally proximate possible harms; for example, one may worry more readily about the potential

harm that some littered straw wrapper may cause to some very real bird, not some possible, not-yet-born bird.

Second, broad aesthetic objections to littering may take the character of espousing aesthetic evaluations of environments, whether natural, artificial, or mixed. On more objectivist grounds, beauty (or some other possible, positive aesthetic quality, e.g., majestic-ness, grand-ness, wild-ness, etc.) is worthy of protection, and insofar as littering degrades the positive aesthetic attributes of an environment, it may be taken to be bad or wrong. Such an aesthetic objection to littering is often the type many have against trash along busy roadways, as often these places are liminal spaces and not significant sites of the sort of wildlife people tend to care about; in place of reference to harm done to the other-than-human world, the focus is rather on an aesthetic offense to the observer. Though the objection may be aesthetic in character, the harm, whether primarily conceived of as purely aesthetic or also as partaking in the moral, is mainly referenced in relation to the observer, not the environment itself.

Third, some may argue that there is something vicious about the act of littering (i.e., it expresses that the actor's character is constituted in part by some significant moral vice), providing instead virtue-based reasons for the wrongness of littering. Such attributions may be common upon witnessing an act of littering. For example, the person who throws a paper bag from a fast-food establishment out the window of their car on the highway might be attributed a negative, vicious, character; we may say that such a person is uncaring about the world they live in, uncaring about others, cold-hearted, lacks an appreciation for beauty, etc. Insofar as a virtuous person is one who cares about the natural environment, the environment they live in with others, cares about the wellbeing of others, or cares about

the aesthetic preferences of others (within reason), the vicious character of the litterer represents a vice of deficiency and is thusly objectionable.[3]

On the other hand, we have pollution. For pollution, consider the following case, which I take to be paradigmatic:

> Walking along a lakeshore, in the distance a person sees what appears to be an oil refinery or a factory of some sort. Spewing from smokestacks appears to be some gaseous mixture. Such a mixture likely contains carbon dioxide, a known greenhouse gas that contributes to global anthropogenic climate change.

It would seem odd to say in such a case that the factory or refinery participates in the act of littering. Corporate/industrial cases of pollution, whether instances of corporations intentionally dumping waste products into rivers, or more accidental instances of fertilizer runoff into nearby waterways, seem to also be paradigmatic cases.

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[3] Littering is presented in literature in a multitude of ways, especially in environmentally oriented pieces, such as *Sick Puppy* by Carl Hiassen (2000) and *The Monkey Wrench Gang* by Edward Abbey (1976). In Hiassen's book, the plot is jumpstarted by the main character's vindictiveness against a highway litterer, initiating the outrageous series of events and ecotage (or monkeywrenching) typical of many of Hiassen's novels. In Abbey's book, one of the main characters engaged in the direct action within the plot, George Washington Hayduke, litters constantly, throwing beer cans out the window of his car all along the highway. Such behavior appears starkly at odds with the ethos of the group and what we typically take pro-environment actors to be like. As has been previously explored by Trumpeter (2021), littering can take on the character of the action of an activist according to Abbey, holding that the litter contributes to and highlights the ugliness of a stretch of highway. Trumpeter (ibid.) also comments on litter and biodegradability in Ernest Callenbach's *Ecotopia* (1975), though such visions may, in more wild contexts, echo complaints of fruit peels left by previous hikers along trails (see, for example, Castrodale 2019).

Looking at more personal cases of pollution, it makes more sense to claim that the greenhouse gas emissions from one's car constitute pollution and polluting, than it does litter or littering.

So, what are some commonalities between various instances of pollution? For one, the object of pollution appears to be gaseous or liquid in terms of its phase of matter (more modestly, pollution/pollutants are, generally, non-solid in their perceived character). Due to a lack of perceived solidity, pollution and pollutants appear to be more commonly spatially dispersed; as such, while one can sometimes point to the source of pollution, as in the factory or oil refinery case (even the name of a particular classification of pollution is "point-source pollution"[4]), the actual pollutant has a particular dispersal to it that may make it more difficult for clear ostension. The perceived ethereal nature of the substance of pollution/pollutants is further highlighted by the ever-increasing kinds of pollution identified by environmental scientists and activists, such that alongside pollutants like anthropogenic greenhouse gasses, light pollution and noise pollution are garnering more attention (both light and noise would likely be intuitively characterized as non-solid, though not formally gaseous).[5] Pollution also appears to be further dispersed in its effects, i.e., it may not be localized (or as localized) compared with

[4] The United States Environmental Protection Agency clarifies "point source" pollution: "The term 'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged" (2022).

[5] As we come to better understand animal olfaction and the chemosenses more generally, it is possible that we may also find olfactory pollution of environments to be a further problem negatively affecting wildlife. For some discussion, see Lindquist 2023.

litter. The negative effects of certain pollutants extend globally; excessive greenhouse gas emissions (in both quantity and rate of production) impact the climate; what's dumped into a river ultimately flows downstream into other bodies of water; light and noise extend atmospherically with difficult to discern boundaries, locations, or discrete objects. Due to the apparent messier nature of gasses, liquids, and non-solids more generally, the effects of pollution are often highlighted more clearly than the pollutants themselves. Effect areas of pollution are larger and more dispersed, causing actual negative environmental effects rather than merely possible ones associated with some of the potential wrong-making reasons offered against a particular act of littering. Furthermore, the negative ecological impact appears to be a weighty component of the concept of pollution; an anthropogenically introduced liquid or gas, absent negative effects, would not be considered pollution. A negative environmental impact of some kind or other might approach something like a necessary, though not sufficient condition for something to be pollution; negative ecological impacts may extend to litter as well, including death, as mentioned above with seabirds (Parker 2015).[6]

As Aaron Lercher (2004) points out, blameworthiness for pollution is complicated, but may be further elucidated through comparisons with litter. We almost always think of littering as blameworthy and something to be avoided if possible, odd fringe cases aside. Pollution, especially when considering individual actions and the scale of effect of pollution-based problems, complicates simple ascriptions of blameworthiness. For much of individual pollution,

[6] Consider, for example, dumping a thimble of clean water with no significant difference in temperature into a river. The quantity could be extended somewhat as well, but it would seem odd to classify such an act as one of pollution since no ecological harm would result from it.

individuals may be constrained by situational factors wherein consequentialist-style cost-benefit analyses play a significant role. Lercher presents the ordinary example of driving to work, which Lercher identifies as a "polluting act,"[7] wherein there are particular pollution costs and benefits to driving to work (e.g., driving causes exhaust and carbon dioxide emissions, but I also get where I want to go) and particular situational factors may play into blameworthiness in each case (e.g., whether the driver is negligent in some significant regard, etc.) (ibid.).[8]

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[7] Lercher (2004) defines a "polluting act" as "an act ('making something happen,' however that may be understood) such that there are externalized costs that are widely scattered" (408). For Lercher, the scope of a polluting act is thus tied to externalized costs, and so extends to things that likely would count as odd instances of pollution to many people, such as the danger posed to drivers of smaller cars by those who drive larger cars. Since Lercher's project is not concerned with attempting to reveal some folk, intuitive, or ordinary concept of pollution, but rather develops the notion of a polluting act for the purposes of exploring blameworthiness, the differences in our analyses are not imperative.

[8] Cases like driving are unique in comparison to something like the larger carbon footprint discourses. With driving, the driver appears to be more directly related to the polluting act. When considering pollution generated through supply chains, for example, the greenhouse gas emissions associated with meat eating or the methane emissions from rice production, the blameworthiness of the consumer for the requisite emissions is a messy matter. I do not intend to generate a solution or commentary on the ethics of such things herein, as my goal is much more conceptual in looking rather at patterns or kinds of reasoning applied to litter and pollution for then exploring the issue of space debris in different contexts. The point here is that in looking at pollution, we have both individual and institutional instances, but we might justifiably think about blameworthiness for the effects of pollution as applying differently to these different cases, scaled to the polluting entity and the countervailing reasons or justifications for such polluting acts.

Summarizing the results of the above analysis, ordinary conceptions of litter and pollution may thus be compared using the following chart to assist with further analysis:

Litter	Pollution
(1L) Solid, discrete object; easy ostension	(1P) Liquid or gaseous (non-solid); difficult ostension
(2L) Localized; small in scale	(2P) Dispersed; large in scale
(3L) Reference to potential eco-harm	(3P) Reference to actual harm or eco-problem

Space Debris: Litter, Pollution, or Something Else?

For analyzing the application of the concepts of litter and pollution to outer space contexts, I will consider three potential cases of human-generated waste in outer space. The first case is that of leaving trash on other celestial bodies with definite surfaces, such as discarded experiments on Moon, dead Mars rovers, or even debris from Mars landing operations (Weston 2009; Kilic 2022; Maki 2022).[9] The second case is that of intentionally crashing objects such as probes and satellites into gas and ice giants; for example, crashing the Cassini spacecraft into Saturn and the Galileo spacecraft into Jupiter (Siddiqi 2018). The third case is that of orbital space debris. To reiterate, the goal of this paper is to assess the conceptual extension and application of "litter" and "pollution" to outer space contexts, and so straightforward ethical analyses about whether leaving such debris in particular places is actually morally wrong or blameworthy is auxiliary to my analysis herein, though the potential reasons on offer are not.

[9] For example, Cagri Kilic estimates there is about "15,694 pounds (7,119 kg) of human debris on Mars" (2022).

First, consider case one, that of surface debris on celestial objects with definite surfaces. Surface debris on Moon and Mars is much more akin to our regular Earthly contexts in part because such cases more closely resemble the phenomenological orientation provided by planetary gravity. In other words, in each context one can "stand on" some celestial body. When first considering the concept of pollution, insofar as pollution is often liquid or gas and therefore difficult to point at (condition (1P)) because of the dispersal of such substances (condition (2P)), it appears that the debris on such surfaces does not fit the notion of pollution outlined in the previous section. Furthermore, if pollution has a strong tie to having a negative environmental or ecological impact (condition (3P)) it does not appear that such waste on Moon or Mars constitutes pollution. If negative environmental or ecological impact of debris is a weighty condition for being pollution, insofar as the ecological necessitates life, pollution seems to not apply to these contexts insofar as they are lifeless.[10]

[10] The biocentric biases of much of environmental ethics often stumbles when applied to outer space environments, and so shedding these biases are often an important step in adapting much of environmental ethics to them (Schwartz 2019b; Lindquist 2022). As an anonymous reviewer notes, one may think that we could pollute even a lifeless environment through pumping smoke into its atmosphere or dumping radioactive material on it. Regarding whether adding various gasses to the atmosphere of a lifeless planet would constitute pollution, it would depend on their relation to some ecological harm; as such, we would likely still make reference to biotic organisms and their respective goods. For example, compare instances where the introduction of gasses is helpful to some terraforming project to those wherein the gasses would inhibit some settlement project. In those instances where gas introduction is for terraforming purposes, the language of pollution would likely not apply since there's no strictly *ecological* harm being done – in fact, the acquisition of classical ecological goods like biodiversity becomes more achievable. In those instances where gas introduction

Unlike pollution, litter might apply more readily to this first case. Many of the objects are solid: string, heat shields, pieces of metal, etc. (condition (1L)); they may also be positively identified and able to be pointed to (condition (1L)); they can also be localized, though places with some atmospheric dynamics, such as Mars, might move objects and somewhat more widely disperse debris from their initial point of placement (condition (2L)). Ecological harm (condition (3L)) is not really referred to in the case of Lunar or Martian trash in part because, without life, there is no real ecology to speak of. Objections to Martian littering may still appeal to similar reasons as those for Earthly litter; one could reasonably object with appeal to aesthetic reasons or in reference to the viciousness of the actors in such cases, whether individual or institutional.[11] So, it appears to make sense to refer to the objects on Moon and Mars as appropriately constituting litter, though such instances failing condition (3L) may be reason to doubt a conclusive designation as litter. Furthermore, litterers on Moon, Mars, and other celestial objects are perhaps better described in terms of more abstract, social, institutional entities, thus

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may further preclude human settlement and flourishing, the language of pollution may begin to apply in reference to human capabilities for living and thriving. Dangerously radioactive materials present a more difficult case, even in thinking of the forms of matter (the materials themselves may be solids, but the radiation itself may stretch our classifications, so a more thorough analysis of radioactive waste may be needed separately).

[11] In reference to the question of terraforming, Sean McMahon (2016) presents an aesthetics-based objection, which could likely be put to the task of critiquing Lunar or Martian litter as well. Also, within the terraforming literature, Keekok Lee's (1994) approach which highlights awe and humility, as well as Robert Sparrow's (1999) virtue ethics objection, could also levy critiques of littering celestial bodies. Environmental virtue ethics is a growing area, but the resources provided by Thomas Hill Jr. (1983) may also help to elucidate an objection here.

diverging somewhat from paradigmatic cases described in the previous section, referencing state-based space programs or corporations instead of the typical individual actor.[12, 13]

Second, consider case two, that of intentional crashing into gas giants, ice giants, and other celestial objects without "proper" grounds to stand on, such as stars. Two of the more famous examples of intentional crashing into these objects is that of the controlled crash of the Galileo orbiter into Jupiter in 2003 and the Cassini orbiter into Saturn in 2017, both at the end of their research journeys. The seemingly necessary condition of negative environmental or ecological impacts for something to be properly considered pollution or a pollutant appear to not hold for such cases (Condition (3P)). Further, it's not clear that litter could apply neatly as, while the orbiters themselves are discrete, ordinary physical objects, the resultant matter that likely results from the pressure and heat of these celestial objects would render solid objects dispersed as liquid or gas (Objects that may

[12] It is possible that the lack of philosophical reflection and theorizing on litter is due to its often being rooted in individual action, and a rather smaller problem compared to more existential concerns like greenhouse gasses and anthropogenic climate change. There are bigger fish to fry, so to speak, than litter.

[13] As an anonymous reviewer has pointed out, some more ordinary instances of littering may be the result of larger social entities. In the case of surface space debris on Moon, it may be more properly attributable to NASA than any individual astronaut – for a stronger case, the litter from landing rovers on Mars involves no particular individual litterer. While I take it to be the case that paradigm cases of litter are more strongly related to individual actors and paradigm cases of pollution are more strongly related to larger social entities, this is not to preclude individuals polluting or social entities from littering. But the philosophical tools of environmental philosophy surrounding pollution would need to be brought to bear on materials of a different sort with litter – whether this particular extension may be done cleanly or not, requires further investigation.

meet condition (1L) and (2L), through their entry into the celestial object, transform them such that the resultant materials more aptly meet (1P) and (2P)). We might, in a way, compare these celestial objects to gigantic waste incinerators in our solar system. The outpouring of gasses from waste incinerators on Earth qualifies as pollution due to their negative impact on environments/ecosystems and life, both human and other-than-human. Orbiters that crash into Saturn, Jupiter, stars, etc. likely have no similar effect that could be pointed to that would qualify them as pollutants or pollution (Condition (3P)). While crashing such orbiters into these kinds of celestial bodies may not be qualified as litter or pollution, litter and pollution are not the only wrongs one can commit, let alone the only environmental wrongs. One could perhaps still object to such intentional crashings on various moral grounds, whether virtue, deontic, or otherwise, but such objections seemingly cannot appropriately refer to ordinary conceptions of litter and pollution.

Third, consider case three, orbital debris. Before proceeding with an examination of the issue of orbital debris in relation to the concepts of litter and pollution, a contextualization of the issue of orbital debris generally may assist with a more appropriate overall analysis. What is it about near-Earth orbital debris that makes it an issue worth concerning ourselves with? Space debris has accumulated in orbit around Earth from rocket launches, satellites becoming defunct, and collisions between objects in orbit; tests of anti-satellite weapons have also produced further space debris. Although orbital debris sometimes burns up in the atmosphere upon reentry, sometimes it does not. Take the 1978 case of Kosmos 954 for example, a Soviet intelligence satellite that reentered Earth's atmosphere, scattering debris over 30,000 square miles of land in the

Great Slave Lake region of Canada – of special note in the case of Kosmos 954 is that due to its Uranium reactor, there was a real risk of the debris being radioactive (Power & Keeling 2018; Hunter & Nelson 2021).[14] Debris, especially radioactive debris such as that from the Kosmos 954 event, poses a much more straightforward problem for people and environments affected by such waste.[15]

The speed and quantity of space debris presents future challenges for putting more objects in orbit.[16] Debris can accumulate, and it's theorized that a potential debris cascade could result in negative consequences for future space exploration. Referred to as "Kessler Syndrome," it constitutes "a collision cascade in which pieces of space debris begin to collide and break into smaller pieces, eventually creating a cloud of debris around Earth that makes access to space too risky, uneconomical, or even impossible" (Green 2022, 69). A Kessler syndrome cascade may thus trap humanity on Earth unless something could be done to clean up Earth's orbital environment. Kessler's original paper, written with Burton Cour-Palais, was

[14] Hunter and Nelson (2021) provide some important commentary on the Kosmos 954 disaster and its aftermath, highlighting the effects of the debris distribution and radioactive material on the Dene and Métis peoples living on the affected land, as well as inequities and injustices related to the Canadian cleanup efforts.

[15] The individual pieces of debris that crashed could be considered as a kind of unintentional litter, while the radioactive material could be said to have a polluting effect. Nuclear waste and radiation present an interesting case for further theorizing about litter and pollution.

[16] The velocity of orbital space debris can be measured in terms of kilometers-per-second. As Brian Patrick Green recounts in his *Space Ethics* (2022), in 1983 a fleck of paint estimated to be 0.2mm hit a window of NASA's *Challenger* space shuttle, necessitating a replacement. It was estimated that the damage caused was consistent with the paint fleck moving between three and six kilometers per second (68) (See also Kessler 1986, 57).

published in 1978, and since then the amount of orbital debris has only increased. If we have obligations that require the extension of humanity beyond Earth, whether to expand our knowledge of the cosmos (see, for example, Schwartz 2011; 2019a; 2020) or settle other planets to ensure the survival of humanity (see, for example, Abney 2019) or other Earth-based life forms, Kessler syndrome may lock us on Earth, frustrating these obligations and their requisite goods.[17]

Attempts at rectifying issues of orbital space debris have tended towards preventing the creation of more debris rather than cleaning up existing debris. Cleaning up space debris presents the additional problem of dual-use technology, defined by Green (2022) as "a power or technology that can have both good, beneficial uses and bad, harmful uses" (264). Technology that could be used to clean up space debris could also be used against orbital technologies of others (Green 2022, 78) while also posing a threat to the stability of the Outer Space Treaty (United Nations General Assembly 1966). While spacefaring states and corporations could avoid creating more space debris, debris may nevertheless increase because of collisions between space debris already in orbit. If space exploration activities are to continue, something might need to be done to clean up what orbital space debris already exists. As collisions increase, so does the quantity of debris, though much of it thereby becomes smaller. One Earthly analog to the space debris problem, often used as a point of comparison, is that of the great Pacific garbage patch (see, for example, Kluger 2023). Insofar as the plastic issue in the ocean tends not towards the breakdown of plastics but

[17] This is, of course, a problem particular to those who argue that we have such obligations. In this paper I do not commit to any particular view as to whether we actually have these obligations.

rather towards their merely becoming smaller and smaller – microplastics – the comparison is at least apt in this regard; smaller pieces of debris in orbit are, like microplastics, likely more difficult to remove.

So, is orbital space debris closer to being litter, pollution, or something else? In June of 1985, the University of Georgia hosted what might have been the first (if not one of the first) conferences explicitly on philosophy and space exploration. Organized by Eugene C. Hargrove with funding from the Program on Ethics and Values in Science and Technology of the National Science Foundation, the conference was entitled "Environmental Ethics and the Solar System." The conference culminated in the publication of the collection *Beyond Spaceship Earth: Environmental Ethics and the Solar System* (Hargrove 1986), which includes a chapter by Donald Kessler entitled "Earth Orbital Pollution" (1986). The title of Kessler's piece stands out from much of the other work on the subject that appears to attempt to avoid language of either litter or pollution, opting instead for the more neutral, sterile language of "debris." In fact, though "pollution" is in the title of Kessler's 1986 piece, the term makes no appearance in the text of the chapter. "Litter" also makes no appearance.[18] A survey of the literature on space debris appears to make no commitments regarding space debris being litter or pollution, so the issue of its status is open.

First, consider the case for orbital space debris as litter. For one, much of it is certainly solid, though a sizable amount of it is very small (and moving very fast). It thus makes sense to say that orbital space debris often consists of

[18] While an extensive corpus analysis of work on issues of space debris does not exist, at least to my knowledge, a brief survey of literature on the topic reveals the use of "debris" more commonly than any notion of "litter" or "pollution," if those terms or concepts appear at all.

solid, discrete objects that may be more easily pointed to (Condition (1L)). One thing the orbital space debris problem is not is small in scale or localized. Sure, orbital space debris is indeed small in scale and localized in the grand scheme of the expanse that is the cosmos, but relative to Earth the problem is potentially, catastrophically all-encompassing. Compared to those things that often are called litter (e.g., the popsicle wrapper in the park), orbital space debris exists on a much more massive scale, such that referring to it as being localized or small in scale appears to be a misrepresentation, thus space debris fails to meet condition (2L). Discourse surrounding orbital space debris does often makes reference to potential ecological harm in attempting to explain its potential wrongness, whether in terms of a Kessler syndrome cascade ensuring the extinction of the Earthly tree of life or in terms of the possibility of debris falling to Earth with grave consequences (Condition (3L). So, as far as considering space debris to be litter, it satisfies conditions (1L) and (3L), consisting of solid discrete objects and constituting a threat to some ecological entity or good, while failing condition (2L), since it is large in scale and not localized.

Second, consider the case for orbital space debris as pollution. Orbital space debris, in being primarily solid, fails to satisfy condition (1P). For the reasons orbital space debris fails to meet condition (2L), it appears it would satisfy condition (2P); orbital space debris is not localized, but rather quite dispersed. Things become more complicated when assessing whether orbital space debris satisfies condition (3P). One may reasonably ask what ecological harm orbital space debris does while in orbit. Further, one might even ask whether orbital space even constitutes an ecology that could suffer ecological harm. It certainly interacts with Earth and affects Earth, and the activities of

living beings on Earth certainly affect it (e.g., rocket launches), yet there is no life in orbit besides that which humans put there (whether, human, dog, plant, or microbe), often in places like the International Space Station (which occasionally needs to take precautions for space debris (Kluger 2023)). Still, we might think that while there are some living beings in orbit around Earth, they are so cut off from biological interaction with the orbital space outside of their vessels that it might be odd to say that their being in orbit *makes* orbital space an ecosystem.

So, why separate the space environment, or at least the orbital space environment, from some larger ecological whole that includes the Earth, the Sun, etc.? Weston challenges classical thinking about the boundaries of "the environment," writing:

> Normally we picture "environment" as terrestrial, as the region of Earth's surface and what lies close beneath and above it... "Environment" does not end at the surface of the Earth. But then why suppose it ends at all? Of course there are always various provisional boundaries, much as one ecosystem can be distinguished from neighboring ones–but no absolute boundary. Ultimately we are coming to understand that all terrestrial ecosystems are linked into a greater and quite dynamic whole. By analogy, space exploration is now challenging us to recognize that the "terrestrial" may not be a closed system either. (Weston 2009, 167–168)

One potential response for considering the orbital environment as separable in some way from a larger cosmic environment, or from terrestrial Earth, is to further specify the type of thing being talked about. "Environment" is often too general a term and, often, refers only to the space which

things inhabit, often living things. Following Lindquist (2022), one might instead talk about a "four-dimensional spacetime region that includes dynamic systems activity exemplified by geological, atmospheric, or hydrological processes that are made manifest in their partially determining the character of a place or environment" (242). This language indicates that the environmental character of the orbital environment may be different than that of Earth; these distinctions could be made even more fine-grained, as Earth consists of many spaces that meet Lindquist's conditions while manifesting different environmental characters, thus a distinction may be drawn denoting the orbital environment as sufficiently separate. While this language avoids the biotic necessary conditions of ecosystem language, if pollution necessitates there being an ecological harm, and the ecological necessitates the biological, then it also precludes much of the outer space environment from being polluted; therefore, the orbital space environment would fail to meet condition (3P). Notably, however, the Kosmos 954 tragedy presents a challenge. While Kosmos 954 was in orbit, even if it were defunct, it would not constitute pollution, but its effects upon reentry and breakup, including dispersing radioactive material, would indeed constitute pollution. So even if orbital space debris does not constitute pollution in orbit, it may attain such a classification upon reentry if it has negative ecological effects; further, not being pollution while in orbit is not sufficient reason to disregard it or its potential negative effects, both in orbit and upon reentry.

In summary thus far, considering orbital space debris as litter, it meets conditions (1L) and (3L), but not (2L), and as pollution it meets condition (2P) but not (1P) or (3P). Initially, a classification of orbital space debris as litter instead of pollution may be sensible since it meets two

criteria for litter and only one for pollution; however, orbital space debris fails condition (2L) in *spectacular* fashion, as it is incredibly diffuse, thus providing cause for doubt about the litter classification. Further, if paradigmatic cases of littering are carried out by individual actors and orbital space debris comes about instead as a result of institutional entities, then the case of orbital space debris diverges from the paradigmatic cases of littering in yet another way (though this is not to preclude the very real possibility of individual actors littering in orbit as well). Approaching orbital space debris with a framework aimed at individual actors when the problem arises instead from institutional entities may thereby constitute a mistake.

As mentioned in Section II, classic arguments against littering may reference potential ecological harm, offering aesthetic considerations, or reflecting on the vicious character of the litterer. To address issues of potential ecological harm, perhaps regulation could be enacted to prevent the perpetuation of the problem that is orbital space debris. While states could regulate to avoid the creation of unduly risky situations in the first place, finding the creation of certain sorts of risky situations morally problematic, such an approach faces issues of attempting to calculate and weigh probabilities of harm actualizing and the severity of harm that may be incurred – the details would need to be filled out, and the details matter. This more deontic framing could also be applied to the popsicle wrapper litter case presented in Section II, so a framing surrounding risk aversion could still be helpful and apply easily to state and corporate actors (though, of course, determining the legislation would come with many practical difficulties).

Aesthetic considerations regarding orbital space debris are perhaps temporally far off due to the distribution and small size of much current space debris; were space

debris to begin to significantly affect the night sky, then perhaps this objection could carry more weight, though such an objection may already be able to be levied at some orbital objects like satellites.[19]

References to vicious character become more complicated in having to ascribe character to institutions, corporations, and governments, rather than individual people; these issues become even messier in current political contexts as we also perhaps ask whether governments or for-profit corporate entities could ever even be virtuous, or if by their very nature they are thereby vicious (i.e., by learning and practicing virtue, they would cease to be the sorts of entities that they currently are, thereby simply ceasing to be).

More complicated moral and political analyses are needed to deal with the actors in the case of would-be litter at this scale, such that the regular frameworks are stretched perhaps beyond their normal operating conditions. The conditions for assessment and altering the behaviors of the would-be celestial litterbugs are, in some significant ways, unlike paradigmatic cases of littering. While orbital space debris is closer to litter than pollution, the sorts of resources needed to engage with it are those developed in the context of discussions about pollution. Such recourse thus may cast

[19] There are also concerns about losing dark skies and the impacts of such a loss aesthetically, as a loss of potential transformative experiences, as a negative health impact, ecological harm, etc. Dill (2022), commenting on dark skies and light pollution, explores the negative health impacts for humans and other species, as well as how light pollution may impact the reproduction and navigation of nocturnal species. Dark skies now have international advocacy groups such as DarkSky International. It's also possible that increases in satellites could present a problem as well for not only dark skies but Earth-based life, and perhaps a more serious one if skies become darker through successive victories of dark sky activists, for if skies become darker, more satellites may thus be made more perceptible, and so their effects may then become more pronounced.

doubt on the status of orbital space debris as litter, leaving the problem in an odd sort of middle between being conceptually litter and pollution, consisting of parts of both but winding up neither in the process. While we may have some philosophical resources to levy at the problem, straightforward appeals to associated ordinary concepts of litter or pollution will not aptly apply to the situation at hand regarding orbital space debris, thus these ordinary concepts lack the requisite escape velocity to apply to at least some outer space contexts as they currently stand.

Conclusion

Following Anthony Weston's (2009) challenge, do the concepts of "litter" and "pollution" achieve escape velocity and apply to outer space contexts in a clean way to be helpful in moral deliberations about space debris? Not entirely. In the context of space debris on the surfaces of other celestial objects like Moon and Mars, the concept of litter appears to apply, but how we might engage in ethical discourse about the problem would primarily be with the tools of pollution discourse since the entities involved are often state or corporate actors instead of individuals. In the context of space debris as objects crashing into gas giants, ice giants, or stars, neither litter nor pollution appears to apply, and so will not serve any use in moral discourse. In the context of orbital space debris, while it may appear to be litter, we are still faced with it not being localized but rather radically dispersed, which strains the use of the ordinary concept of litter in this context even further, perhaps radically so. The outer space context thus appears to present us with some

new problems and is thus not reducible to a mere iteration of some other environmental problem.[20]

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References

Abbey, Edward. 1976. *The Monkey Wrench Gang*. New York, NY: Avon Books.

Abney, Keith. 2019. Ethics of Colonization: Arguments from Existential Risk. *Futures*, *110*, 60–63.

Callenbach, Ernest. 1975. *Ecotopia: The Notebooks and Reports of William Weston*. Berkeley, CA: Banyan Tree Books.

Castrodale, Jelisa. 2019. "Conservationists Would Really Like People to Stop Throwing Banana Peels on the Ground." Vice. https://www.vice.com/en/article/gy4a39/conservationists-would-really-like-people-to-stop-throwing-banana-peels-on-the-ground

DarkSky International. 2023. https://darksky.org/.

Dill, Kimberly M. 2022. In Defense of Wild Night. *Ethics, Policy & Environment*, *25*(2), 153–177.

Hargrove, Eugene C.(ed.). 1986. *Beyond Spaceship Earth: Environmental Ethics and the Solar System*. San Francisco, CA: Sierra Club Books.

[20] A common line of argument often appears when new problems are proposed, which points out that some supposed new problem is really just the same as some older problem and is not *really* providing anything significant or new to deal with. For examples of this kind of argument, see Preston 2013 on synthetic biology and Katz 2022 on de-extinction technology.

Hiassen, Carl. 2000. *Sick Puppy*. New York, NY: Warner Books.

Hill, Jr. Thomas E. 1983. "Ideals of Human Excellence and Preserving Natural Environments." *Environmental Ethics*, *5*(3), 211–224.

Hunter, Hannah & Elizabeth Nelson. 2021. Out of Place in Outer Space? Exploring Orbital Debris through Geographical Imaginations. *Environment and Society: Advances in Research*, *12*, 227–245.

Katz, Eric. 2022. Considering De-Extinction: Zombie Arguments and the Walking (And Flying and Swimming) Dead. *Ethics, Policy & Environment*, *2*, 81–103.

Kessler, Donald J. & Burton G. Cour-Palais. 1978. Collision Frequency of Artificial Satellites: The Creation of a Debris Belt. *Journal of Geophysical Research*, *83*(A6), 2637–2646.

Kessler, Donald J. 1986. "Earth Orbital Pollution." In *Beyond Spaceship Earth: Environmental Ethics and the Solar System* edited by Eugene Hargrove, 47–65. San Francisco, CA: Sierra Club Books.

Kilic, Cagri. 2022. "Mars is littered with 15,694 pounds of human trach from 50 years of robotic exploration." Space.com. https://www.space.com/mars-littered-with-human-trash

Kluger, Jeffrey. 2023. "Scientists Sound the Alarm Over a Growing Trash Problem in Space." Time. https://time.com/6262389/space-junk-increasing-problem/

Lee, Keekok. 1994. "Awe and humility: Intrinsic value in nature. Beyond an earthbound environmental ethics." In *Philosophy and the natural environment: Conference: Papers* edited by R. Attfield & A. Belsey, 89–102. New York, NY: Cambridge University Press.

Lercher, Aaron. 2004. Is Anyone to Blame for Pollution? *Environmental Ethics*, *26*(4), 403–410.

Lindquist, Michael A. 2022. Astroethics and the non-fungibility thesis. *Environmental Ethics*, *44*, 221–246.

Lindquist, Michael A. 2023. "Aesthetics, Olfaction, and Environment." In *Theoretical Perspectives on Smell* edited by Andreas Keller & Benjamin D. Young, 71–88. New York, NY: Routledge.

Maki, Justin. 2022. "Images of EDL Debris." NASA Blog: Mars Perseverance Rover. https://mars.nasa.gov/mars2020/mission/status/394/images-of-edl-debris/

Milligan, Tony and J.S. Johnson-Schwartz. 2023. "Space Ethics." In *The Routledge Handbook of Social Studies of Outer Space*, edited by Juan Francisco Salazar and Alice Gorman, 108–120. New York, NY: Routledge.

McMahon, Sean. 2016. "The Aesthetic Objection to Terraforming Mars." In *The Ethics of Space Exploration*, edited by James S.J. Schwartz and Tony Milligan, 209–218. Switzerland: Springer.

Nash, Roderick Frazier. 1989. *The Rights of Nature: A History of Environmental Ethics*. Madison, WI: The University of Wisconsin Press.

Orbital Debris Interagency Working Group Subcommittee on Space Weather, Security, and Hazards of the National Science and Technology Council. 2022. *National Orbital Debris Implementation Plan*. https://www.space.commerce.gov/national-orbital-debris-mitigation-plan-released/. Accessed August 2023.

Parker, Laura. 2015. "Nearly Every Seabird on Earth is Eating Plastic." National Geographic.

https://www.nationalgeographic.com/science/article/15092-plastic-seabirds-albatross-australia

Power, Ellen & Arn Keeling. 2018. Cleaning up Cosmos: Satellite debris, radioactive risk, and the politics of knowledge in Operation Morning Light. *The Northern Review*, *48*, 81–109.

Preston, Beth. 2013. Synthetic biology as a red herring. *Studies in History and Philosophy of Biological and Biomedical Sciences*, *44*, 649–659.

Siddiqi, Asif A. 2018. *Beyond Earth: A Chronicle of Deep Space Exploration, 1958–2016*, 2nd Ed. NASA Office of CommunicationsSchwartz, James S.J. 2011. Our moral obligation to support space exploration. *Environmental Ethics*, *33*(1), 67–88.

Schwartz, James S.J. 2019a. Mars: Science before settlement. *Theology and Science*, *17*(3), 324–331. doi: 10.1080/14746700.2019.1632520

Schwartz, James S.J. 2019b. Where no planetary protection policy has gone before. *International Journal of Astrobiology*, 18, 353–361. https://doi.org/10.1017/S1473550418000228

Schwartz, James S.J. 2020. *The Value of Science in Space Exploration*. New York, NY: Oxford University Press.

Siddiqi, Asif A. 2018. *Beyond Earth: A Chronicle of Deep Space Exploration, 1958–2016*, 2nd Ed. NASA Office of Communications

Sparrow, Robert. 1999. The Ethics of Terraforming. *Environmental Ethics*, (21), 227–245.

Trumpeter, Kevin. 2021. "The Can is Beautiful, the Road is Ugly": Edward Abbey, KAB, and the Environmental

Aesthetics of Litter. *ISLE: Interdisciplinary Studies in Literature and Environment*, *28*(1), 15–29.

United Nations General Assembly. 1966. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, UN Resolution 2222 (XXI).

United States Environmental Protection Agency. 2022. "Basic Information about Nonpoint Source (NPS) Pollution." https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution#:~:text=The%20term%20%22point%20source%22%20means,pollutants%20are%20or%20may%20be

Weston, Anthony. 2004. Multicentrism: A Manifesto. *Environmental Ethics*, *26*(1): 25–40.

Weston, Anthony. 2009. *The incompleat eco-philosopher: Essays from the edges of environmental ethics*. Albany, NY: State University of New York Press.

Diálogos 114, 2024, pp. 227-249.

In Defence of Relational Anthropocentrism: Towards a Total Field Image of the Environment

Eskendir Sintayehu Kassaye
Sant'Anna School of Advanced Studies
Eskendir.Kassaye@santannapisa.it

Abstract

I argue that strong anthropocentric values are antithetical to environmental ethics. Thus, strong anthropocentrism is responsible for the mistreatment of animals, environmental degradation, and depletion of resources. As an alternative to strong anthropocentrism this paper defends the idea of relational anthropocentrism which stands for the belief that a viable environmental ethics draws on the fundamental interdependence among human beings, animals, plants, and non-animate nature. This position draws on the conviction that human beings are members of the ecological community, and their well-being is inextricably bound to the safety of the animate and non-animate members of this community.

Keywords

Ecological community, eco-centrism, relational anthropocentrism, strong anthropocentrism, intrinsic value, instrumental value, phenomenology

Resumen

Sostengo que los valores antropocéntricos fuertes son antitéticos a la ética medioambiental. Así, el antropocentrismo fuerte es responsable del maltrato de los animales, la degradación del medio ambiente y el agotamiento de los recursos. Como alternativa al antropocentrismo fuerte, este documento defiende la idea del antropocentrismo relacional, que defiende la creencia de que una ética medioambiental viable se basa en la interdependencia fundamental entre los seres humanos, los animales, las plantas y la naturaleza no animada. Esta postura se basa en la convicción de que los seres humanos son miembros de la comunidad ecológica y su bienestar está inextricablemente ligado a la seguridad de los miembros animados y no animados de esta comunidad.

Palabras clave

Comunidad ecológica, ecocentrismo, antropocentrismo relacional, antropocentrismo fuerte, valor intrínseco, valor instrumental, fenomenología

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Environmental ethics as a professional discipline emerged out of concern for the environment created by Earth Day in 1970. There was also a growing dissatisfaction with the instrumental and anthropocentric arguments which put the accent on human use and benefit. The recent discourse on environmental philosophy seeks to dislodge the anthropocentric and instrumental environmental ethics and replace it with a non-anthropocentric and intrinsic environmental ethics. Thus, contemporary environmentalism is grounded in the belief that the root

cause of the current ecological crisis is inherently philosophical since it is deeply rooted in the ontological, epistemological, and moral assumptions of Western anthropocentrism (Hargrove 1992, 183). The quest for alternative theories led philosophers to explore non-Western systems of thought with a view to find an alternative sound environmental ethics. As a result, the study of the traditions and systems of thought of non-Western societies such as Native Americans, Asians, Australian Aborigines, and others has become timely and significant. These non-Western traditions recognize the intrinsic value of the natural world which lead to deep ecological values and principles. However, it should be born in mind that anthropocentrism is not a synonym for instrumental value (Hargrove 1992, 183–84).

In this paper I am trying to synthesize eco-centric or deep ecological values with anthropocentrism by taking the case of indigenous African thought and values. J. Baird Callicott is right to argue that "indigenous African religions tend to be both monotheistic and anthropocentric" (Callicott 1997, 157). But he fails to see the relational aspect of African anthropocentrism. I contend that a relational anthropocentrism revolves around human interests without losing sight of the complex cobweb of ecological relationships among the human and non-human environment. My purpose in this paper is to argue that the African worldview is grounded in relational anthropocentrism. Although Africa is a big and diverse continent, there are common values and traditions in sub-Saharan Africa discovered by an old anthropological tradition. Thus, African thought recognizes that human beings are interdependent and interrelated with the rest of nature. So, I argue that anthropocentrism should be tainted with moral responsibility towards the animate and non-

animate environment. The fundamental problem of the dominant environmental ethics, theories and perspectives is the moral standing of the animate and non-animate things. Thus, this article seeks to outline the underlying premises of African indigenous systems of thought concerning the environment with a view to suggest a relational understanding of anthropocentrism as a viable ecological principle.

The Phenomenological Approach to Morality

One of the major reasons for valuing the environment could be it is endowed with certain fundamental properties which need to be recognized, preserved, and respected. This understanding of environmental values as real properties of the natural world is associated with realist, biocentric or more exactly ecocentric view of the environment. O'Neill says that the proponents of realist forms of ecocentric ethics contend that the value of nature is an intrinsic and objective property of the natural world regardless of the existence of human beings who recognize these properties of the natural world (O'Neill 1997, 127). On the other hand, a strong anthropocentric ethics is liable to environmental risks. It is important to explain the difference between anthropocentrism and deep ecology. Anthropocentrism is a strand of environmental thought that focuses merely on human interests without paying due attention to the interest of other species and the well-being of the environment. So, anthropocentrism can be literally defined as human-centred environmental ethic that seeks to justify the worth of the natural environment in terms of its instrumental value for human beings. On the other hand, deep ecology is a strand of environmental thought that seeks to underwrite the intrinsic worth of the natural environment regardless of human interests and needs. Thus, my objective is to

demonstrate the overlaps between the above-mentioned environmental values through the idea of relational anthropocentrism.

I strongly believe that eco-centric and deep ecological values derive their appeal and significance from the human perspective that recognizes the moral worth of the animate and non-animate nature. Thus, the very belief in the moral worth and value of the ecosystem derives its origin from the enlightened and responsible human individual. That is, an anthropocentric argument is inevitable, but it is rendered weaker with the increasing recognition of interdependence and mutual founding of the ecological community. However, human beings have a distinctive role in this community in terms of setting norms and values that protect the underlying ecological balance. If anthropocentric ethics is understood to mean imposing human values on the natural world without due concern to the protection and reverence of the natural world, then a realist and ecocentric approach is more appropriate than anthropocentric values. Thus, deep ecological values underpin the relevance of animal rights and the rights of nature in general. But still, a plausible anthropocentric approach is useful to "provide a very great proportion of what many people hope to find in a realist and ecocentric approach" (*Ibid.*, 128).

The notion of relational anthropocentrism is deployed exactly for this purpose. The idea is that a realist approach to environmental ethics magnifies the negative aspects of the anthropocentric environmental ethics. Anthropocentric ethical theories include different versions of consequentialism, Kantianism as well as contractarianism which justify moral behaviour in line with human interests exclusively. It is argued that anthropocentric positions risk speciesism which is "a label for unjustified preference for the human species" (*Ibid.*). Thus, speciesism is criticized for its

denial of the moral standing of the environment including animals, plants, rivers and "abstract entities such as species, habitats and ecosystems, bio-diversity and the ozone layer" (*Ibid.*, 129). However, I agree with O'Neill that it is wrong to argue that anthropocentric values are totally committed to speciesism and are indifferent to the moral standing of non-humans as "many anthropocentric positions have benign implications for environmental issues, and specifically for the lives of non-human animals" (*Ibid.*). Utilitarianism is a good example to illustrate this point because it accords moral standing to all sentient animals since they can suffer.

O'Neill points out, "by taking sentience rather than ability to reason as the criterion of moral standing, utilitarians can show the ethical importance of animal welfare; some of them even aim or claim to justify a conception of animal liberation" (*Ibid.*). However, utilitarianism is also susceptible to speciesist interpretation because of John Stuart Mill's distinction between low and high pleasures. O'Neill says, "utilitarian reasoning about required trade-offs between different types of pleasure may demand that human happiness (of the higher sort) be pursued at the cost of large amounts of porcine misery" (*Ibid.*). The other problem with utilitarianism is that it heavily relies on subjective conception of value that accommodates sentient beings excluding "non-sentient beings or dispersed and abstract features of the environment: anything that is not sentient cannot suffer or enjoy, so is denied moral standing" (*Ibid.*, 130). It is also important to note that utilitarianism is highly selective allowing a trade off in terms of the principle of the happiness of the greatest number. O'Neill stresses that some anthropocentric ethical positions are less amenable to speciesism than utilitarianism since they have a more

comprehensive and coherent outlook towards the environment. For instance, moral theories that appeal to action as opposed to results are obviously anthropocentric, in that it is only humans who have full capacity for agency in the sense of complying with or flouting ethical rules and principles. He says, "act-centered ethics, in its many forms, seeks to establish certain principles of obligation, or certain rights, which are to constrain not only individual action but institutions and practices" (*Ibid.*, 131). On this basis one can assert that act-centered ethics is less prone to speciesism since it focuses on rights and obligations rather than results.

Most modern moral theories such as Kantianism, utilitarianism, contractarianism, and egoism have naturalistic assumptions in the sense of specifying "determinable fixed obligations." These obligations are independent of subjective desires, beliefs, and feelings (Brown 2003, 9). Modern moral theories appeal to "the notion of objectivity developed to support the realistic metaphysical interpretation of res extensa" (*Ibid.*). I think the application of this notion of objectivity to morality is questionable. The naturalistic notion of moral objectivity runs parallel with the natural sciences' underlying metaphysical assumption. This renders the right prior to the good in the sense that "such a schema fits the projects of power and control better than the simple desire to gain insight and wisdom and to practice tolerance and compassion" (*Ibid.*, 10). That is, naturalistic moral theory seeks to uncover fundamental moral principles or rules that guide human action without a human perspective, or it is a view from nowhere. This kind of approach neutralizes human lived experiences making them morally irrelevant. Thus, positive human emotions and feelings such as compassion and care remain unaccounted for in the naturalistic notion of objectivity.

A phenomenological and critical approach to moral philosophy gives considerable attention and respect to the pre-theoretical experience of traditional societies. Thus, there is a need to endorse a kind of moral pluralism in which multiple moral perspectives are entertained. The phenomenological approach to morality seeks to locate the essence of moral experience in "the irreducible domains of lifeworldly experience" (*Ibid.*). In our pre-theoretical experience, we find ourselves in a lifeworld infused with meaning and value. That is, we are morally satisfied or frustrated by the continuous flow of actions and events in the world. "Our everyday life is filled with moral sentiments that appear from a phenomenological perspective as instances of a pre-reflective axiological consciousness—that is, as an intentional and evaluative aiming at objects and states of affairs" (*Ibid.*, 11). In our everyday life values and meaning are forms of intentional consciousness in which the valuing subject and the object of value are given simultaneously. This is implied by the famous dictum "back to things themselves," and thereby acknowledging the primal unity of the valuing subject and the object of value (*Ibid.*).

The phenomenological understanding of the Good evolves through continuous reassessment of changing experiences. That is, certain actions are justified considering the intersubjective intentionalities which "experience something as good and desirable from one perspective and later experience that same thing as evil or undesirable from another" (*Ibid.*). The mere recognition of our dependency on the biotic community of our planet is a sufficient justification for the "massive and inescapable interdependency" of all species as members of an ecological community with shared goods (*Ibid.*, 12). Brown explicitly states,

"Our pretheoretical experience, infused with cognitive, evaluative, and volitional moments, is not the experience of

an 'objective world' but rather it is this meaningful order, provided by the presence, activities, and function of life that provides the deep context for the emergence of moral experience... This meaningful order of purpose and value is part of the unnoticed background of experience available for phenomenological reflection" (*Ibid.*, 13).

Relational Anthropocentrism and African Folk Thought

Traditional societies have their own indigenous values that constitute their pre-theoretical lifeworld and lived experience. The idea of Ubuntu/Hunhu/Botho is a value discovered through ethnological and anthropological inquiry into the foundations of indigenous systems of thought in Sub-Saharan Africa. The concept of Ubuntu is derived from "the moral beliefs and practices of those who speak Nguni languages, from which the term originated, as well as of those who have lived near and with them, such as Sotho-Tswana and Shona speakers"(Metz 2011, 535-536). The concept of Ubuntu was popularized during the fall down of Apartheid regime in South Africa and following the new developments with the end of the Cold War which led to increased sense of independence from colonial domination (Manrique Gil 2010, 14). Thus, more attention was given to the study of "the unnoticed background of experience" that engenders a critical reflection on the underlying premises of the background values of indigenous societies as in Africa.

I seek to discuss and explain the ecological implications of the concept of Ubuntu by outlining its underlying philosophical assumptions. The concept of ubuntu/hunhu/botho is not synonymous with humanism especially as it is understood in Western philosophy. Humanness is a better translation of the concept than humanism. Humanism implies the reification of human

identity in a set of principles or values whereas humanness implies openness to manifold human experiences without being aligned to a predetermined identity. Thus, the importance of the distinction between humanness and humanism lies in their implication for the development of human possibilities; humanness is akin to complementarity and relationality by being open to human possibilities whereas humanism prematurely restricts human possibilities by identifying humanity with certain predetermined qualities. The concept of humanness implies "openness or ceaseless unfolding" by which states of being and becoming are revealed at the same time. As a result, it is opposed to the reification of thought in the form an -ism including humanism to indicate openness or ceaseless unfolding in contrast to closedness and finality (Ramose 2005, 105). The fundamental difference between humanness and humanism pertains to two different conception of reality or being. Humanness implies the wholeness of the universe involving the complexity of the human and the non-human universe. This complexity by no means implies chaos but rather "the intrinsic order of the universe" (*Ibid.*). This idea illustrates the ecosophical element of Ubuntu for Ramose.

The concept of Ubuntu is defined as "to be human is to affirm one's humanity by recognizing the humanity of others and, on that basis, establish human relations with them" (Ramose 2005, 106). Thus, the core idea of the concept of Ubuntu is humanness or humanity in the sense of being respectful and polite towards others. Ramose uses the terms "mutual foundedness" and "complementarity" to describe the central idea of Ubuntu (*Ibid.*). Ramose says, "wholeness is the regulative principle here since what is asserted is that the single individual is incomplete without the other" (*Ibid.*). The relation between human beings and the non-human world is governed by the principle of wholeness. Thus,

human solidarity and harmony through care for one another involves care for non-human animals and the physical world. In the absence of this caring relationship, the interdependence between the human and non-human world is jeopardized. It is also important to note that human beings are constituted by physical nature despite their privileged status in it. Hence, caring human relationships involve care for physical nature. That means care and solidarity among human beings has positive ecological implications.

Ramose says, "the concept of harmony in African thought is comprehensive in the sense that it conceives of balance in terms of the totality of the relations that can be maintained between human beings amongst themselves as well as between human beings and physical nature" (*Ibid.*). Harmony among living and non-living things is the supreme ecological principle in African indigenous philosophy of Ubuntu. Reality or being is understood in terms of harmony or wholeness. Ramose says, "without motion, being as enfoldment cannot unfold" (*Ibid.*). The term wholeness as the representation of objects of experience is not susceptible to absolutism and dogmatism to assert its authority. However, the idea of wholeness as a linguistic concepts liable to dogmatism and absolutism to assert its authority because it leads to absolutist conception of truth that undermine all other ways of knowing by making the individual the center of cognition (*Ibid.*, 107). The concept "leads easily to the false idea that the speaker declaring a particular experience does so standing at the center of the universe" (*Ibid.*,107). Furthermore, placing the self at the centre of the universe risks evading the truth.

According to Ramose "there is never a final immutable whole but only enduring and transient wholes always governed by the principle of motion responsible for change" (*Ibid.*, 108). Thus, the African conception of being is

understood as wholeness in the sense of openness or ceaseless unfolding. This testifies to the idea that Ubuntu is humanness as opposed to humanism as a continuous process of unfolding or becoming without any finality or closedness (*Ibid.*). The central insight of the concept of Ubuntu is "the dignity and importance of the individual human being can best be understood in terms of relations with other human beings as well as relations with physical nature" (*Ibid.*, 109). I contend that the concept of relational anthropocentrism implies human dignity is contingent upon relations with fellow human beings and physical nature. Benez Bujo highlights the relational interdependence of human life and the whole of nature in African indigenous thought. He says, "the African is convinced that all things in the cosmos are interconnected. All natural forces depend on each other, so that human beings can live in harmony only *in* and *with* the whole of nature" (Bujo quoted in Behrens 2010, 469). African indigenous thought recognizes the non-instrumental good inherent in nature (Behrens 2010, 471). African thought is commonly understood to be communitarian in contrast to the Western emphasis on individual autonomy "Africans place a high value on the group: the family, the clan, the community" (*Ibid.* , 472). Thus, African morality is fundamentally relational. African environmental ethics is based on the idea of interdependence in the sense that "human beings are bound up in a kind of community with other living beings" (*Ibid.*).

There is some empirical evidence for Africa's worst environmental records on earth because of population density, poverty and unsustainable and traditional agricultural practices (UNEP 2005, p.4-5). However, one should not risk hasty generalizations. African indigenous communities such as the Oromos of Ethiopia have developed a robust environmental ethics (Kelbessa 2005, 21).

Although the Oromo environmental ethics is anthropocentric and pragmatic, it has also spiritual and moral dimensions (*Ibid.*, 21–22). Kalbessa says, "For them(the Oromo), land is not only a resource for humans' utilitarian ends, but also it has its own inherent value given to it by *Waaqa* (God)" (*Ibid.*, 22). It is important to note that both traditional and modern environmental values in Ethiopia are religious. However, Kalbessa notes, "the Oromo people critically reflect on and develop their moral rules through discussion and within the framework of their national assemblies, so as to maintain their contemporary efficacy under changing conditions, technologies and the modern world" (*Ibid.*). There is a concept of "Saffuu" which serves as the moral compass of the Oromo people. According to Kalbessa , "*Saffuu* is a moral concept that serves as the ethical basis for regulating practices in order to ensure a high standard of conduct appropriate to different situations" (*Ibid.*, 23). The concept of Saffuu encourages mutual respect in the form of respecting one another's spirit (or what the people call in their ordinary language called "Ayyanna"). Kalbessa explains, "According to the Oromo, *saffuu* is *ulfina* (respect). We need to show respect to our father, mother, aunt, uncle, and our mother Earth" (*Ibid.*, 24). In general, the Oromo traditional religion encourages establishing sound relationship between human beings and nature (*Ibid.*, 25).

African traditional thought is also vitalist, bio-centric and teleological which appeals to sentience. The concept of sentience refers to "the ability of any being to feel and experience pleasure, pain or consciousness" (Chemhuru 2019, 34). The idea of telos is a recurrent idea in the history of Western philosophy which is traced back to Aristotle. There are many overlaps between the Aristotelian conception of telos and the sub-Saharan African

understanding of telos as both conceptions associate the nature of being or existence with an ultimate purpose such as the good life. Scholars who studied the indigenous belief system of African communities such Placide Tempels attest to the existence of a teleological metaphysics in Bantu systems of thought. The African conception of being is not just metaphysical, it has also a teleological dimension. That is, "Reality is, within the African context, mostly explained in terms of whether, how, and why certain things are what they are and why they happen the way they do" (Chemhuru 2016, 43). This does not mean that African environmental ethics is indifferent to the inherent value of the natural environment. Rather the idea is that there is a teleological symbiosis between human communities and the natural environment (*Ibid.*). Aside from the teleological belief, there are pluralities of values in African environmental ethics such as biocentrism and vitalism. Although these values are not perfectly coherent, they are positive variables in the teleological African worldview as there is a symbiotic relationship between human and natural flourishing in a teleological ethics. This implies that the flourishing of all forms of life such as human, animal, and plant life is central to the African teleological ethics. Moreover, sub-Saharan African thought sanctifies all form of life. For this reason, the flourishing of all forms of life is considered to be the ultimate end of existence. Hence, this explains the biocentrism that resonates in African vitalism by way of promoting respect for all forms of life or vitality that exists in the natural environment (Chemhuru 2016, 45-47).

It is also important to highlight the idea that sentience is an "accurate shorthand for the capacity to suffer and/or experience" (Singer 2015, 38). The fact that a being suffers is a sufficient justification for moral consideration. Thus, some animals are worthy of moral consideration. However, it is

important to note that "when we do value, we value necessarily from a human perspective but not necessarily in terms of human instrumental interests ..." (Hargrove 1992, 202). So, it is impossible to avoid the human perspective from our moral judgement. But this does not mean that all moral reasoning is essentially anthropocentric rather both intrinsic and instrumental values are the products of human moral judgement. Thus, the term anthropocentric intrinsic value is more appealing conceptually than the term non-anthropocentric intrinsic value as the latter sounds redundant (*Ibid.*). I agree with Leopold that human beings are members of an ecological community of interdependent parts (Leopold 1949, 203–204). This idea is the essence of the concept of relational anthropocentrism in the sense that it highlights the fact that animals, plants, soils, and waters are interdependent and mutually reinforcing parts of the ecological community (*Ibid.*). Aldo Leopold rightly points out, "a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such" (*Ibid.*). Thus, economic rationality is not the sole motive for moral consideration as "most members of the land community have no economic value...yet these creatures are members of the biotic community, and if its stability depends on its integrity, they are entitled to continuance" (*Ibid.*, 210).

Deep Ecology and a Total Field Image of the Environment

Deep Ecology is a normative and Ecophilosophical as opposed to being ecological and scientific in the sense of using strict methods (Naess 1972, 98-99). It is important to note that an ecological principle cannot be devoid of a human perspective regardless of how deep it is. Some might

argue that we could think of an ethical perspective from an alien's point of view or God's point of view which is completely indifferent to the human perspective. But those points of view may not account for the human environment. That is, they are to be imagined in a totally different context from the one that human beings find themselves in. So, I contend that the attempt to undermine the human perspective through the mere notion of non-anthropocentric ethics is highly susceptible to criticism. I defend the idea of relational anthropocentrism[1] to account for this problem. That is, the idea of relational anthropocentrism is a version of intrinsic anthropocentrism that seeks to synthesise deep ecology and anthropocentrism. I contend that my attempt to sysnthesize relational ethics and anthropocentrism through the notion of relational anthropocentrism seems to reasonably cohere with Arne Naess' deep ecological framework. As deep ecologists are not as such against the human perspective understood from the moral point of view rather, they are against the central position of human beings in the world.

According to Naess, the first attribute of deep ecology is the rejection the central position of human beings in the environment in favor of "the relational, total field image"(Naess 1972, 95). This image of the environment considers all forms of life as "knots in the bio-spherical net or field of intrinsic relations" (Naess 1972, 95). The idea of intrinsic relations refers to the relationship between two or more things in which the relations constitute the very essence of the things in question. Thus, this understanding

[1] A relational approach to environmental ethics is developed by some authors who write on African environmental values such as Kevin Berhens (2010, 2014). However, as far as I am concerned, little attempt is made to synthesize relational ethics and anthropocentrism in the form relational anthropocentrism.

dissolves the concept of man as the center of the world except for a purpose of moral communication (*Ibid.*). It must be noted that the idea of relational anthropocentrism is opposed to the central position of human beings in the environment by highlighting the fact that human beings cannot survive independent of the other members of the ecological community. But even this position requires human or anthropocentric moral decision without which it is of no effect.

The second attribute is bio-spherical egalitarianism in principle. The clause in principle implies the necessity of "some killing, exploitation and suppression" involved in realistic ventures. I think the necessity for some killing and exploitation seems to put a dark spot on the notion of bio-spherical egalitarianism and respect for all forms of life. However, the notions of respect and bio-spherical egalitarianism are anthropocentric values with ecological import. So, to realize these ecological ideals it may be imperative to engage in some killing and exploitation for the greater good of the entire members of the ecological community. The ecologist is tuned to respect and even revere all forms of life (*Ibid.*). The source of this respect and reverence for all forms life is the human feelings for fellow human beings and "for a narrow section of ways and forms of life" (*Ibid.*, 96). The equal right to live and blossom is an intuitively valid moral value for the ecologist. Thus, the sole application of this value to humanity breeds unrestrained anthropocentrism "with detrimental effects upon the life quality of humans themselves" (*Ibid.*), that is, the quality of human life is contingent on the "deep pleasure and satisfaction" we get from the company of all forms of life. Thus, the failure to understand our dependence on other forms of life by way of affirming our central position in the

universe has "contributed to the alienation of man from himself" (*Ibid.*).

The third attribute has to do with the principles of diversity and symbiosis. Naess points out that diversity is fundamental to the survival of all forms of life. So, the idea of the survival of the fittest must be construed in terms of the ability to maintain the complex ecological relations among different forms of life as opposed to annihilating and exploiting the other forms of life. Naess says, "'live and let live' is a more powerful ecological principle than 'either you or me'" (*Ibid.*). Thus, speciesist dichotomies are liable for annihilating other forms of life and thereby reducing "the multiplicity of kinds of forms of life, and also to create destruction within the communities of the same species" (*Ibid.*). Ecologically sound attitudes protect "the diversity of human ways of life, of cultures, of occupations, of economies" (*Ibid.*). They encourage social justice, peace, and harmony among all forms of life as much as human tribes and cultures (*Ibid.*). The idea of relational anthropocentrism is committed to the notions of diversity and symbiosis because relational anthropocentrism draws on the philosophy of Ubuntu which focuses on complementarity, mutual foundedness and interdependence.

The fourth attribute is anti-class posture. The idea of anti-class posture draws on the recognition that the asymmetry among human species is due to planned or unplanned exploitation and suppression of one group by other groups. Although the exploiter seems to enjoy a comparative advantage over the exploited, both are deprived of their potentialities for self-realization. Thus, an ecologically sound human culture is premised on egalitarianism and symbiotic co-existence (*Ibid.*). The idea of relational anthropocentrism is premised on the realization of the complementarity and mutual foundedness of all forms

of life including human life. So, I claim that relational anthropocentrism has an anti-class posture.

The fifth attribute is fight against pollution and resource depletion. Naess points out that ecologists have found powerful allies in the fight against pollution and resource depletion, but they are forced to compromise on their stand. That is, activities aimed at reducing pollution risk the increase in other kinds of evils such as class disparity because rising cost of life with the increased use of eco-friendly technologies (*Ibid.*, 97). The idea of relational anthropocentrism encourages a safe and healthy environment for all species by fighting against pollution and depletion of resources because the ideals of complementarity and interdependence require caring for the safety and sustainability of the environment.

The sixth attribute is complexity, not complication. Complexity refers to "a multiplicity of more or less lawful, interacting factors may operate together to form a unity, a system" (*Ibid.*). The application of this concept to the human sciences has to do with division of labor as opposed to the fragmentation of labor (*Ibid.*). Thus, complexity favors economies in which a variety of activities such as industrial, agricultural, intellectual, and manual works are integrated and organized to run society efficiently (*Ibid.*, 97-98). It goes without saying that the very attempt to synthesize relational ethics and anthropocentrism draws from the observation of the complexity of the environment that we live in. So, the idea is borne out of a realization on the part of human beings about the interdependence and complementarity of all forms of life.

The seventh and last attribute is local autonomy and decentralization. It should be born in mind that an autonomous form of life is less vulnerable to ecological disequilibrium. This justifies the need for local autonomy

and self-government. Thus, decentralization of power is a democratic principle with sound ecological implications (*Ibid.*, 98). It must be noted that the attempt to synthesize anthropocentrism and relational ethics is intended for the purpose of formulating a moral theory that decentralizes the role of human beings in the environment by recognizing the intrinsic qualities of all forms of life. To sum up, it is important to note that the above principles and values are not logical inductions but rather they are suggested by ecological knowledge and the lifestyle of the ecological field worker inspired by the perspectives of the Deep Ecology movement. The Māori indigenous civilization is the best example for deep ecological beliefs and values because they have a lifestyle and civilization deeply embedded in the land and natural features(Boyes 2010, 3). According to Boyes(2010, 3), the Māori believe that human beings are members of a broader ecological family that incorporates the natural environment and humanity at large. The Māori legend of creation is based on the oneness of the environment, ancestors and human beings. Boyes says, "A commonly practised Māori tradition is to bury the placenta and umbilical of a new child on land of personal significance."(2010, 4) This implies that the Māori identify with nature and environment.

Conclusion

The foregoing discussion and analysis emphasizes the idea that human beings are members of the ecological community which comprises the animate and non-animate environment. This understanding is essential to highlight the interdependence of all species on our planet. Strong anthropocentrism is liable to ignore the mutual advantage entailed by the continuation of all forms of life on the planet Earth. On contrary, relational anthropocentrism recognizes

the interdependence of human beings, animals, plants, soils, and waters to sustain the complexity and diversity of the biotic community for the generations to come. Therefore, this paper defends the idea of relational anthropocentrism drawing on indigenous African values and belief systems such as Ubuntu in which the complementarity and interdependence of all forms of life are central ideas. It should also be noted that although indigenous African values are anthropocentric, they are cognizant of the interdependence and complementarity of all forms of life including human life. In this paper I argued that the best way to characterize African environmental thought is to synthesize relational ethics and anthropocentrism with a view to defend an African version of Arne Naess' deep ecological total field image of the environment.

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References

Boyes, Mike. 2010. "Re-envisioning nature from a New Zealand Māori perspective." A paper presented at the European Institute for Outdoor Adventure Education and ExperientialLearning (EOE) conference. (Sept. 2010). Ratece-Planica, Slovenia.

Brown, Charles S. 2003. "The Real and the Good: Phenomenology and the Possibility of an Axiological Rationality", *Eco-Phenomenology: Back to the Earth Itself* edited by Brown, Charles S., and Ted Toadvine, 3-18. Albany, NY: State University of New York Press.

Behrens, Kevin. 2010. "Exploring African Holism with Respect to the Environment". *Environmental Values* 19 (4): 465–84. https://doi.org/10.3197/096327110X531561.

Callicott, J. Baird. 1997. *Earth's Insights: A Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback*. Berkeley, Calif.: Univ. of California Press.

Chemhuru, Munamato. 2016. "Using the African Teleological View of Existence to Interpret Environmental Ethics". Philosophia Africana, 18(1):41-51.

Chemhuru, Munamato. 2019. "The moral status of nature: an African understanding" in *African Environmental Ethics: A Critical Reader* edited by Chemhuru, Munamato, 29-46. Springer International Publishing.

Hargrove, Eugene C. 1992. "Weak Anthropocentric Intrinsic Value". *The Monist* 75 (2,): 183–207. http://www.jstor.org/stable/27903285

Kelbessa, Workineh. 2005. "The Rehabilitation of Indigenous Environmental Ethics in Africa". *Diogenes* 52 (3): 17–34. https://doi.org/10.1177/0392192105055167.

Leopold, Aldo.1949. *A Sand County Almanac and Sketches Here and There*. London, Oxford, New York: Oxford University Press.

Manrique Gil, Manuel.2010. "Ideology and the possibility of African political theory: African Socialism and "ubuntu" compared." *Fundación para las Relaciones Internacionales y el Diálogo Exterior* (FRIDE) – Madrid.

Metz, Thaddeus. 2011. "Ubuntu as a moral theory and human rights in South Africa." Af*rican Human Rights Law Journal*, 11, 532–559.

Mogobe, B. Ramose. 2005. *African Philosophy through Ubuntu*. Harare: Mond Book Publishers.

Naess, Arne.1972. "The Shallow and the Deep Long Range Ecology Movement. A Summary." *Inquiry*, 16, 95-100.

O'Neill, Onora. 1997. "Environmental Values, Anthropocentrism and Speciesism". *Environmental Values* 6 (2): 127-42. https://doi.org/10.3197/096327197776679121

Singer, Peter. 2015. *Animal Liberation: The Definitive Classic of the Animal Movement*. Iconic eBooks from open road media. New York.

UNEP Report. 2005. "Africa Environment Tracking: Issues and Developments".

Diálogos 114, 2024, pp. 251-283.

UNA MIRADA ÉTICA A LOS PENSAMIENTOS FUNDAMENTALES DE LA ECOLOGÍA EN LA *MORFOLOGÍA GENERAL* DE E. HAECKEL: LA TEORÍA DE LA DESCENDENCIA DE C. DARWIN Y EL MONISMO NATURALISTA

Michael Roman
Universidad Complutense de Madrid
michael.roman107@gmail.com

Abstract

The objective of this article is to present, in an ethical context, the two fundamental thoughts that configure the ecology of the second half of the XIX century developed by the naturalist Ernst Haeckel: Charles Darwin's theory of descendance and the natural monism. Ecology emerges in its beginnings as a subdiscipline of biology in the 19th century, particularly through the work of E. Haeckel entitled *General Morphology of Organisms* in 1866. In this work Haeckel compares a biology understood in a wide sense, to a biology understood in a narrow sense. The latter is equivalent to ecology, which is defined as the science of economy, as well as the forms of life and the external relations between organisms. Even though contemporary ecology has gone from being a branch of biology to being an interdisciplinary field with contributions from multiple branches of knowledge, the philosophical foundations under which Haeckel originally conceived ecology are closely related to strong ethical concerns that continue to have relevance in the current paradigm. Rethinking Haeckel's ecology, returning to the origin of this discipline, could serve

as support to broaden the ethical perspective in this field of knowledge.

Keywords

Haeckel, biology, ecology, Darwin, theory of descendance, monism

Resumen

El objetivo de este artículo es presentar, en un contexto ético, los dos pensamientos fundamentales que configuran la ecología de la segunda mitad del siglo XIX desarrollada por el naturalista Ernst Haeckel: la teoría de la descendencia de Charles Darwin y el monismo naturalista. La ecología surge en sus comienzos como una subdisciplina de la biología, particularmente a través de la obra de E. Haeckel titulada *Morfología general de los organismos* del 1866. En ella Haeckel compara una biología entendida en sentido amplio, frente a una biología entendida en sentido estrecho. Esta última es equivalente a la ecología, que queda definida como la ciencia de la economía, así como de las formas de vida y de las relaciones externas de los organismos entre sí. A pesar de que la ecología contemporánea ha pasado de ser una rama de la biología a ser un campo interdisciplinario con aportaciones de múltiples ramas del saber, los fundamentos filosóficos bajo los que Haeckel concibió la ecología originariamente están estrechamente relacionados con fuertes preocupaciones éticas que continúan teniendo relevancia en el paradigma actual. Repensar la ecología de Haeckel, retornar al origen de esta disciplina, podría servir de apoyo para ampliar la perspectiva ética en este campo del saber.

Palabras clave

Haeckel, biología, ecología, Darwin, teoría de la descendencia, monismo

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Introducción[1]

Las raíces de la ecología son históricamente tan diversas como profundas. Entre ellas se encuentran aportaciones de múltiples disciplinas científicas que van desde la zoología, la botánica y la biología, hasta la biogeografía, la historia natural, la ciencia de la energía y las ciencias biomédicas (Kingsland 2004, 367). Dentro de esta diversidad de aportaciones científicas, algunas de las raíces principales que sustentan la ecología son el sistema de clasificación de la naturaleza de Carlos Linneo (1707-1778), la concepción de una nueva ciencia física terrestre de Alexander von Humboldt (1769-1859) y la teoría de la selección natural de Charles Darwin (1808-1882). Por otro lado, las raíces ecológicas también son históricamente profundas, pues se encuentran ideas ecológicas que van desde la antigüedad griega en la zoología de Aristóteles y la botánica de Teofrasto[2], pasando por el medioevo, el

[1] Agradezco las múltiples recomendaciones ofrecidas por los lectores anónimos durante el proceso de revisión, las cuales han ayudado a fortalecer las observaciones éticas presentes en este texto. También agradezco las recomendaciones del Dr. Étienne Helmer sobre la teoría de la descendencia, así como las lecturas recomendadas por María Guibert Elizalde en torno al pensamiento de Haeckel. Por último, agradezco a César A. Rosa Pumarejo por la lectura atenta de este artículo y por su asistencia con diversas cuestiones de formato. Su ayuda ha mejorado notablemente este texto

[2] F.S. Bodenheimer considera a Aristóteles como "el padre de la ecología animal" por sus trabajos zoológicos, mientras J. Donald Hughes,

renacimiento y la revolución científica hasta nuestros tiempos (Egerton 2016, XII-XIV). No obstante, la ecología como concepto y disciplina ha tenido su origen en el pensamiento del naturalista alemán Ernst Haeckel.

La ecología de Haeckel surge como una rama de la biología del siglo XIX. Durante este período la biología estaba estrechamente vinculada con una diversidad de posturas filosóficas como el vitalismo, el mecanicismo, el deísmo, la teología natural, entre otras, las cuales competían por explicar el fenómeno de la vida (Frezzatti Jr. 2003, 436-437). La ecología biológica que desarrolla Haeckel está particularmente influenciada por las teorías de la descendencia de Goethe, Lamarck y Darwin, así como por las filosofías de Demócrito, Spinoza, Leibniz, Bruno y Schopenhauer que sirven de base para su concepción monista de la materia animada donde la vitalidad del mundo físico y sus procesos mecánicos, es decir, el espíritu y la materia, forman una unidad[3] (Haeckel 1879, 109-110). Esta última idea, que podría catalogarse como panpsiquista, tiene sus orígenes en el pensamiento de los antiguos filósofos griegos "hilozoistas" como Tales de Mileto, quien sostenía que la naturaleza entera estaba "llena de dioses", es decir, que poseía alma o conciencia[4] (Popper 1977, 178).

Los presupuestos naturalistas en el pensamiento de Haeckel están vinculados a una diversidad temática que abarca la ciencia, la filosofía y la religión. En la encrucijada

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considera a Teofrásto como el "padre de la ecología" por sus estudios botánicos (Bodenheimer 1954; Hughes 1985, 304).

[3] Sobre este punto véase *Della biologia cellulare alle scienze dello spirito. Aspetti del dibattito sull'individualità nell'Ottocento tedesco* (Orsucci 1992, 137).

[4] El monismo de Haeckel tiene características panpsiquistas. Por ejemplo, en sus obras posteriores Haeckel habla del "psicoma" (Frezzatti Jr. 2003, 449). Una crítica al panpsquismo de Haeckel aparece en el artículo de *The Monist* titulado "Panpsychism and Panbiotism" (1893).

de estas áreas del saber se puede entrever una fuerte preocupación ética. Como bien muestra Nolan Hele en "Ernst Haeckel and the Morphology of Ethics": "Haeckel sintió la urgente necesidad de basar un sistema ético en los fundamentos firmes de la ciencia, y en particular en la biología, en lugar de en la dudosa revelación religiosa" (Hele 2004, 3). Para llenar esta necesidad ética, Haeckel recurrió a la morfología y a su comprensión de la teoría de Darwin, a partir de las cuales Haeckel se esforzó por alcanzar un sistema ético anclado en sus investigaciones biológicas (Hele 2004, 10). Un ejemplo particular de este esfuerzo puede apreciarse en el intento de Haeckel por desarrollar una antropología basada en los principios científicos de la zoología y la biología (Haeckel 1886b, 433). Aunque la ecología de Haeckel no tiene un objetivo inmediato de carácter ético, este elemento sigue estando presente en su pensamiento, por lo que podría reflexionarse sobre sus postulados filosóficos para repensar éticamente la ecología desde una postura naturalista. Se trata de crear un espacio para pensar con Haeckel, desde Haeckel y más allá de Haeckel, cuestiones éticas de carácter ecológico que puedan ser pertinentes en nuestro tiempo.

A pesar de que la ecología contemporánea ha rebasado los límites biológicos que la definían durante la época de Haeckel[5], sus presupuestos filosóficos y científicos continúan teniendo una relevancia ética en esta disciplina. Un buen ejemplo de esto se encuentra en el texto de Mónica Giardina titulado "La pregunta por la tierra" donde se establece un paralelismo entre las críticas al antropocentrismo del naturalista Ernst Haeckel y las del teólogo brasileño

[5] Ejemplos de esta separación de la biología son el artículo "The Shallow and the Deep" (1973) de Arne Naess y el libro *Primavera silenciosa* (1964) de Rachel Carson.

Leonardo Boff[6] (Giardina 2016, 32). Si bien el recorrido histórico y conceptual que elabora Giardina tiene como objetivo presentar de trasfondo algunos principios ecológicos para pensar en este contexto la filosofía de Martin Heidegger, al mismo tiempo abre el camino para repensar el valor filosófico de la ecología de Haeckel en nuestros tiempos. En este sentido, los fundamentos darwinistas y monistas de la filosofía de Haeckel podrían continuar teniendo relevancia en las discusiones ecológicas más allá del campo de la biología, presentando una oportunidad para repensarlos de manera filosófica y, sobre todo, ética.

Con el fin de abrir el camino para repensar éticamente los fundamentos filosóficos de la ecología de Haeckel, en las siguientes líneas se presenta la conexión entre la ecología de Haeckel y los pensamientos filosóficos del darwinismo y del monismo en la *Morfología general de los organismos* del 1866. En primer lugar, se presenta una breve biografía del autor. Luego, se expone de manera breve el contenido filosófico de esta obra. Acto seguido, se ubican, en el contexto de la obra, aquellos pasajes en los que se define etimológica y conceptualmente la ecología. Finalmente, se revisan los dos presupuestos filosóficos de la ecología de Haeckel: la teoría de la descendencia de Charles Darwin y el monismo filosófico a partir de la unidad de los cuerpos naturales orgánicos e inorgánicos. Estos dos elementos de la ecología que son categorizados en este texto como dos pensamientos fundamentales, sirven como punto de partida para repensar la ecología contemporánea desde una base naturalista y abrir nuevamente el horizonte para una nueva filosofía tal y como lo buscaba Haeckel.

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[6] Leonardo Boff encuentra en la base de la ecología de Haeckel una "preocupación ética de la responsabilidad" que es justamente la que le permite a la ecología posterior rebasar el campo de la biología (Boff 1995, 16-17).

Ernst Haeckel: vida, influencias intelectuales y obras

Ernst Heinrich Philipp August Haeckel nació en Potsdam el 16 de febrero de 1834[7]. Su padre, Carl Gottlob Haeckel, fue jurista de profesión y ejerció como consejero privado en la corte prusiana. Su madre, Charlotte, era hija del jurista Christoph Sethe. Su hermano Karl, diez años mayor, continuó los pasos de su abuelo y de su padre en el campo de la profesión legal. Tras un año de haber nacido Haeckel, la familia se mudó a Merseburg, donde su padre Carl se desempeñó en el área de la responsabilidad ministerial para las escuelas y los asuntos eclesiásticos. En el transcurso de los diecisiete años que vivió allí, Haeckel tuvo una rica vida intelectual. Conoció a temprana edad, a través de su madre, la poesía clásica alemana de Friedrich Schiller, la filosofía de la naturaleza de Goethe y las ideas religiosas de Friedrich Schleiermacher, quien era un conocido íntimo de la familia de Haeckel. El interés de su padre, Karl, por la geología y los panoramas extranjeros condujo a Haeckel a conocer las obras de Alexander von Humboldt, Charles Darwin y otros investigadores naturalistas.

Entre las obras más influyentes en el pensamiento de Haeckel se encuentran *Ansichten der Natur* (Perspectivas de la naturaleza) del 1808 de Humboldt, *Naturwissenschaftliche Reisen* (Viajes de la ciencia natural) de 1844 de Darwin y *Die Pflanze und ihr Leben* (Las plantas y su vida) de 1848 de Matthias Jakob Schleiden. Estas obras determinaron el curso de la vida profesional de Haeckel. De acuerdo con Robert J. Richards, de Humboldt, fue central

[7] Para elaborar esta breve biografía se han utilizado principalmente como texto base las obras de Robert J. Richards, *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought* (2008) y de Erika Jena Krauße, *Biographien hervorragender Naturwissenschaftler, Techniker und Mediziner Band 70. Ernst Haeckel* (1984).

la idea de que las fuerzas vitales de la naturaleza podían ser entendidas como interacciones químicas desconocidas que explicaban el fenómeno de la vida (2008, 21). De Schleiden, la idea de que las fuerzas químicas habían transformado los organismos simples en especies cuyos descendientes ahora poblaban la tierra (21-22). De Darwin, el interés por la naturaleza botánica y zoológica, que le hacían pensar viajes imaginarios a las zonas tropicales (22). Además de estas obras, conoció el sistema de Linneo y las ideas de Lorenz Oken a través de su tutor Karl Guide y, más adelante, cuando entró al Domgymnasium de Merseburg en el 1843, su maestro Otto Gandtner lo introdujo a los elementos de la química.

A pesar de estar inicialmente interesado en estudiar Botánica, en el 1852 entró a la Universidad de Würzburg a estudiar Medicina siguiendo el consejo de su padre. En Würzburg tomó el curso de histología de Albert von Kölliker, quien introdujo a Haeckel en el estudio microscópico. También conoció a Rudolf Virchow, quien era conocido por sus posturas políticas, así como también por sus ideas en torno a las bases celulares para la vida y las enfermedades. Recibió su doctorado médico en 1857. Sin embargo, en el transcurso de estudios de medicina, se dio cuenta de que su verdadero interés era la investigación en el campo de la biología. En el 1858, Haeckel hizo sus planes para perseguir la investigación científica y llevar a cabo su investigación para la habilitación, con su monografía requerida, para obtener una posición académica en Berlín.

En el 1859 viajó a Italia, donde realizó su investigación para su habilitación centrada en los radiolarios. Su investigación quedó completada en el 1861. Al año siguiente estas investigaciones aparecieron en su monografía *Die Radiolarien (Rhizopoda Radiaria)*, inicialmente compuesta de dos partes (Haeckel 1862).

Durante este mismo año, tras la aparición de su monografía sobre los radiolarios, Haeckel fue nombrado profesor extraordinario en la Universidad de Jena. Haeckel envió dos folios de *Die Radiolarien* a Darwin, quien los recibió en el 1864 y escribió en una carta que data del 3 de marzo del mismo año: "Es uno de los trabajos más magníficos que jamás había visto, y estoy orgulloso de poseer una copia del autor" (Richards 2008, 1; DCP-LETT-4419)[8]. Pero la obra que mayor controversia alcanzó fue su *Darwin-Buch*[9], *La morfología general de los organismos* publicada en 1866, la cual contendría los fundamentos para todo el pensamiento posterior de Haeckel.

Ernst Haeckel y la *Morfología general* de los organismos

La *Morfología general de los organismos. Principios generales de la ciencia de las formas orgánicas, mecánicamente fundamentada a través de la teoría de la descendencia reformada de Charles Darwin*[10] es considerada como el *magnum opus*[11] de Ernst Haeckel.

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[8] Las citas del *Darwin Correspondence Project* y el *Haeckel Briefwechsel Projekt* han sido respectivamente abreviadas en las referencias como DCP-LETT- y HBP-LETT- seguidas del número de identificación de la carta correspondiente.

[9] Haeckel utiliza el término *Darwin-Buch* para referirse a la *Morfología general de los organismos* en su correspondencia con Hermann Allmers (HBP-40737; HBP-40738).

[10] *Generelle Morphologie der Organismen. Allgemeine Grundzüge der organischen Formen-Wissenschaft, mechanisch begründet durch die von Charles Darwin reformirte Descendenz-Theorie*. A partir de ahora abreviada como *Morfología general*. Todas las traducciones de los pasajes de esta obra presentes en este texto son propias del autor de este artículo.

[11] Así lo considera Sander Gliboff en su libro *H. G. Bronn, Ernst Haeckel, and the Origins of German Darwinism: A Study in Translation and Transformation* (2008, 156).

Haeckel elabora los planes para esta obra durante el verano de 1864 y para el mes de octubre de este mismo año finaliza el manuscrito (Richards 2008, 115-117). Se trata de una obra extensa que contiene diversas temáticas que van desde la biología hasta consideraciones filosóficas y religiosas que se entrecruzan en una cosmovisión monista. La obra está dividida en dos volúmenes. El primer volumen se titula *Anatomía general de los organismos*[12] y está dedicado a su más preciado amigo (*theurer Freund*) Carl Gegenbauer[13]. El segundo se titula *Historia evolutiva general de los organismos*[14] y va dedicado a los teóricos de la evolución Goethe, Lamarck, y Darwin (Haeckel 1866ª, 2; 1866b, 5). Cada volumen está dividido en libros compuestos de capítulos y secciones, estas últimas identificadas con números romanos.

En esta obra Haeckel se propone elaborar una filosofía del futuro (*Philosophie der Zukunft*) en la que no existe una diferencia entre la ciencia natural (*Natur-Wissenschaft*) y la filosofía natural (*Natur-Philosophie*), pues ambas son "una y la misma" (Haeckel 1866a, 108). Esta nueva filosofía, denominada por Haeckel como monista, supera los contrarios presentes en el dualismo como "fuerza y materia, espíritu y cuerpo, libertad y naturaleza, esencia y apariencia", así como también la escisión entre filosofía y ciencia, entre

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[12] *Allgemeine Anatomie der Organismen. Kritische Grundzüge der mechanischen Wissenschaft von den entwickelten Formen der Organismen, begründet durch die Descendenz-Theorie.*

[13] Sobre la amistad de Haeckel y Carl Gegenbauer véase la sección "Friendship with Gegenbauer" en Richards 2008 ,84-90.

[14] *Allgemeine Entwickelungsgeschichte der Organismen. Kritische Grundzüge der mechanischen Wissenschaft von den entstehende Formen der Organismen, begründet durch die Descendenz-Theorie.*

pensamiento y experiencia[15] (106). Entre los elementos contrarios que supera el propio Haeckel se encuentran la dualidad entre el hombre y el animal, una idea que tiene su origen en el pensamiento evolucionista de Darwin y, la superación de la escisión entre el hombre y la naturaleza mediante la unidad de la materia orgánica e inorgánica, perspectiva que revive antiguas concepciones de la naturaleza animada. Estas dos ideas que coordinan toda la estructura de la *Morfología general* están agrupadas por Haeckel bajo la categoría de pensamientos fundamentales.

Para Haeckel, la relación entre el hombre y el animal se presenta como una respuesta a la pregunta por "el lugar del hombre en la naturaleza" desde la teoría de la descendencia (Haeckel 1886b, 425). De acuerdo con Haeckel, la afirmación de que el ser humano se ha desarrollado gradualmente, mediante un proceso evolutivo, a partir de seres inferiores con vertebras "...hasta ser el sucesor directo evolutivo de los simios, es una conclusión deductiva que surge con absoluta necesidad de la ley general de inducción de la teoría de la descendencia" (427). Esta deducción tiene como base una línea genealógica que va desde animales sin cerebro ni corazón centralizado, pasando por peces, anfibios, hasta llegar a los simios y finalmente al hombre (428-429). En la línea evolutiva trazada por Haeckel no existe una diferencia cualitativa entre el hombre y los animales (el simio en particular), sino solamente una diferencia cuantitativa. Sin embargo, de acuerdo con el naturalista de Potsdam, no por eso ha de estar el hombre menos orgulloso. Justamente el hecho de que el hombre haya dejado detrás de sí en el proceso evolutivo a un sinnúmero de

[15] Se trata de un pensamiento previamente elaborado por August Schleicher en *Die Darwinsche theorie und die Sprachwissenschaft* (1863, 8-9).

diversas especies le da un valor incalculable, pues "nada en la naturaleza es comparable a este triunfo evolutivo" (430).

Por otro lado, el monismo filosófico de Haeckel se presenta con mayor fuerza en la obra mediante la unión o identidad de los cuerpos materiales orgánicos e inorgánicos. Es lo que Haeckel llama "el pensamiento fundamental"[16] de la unidad de la naturaleza (tanto orgánica como inorgánica) regida por las leyes causales (446-447). Según Haeckel "[e]l monismo no reconoce ni la materia sin espíritu de la que habla el materialismo, ni el espíritu sin materia que el espiritualismo acepta" (448). No existe una escisión entre lo material y lo espiritual, no hay materia sin fuerza, ni fuerza sin materia, y esto se aplica tanto al reino inorgánico, como el orgánico del que el hombre forma parte. En este sentido, existe en Haeckel una genealogía del hombre a partir de la misma tierra (aunque como muy bien explica Haeckel no en el sentido directo, sino en el sentido indirecto, pues directamente el hombre viene del simio, que es mucho más valioso que la tierra que proclama la antigua tradición).

La superación de la dualidad hombre-animal y la superación de la dualidad hombre-naturaleza forman conjuntamente una parte importante de la obra y son centrales para comprender el pensamiento de la ecología fundado por Haeckel que se discutirá en las siguientes líneas.

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[16] Haeckel utiliza la expresión *pensamiento fundamental* (*Gründgedanke*) para referirse tanto a la teoría de la descendencia de Darwin, como al monismo naturalista. Para este artículo hemos empleado la expresión *pensamientos fundamentales* en plural con el objetivo de analizar estos dos pensamientos por separado. No obstante, es importante tener en cuenta que bajo el monismo de Haeckel estos dos pensamientos son uno y el mismo.

La ecología en la *Morfología general* de Haeckel

La ecología, en tanto que concepto y disciplina, tiene su origen en la *Morfología general* de Haeckel. La primera formulación aparece a pie de página en una sección del primer volumen de la obra titulada "Morfología y Biología". En esta sección Haeckel contrasta una biología entendida en sentido amplio frente a una biología entendida en sentido estrecho. Por biología en sentido amplio Haeckel entiende una disciplina que se ocupa de la ciencia de la vida (*Lebenswissenschaft*), en tanto que reúne "la ciencia completa de los organismos o de cuerpos naturales vivos de nuestra esfera terrestre" (Haeckel 1886a, 8). La morfología general, de la que Haeckel se ocupa en esta obra, vendría a ser una parte de esta biología amplia. En cambio, la biología en sentido estrecho es equivalente a la ecología, la cual Haeckel entiende como "la ciencia de la economía, de las formas de vida, de las relaciones externas de los organismos entre sí, etc." (8n1).

La segunda formulación de la ecología surge en la sección del segundo volumen titulada "Ecología y Corología"[17] donde se ofrece una definición de la ecología más extensa y se presenta su origen etimológico. La palabra *ecología* (*Oecologie*) está compuesta por la palabra griega *οἶκος* (*Oikos*), la cual Haeckel traduce al alemán por *der Haushalt* y *die Lebensbeziehungen* (Haeckel 1866b, 286n2). El término *der Haushalt* se traduce al español como *casa* u *hogar* y, para Haeckel, se relaciona con la administración económico-política de los recursos naturales, mientras que el

[17] En cuanto al término *corología*, este surge del griego *χῶρα* (*Khora*) que Haeckel traduce por *der Wohnort* y *der Verbreitungzbezirk* (Haeckel 1866b, 286n2). El término *Wohnort* quiere decir en español *morada* o *residencia*, mientras que *Verbreitungzbezirk* puede entenderse como *entorno*. El concepto *Verbreitungzbezirk* aparece en la traducción de H.G. Bronn de *El origen de las especies* de Darwin (1860, 50).

término *Lebensbeziehungen* se traduce al español como *relaciones de vida* y se refiere a los factores externos que influyen en las diversas formas de vida orgánicas. Sin perder de vista las raíces etimológicas de la ecología, Haeckel la define en esta sección de la siguiente manera:

> Por ecología entendemos toda la ciencia de las relaciones del organismo con el medio ambiente, incluidas, en un sentido amplio, todas las "condiciones de existencia". Estos son en parte orgánicas, en parte de naturaleza inorgánica; ambas, como hemos mostrado, son de la mayor importancia para la forma de los organismos, porque los obligan a adaptarse (286).

Uno de los conceptos centrales de la ecología es el de *condiciones de existencia* (*Existenz-Bedingungen*). Las condiciones de existencia están divididas entre las condiciones inorgánicas y las condiciones orgánicas. Entre las condiciones de existencia inorgánicas ubica Haeckel "las particularidades físico-químicas de su lugar de vida, el clima (luz, calor, y condiciones de humedad y electricidad de la atmósfera), los medios inorgánicos de alimento, la calidad del agua y del suelo, etc." (286). Estos recursos forman una parte esencial de la economía natural de los organismos y son indispensables para que estos últimos puedan llevar a cabo sus funciones vitales. Las condiciones de existencia influyen directa o indirectamente en los modos de vida de los organismos y su alcance o ausencia determina las posibilidades mismas de la vida de los organismos.

Por otro lado, las condiciones orgánicas de existencia son "...todas las relaciones de los organismos con los otros organismos restantes que entra en contacto y de los cuales, en su mayoría, contribuyen a su utilidad o a su perjuicio" (286). Se trata de la lucha entre los organismos por recursos

naturales. La limitada capacidad de recursos naturales en el entorno natural afecta tanto las condiciones de vida como la supervivencia de los organismos. Por tanto, es indispensable considerar la relación entre los organismos mismos que compiten por los limitados recursos naturales. Esta relación entre los organismos es una de lucha por la existencia (*Kampf um Dasein*), donde cada organismo considera al otro como útil (en la medida en que le favorece, es decir, en tanto que puede sacar provecho de él para obtener recursos) o nocivo (cuando este otro organismo le perjudica y puede atentar contra la vida misma) (Haeckel 1886b, 286-287). Entre este tipo de relaciones se cuentan aquellas de dominio y servidumbre, donde un organismo le sirve a otro para la búsqueda de medios de supervivencia como el alimento, así como también las relaciones parasitarias y de dependencia entre organismos.

De manera general, las condiciones de existencia orgánicas e inorgánicas se ocupan de las relaciones de conservación de los organismos (la alimentación, la procreación, el crecimiento, etc.) mediante una perspectiva que abarca el organismo en relación con su entorno como un todo. Haeckel expresa esta relación complicada con el término *Natur-Haushalt*, el cual asocia a una "Economía de la totalidad de la naturaleza" (*Oeconomie des Natur-Ganzen*). No obstante, la expresión de *administración de la naturaleza* sería una traducción más adecuada, ya que capta la doble vertiente económica y política que este término tiene en su idioma original. Estas relaciones administrativas, añade Haeckel, son explicadas por la teoría de la descendencia de Goethe, Lamarck y Darwin de manera mecánica bajo un único principio, el de las relaciones de causa y efecto, con lo cual se alcanza una fundamentación monista de la ecología (*monistische Grundlage der Oecologie*) (287).

El darwinismo: la teoría de la descendencia y la selección natural en la ecología de Haeckel

La figura de Charles Darwin desempeña un rol central en el pensamiento de Haeckel, tanto para su concepción de la ecología, como para la *Morfología general* en su totalidad. Haeckel lee la segunda edición de *El origen de las especies* de Charles Darwin traducida al alemán por H.G. Bronn a los 26 años, durante el mes de abril del 1860[18] (Kutschera et al. 2019, 1). La "teoría de la descendencia reformada de Charles Darwin", tal y como se anuncia en el subtítulo de la *Morfología general*, estructura gran parte del pensamiento presente en esta obra de Haeckel. Así lo constata una carta del 1865 de Haeckel a Darwin:

> No tengo palabras para expresar cuan excepcionalmente feliz me ha hecho al permitirme visitarle, y la inmensa satisfacción que recibo de haber conocido personalmente al naturalista que, como reformador de la teoría de la descendencia y descubridor de la selección natural, ha tenido gran influencia en la dirección de mis estudios y el trabajo de mi vida más que ningún otro. Una vez más le doy a usted y a su familia mis más cordiales y sinceras gracias (DCP-LETT-5533).

En gran medida, la *Morfología general* de Haeckel es una continuación de la tarea de reformación iniciada por

[18] La traducción de Bronn, titulada *Über die Entstehung der Arten im Thier- und Pflanzen-Reich durch natürliche Züchtung, oder Erhaltung der vervollkommnenten Rassen im Kampfe um's Daseyn* está influenciada por el vocabulario pre-darwiniano trascendentalista de la filosofía natural alemana (Gliboff 2008, 7). Sin embargo, muchos de los conceptos que emplea Bronn en su traducción tienen un significado novedoso que rebasa la tradición de la *Naturphilosophie* alemana (7).

Darwin. En palabras del propio Haeckel: "Como yo lo creo, de lo que se trata entre nosotros es de una *reforma radical* de toda la ciencia, la cual usted, muy estimado señor, ha iniciado con su fundamentación mecánica y causal de la teoría de la descendencia"[19] (DCP-LETT-5533).

La teoría de la descendencia es "el fundamento indispensable" de la morfología general, así como de las disciplinas fisiológicas de la ecología y de la corología (Haeckel 1886b, 289). Se trata del "pensamiento fundamental" (*der Grundgedanke*) de la obra y se refiere a "el origen [o descendencia] de los organismos "emparentados" de los progenitores más simples" y que según Haeckel "es el único pensamiento que en general aclara mecánicamente el desarrollo de los organismos y, a través de ello, sus formas de relación enteras" (290). En general, todos los fenómenos complejos de la naturaleza orgánica pueden ser aclarados para Haeckel por el pensamiento fundamental de la teoría de la descendencia (294). Si bien la teoría de la descendencia ya había sido proclamada *a priori* y de manera abstracta por Goethe y Kant, y presentada como teoría completamente fundamentada por Lamarck, Haeckel sostiene que ha sido Darwin quien "ha presentado una prueba concreta de esta proposición abstracta"[20] (DCP-LETT-4586; Haeckel

[19] La carta continúa: "...Tal reformación, que tiene que luchar en todas partes con enormes obstáculos y prejuicios, no puede ser ganada con palabras suaves y persuasión benevolente. Más bien, ataques energéticos y golpes sin piedad son necesarios en todas partes para demoler el antiguo edificio de los errores persistentes. Como con todas las luchas, aquí también, el valiente atacante tiene gran ventaja y, por consiguiente, pienso que es más sabio que yo ataque sin piedad a ser atacado por mis oponentes malévolos" (DCP-LETT-5533).

[20] Sobre este punto véase la carta de Haeckel a Darwin del 10 de agosto del 1864, así como la *Morfología general* (DCP-LETT-4586; Haeckel 1886a, 72-73).

1886a, 72-73). Solo tras la formulación de la teoría de la selección natural, la teoría de la descendencia de Goethe y Lamarck queda completada y tornada en arma de conquista por Charles Dariwn (*Eroberungs-Waffe*) (Haeckel 1886a, XV).

La teoría de la selección natural expuesta en *El origen de las especies* de Charles Darwin es, a su vez, el fundamento causal de la teoría de la descendencia de Goethe y Lamarck que explica los problemas de la biología bajo un único pensamiento mediante la ley de la "causa eficiente" y que ha abierto un nuevo campo para la filosofía (71). Como señala Wilson Antonio Frezzatti Jr., "[p]ara Haeckel, Darwin fue el primero en introducir las explicaciones físico-químicas en la biología" (2001, 53). Haeckel interpreta estas explicaciones físico-químicas de Darwin desde su concepción monista de la realidad que concibe todos los fenómenos bajo la relación mecánica de causa y efecto. Es en este punto donde Haeckel reforma la teoría de la descendencia de Darwin al pensarla bajo un principio filosófico monista (movimiento mecánico causal) que no distingue, en su esencia, los cuerpos naturales orgánicos de los inorgánicos. Esta es una diferencia substancial entre las "condiciones de existencia" en el pensamiento de Darwin y de Haeckel.

Las "condiciones de existencia", que forman una parte central de la ecología de Haeckel, están estrechamente vinculadas a la teoría de la selección natural (*natural selection / natürliche Züchtung*) y a la idea de la lucha por la existencia (*Strugge for existence / Kampf um Dasein*) de Charles Darwin[21] (Stauffer 1957, 139). Para Darwin, los seres orgánicos se han formado a partir de dos leyes

[21] Robert C. Stauffer ha mostrado en su artículo "Haeckel, Darwin and Ecology" (1957) la importancia que desempeñan las ideas de Charles Darwin en la ecología desarrollada por Haeckel.

fundamentales: 1) la unidad de tipo y 2) las condiciones de existencia. Por un lado, la ley de la unidad de tipo se refiere a la similitud presente en la estructura de organismos de la misma clase, la cual es independiente de los hábitos de vida (Darwin 1860a, 206). Por otro lado, la ley de las condiciones de existencia abarca el conjunto de condiciones de vida de como el clima y la alimentación, las cuales tienen la capacidad de alterar (para su utilidad o desventaja), aunque sea mínimamente, la organización de los organismos (Darwin 1860a 167, 168, 206). Estas condiciones naturales son divisibles entre las categorías de "orgánico" e "inorgánico". Sin embargo, esta distinción fisiológica entre los cuerpos naturales orgánicos e inorgánicos (vivos y no vivos) presente en las "condiciones de existencia" de Darwin, no se sostiene morfológicamente en la filosofía monista de Ernst Haeckel.

El monismo metodológico y la superación de la dualidad orgánico e inorgánico

La filosofía de Haeckel ha sido catalogada como hiper-darwinismo[22] en la medida en que va más allá de Darwin en cuestiones fundamentales de la teoría de la descendencia (DCP-LETT-7510). De acuerdo con Haeckel, la teoría de la descendencia de Darwin deja una pregunta sin responder: "¿Cómo surgen aquellos primeros y sencillos seres vivos, de los cuales todos los restantes organismos más completos se desarrollaron poco a poco?" (Haeckel 1886a, 168). Haeckel se propone responder esta pregunta "hipotéticamente" a partir de su concepción monista de la realidad con su explicación mecánica causal (168). Se trata del pensamiento fundamental de la unidad orgánica e inorgánica de la

[22] Sobre este punto véase también la obra de M.L. Stern, *Die Philosophie und die Anthropogenie des Prof. Dr. Ernst Haeckel* (1879).

naturaleza que atraviesa "como un hilo rojo" la *Morfología general* (Haeckel 1886b, 446-447). En esta explicación causal se traza la conexión entre la materia orgánica e inorgánica a modo de continuo, borrando así la brecha entre estos dos mundos de la naturaleza y reformando en el proceso la teoría de la descendencia de Darwin.

Haeckel comienza examinando la dualidad existente en torno a los cuerpos naturales orgánicos e inorgánicos desde las formas y las fuerzas (a las que también llama funciones) de ambos grupos. De acuerdo con Haeckel, la representación dualista dominante en torno a los cuerpos materiales sostiene una diferencia absoluta entre los organismos y lo inorgánico. Para Haeckel, en cambio, no existe una brecha absoluta que separe ambos grupos, de tal manera que los cuerpos naturales orgánicos e inorgánicos no pertenecen a dos mundos distintos, pues "los primeros organismos han surgido inmediatamente de lo inorgánico" (113-114). La dualidad aparente entre estos dos tipos de cuerpos naturales surge de una perspectiva vitalista, teleológica y analítica anclada en el dualismo. Por el contrario, Haeckel propone elaborar una perspectiva sintética que supere la dualidad absoluta entre la materia orgánica e inorgánica y, con ello, amplificar el significado de una morfología general de los organismos, incluyendo en esta disciplina lo que pertenece al reino inorgánico (113-114).

Los cuerpos naturales orgánicos e inorgánicos son para Haeckel solo aparentemente contrarios, pues en su esencia no existe entre ellos ninguna diferencia substancial. El concepto de organismo (*Organismus*) tiene una base morfológica[23], y se refiere a los cuerpos naturales compuestos

[23] Para Haeckel, la morfología se refiere a la estructura estática fisicoquímica de los entes, mientras que la fisiología se refiere a la dinámica de los entes (sus cambios a base de movimientos en configuraciones de la estructura morfológica).

de órganos "es decir, de herramientas o de partes desiguales que trabajan conjuntamente para el fin de la totalidad" (112). Pero, en la medida en que existen organismos unicelulares que no poseen ningún órgano con características morfológicas determinadas, el término "organismo" pierde su significado morfológico y solamente es concebible en el sentido fisiológico, según el cual los organismos serían aquellos entes que presentan funciones vitales como la alimentación[24] (*Ernährung*) (112). Por el contrario, los cuerpos naturales inorgánicos (*Anorgane*) serían aquellos que no poseen la función vital de la alimentación y que tampoco muestras aquellas actividades vitales presentes en lo orgánico (reproducción, movimiento voluntario y sensación) (112).

Por otro lado, el hecho físico de que todos los cuerpos naturales muestran un conjunto de cualidades generales como "extensión, impenetrabilidad, divisibilidad, extensibilidad, compresibilidad, elasticidad, porosidad, inercia, peso, etc." constata que "en todas las cualidades-fundamentales generales de la materia no se encuentra la menor diferencia entre lo orgánico y lo inorgánico" (115). De ello se desprende que los cuerpos naturales están sujetos a los mismos principios físico-químicos de la materia según formulados en la teoría atomística, para la cual la materia está compuesta de átomos "... es decir, de partículas de masa pequeñas, discretas e indivisibles, que sometidas al peso y a la atracción general de la masa, se atraen recíprocamente a través de esta fuerza de atracción o cohesión" (115). Los átomos se encuentran separados por una materia de peso imperceptible llamada éter[25] (115). Para Haeckel "[l]a teoría

[24] Véase Haeckel 1866a, 135- 138.

[25] De acuerdo con Haeckel existen dos tipos de átomos: los átomos-masa que causan la cohesión y los átomos-éter que causan la repulsión (Haeckel 116-117n2).

atomística aclara de igual manera las particularidades fundamentales de los organismos y lo inorgánico" ya que ambos cuerpos naturales, vivos y no vivos, están formados por átomos (116).

Todo lo que se encuentra en los cuerpos materiales de la naturaleza está compuesto por átomos, cuya diferencia cualitativa consiste en las distintas formas de átomos (*Atom-Arten*) (pues habría tantas variaciones de formas de átomos como elementos químicos existentes) y en las diferencias de peso (*Gewicht*) de estas formas de átomos que determinan la unión de la materia mediante las distintas relaciones de peso (*Gewichtverhältnissen*) de los átomos (116-117). Por lo tanto, en un segundo plano, cabría preguntarse si estos átomos que componen la materia son distintos en los cuerpos naturales orgánicos y los inorgánicos. La respuesta de Haeckel es negativa. Tanto los compuestos químicos, como las leyes generales que rigen las variaciones de los enlaces químicos que estructuran la materia de los cuerpos naturales orgánicos e inorgánicos son idénticas. No existe una diferencia cualitativa entre los átomos que componen la materia orgánica y la materia inorgánica, ya que "[t]odos los elementos químicos que componen los cuerpos de los organismos, también se encuentran en la naturaleza inorgánica" (117). Solamente habría una diferencia cuantitativa entre ellos.

Entre los elementos químicos que se encuentran en los organismos se destacan principalmente cuatro, llamados organógenos (*Organogene*): carbono, oxígeno, hidrógeno y nitrógeno. De particular importancia es el elemento químico de carbono "cuyas extrañas particularidades físicas y químicas han sido consideradas como la última causa de todas las funciones y formas particulares que separan a los organismos de lo inorgánico" (118). Sin embargo, sostiene Haeckel que, ni el carbono es algo exclusivamente de los

organismos, pues lo encontramos en la naturaleza inorgánica del grafito y del diamante, ni sus configuraciones particulares, los llamados "vínculos orgánicos" (*organische Verbindungen*), por oposición a los "vínculos inorgánicos" (*inorganische Verbindungen*), surgen de leyes químicas distintas a las del reino inorgánico (119-120). En la configuración de la naturaleza orgánica no opera ninguna materia vital (*Lebenstoff*), ni ninguna fuerza vital (*Lebenskraft*) particular, sino que solamente hay distintas formas de unión química del carbono (*Kohlenstoff*) (118, 120).

Estas formas de unión química de los organógenos pueden ser consideradas desde el estado de agregación de la materia (*Aggregatzustand*) de los cuerpos naturales. Para Haeckel, el estado de agregación de la materia es "el movimiento relativo condicionado de los átomos-masa por su grado de distancia" en base a las fuerzas de cohesión de los átomos (*Cohäsions-Kraft der Atome*) y de la fuerza de expansión de las partículas etéreas (*Expansions-Kraft der Aethertheilchen*) (122). En lo inorgánico hay tres estados de agregación de la materia: sólido, líquido y gas (112). Estos tres estados también están presentes en los organismos, pero Haeckel observa un cuarto estado adicional que solamente está presente en los organismos. Se trata del "estado de agregación semisólido o inflado" (*festflussigen oder gequollen Aggregatzustand*) que es una formación intermedia entre el estado firme y el fluido, es decir, entre lo sólido y lo líquido (124). Este estado intermedio surge a partir de la entrada de líquido a los espacios intermoleculares de un cuerpo sólido, los cuales son capaces de llevar a cabo una absorción de líquido, por hinchamiento o imbibición, sin perder su estado sólido (124). Los más importantes fenómenos vitales y funciones orgánicas de los cuerpos son posibles a partir de este cuarto estado orgánico:

> Las llamadas fuerzas "animales" de sensación y movimiento que surgen de la substancia muscular y nerviosa, como la así llamada fuerza "vegetativa" de la alimentación y la reproducción, la cual heredan las distintas substancias de los organismos, son completamente impensables sin el estado de la materia semisólido [*festflussige Aggregatzustand*] de su substrato material (125).

Esta capacidad de imbibición del estado semisólido de la que carecen los compuestos inorgánicos está presente solo en una parte pequeña de los compuestos orgánicos, pues compuestos como las grasas, los ácidos orgánicos, los alcaloides y los azúcares, entre otros, aparecen en el cuerpo de los organismos solamente en estado sólido (cristalino) o líquido (fundido) y no en el estado intermedio que permite la imbibición (129). Por lo tanto, en base a este cuarto estado de la materia se da una diferencia entre la materia orgánica e inorgánica, en la medida en que la primera es capaz de imbibición, pero no de cristalización, y la segunda materia incapaz de imbibición, pues no puede hincharse, pero capaz de cristalización (129).

Siguiendo esta distinción de cuerpos a partir de su estado de agregación de la materia, Haeckel compara algunos ejemplos de individuos orgánicos e inorgánicos para argumentar que no existe una diferencia substancial entre la forma interna de estos cuerpos. Como ejemplo de la similitud de la forma interna entre los dos tipos de cuerpos naturales, Haeckel compara los cristales y las móneras. Los cuerpos inorgánicos, en general, son homogéneos y carecen de una estructura fija. Sin embargo, los cristales forman una unidad espacial cerrada y determinada, similar a la de los organismos; adicionalmente, su configuración interna varía por condiciones externas como la luz, la electricidad y el calor (24, 133). En cuanto a los cuerpos orgánicos, estos

generalmente son heterogéneos en su estructura interna. No obstante, existen varios individuos orgánicos particulares pertenecientes al grupo de las móneras que son homogéneos y que llevan a cabo todas las funciones vitales de los organismos (alimentación, reproducción y movimiento) sin una estructura fija y sin órganos (136). Este par de individuos pone en cuestión la diferencia entre lo orgánico y lo inorgánico en su sentido morfológico, pues ambos cuerpos naturales poseen estructuras internas que no se ajustan a las etiquetas habituales (135).

Otra diferencia aparente entre los cuerpos orgánicos e inorgánicos es su forma externa. Generalmente, se parte de la premisa de que la forma externa de los cristales puede ser clasificada con exactitud matemática, mientras que los individuos orgánicos tienen una superficie torcida, líneas curvas y ángulos inconmensurables (137). Ahora bien, Haeckel expone dos ejemplos que ponen en cuestión la diferencia entre este par de cuerpos naturales en base a su estructura externa. Por un lado, Haeckel argumenta que existen varios tipos de cristales que poseen estructuras asimétricas tal y como ocurre con los organismos (138). Ejemplos particulares de este tipo son las múltiples formas complejas de los cristales de la nieve, de la escarcha y de las capas de hielo que se forman sobre las hojas (138). Por otro lado, Haeckel afirma que existen organismos cuya estructura posee la misma simetría geométrica de los cristales. Se trata de los radiolarios, pertenecientes al grupo de los Rhizpoda, los cuales habían sido el tema central de la tesis de habilitación de Haeckel (138). Estos exhiben formas similares a los cristales que van desde el tetraedro, al octaedro y el prisma, entre otras (138).

Tras haber demostrado que los organismos y lo inorgánico no se diferencian en sus en sus formas internas, ni en sus formas externas, así como tampoco en los compuestos

físico-químicos de la materia que los compone, Haeckel expone su idea de la unidad de la naturaleza orgánica e inorgánica. Haeckel afirma que los cuerpos orgánicos y los cuerpos inorgánicos coinciden en las propiedades básicas esenciales de su materia, en su composición de átomos-masa y en que sus formas y funciones son efectos directos y necesarios de la materia que los compone. Las diferencias aparentes que existen entre estos dos tipos de cuerpos naturales radican en las diferencias materiales que se producen por los diversos modos de enlaces químicos de los elementos que la componen. Los fenómenos del movimiento que se agrupan bajo el nombre de "vida" y que determinan las formas peculiares de los organismos — como el crecimiento (*Wachstum*), la auto-regulación (*Selbsterhaltung*) y la adaptación (*Anpassung*) — no son la salida de una fuerza especial interna o externa del organismo, sino solamente los resultados directos o indirectos de diversos compuestos complicados del carbono (164).

Todas las funciones o fuerzas de los organismos quedan reformuladas desde la morfología, desmantelando en el proceso el dualismo entre la mente y el cuerpo. En el monismo de Haeckel la actividad psíquica es presentada como equivalente al movimiento físico de la materia:

> Todas las fuerzas que conocemos, desde las simples fuerzas "físicas" (p. ej. la refracción de la luz, la conducción del calor) de los cristales inorgánicos, hasta los más altos fenómenos vitales de los organismos (hasta la formación de flores de los árboles, el vuelo de los insectos, o las operaciones cerebrales filosóficas de los humanos) están unidas a la materia con absoluta necesidad, e incluso cada materia (orgánica e inorgánica) está dotada de una cierta suma de fuerzas (171).

Las actividades del alma pueden ser explicadas a partir de las leyes de causalidad de la concepción monista de Haeckel[26]. Bajo el concepto de "alma" o "facultades del alma" Haeckel entiende "una suma de funciones distintas, altamente diferenciadas del sistema nervioso central, bajo las cuales la voluntad y la sensación son las más importantes" (232- 223). La voluntad (*der Wille*) y la sensación (*die Empfindung*) vendrían a ser representaciones (*Vorstellungen*) que ocurren solamente en los animales superiores que poseen un sistema nervioso central altamente desarrollado (233). Estas actividades del alma serían equivalentes, en última instancia, al conjunto de movimientos moleculares complejos que ocurren en las células ganglionares (233-234).

La unidad entre lo mental y lo material se extiende a todos los entes que componen el mundo. La misma unidad entre materia y fuerza que Haeckel sostiene en el nivel psicológico está presente también en el nivel cosmológico. Lo que Haeckel concibe bajo los términos "Kosmos" "Mundus" o "Universum" abarca la suma total de toda materia y de toda fuerza, así como su unidad, pues estas son inconcebibles las unas sin las otras (Haeckel 1886b, 441). En este universo monista, las leyes que rigen las diversas ramas de la antropología como la historia, la política y la ética, son las mismas leyes causales que rigen las disciplinas de la biología y la zoología (433). Estas mismas leyes causales rigen también la parte inorgánica del mundo. Pensar la ética desde Haeckel, implica pensar ecológica y relacionalmente

[26] Como refutación de las "fuerzas vitales" separadas de la materia que predominan en el dualismo metafísico, Haeckel alude al primer volumen de la obra del 1796 de Johann Christian Reil *Archiv für Physiologie*, donde se argumenta que el concepto de espíritu proviene de la observación de movimiento en el aire o en el viento (*Spiritus*, *Pneuma*, *Hauch*) (Reil 1796, 11-12; Haeckel 1886a, 172-174).

el ser humano con su entorno y en su entorno. Esto quiere decir que no es posible pensar una buena vida sin considerar las condiciones de existencia que benefician o perjudican la vida humana. Por lo tanto, pensar la ética es pensar en el bienestar de todo aquello que rodea al ser humano y esto implica que, para cuidar de otros seres humanos, es necesario cuidar, ante todo, también los animales y la tierra.

Conclusión

La ecología de Haeckel se mantiene enmarcada en el pensamiento naturalista del siglo XIX. En particular, la ecología de Haeckel está atravesada por los pensamientos fundamentales de la teoría de la descendencia de Darwin y del monismo filosófico. Ambos pensamientos se encuentran de manera explícita tanto en la ecología, como en toda la *Morfología general*. El Darwinismo permite pensar la relación entre el ser humano y los animales, mientras que el monismo filosófico de la naturaleza animada permite repensar el vínculo entre el hombre y la tierra. Ambas teorías, a su vez, están estrechamente relacionadas al punto de ser expresiones de un mismo pensamiento. Esto queda demostrado por el fundamento natural de los fenómenos continuos a través de las relaciones mecánicas de causa y efecto. La ecología de Haeckel permite pensar desde su pensamiento monista una unidad armónica entre el hombre, los animales y la tierra, abriendo una vía para reflexiones éticas desde una filosofía del futuro que permita recuperar el vínculo fundamental que existe entre el hombre y la naturaleza. Se trata de una idea que recupera la unidad entre el ser humano con su entorno y que invita a pensar al hombre vinculado con la comunidad que le rodea y con su hogar primordial, la tierra.

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Referencias bibliográficas

Bodenheimer, F. S. *Aristotle the Father of Animal Ecology*. Barcelona, Consejo Superior de Investigationes Cientificas, 1954.

Boff, Leonardo. *Ecología: grito de la tierra, grito de los pobres*. Trans. Juan Carlos Rodríguez Herranz. Madrid, Trotta, 1996.

Carson, Rachel. *Primavera Silenciosa*. Barcelona, Luis de Caralt, 1964.

Darwin Correspondence Project. "Letter no. 4419." darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-4419.xml. También publicado en *The Correspondence of Charles Darwin*, vol. 12

Darwin Correspondence Project. "Letter no. 4586.", darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-4586.xml. También publicado en *The Correspondence of Charles Darwin*, vol. 12

Darwin Correspondence Project. "Letter no. 5533.", darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-5533.xml. Consultado el 25 de marzo de 2023. También publicado en *The Correspondence of Charles Darwin*, vol. 15

Darwin Correspondence Project. "Letter no. 7510.", darwinproject.ac.uk/letter/?docId=letters/DCP-LETT-7510.xml. También publicado en *The Correspondence of Charles Darwin*, vol. 19

Darwin, Charles. *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*. London, Murray, 1860a. *Biodiversity Heritage Library*, biodiversitylibrary.org/item/271418.

——. *Über die Entstehung der Arten im Thier- und Pflanzen-Reich durch natürliche Züchtung, oder Erhaltung der vervollkommnenten Rassen im Kampfe um's Daseyn*. Trans. H. G. Bronn. 1st. Stuttgart, E. Schweizerbart'sche Verlagshandlung und Druckerei, 1860b. *Biodiversity Heritage Library*, biodiversitylibrary.org/item/107282.

Egerton, Frank N. *Roots of Ecology: Antiquity to Haeckel*. Berkeley/Los Angeles/London, University of California Press, 2012.

Frezzatti Jr., Wilson Antonio. "Haeckel e Nietzsche: aspectos da crítica ao mecanicismo no século XIX." *Scientiae Studia*, vol. 1, no. 4, 2003, pp. 435-461. *SciELO*, scielo.br/j/ss/a/ZLWnLx5Wz9wxSpcTGqGbZfn/?format=pdf&lang=pt

——. *Nietzsche contra Darwin*. São Paulo, Discurso Editorial & Editora UNIJUÍ, 2001.

Giardina, Mónica. "La pregunta por la tierra." Vattimo, Gianni, Mónica Giardina and Ricardo P. Pobierzym. *Heidegger y la cuestión ecológica*. Buenos Aires, Prometeo Libros, 2016, pp. 25-68.
eLibro, elibro.net/es/ereader/sagrado/190576

Gliboff, Sander. *H. G. Bronn, Ernst Haeckel, and the Origins of German Darwinism:* A *Study in Translation and Transformation*. Cambridge/London, MIT Press, 2008.

Haeckel Briefwechsel Projekt. "Letter no. 40737." haeckel-briefwechsel-projekt.uni-jena.de/en/document/b_40737

——. "Letter no. 40738." haeckel-briefwechsel-projekt.uni-jena.de/en/document/b_40738

Haeckel, Ernst. *Die Radiolarien. (Rhizopoda Radiaria)*: eine Monographie. Berlin, Georg Reimer, 1862. *Biodiversity Heritage Library*, biodiversitylibrary.org/item/40628.

——. *Generelle Morphologie der Organismen. Allgemeine Grundzüge der organischen Formen-Wissenschaft, mechanisch begründet durch die von Charles Darwin reformirte Descendenz-Theorie*. Vol. 2. Berlin, Georg Reimer, 1866b. 2 vols. *Biodiversity Heritage Library*, biodiversitylibrary.org/item/52177#page/1/mode/1up.

——. *Generelle Morphologie der Organismen. Allgemeine Grundzüge der organischen Formen-Wissenschaft, mechanisch begründet durch die von Charles Darwin reformirte Descendenz-Theorie*. Vol. 1. Berlin, Georg Reimer, 1866a. 2 vols. *Biodiversity Heritage Library*, biodiversitylibrary.org/item/22319#page/1/mode/1up.

——. *Gesammelte populäre Vortrage aus dem Gebiete der Entwickelungslehre*. Vol. 2. Bonn, Verlang von Emil Strauss, 1879, 2 vols. 97-120. *Bayerische StaatsBibliothek / Münchener DigitalizierungsZentrum Digitale Bibliothek*, digitale-sammlungen.de/en/view/bsb11389115.

Hele, Nolan. "Ernst Haeckel and the Morphology of Ethics." *Journal of the Canadian Historical Association / Revue de la Société historique du Canada*, vol. 15, no. 1, 2004, pp. 1-27. id.erudit.org/iderudit/012066ar

Hughes, J. Donald. "Theophrastus as Ecologist." *Environmental Review*, vol. 9, no. 4 1985, pp. 296-306. *JSTOR*, jstor.org/stable/3984460

Kingsland, Sharon. "Conveying the Intellectual Challenge of Ecology: An Historical Perspective." *Frontiers in Ecology and the Environment* vol. 2, no. 7, 2004, pp. 367-374. *JSTOR*, jstor.org/stable/3868362

Krauße, *Erika Jena. Biographien hervorragender Naturwissenschaftler, Techniker und Mediziner Band 70. Ernst Haeckel*. 2da ed., Leipzig, B. G. Teubner Verlagsgesellschaft, 1984.

Kutschera, Ulrich, Georgy S. Levit and Uwe Hossfeld. "Ernst Haeckel (1834–1919): The German Darwin and his impact on modern biology." *Theory in Biosciences*, vol. 138, 2019, pp. 1-7.

Naess, Arne. "The Shallow and the Deep, Long-Range Ecology Movement. A Summary." *Inquiry*, 1973, pp. 95-100.

Orsucci, Andrea. *Della biologia cellulare alle scienze dello spirito. Aspetti del dibattito sull'individualità nell'Ottocento tedesco*. Bologna, Società editrice il Mulino, 1992.

"Panpsychism and Panbiotism." *The Monist*, vol. 3, no. 2, 1893, pp. 234-257. *JSTOR*, jstor.org/stable/27897062.

Popper, Karl R. "Some Remarks on Panpsychism and Epiphenomenalism." *Dialectica*, vol. 31, no. 1/2 1977, pp. 177-186. *JSTOR*, jstor.org/stable/42966456.

Reil, Johann Christian. "Von der Lebenskraft." *Archiv für Physiologie*. vol. 1, 1796, pp. 8-162. *Hathi Trust Digital Library*, hdl.handle.net/2027/uc1.b4619318.

Richards, Robert J. *The Tragic Sense of Life: Ernst Haeckel and the Struggle over Evolutionary Thought*. Chicago/London, University of Chicago Press, 2008. *ProQuest Ebook Central* ebookcentral.proquest.com/lib/universidadcomplutense-ebooks/detail.action?docID=432283.

Schleicher, August. *Die Darwinische Theorie und die Sparchwissenschaft*. Weimar, Hermann Böhlau, 1863. *Deutsches Textarchiv* deutschestextarchiv.de/book/show/schleicher_darwin_1863

Stauffer, Robert C. "Haeckel, Darwin, and Ecology." *The Quarterly Review of Biology*, vol. 32, no. 2, 1957, pp. 138-144. *JSTOR*, jstor.org/stable/2816117.

Stern, M.L. *Die Philosophie und die Anthropogenie des Prof. Dr. Ernst Haeckel*. Berlin, Theobald Grieben, 1879. *Hathi Trust Digital Library* hdl.handle.net/2027/mdp.39015064455192.