

Ecocentrism is Underspecified:

Toward a Sentimentalist Ethic of Respect for Evolution as a Moral Basis for Rewilding

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I think of this piece as the first instalment of an ongoing project of analysing and articulating a plausible moral foundation for *rewilding* – which, from here on out, I'll use in the sense of the North American rewilding movement and [The Rewilding Institute](#), unless otherwise specified.

In what follows, I lay out the motivation and groundwork of my proposal for a moral basis for rewilding: an ethic of respecting the creative potential of “self-willed” evolutionary processes, which I will develop in a manner partially inspired by moral sentimentalism and virtue ethics. This perspective is ecocentric; however, it is also importantly different from other possible ecocentric perspectives. For one, it's “process-focused” instead of “product-focused” in locating the key bearer of intrinsic value (i.e. focusing on evolution instead of ecosystems, the biosphere, or biodiversity). For another, it aspires to reclaim a robust enough sense of a “human/nature distinction” to allow us to conceptualise these processes as autonomous, and thus to respect and protect them as such. In later work, I plan to contrast my position with other analyses of “respecting Nature's autonomy” in the literature, and I'll look more closely at potential practical consequences for restoration and rewilding.

0. Synopsis

Rewilding, in the first instance, must be ecocentric (§1). This follows from the fact that ecocentrism is true, and thus it must guide our policies impacting the more-than-human world just as much as respect for human dignity must guide our policies impacting members of our own species. At the same time, however, ecocentrism *per se* is *insufficient* as a moral basis for rewilding. What is missing is a means to adjudicate the extent to which human intervention is morally appropriate on behalf of the more-than-human world (§2). While I do not deny that humans can intentionally intervene in nature *on nature's behalf*, we must be wary of the risk of *paternalism* – just as when we presume to intervene in other people's affairs for their own

good. For the paternalism worry to be coherent, we need a concept of wild nature as autonomous, which possibly would not sit well with ecocentrists who attempt to deny “human-nature dualism.” However, I argue that the latter ignores human agency and our ability to consciously choose how (and how much) to impact the rest of nature (§3). On the account that I propose, an ecological ethic must foreground the importance of respect for evolutionary processes (§4). Even under this specification, however, there remains an important question as to what this moral demand entails in practice, and it returns to similar questions regarding the appropriate nature and degree of human intervention (§5). I claim that respect for evolution, properly construed, is constituted not only by the acceptance of certain beliefs but also by the cultivation of certain *sentiments* toward natural evolutionary processes – such as wonder, reverence, and humility – and that the fitting sentiments are ones that tend to dispose us to favour actions that minimise intervention in natural processes (§6). While the account offered here is ultimately subjectivist, it offers a (possibly) novel starting point from which to approach questions of our moral obligations to wild nature and their implementation.

1. Rewilding Must Be Ecocentric

The moral position known as *ecocentrism* holds that wild nature has intrinsic worth that is not reducible to the intrinsic worth of humans or any other individual animals or organisms. *The Ecological Citizen*, a self-described ecocentric journal, elucidates the moral position in its [Statement of Commitment to Ecocentrism](#):

Ecocentrism takes a much wider view of the world than does anthropocentrism, which sees individual humans and the human species as more valuable than all other organisms. [...] [E]cocentrism goes beyond biocentrism (ethics that sees inherent value in all living things) by including environmental systems as wholes and their abiotic aspects. It also goes beyond zoocentrism (seeing value in animals) on account of explicitly including flora and other organisms, as well as their ecological contexts.

An ecocentric moral stance has been integral to the North American rewilding movement since its inception, as reflected in the journal *Wild Earth*, as well as later publications of Dave Foreman and other leading rewilding advocates (including Foreman’s blistering critiques of anthropocentric “enviro-resourcist” conservation in [Take Back Conservation](#)). Foreman’s The Rewilding Institute carries on this tradition, the preamble to its [vision statement](#) reading, “The

Rewilding Institute begins with the assumptions that most of the world ought to be wild [...] and that we modern humans have an ethical obligation to protect and restore wild Nature.”¹

However, a commitment to ecocentrism is not universal among those who proclaim to be advocates of rewilding. If you’ve read my past writings, you’re likely already aware of my great disappointment at the fact that ecocentrism has much less (if any) hold on the movement that calls itself ‘rewilding’ in Europe, where I spend most of my time as an American in self-exile. But don’t take my word for it. In the following passage, three leading European “rewilders” – Paul Jepson, Frans Schepers, and Wouter Helmer of Rewilding Europe – acknowledge the influence of ecocentrism in North America, only to dismiss its relevance to Europe:

[T]he literature suggests that in North America, ecocentric worldviews influence the study and practice of conservation biology, restoration ecology and rewilding. These worldviews foreground the intrinsic value of nature [...]. By contrast, the version of rewilding we promote in Europe expresses worldviews identifiable with utilitarianism and pragmatic realism. We accept that nature, society and economy are intertwined [...]. In contrast to protectionist worldviews that view nature as vulnerable and in need of protection, this pragmatic realist worldview [...] views nature as a dynamic force that can be restored and embraced to help solve modern socio-economic issues.²

Why accept ecocentrism instead of “utilitarianism and pragmatic realism”? Well, briefly, because ecocentrism is the correct one. Below, I will argue that an ecological ethic should be grounded in respect for evolution (§4), a variant of ecocentrism. Unlike ecocentrism, utilitarianism is “sentio-centric”; that is, it holds that only creatures able to experience pain and pleasure have moral relevance, not (for example) plants, ecosystems, or evolutionary processes. It is also a moral theory widely discredited for other reasons, leading to such infamous counterintuitive consequences as the conclusion that it’s morally mandatory to kill healthy people to harvest their organs. For better or worse, Jepson, Schepers, and Helmer haven’t lined up to sacrifice themselves to the organ-harvesters, so one might question their commitment to *really* base practical decisions on the philosophical theory of utilitarianism.

¹ “The Rewilding Institute’s Vision and Work” <<https://rewilding.org/about-tri/vision/>>; accessed 1 Jan 2023. I would quibble with the elided section that “extinction is the overarching crisis of our time.” The extinction crisis is a symptom of our destruction, exploitation, and fragmentation of wild nature, but it’s wrong in itself to needlessly destroy, exploit, and fragment wild nature – irrespective of consequences.

² Jepson, Schepers and Helmer, 2018, “Governing with nature: a European perspective on putting rewilding principles into practice,” *Philosophical Transactions of the Royal Society* 373, p. 10. I have elided portions of this passage that betray a clear lack of understanding as to what ecocentrism does and does not entail, since correcting the authors’ misconceptions would take us too far afield.

What about “pragmatic realism”? In the cited “Recoverable Earth” article, Jepson describes pragmatic realism as a worldview that “views nature and society as intertwined: natural entities exist independent of human consciousness but how we conceptualise and interact with them structures their identities, abundance, distribution and associations.”³ In fact, however, natural entities *do* have identities, abundances, distributions, and associations independent of human conceptualisation, just as they have for billions of years prior to the evolution of the human mind. While we might be justified in wanting some of what Jepson was smoking, new age drivel is unsuitable as a moral basis for anything. And I can only hope that readers who have cultivated an empathetic love for the more-than-human world share in my revulsion at the thought that nature should be “restored and embraced to help solve modern socio-economic issues” – as though nature exists only to serve modern civilisation.

In what follows, I will argue for a particular type of ecocentrism, but I accept ecocentrism as such as the default position. “Environmental systems as wholes” encompass us, but they also exceed us, antedate us, and created the conditions for our own evolution. It seems unscientific and counterintuitive to suppose that we’d have moral value and not *them*. In any case, the burden of proof falls on anthropocentrism, since it is patently contrived by a recently evolved species to suit its own interests. And if ecocentrism is correct, then rewilding should be ecocentric – on pain of morality and logical consequence. Once we accept ecocentrism, there should be no further debate as to whether conservation ought to be ecocentric; that would be to put the cart before the horse. We must begin with our moral principles and ask what practice prescriptions for conservation follow therefrom. Morality is not something to be devised *ex post facto* on the basis of considerations of sales and marketing. Moreover, to attempt to ignore morality altogether would be to risk floundering aimlessly. Bold proposals such as rewilding need a firm normative grounding to maintain focus and direction.

Recently, an IUCN Task Force on Rewilding was tasked with creating a globally applicable definition and set of guiding principles for rewilding, which it devised after synthesising information obtained through a literature review and surveys and consultations with expert

³ Jepson, P. 2018, “Recoverable Earth: a twenty-first century environmental narrative,” *Ambio* 48, p. 128. Jepson also cites El-Hani and Pihlström’s “Emergence Theories and Pragmatic Realism” (2002, *Essays in Philosophy* 3:2). It occurs to me that there’s a fine line between metaphysics-speak and corporate-speak, which might explain Jepson’s attraction to this article. Judging from the abstract, it seems that El-Hani and Pihlström are making a metaphysical argument that is entirely orthogonal to the *moral* argument for an ecocentric worldview based on the axiom that evolution is good (§4).

researchers and practitioners. Although the resulting principles are primarily procedural, they also extend to the moral reasons for rewilding, and make explicit reference to ecocentrism:

Rewilding recognizes the intrinsic value of all species and ecosystems. Although there is increasing recognition that natural ecosystems, and the species within them, provide valued goods and services to humans, wild nature has its own intrinsic value that humanity has an ethical responsibility to both respect and protect. This principle emphasizes the values of compassion and coexistence. Rewilding should primarily be an ecocentric, rather than an anthropocentric, activity.⁴

This is a welcome contribution to a global rewilding discourse in which ecocentrism is shunted aside by major discussants, and where the term ‘rewilding’ is too often thrown about with no sense of either the ecological or ethical commitments of the movement’s founders. Unfortunately, morally amorphous organisations like Rewilding Europe have created an environment in which it *is* progress to disavow anthropocentrism and reassert ecocentrism.

At the same time, however, declaring a commitment to ecocentrism is *not enough*. Here’s the rub: as far as the above definition goes, ecocentrism is not a sufficiently precise moral philosophy to provide a coherent moral basis for rewilding. As I describe in the next section, ecocentrism leaves open a “loophole” due to the fact that we humans are ourselves part of nature. Thus, depending on their ancillary premises, ecocentrists might argue for anything from certain types of small-scale landscape maintenance efforts for the sake of biodiversity preservation (§2.2) to planetary-scale technologies to protect life of all Earth (§2.1). As it turns out, ecocentrism *per se* doesn’t even entail that “most of the world ought to be wild.”

I happen to believe that, indeed, most of the world ought to be wild. But this does not follow immediately from the definition of ecocentrism. Understanding and acknowledging the moral value of “wildness” requires us to reclaim a distinction between humans and the rest of nature and provide a more precise account of what we’re obliged to protect when we protect nature.

2. Ecocentrism is Underspecified

The definition of ‘ecocentrism’ presented in §1 ascribes intrinsic value not only to non-human individuals and species but also to entire ecosystems considered holistically. So far, so good. Complications arise, however, when we acknowledge that *humans* are among the parts of

⁴ Carver, S et al, 2021, “Guiding Principles of Rewilding,” *Conservation Biology* 35: 1882-1893, p. 1890.

many ecosystems and of course the planet's ecosphere as a whole. Ecocentrism entails that our actions must somehow benefit or manifest concern for ecosystems considered holistically, but how do we fit into that? What we still need is a way to adjudicate how much, and what type of, deliberate human intervention in ecosystems is permissible or mandatory.

Self-declared ecocentrists who are attracted to rewilding and wilderness preservation – the idea that “most of the world ought to be wild” – implicitly assume that we manifest respect for “environmental systems as wholes” by keeping our grimy hands off of them to the extent possible, although often following an initial period of restoration to undo human-caused damage and degradation. But ecocentrism *per se* doesn’t entail non-intervention. Others might argue that we can respect environmental systems as active participants in them. To illustrate, I’ll consider two articles that propose two very different types of interventions under the banner of ecocentrism. In the first, philosophers Karim Jebari and Anders Sandberg argue that ecocentrists should support radical geoengineering projects as a way to extend the lifespan of Earth’s biosphere (§2.1). In the second, ecocentric author and advocate Joe Gray advances an justification for various anthropogenic landscapes, a view he presents as an antidote to non-interventionist versions of ecocentrism that he considers dangerous (§2.2).

2.1 “Biospheric Life Extension”

A recent paper by Karim Jebari and Anders Sandberg argues that ecocentrists ought to support geoengineering projects – such as moving the Earth to a more remote orbit or installing solar shields between the Earth and the Sun – as a means of prolonging the habitability of Earth in face of the increasing luminosity of the Sun.⁵ I doubt that I’m the only ecocentrist who, in fact, finds such proposals morally repugnant; geoengineering cannot protect wild nature since it obliterates wildness by its very essence.

Importantly, though, Jebari and Sandberg don’t appear mistaken about ecocentrism *per se*, at least as far as our definition in §1 goes. They summarise their argument by noting that “[a]ccording to ecocentric ethics, the biosphere is what matters” and that “[t]he continued existence of human industrial civilization is currently necessary to prevent the premature destruction of the biosphere,” since industrial civilisation alone has the potential to develop

⁵ Jebari, K and Sandberg, A, 2022, “Ecocentrism and Biosphere Life Extension,” *Science and Engineering Ethics* 28:6; I will not provide page numbers in the citations that follow, because in the version of the manuscript that I downloaded from PhilPapers or something, every page is page 46.

geoengineering technologies that increase Earth's habitable lifespan. From these premises, they conclude that the continued existence of industrial civilisation (and, specifically, pursuit of geoengineering technologies) is morally required by ecocentrism.

A favourite saying of philosophers is “One person’s *modus ponens* is another person’s *modus tollens*.” Jebari and Sandberg’s argument has the form of a *modus ponens*: they accept the truth of their premises, and thus they accept the truth of the conclusion that these premises jointly entail. QED. In contrast, I suggest that those who share my intuitions ought to read the same argument as a *modus tollens*: the conclusion is obviously false (i.e. the implementation of such planetary technologies should be *morally wrong* under any plausible version of ecocentrism); thus, one of Jebari and Sandberg’s premises must be false as well. Let’s grant their second premise; it’s hard to comprehend how planetary-scale technologies would be created if not by industrial civilisation. The flawed premise, then, must be the first: “According to ecocentric ethics, the biosphere is what matters.”

Now, I’ve intentionally used the weasel word ‘flawed’ instead of ‘false’ because the premise, as stated, is not so much false as underspecified. The biosphere *does* matter morally according to ecocentrism. Yet Jebari and Sandberg take artistic licence to implicitly embellish what it means for the biosphere to “matter.” Indeed, their argument seems to contain an elided premise: “If X is what matters, then we must do what is our power to prolong the existence of X.” However, it is not obvious that we should accept this, especially when “prolonging the existence of X” requires the subversion of X’s right to a free and autonomous existence – which is exactly what Jebari and Sandberg propose in the case of the biosphere. I’ll return to the problem here in §3.1. First, let’s turn to our second motivating example.

2.2 “Co-Created Habitats”

Much less dramatically, one might argue that ecocentrism requires humans to take an active role in shaping ecosystems, while stopping far short of endorsing geoengineering. This is what Joe Gray does in an article for *The Ecological Citizen*, an ecocentric journal of which he is a co-editor, wherein he argues in favour of the conservation of certain types of anthropogenic landscapes – including hay meadows, heathlands, coppiced woodland, and old orchards – for the sake of protecting the biodiversity they contain.⁶ In some cases, Gray

⁶ Joe Gray, 2019, “Making Hay,” *The Ecological Citizen* Vol 3 Suppl A.

argues that maintaining these “co-created” habitats is necessary to provide suitable habitat for globally threatened species. In other cases, he argued that they should be sustained in order to support common species in relatively abundant numbers. As he summarises,

First, co-created habitats are unique and thus complement the variety within a wider rewilded landscape. Secondly, they can serve as ‘reservoirs’ from which biodiversity can radiate again once the time comes. Thirdly, they are an insurance policy. On this last point, I believe that ecocentrically minded conservationists must be realistic about the chances of achieving large-scale rewilding and keep options open for biodiversity in a landscape that retains a strong human presence during a protracted collapse (p. 53).

At first glance, this position may seem unremarkable. Gray introduces many caveats and disclaimers prior to his apology for the preservation of anthropogenic landscapes, making clear that he does believe that “evolution and other unguided ecological dynamic processes are ethically good in their own right” (p. 44) and that, overall, humans should step back in managing landscapes. If his “co-created habitats” are indeed effective in safeguarding biodiversity, then they seem roughly functionally equivalent to captive breeding enclosures – protecting a vulnerable species until it can be re-released into wild nature. To this extent, the important questions are not moral but empirical: *do* threatened species need these habitats, and *is* this the most effective way to preserve biodiversity through a “protracted collapse”?

However, Gray himself takes his article to advance a potentially contentious *moral* claim, which is one reason the article is illustrative. He positions his view against what he calls a “dangerous caricature” of ecocentrism: the position that asserts that “all land [should] be returned to a self-willed state, free of major human intervention, except where humans have their homes or are managing land to produce the most essential of goods, such as food” (p. 43). Gray attributes this so-called “dangerous caricature” to German conservationist Christof Schenck. This strikes me as a gross exaggeration, and I *strongly advise* anyone in my own readership to read the cited Schenck chapter rather than accepting Gray’s conclusion blindly.⁷ Schenck exegesis aside, however, I submit that the so-called “dangerous caricature” should

⁷ Christof Schenck, 2015, “Rewilding Europe,” *Protecting the Wild* (eds. Wuerthner, Crist and Butler), 96-104. There is another reason that it is imperative to read Schenck’s chapter in conjunction with Gray’s article: Schenck provides arguments against biodiversity conservation as a justification for the protection of cultivated lands; Gray then defends the same type of “European conservation specialty” (cf. Schenck, p. 98), without adequately addressing the arguments that Schenck has raised against it.

not even seem particularly appalling.⁸ Ideally, the human population could be reduced to such a degree that people could use and occupy the land for more than “most essential of goods,” while still preserving the majority of Earth’s land for self-willed nature. Realistically, however, a world of eight-billion people leaves little room to *both* give self-willed nature its due *and* allow humans enough land for their homes and production of essential goods like coffee and wine.

Compared to Jebari and Sandberg’s planetary scale techno-fantasies, Gray’s modestly scaled and low-tech “co-created” habitats should be expected to arouse fewer negative reactions from fellow ecocentrists. At the same time, Gray himself anticipated that his position would elicit controversy and opposition, especially from defenders of wilderness such as Schenck. Significantly, this is a dispute that arises *within* the ecocentric community. All parties to the dispute presumably agree that “environmental systems as wholes” possess intrinsic value. The disagreement arises with respect to the question of where *human agency* should fit in relation to these environmental systems. Gray rejects the what he describes as the “inherent human-nature dualism” of non-interventionist perspectives:

[I]t seems perverse from an ecological perspective to automatically judge human intervention in landscapes as necessarily bad, when examples abound of non-human species, from African elephants to yellow meadow ants, shaping habitats and engineering ecosystems. For just as these ants [...] build mounds with altered soil properties that provide biodiversity-enriching micro-niches [...], there are well-known and cherished examples of human interventions that, in a similar way, can benefit biodiversity, at least on a local or regional scale (pp. 43-44).

As I will argue in §3.2, we should – and can – reclaim a notion of “human-nature dualism.” Note, for now, that it is not an entailment of ecocentrism *per se*.

2.3 What Ecocentric Premises?

As we’ve now seen, ecocentrism *per se* does not entail non-intervention. What it *does* entail is that any deliberate modification of nature must be justified, at least in part, on the basis of considerations in favour of environmental systems considered holistically. The above authors purport to provide such justifications. Jebari and Sandberg take for granted that the possibility of extending the biosphere’s habitable lifespan justifies placing the entirety of Earth under

⁸ A better target, perhaps, would have been philosopher Eric Katz, who’s made something of a career arguing against all types of ecological restoration on the basis of protecting nature’s autonomy. I intend to examine Katz’s arguments – and their weaknesses – more closely in future writings on autonomy.

human dominion. Gray, in contrast, states that he is “not clearing an intellectual path towards treating the Earth as a global garden” (p. 44); presumably, then, he’d also deny that the entirety of the planet should be put under human management in the form of geoengineering. At the same time, however, he offers ecocentric (or biocentric) rationales in favour of continued management of anthropogenic landscapes, whether providing habitat for globally threatened species or increasing biodiversity or species richness at a local level. The premise Gray takes for granted is that biodiversity can justify continued intervention: “The focus of the interventions should be supporting biodiversity for biodiversity’s sake” (p. 45).

But there’s room for dispute as to whether any of these considerations – ecocentric or biocentric as they might be – are in fact adequate to licence intervention. For one, it seems obvious that other factors can override the desirability of life extension. Many of us, I assume, would choose an earlier death over a longer life if our only option for life extension involved imprisonment in a safe room for all our remaining days. It’s far from obvious that it wouldn’t be better, morally speaking, to allow the biosphere to reach an earlier *but natural* demise.

Concerns can also be raised about management of ecosystems at a smaller scale. It is tempting to assume that human intervention is necessary if it offers an opportunity to prevent the extinction of a threatened species, as in some of Gray’s examples. Yet even this intuition may admit of exceptions, as can be more easily seen when the endangered species are uncharismatic ones – like lichens. In my early critique of heathland preservation, “[In Memory of Anholt as I Never Knew Her](#),” I entertained a thought experiment to defend a landscape’s right to self-determination against intervention to preserve a human-created degraded landscape – the rare lichen heath – even if global biodiversity would thereby be compromised. Importantly, however, intervention to preserve global biodiversity is a limiting case. Most cultural landscapes are *not* protected to prevent extinction but to protect local biodiversity, as Gray acknowledges (and, specifically, the particular species assemblages that are associated with the cultural landscape, as opposed to the different species assemblages that would emerge of their own accord in the absence of human management⁹).

⁹ This is, in fact, among the key points emphasised by Schenck, with which Gray fails to engage (as would have been more useful than a bizarre blanket dismal of Schenck’s position as a “dangerous caricature”). For example: “when a blooming man-made meadow, obviously rich in plant and insect species, is compared to a dark beech forest with little plant and animal diversity, the comparison is false. The right type of forest for comparison is missing; in other words, the wild woods are gone. Absent are the large tracts of ancient forests—forests where the trees are not cut but allowed to grow for hundreds of years before they enter a slow phase of decomposition, which might last another hundred years. There are no large, diverse, and dynamic forest ecosystems that have been impacted by storms, snow, fire, and other natural factors to form a natural species composition. The comparison

We need to ask what, if anything, is the morally relevant difference between imposing our will on a landscape to create a zoo versus imposing our will on a landscape to create a hay meadow, about which Gray quotes George Peterken as saying “They are amazingly diverse at a small scale, but [they] contribute little to regional diversity, because their constituent species have been drawn from various habitats, and most still inhabit versions of those habitats” (p. 47). As Gray (following Peterken) freely admits, the species richness and diversity of hay meadows is neither natural nor necessary to protect global biodiversity; meadows merely afford us an artificially created opportunity to see numerous species together at once.

More fundamentally, though, I have denied in previous work that “biodiversity for biodiversity’s sake” is suitable as a moral basis for conservation; see §3.2.1 of “[On Rewilding \(Whatever That Is\): Thoughts of a Faux-Expat](#)” and §4.2 of “[American Rewilders Should Worry about Europe \(Take Two\)](#). Consider, for example, the fact that an ideal of “biodiversity for biodiversity’s sake” seems to licence genetic engineering of novel organisms just to increase biodiversity. Many would agree, I presume, that “high-tech” created biodiversity is not morally valuable in itself and, indeed, would *subtract value* from an ecosystem if introduced into (formerly) wild nature. We must question whether the biodiversity that results from “low-tech” interventions like ancient agricultural practices – meaning biodiversity here in the form of novel species assemblages, not novel organisms – should have any different moral status.

The preceding authors present their arguments from perspectives that are, generally speaking, ecocentric. However, I submit that they err concerning what types of considerations are sufficient to justify intervention, and that they meanwhile neglect important considerations about what we *should* protect when protecting “environmental systems as wholes.”

3. Missing Considerations: Autonomy and Paternalism

To summarise, ecocentrism *per se* doesn’t tell us that we shouldn’t maintain hay meadows or even install a solar shield around the planet. When we accept that humans are part of nature, it’s not hard to see how ecocentrism could be invoked to justify any manner of interventionist proposals, from the conservation of cultivated landscapes to all-out geoengineering. Granted,

of a man-made meadow with a man-managed forest composed of younger trees, less open space, less dead wood and, consequently, far fewer species gives us little information pertinent to biodiversity. What counts for biodiversity is the natural diversity of genes, species, and ecosystems. And all three levels are not static. *They emerged from natural processes, and only by allowing the processes to continue will we be able to keep the biodiversity we inherited* (p. 100; emphasis added).

the ecocentrist must argue that such interventions benefit not humanity alone but the biosphere or ecosystems considered holistically. Jebari and Sandberg do this by invoking life extension; Gray does it by invoking both local and global biodiversity and abundance.

But there is a catch when we intervene on behalf of the more-than-human world: the spectre of paternalism (§3.1). Although we are no different from other animals in the mere fact that we impact our surrounding environments, we *are* different in that many of our interventions are the result of *conscious choice* (§3.2). We have the capacity to recognise nature's ability to persist and evolve autonomously, and we can choose to respect this by resisting *not only* anthropocentrically-driven domination *but also* paternalism under the guise of ecocentrism.

3.1 The Threat of Paternalism

In both of our motivating examples, the authors presuppose a putatively objective measure of the health or well-being of the biosphere or ecosystems, and thereupon they instruct us to govern nature according to this definition of nature's health or well-being. The danger of paternalism arises when we presume that we are the ones who know what is best for someone (or nature), as opposed to allowing that person (or nature) determine this, and when moreover we don't trust that person (or nature) to achieve this outcome through their own capacity and will. As a result, we intervene for that person's (or nature's) "own good" – but, in fact, harm that person (or nature) by infringing on their freedom and autonomy.

In the human domain, intervention on another's behalf is not inevitably paternalistic. Likewise, there is no reason to assume that *all* deliberate intervention in natural processes must be objectionably paternalistic. At the same time, however, it must be acknowledged that nature has done quite well without human intervention for billions of years, including its remarkable self-directed recoveries from five previous mass extinction events, as well as other less heralded episodes of extinction and climate chaos. If biodiversity is our concern, we must admit that nature's track record of producing it – even in the face of grave adversity, though it might take 10 million years – is quite a bit more impressive than our own short track record of undermining it. It behoves us to be cautious and conscientious: when do we truly help nature as opposed to thwarting nature's own self-directed recovery and continued evolution?

This is a crucial question with which I will continue to grapple in future work. For now, my goal is not to answer it, but simply to redirect attention to it. Neither Jebari and Sandberg nor Gray

broach the issue of paternalism and respect for nature's autonomy. I presume that this is because the authors adopt the assumption that human activity cannot be meaningfully separated from the rest of nature (as Gray does explicitly), which may also seem to undercut claims of nature's autonomy. However, it is not clear that the former *does* undercut claims to nature's autonomy. By analogy, humans may also be said to be interdependent, yet this does not mean that we lack an actionable and morally relevant concept of respecting another person's autonomy. Furthermore, humans *can* be separated from the rest of nature in an important sense: we have the capacity to deliberately decide how to interact with the rest.

3.2 Reclaiming Human-Nature Dualism

The concept of nature's autonomy presupposes some type of separation between humans and the rest of nature, but how are we to conceive of this human-nature dualism? Undeniably, humans *are* part of nature. Indeed, this is an important reason that anthropocentrism is morally and intellectually unsustainable; we are made of the same starstuff as the rest of our planet, and we are the product of the same blind and non-teleological processes of evolution as the rest of life on Earth. Humans cannot be isolated from the rest of nature as somehow unique in our essence. However, we needn't accept otherwise to justify non-intervention.

There is, in fact, one important attribute that distinguishes human activity from the behaviour of non-human animals and other organisms: intervention in our environment is often a *choice*. A disanalogy between humans and yellow meadow ants is that – after a point – humans have the ability (and, indeed, the responsibility) to *make a decision* as to whether to engage in further modification of the biosphere. Correspondingly, we have the capacity to *refrain from intervention*. We are able to reflect on our actions and choose otherwise. It is therefore foolish to point to some given instance of intentional anthropogenic modification of nature – such as the transformation of a landscape for agriculture, extraction, or development (or, for that matter, restoration) – and say that this is merely another case of an organism modifying its environment, like beavers building a dam or termites building a mound. Beavers, termites, the earliest bioturbators of the Cambrian, and all other non-human animals don't reflect on the ecological ramifications of their actions when they go about their activities that happen to impact their environment (as far as we know); humans can. This accident of evolution doesn't endow us with special moral worth; it *does* give us special responsibility as moral agents.

We impact our environment in manifold ways, some of which are indeed unintentional and inevitable, true to our animal nature. Although we have a large degree of choice in what we eat and how we obtain our food, we can't help but use our surrounding environment as a source for our nourishment in some way – whether through hunting, foraging, or planting. Although modern societies have chosen to confine human waste, we can't help but pee and poop, and our waste products could nourish the ecosphere.¹⁰ It is a choice to “impact” earth by paving over it, yet we also can help but impact the ground upon which we walk, when (if ever) we do walk upon the ground. And even if we think we can walk in perfect stealth, other animals will detect our presence through smell, sight, or finer hearing than ours; we can't help but alarm them with our very physical presence. We inhale, exhale, belch, fart... In these ways and more, we are indeed animal, ineluctably interacting with the earth and air about us.

But when people claim “humans are part of nature” in rejecting human-nature dualism, they generally aren't thinking about breathing, walking, pooping, or even eating *per se* (systems of food production are another matter). The claim is that many, if not all, intentionally designed products of human culture – from farms to cities to artificially maintained heathlands – are not distinct in kind from the wilderness that they presume to be idealised and fictional. But that is to miss the crucial disanalogy between humans and all other organisms that impact their environments: *humans can choose otherwise*. It is beside the point to bemoan that the whole Earth is now affected by anthropogenic climate change, light pollution, microplastics, and forever chemicals; we can still choose to restore landscapes, and we can still choose not to manipulate landscapes further. Nor is it an excuse to say that the global population of humans has burgeoned to such a size that we can't help but manipulate the entirety of the planet's surface merely to meet our basic biological needs – for overpopulation itself is the result of deliberately chosen human actions (from family-level reproduction decisions to society-level adoption of pro-natalist policies and cultural norms); we could choose a shrinking population.

Ultimately, the rejection of “human-nature dualism” seems like a bizarre denial of our own agency. We can't avoid the fact that our intrusions upon our external environment are by and large voluntary, and we can't avoid the necessity of choosing whether or how to impose our will upon the land (and, as the Rush lyric goes, “If you choose not to decide, you still have made a choice”¹¹). Nor can we suppress our knowledge that natural processes would carry on

¹⁰ See, e.g., Lina Zeldovich, 31 Aug 2022, “[Why it's time to talk about poo](#),” *BBC Future Planet* <www.bbc.com/future/article/20220830-the-new-science-of-recycling-human-poo>.

¹¹ “[Freewill](#)” from *Permanent Waves* (1980).

without us – the same natural processes that created us and long preceded us. Most of our acts of intervention are not inevitable. We can create and expand protected areas, and we can refrain from intervening in the future course of natural processes within them.

I maintain that the decision not to intervene in natural processes is often justified – indeed, mandated – as a manifestation of the *respect* and *deference* that we owe to self-willed nature.¹² Or, to put it otherwise, decisions to intervene in natural processes beyond necessity are often manifestations of anthropocentric arrogance and hubris, which are *not* the virtues that should guide us in our interactions with the more-than-human world, given our capacities for empathy, wonder, curiosity, awe, reference, and humility. I will revisit the relevance of the moral sentiments in §6. In the next section, I sharpen our focus on what I believe should be a fundamental bearer of value under ecocentric ethics: the process of evolution. This might seem like a diversion. However, conversations about “respecting nature’s autonomy” risk deadlock without a more precise specification of *what*’s autonomy must be respected.

4. Evolution is Good

The positive account that I propose begins with the postulate (a la Michael Soulé) that *evolution is good*. In fact, I believe that we should accept this moral claim as axiomatic (although, as we’ll see, there’s much room to debate what it entails for conservation; §5).

In his much-cited 1985 article “What is Conservation Biology?” Michael Soulé lays out four normative postulates that he claims to be shared by most conservationists: diversity of organisms is good; ecological complexity is good; evolution is good; biotic diversity has intrinsic value. The third of these – evolution is good – receives the least amount of elaboration, yet it is where I want to focus, for it holds considerable intuitive pull. As Soulé writes, “Assuming that life itself is good, how can one maintain an ethical neutrality about evolution? Life itself owes its existence and present diversity to the evolutionary process” (p. 731). Indeed. Across time and space, religions have agreed that we owe reverence and respect to the god or gods who created our world and ourselves, but it is the natural process of evolution that is our one true Creator. If life in all its present diversity is good, then do we not owe reverence and respect to the forces that *actually* caused it to come into being?

¹² In future work, I will examine when and how intervention can be justified on behalf of wild nature, e.g., in restoration. I do think it can; I don’t follow Katz in rejecting all restoration as covertly anthropocentric.

Even those pitiable souls who are enamoured solely of *Homo sapiens* would seem to owe reverence and respect to the self-directed natural processes that created *our own species*. We wouldn't possess our own remarkable abilities were it not for evolution. Meanwhile, even the staunchest anthropocentrist – if they are true to science – must admit that evolution is not teleological. That is, the evolutionary history of life on Earth has not been a goal-directed process destined to terminate in *Homo sapiens*. Thus, at the same time that we admire the masterwork that is humanity, we must also admit that evolution – left to its devices – might well go on to produce other species with capacities even more impressive. *Homo sapiens* is indeed a marvel of evolution (as are Earth's millions of other species), but there's the rub: we are a marvel of evolution. And is it not hubristic arrogance to assume that we can best the creative potential of those blind and arational autonomous processes that created *us*?

Indeed, the postulate that “evolution is good” might be said to straddle the line between anthropocentrism and biocentrism, while at the same time pointing to a source (and bearer) of value even more basic than whatever qualities imbue humans and/or all life with moral worth. For whether we examine the exceptional qualities of humans *per se* or the morally valuable attributes shared by all life, we must credit their very existence to evolutionary processes, progressing on their own for billions of years with no conscious intervention to guide them. And what could licence our 300,000-year-young species to presume the knowledge and authority to dictate the future course of 3,700,000,000 years of evolutionary history of life on Earth? Hasn’t evolution done quite well without us? After all, this autonomous but arational process created even *us*; a hominid in the sky did not. Moreover, it would be flatly false to assume that evolution has been oriented all these hundreds of millions years toward the formation of our own species. Our emergence was not destiny, but contingent, accidental. Dave Foreman has stressed this point in TRI’s *Around the Campfire* series:

This may be the hardest and most frightening teaching from evolutionary biology and paleontology. [...] That we were not meant to be, but only happened to be is likely the Most revolutionary idea in Man’s tale. [...] Not only were we not meant to be and are only the happenstance of a string of flukes that could have gone other ways — but no abstractly intelligent kind of life with the inner might or craft to make a technological civilization overlording Earth was meant to be. In other words, no being with our abstract reasoning and skill in taking over Earth was meant to be or was inevitable thanks to built-in design features in the unfolding of biology (“[Darwinism—Science and Philosophy](#)”).

Evolution has endowed our own kind with an incredible brain, it is true, as well as the capacity for sophisticated language and social cooperation. Arguably, it is our evolution-given right to use our cognitive abilities and technologies to increase our own well-being in the face of other biological shortcomings – using modern medicine to heal ourselves and avoid disease, for example, rather than waiting for natural selection to improve the disease-resistance of future hominids. Such uses of technology, however, are what we might consider “species-regarding actions” by analogy with self-regarding actions in ethics, actions that harm or benefit only ourselves (or, in this case, our species). Of course, anything that benefits *Homo sapiens* may *indirectly* harm other species merely by increasing our potential for overshoot, not to mention the ecological destruction inherent in the development of our technologies. Nonetheless, there does seem to be a morally significant difference between using technology to allieve human diseases, disabilities, and other defects (as opposed to waiting for natural selection to weed out those with a genetic basis) and knowingly modifying nature in ways that will influence the future course of evolution of *other* species and ecosystems.

5. Respecting Evolution

Let's assume, then, that it's axiomatic that evolution is good. When we accept this, what does it entail for conservation? What does it mean *in practice* to honour or respect the goodness of evolution? Especially to those of us who are already enculturated in the ethos of wilderness protection, it might seem intuitive that respect for evolution entails the protection of large areas of land and sea from human interference – preserving areas where evolutionary processes may carry forth on their own (§5.1). However, analogous to the interventionist interpretations of ecocentrism seen above, different interpretations may arise when one considers that *Homo sapiens* itself is not only a product of evolution but also – like any other species – a *participant* in this ongoing process (§5.2). Just as ecocentrism *per se* doesn't entail non-intervention, the postulate that “evolution is good” doesn't by itself entail that humans must resist influencing evolutionary processes. I ultimately defend the “intuitive” view, but it is important also to recognise that it is not an immediate entailment of the postulate.

5.1 Respect for Evolution 1: The “Intuitive” View

According to Soulé, the postulate that evolution is good implies an “ethical imperative to provide for the continuation of evolutionary processes in as many undisturbed natural habitats

as possible.” (p. 731). Similarly, Dave Foreman writes in *Rewilding North America* that “Nature reserves have to protect entire ecosystems, guarding the flow and dance of evolution. We have finally learned that wilderness is the arena of evolution,” invoking Leopold: “Only those able to see the pageant of evolution can be expected to value its theater, the wilderness.”¹³

This is what I think of as the “intuitive” position: respecting evolution requires us to protect large areas of untrammeled land where the processes can continue without our intervention.

How should such areas be selected? And what is large enough? Soulé enjoins us to protect as many different natural habitat types as possible. Foreman notes that, to be effective, the protected areas must encompass entire ecosystems. Soulé also warned of the “end of speciation for most large animals” at the then current (and since worsening) rates of habitat destruction.¹⁴ This suggests another important criterion for protecting wild Nature with the specific goal of preserving natural evolutionary processes: at least some wilderness areas must be large enough to permit speciation of large animals and plants. This is an empirical question, and one that biologists can indeed study. For instance, I came across a 2018 paper on island biogeography that argues that the lower area limit for speciation is about the size of Sulawesi for large mammals and about the size of Madagascar for bats (with speciation of frogs, lizards, small mammals, and birds able to occur on smaller sized islands).¹⁵

Connie Barlow, writing for *Wild Earth*, has elucidated a somewhat different interpretation of the intuition that rewilding should respect the integrity of evolutionary processes. Instead of thinking about evolutionary processes holistically, Barlow focuses on the level of specific biological lineages. Her claim is that it is wrong to permit human activity to influence a lineage’s “evolutionary futures” via selective pressures created by man-made environments or even our very presence in shared environments, including recreational access of wilderness:

Backpackers should be easy to hunt; nevertheless, if a large carnivore experiments in this direction, the innovator will be tracked down and killed. Intermittent exposure to the magical powers of humans to kill or wound at a distance does seem to preclude that kind of experimentation in the wilderness region I am most familiar with – the Gila Wilderness in southwestern New Mexico. There bears and lions are hunted for sport.

¹³ 2004, p. 114; the Leopold quotation is from the essay “Wilderness” (*A Sand County Almanac and Sketches Here and There*, 1949).

¹⁴ Cited in *Rewilding North America*, p. 12.

¹⁵ Heaney, L, et al, 2018, “How small an island? Speciation by endemic mammals (*Apomys*, *Muridae*) on an oceanic Philippine island,” *Journal of Biogeography* 45.

In this, the first of all designated Wilderness Areas, the evolutionary futures of wild beasts are thus profoundly influenced by human demands for meat and recreation.

Accordingly, philosopher Baird Callicott has contended that if conservationists begin to speak of the evolutionary value of rewilding when we push for a remnant of America to be held off-limits to the impacts of settlement, logging, and mining, then for consistency's sake we ought to go the full route and urge the elimination of grazing, hunting, and what he calls "wilderness voyeurism and tourism" too. Rewilding for evolution, in its purest form, would thus challenge common assumptions about compatible human uses of Wilderness.¹⁶

If Barlow and Callicott are correct, then respect for evolution might further demand the protection of certain wilderness areas, large enough to permit speciation even of large mammals, free from all human use altogether. At the least, it is important to closely examine what – if any – human use (e.g. restricted numbers of unarmed backpackers) could be permitted without risk of influencing "evolutionary futures" of non-human inhabitants.

5.2 Respect for Evolution 2: Humans as Part of Nature

A counterproposal to the "intuitive" view could point out that humans are ourselves participants in the ongoing process of evolution and, thus, acknowledging that "evolution is good" does not require us to step aside but permits – or even requires – that we *play along*. There is a further question as to what "playing along" entails. Here are some possibilities:

- (A) If anything is partly constitutive of natural evolutionary processes, it is the impulse of animals to breed and rear young.¹⁷ Evolution can hardly happen without the reproductive instinct! Given this, one might think that humanity would respect evolution by breeding and reproducing until our species reaches its carrying capacity – like any other species would do.
- (B) Respecting evolution might entail respecting the resilience of life to adapt and evolve in the face of novel and changing environmental pressures. In the words of Menno Schilthuizen, urban ecologist and author of *Darwin Comes to Town*, cities are the new "pressure cookers"

¹⁶ Barlow, C, 1999, "Rewilding for Evolution," *Wild Earth*, p. 54; www.environmentandsociety.org/sites/default/files/key_docs/rcc_00097009_1_1.pdf
Curiously, as I've critiqued previously, Barlow pivots to support Pleistocene rewilding and the use of non-native proxy species – which seems not only a non-sequitur but also inconsistent. If we translocate a species to an entirely new geographical region, can our action be construed as anything *other than* a case of humanity influencing the future evolution of that species?

¹⁷ I am an evolutionary anomaly in this respect.

of evolution. Given this, one could argue that truly respecting evolution requires us to trust the ability of life to adapt and thrive in the novel environments we have created. On this view, we may simply carry on however we will; respect for evolution is exemplified not through action but through mindset: confidence in nature's capacity to find creative and novel ways to adjust *to us*. (This perspective thus outright denies Barlow's idea that it's wrong for humans to influence the evolutionary trajectories of biological lineages – as Schilthuizen surely would.)

(C) According to (A) and (B), humans should not exercise any restraint in colonising and consuming the Earth, letting our activities drive future evolution. But another type of perspective might suggest that humans should make certain interventions for the sake of "helping" or "improving" evolution in some way – such as, say, applying biotechnology to hasten the rate of evolution. Or Jebari and Sandberg could argue that their proposals for geoengineering manifests respect for evolution, since extending the life of the biosphere would thereby extend the timeframe during which evolution is possible.

* * *

By itself, positing that "evolution is good" does necessarily distinguish between the "intuitive" prescription of non-intervention and wilderness protection (§5.1) and alternative interpretations that perceive human action as internal to evolutionary processes (and rightfully so) (§5.2).

Thus, Soulé's third postulate is not by itself sufficient to help us gain ground in interpreting ecocentrism in a way that is practically relevant to rewilding. Like ecocentrism itself, an evolution-based ecological ethic lends itself to multiple conflicting precisifications, depending on one's view of the appropriate role of human action, given that humans are part of nature.

6. Sentiments and Virtues

Here's my suggestion: our interpretation of Soulé's postulate in §4 was incomplete. To accept the postulate that "evolution is good" is not *merely* to add a certain proposition to one's set of premises for normative reasoning. Truly acknowledging and appreciating the goodness of evolution *also* requires the cultivation of certain *moral sentiments* through reflection on the evolutionary history of life on Earth, including its unfathomable length when assessed from puny human timescales, and the manifold diversity and intricacy of its creations. When we let

ourselves become absorbed in selfless and engaged contemplation of life's evolution, we cannot help but to experience feelings of wonder, awe, and humility – or so I would surmise.

In our discussion in §5, the postulate that “evolution is good” was accepted as a premise for normative reasoning, an object for cold logic. Approached in this way, the postulate does seem compatible with such counterproposals as suggested in §5.2. But this is a bloodless and mechanical way to think of actual human valuations of goodness. If we think of a friend as inherently good, for example, we almost certainly don't merely accept the proposition “my friend is good.” We also tend to have certain emotions in relation to that friend, such as love, compassion, and empathy. Indeed, if we lacked such emotions, it could reasonably be doubted whether we genuinely recognise our friend's goodness at all. Likewise, my claim is that recognition of evolution's goodness also possesses a non-cognitive component, consisting of the sentiments or affective states that tend to be aroused in us when we ponder and reflect upon life and its evolutionary past from the earliest recesses of the Archaean aeon. The previous examples of wonder, awe, and humility seem like obvious candidates.¹⁸

These non-cognitive states play an important and indispensable role in leading us to regard certain actions as appropriate or virtuous in relation to the more-than-human world, while causing us to turn away from others, perhaps with a sense of moral disgust. And this, I believe, is as it should be. When we behave with kindness toward a friend, we often do so due to non-cognitive influences such as love and empathy – and this is as it should be. Analogously, our actions towards wild nature are rightly motivated not only by science and reason but also by sentiments such as humility and reverence.

When we act under the influence of the awe, reverence, and humility that self-willed nature inspires, can we possibly endorse geoengineering projects that subject the entire biosphere to technological society? I am open to hear the viewpoints of any who honestly answer “Yup,” but it is a bit hard to imagine. When addressing the potential objection that geoengineering is hubristic, Jebari and Sandberg say, “If we understand ecocentrism as a theory of how to value certain entities, such as ecosystems, rather than as a more general theory of human virtues, then it is not contrary to ecocentrism to have ambitions that could be described as hubristic.” This is odd; if ecocentrism is a “theory of how to value” entities such as ecosystems, then why

¹⁸ I don't mean to suggest that pondering evolution is the only path to the development of these sentiments; of course, they are often – and more stereotypically – cultivated by direct experience of wild nature. Independently however, they seem fitting responses to contemplating the evolution of life.

shouldn't "how to value" them encompass the dictum that they should be valued with humility, modesty, and deference? Another shortcoming is that Jebari and Sandberg fail to consider ecological and evolutionary *processes* as among the entities that ought to be valued;¹⁹ hubris is bad precisely because it is a manifestation of an inappropriate valuation of these processes and their capabilities as autonomous creative and life-producing forces.

What about more modest interventions, such as the deliberate maintenance of anthropogenic habitats like hay meadows, heathland, or coppiced woodland? I don't want to presume that support for some such interventions, on a small scale, is incompatible with acceptance of the goodness of evolution as described above, especially if the practitioner is sincerely motivated by helping a beleaguered species through an evolutionary bottleneck in a time of crisis. However, a reverential and deferential stance toward evolution does seem incompatible with an ethos of conservation that in general prioritises the maintenance of anthropogenic landscapes at the expense of returning more land to a self-willed state – to wilderness, that is, the arena of evolution. In the chapter that Gray castigates as a "dangerous caricature" of ecocentrism, Schenck defends self-willed landscapes and evolutionary processes against the "European conservation specialty" of the "protection of cultivated lands" (p. 98). The latter conservation ethos – which is indeed hard to miss in Europe – does appear indicative of a lack of reverence, admiration, and humility. Either practitioners view cultivated landscapes as superior to wild nature's own creations, or they paternalistically maintain that wild nature will not be able to recover on its own, rendering continued cultivation necessary.

If we merely engage in the intellectual exercise of deducing what follows from the premise that ecosystems have intrinsic worth, then, yes, we might arrive at anything from a justification of geoengineering to a defence of the protection of cultivated lands. And if we merely engage in the intellectual exercise of deducing what from the premise that "evolution is good," then we might arrive at the conclusion that (say) we should breed and consume at will and let other biological lineages adapt *to us* or perish. But appreciation of the goodness of evolution is *not* merely an intellectual exercise. It has an emotional or affective component that, I claim, we ought to accept as morally probative – as moral sentiments that are rightfully action-guiding.

¹⁹ For example: "While some parts of the biosphere could conceivably survive for hundreds of millions of years after the runaway phenomena described above, no multicellular life is likely to ever emerge again. While some value-bearing systems would persist for a while, complex valuable ecosystems would not." They do not entertain the idea that natural *processes* may be value-bearing.

This account, admittedly, is subjective twice over. Different individuals might form different non-cognitive attitudes even after taking time to learn about the evolutionary history of life and mindfully and curiously contemplate it. Different individuals might even form different non-cognitive attitudes in response to direct encounters with designated wilderness areas and other types of formative experiences that tend to lead to reverence and admiration of self-willed nature. There is no *guarantee* that such actions and experiences will lead every person to profound and action-guiding states of wonder, awe, and humility. In addition, the same or similar sentiments might affect different individuals in disparate ways with respect to action guidance. For example, while wonder at Earth's diversity of life might lead some to prioritise its protection, it might lead others to desire to research and analyse it, even if this requires infringing on Nature's autonomy. In past times, a purported love and admiration of birds led many an ornithologist to shoot specimens for their study and collections.

Is this subjectivity a problem? I would say, rather, that it is what it is. I am not under contract to produce an absolute or objective moral theory that will provide clear and decisive answers on all questions of conservation. The starting points, again, do have some claim to objectivity. The value of natural (self-willed) evolution should be undeniable, provided that we value any or all of life itself, including (or despite) the emergence of our own species. Further, it is simply an objective fact that our own species is but a late-comer in the saga of evolution, and that our existence is accidental rather than preordained. We have a duty to acknowledge and reflect upon this fact before rushing headlong into action that will impact the future course of the evolution of life on Earth – and this is an epistemic duty as much as a moral one, given that the flagrant irresponsibility of making decisions that influence ecological and biological processes in the absence of due attention to relevant empirical facts.

But I do believe that it's in part the cultivation of certain moral sentiments that inspires *deference* to wild nature, and thus provides the missing link between our interpretation of "respect for evolution" as demanding non-intervention and wilderness preservation (§5.1) rather than assuming an active role in influencing the future evolution of life (§5.2). It is plausible that reflecting on life's long evolutionary history will not engender the exact same sentiments in everyone as it does in me. That said, I am surely not alone in my sentiments. For example, the creators of the [Deep Time Walk](#) cards and app – which provide a narrated journey through the geological and biological history of Earth in 100-million-year time segments – see the project as a means to inspire action-guiding deference and respect for nature. As its website states, "It is an invitation to view the world differently, encouraging

positive action and advocacy for a regenerative Earth.” In addition to often stressing themes of respect and humility, and the ethical imperative to preserve the building blocks of evolution, Dave Foreman himself has credited his initial interest in nature to reading about palaeontology and evolution (see his interview in “[Do Something](#)”). Veneration of life’s long evolutionary past was also a common motif in Aldo Leopold’s writing, such as in the following two famous passages from *A Sand County Almanac*:

It is a century now since Darwin gave us the first glimpse of the origin of species. We know now what was unknown to all the preceding caravan of generations: that men are only fellow-voyagers with other creatures in the odyssey of evolution. This new knowledge should have given us, by this time, a sense of kinship with fellow-creatures; a wish to live and let live; a sense of wonder over the magnitude and duration of the biotic enterprise (“On a Monument to the Pigeon”).

[O]ur appreciation for the crane grows with the slow unraveling of earthly history. His tribe, we now know, stems out of the remote Eocene. [...] When we hear his call we hear no mere bird. We hear the trumpet in the orchestra of evolution. He is the symbol of our untamable past, of that incredible sweep of millennia which underlies and conditions the daily affairs of birds and men.

And so they live and have their being – these cranes – not in the constricted present, but in the wider reaches of evolutionary time. Their annual return is the ticking of the geological clock. Upon the place of their return they confer a peculiar distinction. Amid the endless mediocrity of the commonplace, a crane marsh holds a paleontological patent of nobility ... (“Marshland Elegy”).

A few examples, however, do not prove that all conservationists will necessarily arrive at the same conclusion – that we must respect the autonomy of self-regulating evolutionary processes, and thus must preserve large areas of wilderness – even if they accept the axiom that evolution is good. I believe, however, that the burden of proof is on any dissenters to justify their proposals *on the basis of the same axiom*, including acknowledgement of our own species’s diminutive lifespan and contingent existence within the broad scope of evolutionary history. The latter must be common ground to all conversations about conservation, restoration, and rewilding. Otherwise, we will merely talk past one another.

It requires more than science and reason to confront not only anthropocentric worldviews but also putatively *non-anthropocentric* worldviews that capitulate to the idea of “the end of nature” and denial of the role for autonomous nature processes. A persistent suspicion of mine is that both sorts of worldviews are products of minds that are *disenchanted* and

disengaged from serious reflection on the creative power of self-willed evolution and the unfathomable scope of the time spans on which evolutionary processes play themselves out.

Get outside. Observe nature. Be fascinated. Learn about the evolutionary history of what you have observed. Be all the more fascinated. Sit with it all for a while. Then we can talk.