

Kant's Pre-critical Ontology and Environmental Philosophy (penultimate draft)

Please cite published paper at: <https://doi.org/10.5840/envirophil2021318105>

Abstract: In this paper I argue that Kant's pre-critical ontology, though generally dismissed by environmental philosophers, provides ecological lessons by way of its metaphysical affinities with environmental philosophy. First, I reference where environmental philosophy tends to place Kant and highlight his relative marginalization. This marginalization makes sense given focus on his critical works. I then outline Kant's pre-critical ontological framework and characterize the ways in which it is ecological. Finally, I conclude with some ecological reflections on the pre-critical philosophy and its possible relevance for contemporary environmental issues.

Key words: Kant, environmental philosophy, pre-critical

Corresponding Address:

Zachary Vereb, Ph.D.
Department of Public Policy Leadership
University of Mississippi
ztvereb@olemiss.edu

Environmental philosophy only emerged as its own distinct subfield of philosophy in the latter half of the 20th century. Due to its recent emergence, there is much to gain from investigating the latent ecological potential of canonical philosophers. While Spinoza, Leibniz, Marx, Nietzsche, and Heidegger have been subjects of these investigations,¹ environmental philosophers tend to be more dismissive of Kant.² Aside from critical literature, Kant remains off the radar for most environmental philosophers.

In this paper I argue that Kant's pre-critical ontology³ provides ecological lessons by way of its theoretical affinities with environmental philosophy. The value of Kant for environmental thought has not only been unrecognized, but is indeed informative today with regard to the philosophical canon and our appreciation of dynamic systems. Nonetheless, Kant's relative marginalization makes sense. Focus rarely deviates from the *Critique of Pure Reason* (1781/7) and the *Groundwork for the Metaphysics of Morals* (1785).⁴ When environmental philosophers do discuss Kant, they mainly engage his critical works, as do many Kantian defenders.⁵

¹ For environmental readings from Spinoza to Heidegger, see Naess (1977), Zimmerman (1983), Benton (1996), Parkes (2013), Rentmeester (2016), Phemister (2016), and Stephano (2017).

² See Hoff (1983), Rolston III (1988), Regan (2004), Jamieson (2007), and Singer (2009).

³ I use "ontology" broadly, referring to the fundamental nature of reality. This may range from explicit accounts (such as arguments about the constitutive elements of reality), implicit judgments (such as passing remarks that would allow us to make inferences about presupposed accounts), and philosophical frameworks (which include metaphysical commitments).

⁴ References to Kant's works give the volume:page number from the Academy Edition, followed by the page number from the corresponding English version in the Cambridge Edition of Kant's works. I use the following abbreviations: FE = "The question, whether the Earth is ageing, considered from a physical point of view" (in Kant 2012); LF = *Thoughts on the True Estimation of Living Forces*, or *Living Forces* for short (in Kant 2012); ND = *A New Elucidation of the First Principles of Metaphysical Cognition*, or *New Elucidation* (in Kant 1992); PM = *The Employment in Natural Philosophy of Metaphysics Combined with Geometry, of which Sample I Contains the Physical Monadology*, or *Physical Monadology* (in Kant 1992); UNH = *Universal Natural History and Theory of the Heavens*, or *Universal Natural History* (in Kant 2012); OE = *On the Causes of Earthquakes on the Occasion of the Calamity that Befell the Western Countries of Europe Towards the End of Last Year* (in Kant 2012); *Groundwork* = *Groundwork for the Metaphysics of Moral* (in Kant 1996); *Anthropology* = *Anthropology from a Pragmatic Point of View* (in Kant 2007).

⁵ See Wood (1998), Korsgaard (2004), Schönfeld (2008), Altman (2011), Brady (2013), Biasseti (2015), and Svoboda (2015).

Commentaries on non-critical works typically concern Kant's intellectual development, not contemporary relevance.⁶ I hope to remedy these oversights. Kant's early theoretical works hold promise for environmental philosophy by way of their emphasis on an anti-dualistic, naturalistic, and holistic nature.⁷

This paper is divided into three sections. Section 1 references where environmental philosophy typically places Kant, which makes sense given contemporary focus on the critical works. I also consider attempts to “green” Kant, which similarly overemphasize these works. Section 2 outlines Kant's pre-critical ontological framework, drawing from two central texts. This framework is theoretically compatible with environmental philosophies such as ecocentrism.⁸ Section 3 concludes with some reflections on Kant's ecological holism and its relevance for contemporary issues, especially climate change. Though this paper aims to make a new Kant visible, I hope that it will motivate further research to support Kant as an environmental asset, rather than a liability.

1. Kant's Relative Marginalization

Kant tends to be marginalized in environmental philosophy. This is unsurprising, since most concentrate on his critical philosophy. Consequently, pre-critical works before the first *Critique* remain neglected. The exception to this are Kant's early lectures on ethics, cited unfavorably by

⁶ Two important historical studies include Schönfeld (2000) and Watkins (2005).

⁷ I use “holistic” to mean a view that requires appreciating how parts are greater than the whole, understood through reference to their interconnection as a system. In environmental ethics, holism has a narrower though not unrelated sense, and includes debates focusing on individual entities (moral agents and patients) vs collectives, species, or the biotic community.

⁸ Biasetti suggests that an ecological reading of Kant is needed (2015, 153n67). I agree, but believe that we should start with the pre-critical works. Though Kant does not articulate duties consistent with an ecocentric Land Ethic, his *theoretical* framework is compatible insofar as it is naturalistic, immanent, dynamic, and emergent. No one species is qualitatively superior but rather must be understood in relation to the whole. For more on ecocentrism—the view in environmental philosophy that emphasizes the primacy of wholes like the land (and how individual entities are dependent on or related to such wholes)—see Callicott (2013).

animal- and environmental ethicists for the inadequacy of indirect duties. Among the early works, these lectures seem compatible with the critical ethics. When we take the critical philosophy as the default Kant, only the lectures on ethics seem important as early works. The metaphysical and naturalistic pre-critical works remain invisible because they do not fit neatly into our familiar picture of Kant.

I will not be defending the critical works. Though others have,⁹ environmental philosophers have good reason to be suspicious of their value. Let us, then, consider Kant's reception vis-à-vis the environment. This will help us understand why and to what extent Kant remains marginalized. It will also motivate exploration into the pre-critical works.

Kant and Environmental Ethics

Christina Hoff (1983) is among the first of Kant's environmental critics. Animal ethicists Peter Singer and Tom Regan impugn Kant earlier for his self-serving preference for rational beings. However, it is likely not until Hoff that Kant becomes a primary target. Hoff integrates the concerns of Singer and Regan in the context of environmental ethics. Thus, her objections to the default Kant are worth enumerating as a point of reference.

As part of her critique, Hoff argues that Kant's ethics requires (or entails) indifference to animal suffering (Hoff 1983, 67). She relies on a standard reading of the *Groundwork* and lectures on ethics (Hoff 1983, 64-5), highlighting ethical and internal problems with Kant's exclusionary humanism. Kant's moral theory is "perverse," Hoff contends, since it conflicts with our "common moral intuition" regarding the wrongness of animal suffering (Hoff 1983, 67). It is hopelessly and even viciously anthropocentric. Hoff concludes that "Kant's ethical humanism has its seamier side... its attitude to nonhuman animals is morally impoverished... Kant has

⁹ This will be discussed at the end of Section 1.

failed to provide satisfactory grounds for excluding animals from the moral community” (Hoff 1983, 70).

For space, I do not evaluate Hoff’s arguments. It is probable that these reflect a general though not all-encompassing tendency in environmental philosophy for viewing Kant in a partial and largely negative light. Though I believe these objections are partly mistaken,¹⁰ they appear plausible if Kant’s *Groundwork* and ethics lectures hold priority.¹¹ The naturalistic pre-critical works do not readily succumb to these concerns. As such, they may provide a unique way for demarginalizing Kant.

Holmes Rolston III (1988) presents another early environmental objection to Kant. Rolston III’s critique focuses on Kantianism’s ecological myopia. It is therefore worth exploring as a foil for the ecological Kant of Sections 2 and 3. Rolston III problematizes individualist and anthropocentric thinking. Even today, for climate ethicists like James Garvey (2008), this is a prominent concern, though Rolston III—following Aldo Leopold—frames the early terms of the game. We need, Rolston III submits, to supersede “egoistic” Kantian humanism to adequately grapple with environmental problems:

Kant knew something about others, but, eminent ethicist though he was, the only others he could see were other humans, others who could say “I.” Environmental ethics calls for seeing nonhumans, for seeing the biosphere, the Earth, ecosystem communities... Environmental ethics advances beyond Kantian ethics, beyond humanistic ethics.... Kant was still a residual egoist in the objects of his ethics. (Rolston III 1988, 340)

Rolston III is also skeptical as to whether pseudo-Kantian approaches, such as Regan’s rights view, allow for duties toward species or the appreciation of ecological processes (Rolston III

¹⁰ Korsgaard (2004, 89-92) cites numerous passages from Kant’s works contesting that his philosophy entails indifference to animal suffering. These include Kant’s proscriptions of sport hunting, painful animal experimentation, and his claim that we should not make animals do work we ourselves would not do.

¹¹ See, for instance, *Groundwork*, 4:428, 79 and 4:435-436, 84-5.

1988, 144-9). Not only is Kant's anthropocentric egoism hopeless for environmental ethics,¹² but he is short-sighted due to his humanism. Kant cannot help us, it seems, because his philosophy is rooted in a tradition prioritizing individual human agents. Instead, we require an ethical paradigm shift—away from the humanistic Kant and toward an ecologically conscious environmental ethic (Rolston III 1988, 1; 158).¹³

Kant and Climate Ethics

Kant is also marginalized for his dualistic individualism, which precludes collective, holistic, and intergenerational thinking. When Hoff and Rolston III were writing, a liberal, Rawlsian Kant dominated. Only recently have less individualistic interpretations, including Kant's intergenerational philosophy of history, been explored. These readings remain in the narrow purview of Kant scholarship, so it comes as no surprise that Kant remains off the radar in environmental philosophy. We also see Kant's explicit marginalization visibly in climate ethics.

Dale Jamieson dismisses Kant vis-à-vis climate change for his individualism:

There is also the question about the philosophical basis for collectivizing duties. Some accounts claim to be inspired by Kant but they can find no real foundation in his work. He was interested in the conditions under which our actions have moral worth, not in solving collective action problems. There may be many things that are wrong with Paris Hilton flying to Rome on a shopping trip but a contradiction in will is not among them. (Jamieson 2014, 173)

Elsewhere, Jamieson in little more than two paragraphs minimizes Kant's environmental value:

“Consider first Kantianism... The silence of Kantianism on this issue [global environmental change] is related to two deep features of the theory: its individualism, and its emphasis on the interior” (Jamieson 2007, 161). When Jamieson discusses Kantianism, he clearly refers to a

¹² Rolston III cites Kant's late *Anthropology*, 7:127, 239.

¹³ Though the critical Kant rejects nonrational nature as an end-in-itself, nature has more than instrumental value. In Kant's account of natural beauty, nature is appreciated in non-instrumental, “disinterested” terms (Biasetti 2015). It is questionable whether the critical *ethics* can accommodate duties toward species as Rolston III desires.

narrow reading based on the *Groundwork*. Most commentators take for granted that this reading represents either his philosophy as a whole, or what is worth taking seriously; it is not worth investigating his early works.¹⁴ After all, the latter probably reflect the Western anthropocentric tradition anyway (Rolston III 1988, 62-63; Garvey 2008, 52).

I do not assess these arguments here. Again, we have good reason to be weary of a hopelessly anthropocentric and myopically individualistic Kant. We should, nonetheless, note this: the Kant problematic for climate- and environmental philosophers is very particular, based on critical works like the *Groundwork*. Jamieson, for instance, is engaged in a critique of Korsgaard's interpretation of Kant (2007, 161), and hers is a Rawlsian reading.

Green Defenders of Kant

To avoid giving the impression that Kant is universally perceived as an environmental hindrance, it is worth highlighting his defenders. We may consider two camps: Kantian commentators who attempt a "green" gloss of Kant, usually through reconstructions or interpretive augmentations in the spirit of Kant's thought based on loose textual readings; and Kantian environmental philosophers. The latter have environmental commitments but see Kant's marginalization as an oversight. Re-imagining key Kantian ideas, for this camp, holds promise for contemporary problems. Green defenders of Kant are few on both sides. They often draw on the critical works and usually publish outside environmental circles. If they consider non-critical texts, they rarely investigate the early naturalistic ones.

Kant scholarship defenders include Guyer (1993), Wood (1998), Korsgaard (2004), and Altman (2011). For Allen Wood's (1998) augmented Kantian defense of nature, Kant's philosophy is best understood as "logocentric" rather than anthropocentric. If we re-frame what

¹⁴ This view is supported by Kant's own infamous claim that, before Hume, he slumbered dogmatically.

Kant means by respect for rational nature, then a variety of non-humans deserve direct moral consideration. Wood's reading defends duties toward flora, fauna, and even ecosystems insofar as they are all fragments, proto-configurations, or preconditions of rationality (Wood 1998, 198-200).

Christine Korsgaard (2004) defends a constructivist interpretation of Kantian duties to animals to meet Hoff-like objections. Korsgaard's argument relies on a claim that we are value-conferrers, and that we value our animal nature. On Korsgaard's modified Kantian reading, rational consistency requires direct consideration of the interests of analogously-constituted animal natures, such as in children and sentient animals (Korsgaard 2004, 99-101).

These accounts, despite drawing from the later *Metaphysics of Morals* and early lectures on ethics, hinge on reinterpreting key *Groundwork* moments. Not all Kant commentators do this. Paul Guyer (1993, 328) and Matthew Altman (2011), for instance, investigate the *Critique of Judgment* for aesthetic and indirect duty defenses of nature, though environmental philosophers may find these overly human-centric.

Finally, Kantian or Kantian-inspired environmental commentators attempt to rehabilitate Kant for environmental ends without being wed to orthodox Kantian commitments. They include Wilson (1997, 2008), Schönfeld (2008), Brady (2013), Biasetti (2015), Svoboda (2015), Williston (2016), and Vereb (2019). Schönfeld draws from the *Groundwork*'s categorical imperative in a defense of sustainability, *pace* Jamieson; Brady, Biasetti, Williston, and Vereb reconsider the third *Critique*'s beauty and sublimity in defense of aesthetic-moral views of nature, *pace* Hoff. And Svoboda, *pace* Rolston III, defends a virtue-theoretic Kantian environmental ethic, mobilizing the third *Critique* and *Metaphysics of Morals*. These commentators look to either the critical works or the later moral writings. One exception is the

unique ecofeminist defense of Kant by Holly Wilson, undertaken primarily from an interpretation of his anthropological writings from 1798. Wilson argues that Kant is no normative dualist (1997, 380). This claim may initially seem preposterous. Section 2 will show why this is less so.

Though defenders of Kant exist, their attempts are unlikely to appeal to many environmental philosophers. First, the helm of “enlightened humanism” is too anthropocentric for deep ecological, ecocentric, or animal welfare philosophers. Logocentric stewardship, though helpful for climate change, is problematic by reinforcing exceptionalism at the root of the crisis. Excepting Wilson (1997), they prioritize the dismissed critical works. I suggest we pursue the power and promise of Kant’s pre-critical ontology of nature to bypass these limitations.

2. Kant’s Pre-Critical Ontology of Nature

This section provides an overview and interpretation of several important naturalistic works by Kant. My aim is to make Kant’s pre-critical ontology more visible and useful as a key to environmental philosophy. In these works, Kant views nature as an energetic, interconnected network. Before the phenomenal-noumenal split, Kant defends a single-world ontology of dynamic forces. This world—nature—is constituted by a complex web of natural relations, according to which the whole is greater than the sum of its parts.

Since it would be impossible to adequately survey works spanning a decade (1746-1756), I focus on two primary works: *Thoughts on the True Estimation of Living Forces* (1746-9) and *Universal Natural History and Theory of the Heavens* (1755). When relevant, I discuss others including *New Elucidation of the First Principles of Metaphysical Cognition* (1756). My rationale for choosing these two is as follows: the former is Kant’s first major philosophical work. It sets the stage for his dynamic metaphysical framework. The latter is among Kant’s more

developed pre-critical works. It lets us see the naturalistic implications of that framework. *Living Forces* provides the ontological stage for this dramatic period, and *Universal Natural History* populates it with empirical and naturalistic personae.

Living Forces and a Dynamic Nature

In *Living Forces* (1746-9), Kant engages the scientific *vis viva* debate. His attempt at a solution involves developing a new metaphysical framework—roughly thirty-five years before the first *Critique*'s transcendental idealism (1781/7). For the young Kant, motion results from a process of active forces (LF, 1:19, 23). “It was believed,” Kant declares in *Living Forces*, “that Aristotle’s obscure entelechy is the secret of the action of bodies...Leibniz, to whom human reason owes so much, was the first to teach that an essential force inheres in a body and belongs to it even prior to extension” (LF, 1:17, 22). Since *entelechy* is obscure, a brief aside on its meaning is needed to appreciate Kant’s early ontological framework. Etymologically, ἐντελέχεια comprises three parts: ἐν = “in”; τέλος = “goal”; and ἔχειν = “to have.” Conceptually, *entelechy* is that having its goal contained within itself. *Entelechies* are active, goal-directed processes.

Kant conceives of *entelechies* as self-regulating, self-realizing drives. He likens his living forces to Leibniz’s *entelechies* but wishes to avoid dualistic schisms between natural and ideal. In this framework, organisms, ecosystems, and planetary-systems are instantiations of primitive *entelechies*. The cosmos, for Kant, is itself an emergent system grounded on dynamic powers.

Kant’s early view is in many ways ecological. An ecological view, in the philosophical sense I use here, refers to reality insofar as it constitutes self-regulating, interconnected, and dynamic systems; individual entities are understood holistically, loosely integrated within such systems (Rolston III 1988, 174). As Arne Naess puts it, “intimate interconnectedness in the sense of internal rather than external relations characterizes ecological ontology” (Naess 1977, 46). An

ecological view in the philosophic sense, then, is essentially systems-oriented. Taking this view seriously requires humans to understand how they are embedded within nature, among its web of beautiful and diverse interrelations (Stephano 2017, 3). The ontological basis of reality in Kant's early works is systems-oriented in a uniquely non-anthropocentric way.¹⁵

Beginning with these first provocative passages, Kant defends a dynamic and holistic metaphysical framework. Nature is no mechanical aggregate of objects, unified through the will of God. Rather, it is an interconnected network of active, self-directed conative powers.

Throughout this period, Kant develops a framework grounded on like powers to explain the emergence of time, the origin of nature, and the evolution¹⁶ of its diversity-in-unity as a beautiful naturalistic system.

Nature's systematicity is grounded on this dynamic ontological framework. For a few examples to help us appreciate the systematicity of nature with *Living Forces* at its conceptual basis, we can consider Kant's explanation of natural phenomena in other early scientific works. Understanding nature as a web of causal relations, *On the Causes of Earthquakes* (1756) explains earthquakes naturalistically rather than by theodicy. Kant reflects on earth as a planetary system: "The first thing to be observed is that the ground under us is hollow and its caverns extend very widely, almost as in a single interconnected system" (OE, 1:419, 330). Kant continues: "The cause of earthquakes seems to extend its effect into the atmosphere. Some hours before an earthquake occurs, a red sky and other indications of altered atmospheric conditions

¹⁵ For takes on ecological philosophical systems, see Naess (1973) and Stephano (2017). An ecological ontology, in both, considers reality as a single interconnected matrix. Humanity must appreciate its situatedness in that matrix as natural beings, and this involves respect for natural science (Taylor 1986).

¹⁶ By "evolution" or "evolutionary," I do not refer to Darwinian evolution, though Kant's early view is not necessarily incompatible with it. In late 1798 lectures, Kant conjectures that humans evolved [*bei großen Naturrevolutionen*] from apes (*Anthropology*, 7:328, 423f). I use this term to refer to immanent and emergent processes of development in nature.

have been observed. Animals become terrified shortly beforehand. Birds take refuge in houses...” (OE, 1:419, 330). Though his causal account—linked with vapor-formation in underwater caves—is wrong, Kant approaches natural phenomena systemically. Kant would obviously not use this terminology, but he conceptually links lithosphere, hydrosphere, biosphere, and atmosphere. As another example, Kant reflects on atmospheres as dynamic systems and climates as interactive networks, in *Theory of the Winds* (1756) and *Physical Geography* (1802), respectively.¹⁷ This tendency to see an interconnected nature makes sense given *Living Force*’s ontological framework, which we continue to explore in this section.

Kant’s first publication, *Living Forces*, is interesting for how non-dualistic and dynamic it is. Unlike many moderns, Kant defends a multipolar, single-world ontology based on the reciprocal actions of living force [*Kraft*] (LF, 1:21, 25). These energetic forces give birth to space and physical bodies, weaving the network of reality. Kant also uses active forces to explain motion (LF, 1:21, 25). Newtonian universal gravitation itself results from the *entelethic* field (LF, 1:24, 27-8), and no actual part is unconnected to the whole: “the world is an actually composite entity, and so a substance connected with no thing in the entire world will not belong to the world at all” (LF, 1:22, 26). In short, *Living Forces* articulates nature as, fundamentally, a dynamic and holistic network of forces.

Though Kant later, in *New Elucidation*, uses this ontology as a basis for developing a compatibilist account of human freedom, he provides outlines of it here. These are ecologically significant due to a clear anti-dualism. Now, living forces on Kant’s view produce the spatial

¹⁷ This paper outlines the metaphysical framework that makes Kant’s more empirical scientific analyses possible, and to support that framework as compatible with environmental thought. Accordingly, I do not investigate the scientific works here. For other phenomena Kant explains naturalistically, such as tides and fire, see Schönfeld 2000. Though *Physical Geography* (1802) is a later publication, it is based on lectures beginning in 1756 (*Natural Science* 2012, 434), the same decade as works discussed in this section.

network which makes physical interaction possible. Physical interaction, moreover, must take place in a determinate external location (LF, 1:20-21, 24-5). Kant continues:

[M]atter that has been set in motion acts on everything that is spatially connected with it, and hence also on the soul; that is, it changes the internal state of the soul insofar as this state is related to what is external to it. Now the entire internal state of the soul is nothing other than the summation of all its representations and concepts insofar as this internal state is related to what is external to it, it goes by the name of *status repraesentativus universi*; thus, by means of the force that it has while in motion, matter changes the state of the soul through which the soul represents the world. In this way, we can understand how matter can impress representations on the soul. (LF, 1:21, 25)

Kant simultaneously bypasses the determinism of modern mechanism, and the anthropocentric dualism of Descartes. Matter does not determine the soul, as materialists like La Mettrie are left to conclude. Furthermore, minds and bodies do not occupy distinct metaphysical spaces, as in Descartes and Leibniz. Instead, minds *interface* with bodies through their external mode of representation; location discloses the field of possibilities available to minds, and the reciprocal interaction between forces open, as it were, the windows through which the soul engages reality.

This is all very complicated, and Kant's solution is probably unsuccessful, but the upshot is clear: Kant presents a holistic ontology where minds and the world, conceived in terms of primitive forces, interact. Minds and bodies interface, showing how freedom can be compatible with an interconnected world of efficient causes. In other words, "Kant holds that characterizing force more abstractly as active rather than in terms of motion solves the [mind-body] problem because it shows how to understand force in such a way that there is no heterogeneity between the mind and the body at the relevant level" (Watkins 2005, 107).

Kant's anti-Cartesian rejection of the heterogeneity between mind and body, founded on a dynamic framework, makes him a greater ally to environmental philosophy than the default

critical reading leads us to believe.¹⁸ Moreover, objections that Kant bifurcates nature into dignified humanity and worthless animality seem less appropriate vis-à-vis these early theoretical works. In *Living Forces*, minds and bodies are part of the same immanent reality, emerging from living forces. One implication, which Kant articulates more clearly in *Universal Natural History*, is that consciousness exists on an evolutionary continuum. Non-humans have minds,¹⁹ and humans are not creation's final end.²⁰ With an evolutionary view on minds and an opposition to anthropocentric exceptionalism, Kant's pre-critical ontology of nature appears to share much with contemporary views in animal- and environmental ethics.

The Trajectory of Kant's Early Framework

After *Living Forces*, Kant continues to sharpen his early framework. Subsequent works to this effect include the short metaphysical treatise *New Elucidation* (1755), as well as the naturalistic tract, *Physical Monadology* (1756), aiming to integrate Newtonian science with Leibnizian metaphysics. In the development of his early thought but still twenty-five years before the *Critique*, Kant departs from *Living Forces* in significant ways in response to scientific and philosophical problems.²¹ Still, his basic framework—a view that is dynamic, naturalistic, and holistic—remains intact.

¹⁸ For more on Kant's anti-Cartesianism, including a rejection of the *bête machine*, see Wilson 1997, 387-388; Kain 2010, 215; cf. *Critique of Judgment*, 5:457, 464n.

¹⁹ In lectures Kant argues that non-human animals have souls (*Metaphysik*, 28:274-5, cited from Wilson 2008, 6) and have a power of representation like humans (*Anthropology*, 7:141, 252-3).

²⁰ Kant defends humanity as nature's final end in the *Critique of Judgment*, yet *Universal Natural History* rejects the "teleological anthropocentrism" prominent in the tradition; In fact, "[a]s he noted in the *Universal Natural History*, it is an exaggeration to suppose that the whole cosmos had been organized for the mere purpose of human interests" (Schönfeld 2000, 101).

²¹ In *Physical Monadology*, Kant argues that physical monads—the *entelechi*c forces in his ontology—are compatible with Newtonianism. Simple monads cannot be divided. Their simplicity seems to contradict the infinite divisibility of objects in Newtonian space (PM, 1:477, 53; 1:480, 56-7). Kant's dynamic solution allows for both. Monads fill space through spherical activity (PM, 1:481, 58). They lie at the center of their spheres as simple energy points, while their active fields remain spatially divisible. The interplay of attractive and repulsive monadic forces, a development from *Living Forces*, generates stable nature. In this picture, physical monads are naturalistic, not otherworldly.

Among Kant's interests is the problem of free will.²² All events follow natural necessity, located within an interlinked web of causal relations. Yet, the will can act freely through a spontaneous inner principle of self-determination spun from that web (ND, 1:403-4, 26-8). *New Elucidation* integrates freedom, moral responsibility, and the physical web of relations into a single-world view, and *Physical Monadology* makes these findings compatible with the physical science of Kant's time.

Living Forces importantly sets the stage for these discussions, which are unlike the traditional dualistic and anthropocentric readings of Kant. Though Kant appeals to God as the sustainer of his two fundamental metaphysical principles (ND 1:395-396, 15), they themselves are unorthodox; from a non-Western perspective, Kant's early metaphysical foundations appear closer to Daoism than orthodox Christianity.²³ Let us now consider an important pre-critical work relevant for environmental philosophers: *Universal Natural History*. This text is philosophically significant because of its ecological implications: nature is evolutionary and emergent, cosmic humility is favored over human exceptionalism, non-human rational beings exist, and earth is framed in proto-Gaian ways.

The Evolutionary Ecology of *Universal Natural History*

Universal Natural History (1755) uses the dynamic framework developed out of *Living Forces* to explain the origin, development, and systematicity of the cosmos naturalistically. Because it

²² In a dialogue in *New Elucidation* Kant defends moral compatibilism with his "interlinked, interconnected and interwoven" ontological holism (ND, 1:401-405, 24-30). Rather than discrete, disembodied beings, autonomous beings are embodied in the nexus of nature.

²³ *New Elucidation* defends two principles constitutive of reality: the principle of identity and the principle of contradiction (ND, 1:389, 7). This dual foundation reveals Kant's early philosophy as multipolar and dialectical. Traditional views conceive being in ontologically positive terms, while Kant's is an interactive synthesis between identity and negation, attraction and repulsion, good and evil. In this ontology, being is processual; theory, physics, and morality converge.

synthesizes and unifies several key elements discussed in the foregoing, this text is important for understanding Kant's early view of nature and its value for environmental philosophy.

Universal Natural History's nature is a self-made, self-forming process (UNH, 1:264, 228). Nature is immanent and its origins are material (UNH, 1:262, 226; 1:344, 290). Having "evolved from chaos" in accordance with dynamic laws, our world naturally coalesces into a harmonious, well-ordered nexus, bringing, "as it were, a continuous life in nature" (UNH, 1:313-314, 265-6; 1:264-265, 228-9). Yet, nature's evolution is never complete. It continuously re-organizes itself, yielding higher degrees of complexity. Nature's evolution, says Kant, "is effective throughout the entire sequence of eternity with ever increasing degrees of fruitfulness" (UNH, 1:312-314, 265-6).

In this grandiose cosmogony the "sphere of formed nature...has within it the seed of future worlds," which "strives to evolve out of the raw state of chaos over longer or shorter periods" (UNH, 1:314, 267). By contrast with the linearity of monotheistic accounts, Kant's nature is a cyclical process, encompassing birth and rebirth, creation and destruction: "Worlds and world-orders pass away and are swallowed by the abyss of eternities; by contrast, creation is ever busy carrying out new formations in other regions of the heavens and replacing what has gone with advantage" (UNH, 1:317, 269). As we will see, this entropic view leads Kant to reject human exceptionalism; humanity, too, shall pass.

Kant makes use of an interesting phoenix metaphor to explain nature's evolution; in its most simple state, nature, through the interaction of simple polar forces, engenders self-organizing networks. The phoenix nature births planetary systems, which in turn facilitate the development of complex organisms, including rational life. With time, our phoenix decays back into itself.

If we follow this phoenix of nature, which burns itself only to rise rejuvenated from its ashes to new life through all infinity of time and space; when one sees how, even in the region where it decays and ages, it continues unexhausted with new appearances and on the other border of creation it proceeds in the space of unformed raw matter with constant steps... then the mind that contemplates all this sinks into profound astonishment. (UNH, 1:321, 272)

This metaphor is of obvious interest for environmental philosophers. Nature is self-standing, holding the seed of its own emergence and organization. With each rebirth, its evolution grows more fruitful with cosmic diversity. Though Kant employs theological discourse expected of academics in pietistic Prussia, *Universal Natural History* articulates a nature that unfolds naturalistically according to its own dynamic laws. This deviates from other views of Kant's time that posit a creator God with humanity made in His image.²⁴

The phoenix imagery suggests a highly naturalistic and potentially pantheistic aspect of Kant: A transcendent deity appears superfluous.²⁵ With the dialectical interplay of forces, *entelechies* unfold themselves to produce natural structures and regularities. Destruction is the natural process of entropy for which the phoenix cosmically inclines. On this view, nature is organic, living, and constantly developing; it evolves solar systems, animal life, and intelligences with moral faculties. This process continues until nature inevitably refolds itself into nothingness, eternally returning the phoenix anew.²⁶

For contrast with the *Groundwork*, consider the Part 3 Appendix of *Universal Natural History*. Kant makes several interesting assertions, leading him toward cosmic humility and a

²⁴ See White (1967) for a discussion as to why this association can be environmentally problematic.

²⁵ Kant makes numerous references to God in this text. However, a deity appears explanatorily useless (UNH, 1:344, 290). For context: Kant must pay lip service to orthodoxy to retain his academic post.

²⁶ Unsurprisingly, Kant's innovative follower Arthur Schopenhauer found it plausible to synthesize Kantian metaphysics with Vedic teachings. It would be interesting to determine whether Nietzsche's eternal return was not also influenced by the early Kant. We do know that Nietzsche read Strauss's *Der alte und der neue Glaube* (1872). In section 47, pages 153-4 of that work there is a discussion of *Universal Natural History*, which includes reference to Kant's phoenix. Because pages before and after this section are annotated by Nietzsche in his archived personal copy, it is probable that he read this section and was at least indirectly familiar with Kant's view. I thank William A. B. Parkhurst for help locating this reference.

rejection of human exceptionalism. He reflects on alien intelligences and presents thoughts on planets as systems (UNH, 1:351-368, 295-308). Kant's speculation that aliens exist—ones that cognitively, spiritually, and morally exceed us—is a simple consequence of this evolutionary ontology (UNH, 1:359-60, 301-2).²⁷ Regarding human exceptionalism, we need only consider Kant's discussion of lice and cosmic humility:

Let us judge without prejudice. This insect that expresses the disposition of most people very well both in the way it lives and in its insignificance, can be used as a comparison with good reason. Because in its imagination its existence matters infinitely to nature, it considers the whole of the rest of creation as in vain as far as it does not have its species as a precise goal, as the centre point of its purposes. The human being, so infinitely removed from the highest stage of beings is so bold as to allow himself a similar delusion, to be flattered by the necessity of his existence. The infinity of creation encompasses in itself, with equal necessity, all natures that its overwhelming wealth produces. From the most sublime class among thinking beings to the most despised insect, not one link is indifferent to it; and not one can be absent without the beauty of the whole, which exists in their interrelationship, being interrupted by it. (UNH, 1:353-354, 296-7)

Arrogant, humans consider themselves hegemon of nature, as lice consider themselves kings of scalp. For Kant, cosmically conceited humans, like lice, are small. They lack humbling awareness that they are another feather on the great phoenix nature.

Dialectical laws of nature allow for the emergence of planets that naturally bring forth life (UNH, 1:352-353, 295-6; 1:360, 301-2). Planets are, as it were, macro-instantiations of *entelechies*. Each planetary system is interconnected and interlinked with the larger cosmic whole: “everything in the whole extent of nature is connected in an uninterrupted graduated sequence by the eternal harmony that refers all links to each other” (UNH, 1:365, 305). This is

²⁷ After defending what is now known as the Kant-Laplace nebular hypothesis, Kant's Appendix concludes with some speculations. Subtitled “On the inhabitants of the planets,” Kant asserts that other alien lifeforms exist (UNH, 1:351, 295-6). “[M]ost of the planets are certainly inhabited and those that are not will be at some stage” (1:354, 297). Kant compares such beings with humankind, where he gives a material explanation for our “evolution” [*Auswickelung*] as one rational species. He discusses the connection between the physical development of our nerves and brains on concept formation (1:356, 299). Humanity, Kant muses, occupies a “middle rung on the ladder of beings,” and alien inhabitants of Saturn likely have average intelligences equaling Newton (1:359-60, 301).

quite dissimilar from the standard view of Section 1. When environmental philosophers consider Kant's early ontology, they may find an ecological framework with more in common than previously thought.

3. Reflections on a Gaian Kant

This final section reflects on how the ecological holism of Kant's framework is, in a sense, Lovelockean. I then conclude with a brief discussion of Kant's possible relevance for climate change. One year before *Universal Natural History*, Kant publishes a peculiar essay. In "The question, whether the Earth is ageing, considered from a physical point of view" (1754), Kant considers the plausibility of a pantheistic world-soul. As the estimation of an unknown animal's age requires reference to its vitality, so also can the age of the earth be determined. Kant reasons that we should think about the earth in Gaian terms, like a living organism:

[I]t seems to be a subject worthy of enquiry to determine whether the Earth is ageing gradually and whether it is not in its declining phase, or whether its constitution is still in good health, or indeed whether the perfection to which it is to develop has not yet been fully attained and it has perhaps not yet passed beyond its childhood. (FE, 1:196, 168)

Foreshadowing Leopold, earth has a state of health. It can be harmed or benefitted; it, in Kant's developmental schema, is flourishing, perhaps now in its infancy. Kant accepts the plausibility "of those who presuppose a general 'world-spirit', an imperceptible but universally active principle, as the secret driving force of nature" (FE, 1:203, 174). The "generation and the economy of all three realms of nature"—the οἶκος of nature—can be best framed in terms of world-spirit (FE, 1:211, 180). By this "Proteus of nature," Kant does not intend to anthropomorphize. Instead, its organization and life-source emerges, Kant conjectures, through "a subtle but universally active matter which, in the products of nature, constitutes the active principle" of nature (FE, 1:211, 180). This active principle—nature's wellspring—is consistent

with the pre-critical *entelethic* framework. The early works, then, converge on an ecological view of nature: an emergent οἶκος that connects all beings through dynamic, living forces.

To summarize Section 2, nature for Kant is a nexus of teleological connections. Multipolar forces structure the cosmic edifice into a stable, diverse, and interconnected system capable of sustaining life. Through its nebular whirling nature congeals dust particles into stable planetary structures (Schönfeld 2000, 113-4). These, over time, allow for the development of crystalline formations and flora that Kant appreciates aesthetically in later works (UNH 1:358, 300; *Metaphysics of Morals* 6:443, 564). Finally, the phoenix nature engenders conditions that support intelligent life. These conditions would be impossible without a properly suited relationship (which we might call niche) between environment, climate, flora, and fauna. This is how humans emerge on Kant's early picture (UNH 1:356, 299).

Kant often takes time to reflect upon nature's systematicity in its awe-inspiring sublimity. Cosmic humility is a key theme and moral implication of these reflections.

The fixed stars, as we know, all relate to a common plane and thus constitute an orderly whole, which is a world of worlds. One can see that in the immeasurable distances, there are more such star systems, and that creation in the entire infinite scope of its size is everywhere systematic and interrelated. (UNH, 1:255, 221)

If the magnitude of a planetary system in which the Earth is a grain of sand and scarcely noticeable puts our reason into a state of wonderment, then with what amazement are we delighted when we contemplate the infinite magnitude of worlds and systems. (UNH, 1:256, 222)

By its immeasurable magnitude and by the infinite diversity and beauty that shines forth from it on all sides, the universe puts us into silent astonishment. (UNH, 1:306, 260)

Though sublimity has a primarily moral, anthropocentric function in the *Critique of Judgment* (1790), here nature's sublimity imbues us with a humble admiration and appreciation for nature as a whole.²⁸

Using theological imagery we might recognize in Aquinas, Kant contemplates nature as a great chain of being (UNH, 1:278, 239; 1:319, 270). However, as Schönfeld nicely puts, "the precritical Kant rejected the idea that rational life is more valuable than nonrational, mere organic life... Setting himself at variance with the theological tradition, Kant doubted not only that humankind is the purpose of creation, but also that it is the crown of creation" (2000, 118). Kant's chain is evolutionary: instead of a static ladder established by the Creator, a dynamic and naturalistic continuum. Humanity, its middle link, is among other rational beings unfolding from nature's dialectical furls (UNH, 1:330, 279).

Humans mistakenly see themselves as superior links in the chain. They are not exempt from the phoenix's law of creation and destruction (UNH, 1:318, 270). Indeed,

A theme running throughout the whole precritical period was Kant's rejection of the theological dogma that humans are in an important sense distinct from the remainder of creation. Kant did not subscribe to a Cartesian dualism... Although the soul does not consist of matter... it may be some sort of energy or force commensurate with the material framework of nature. (Schönfeld 2000, 118)

Interestingly, moral virtue is itself an immanent feature of Kant's total-field, ecological view, rather than a sign of our transcendent superiority over it. Nature

embraces all possible changes in the extent of its multiplicity, even to failings and deviations. It is precisely the same unlimited fertility of nature that has brought forth the uninhabited heavenly spheres as well as the comets, the useful mountains and harmful cliffs, habitable landscapes and empty deserts, virtues and vices. (UNH, 1:347, 293)

²⁸ Connecting *Universal Natural History* and the *Critique of Judgment* vis-à-vis nature's systematicity, beauty, and sublimity would exceed the present paper's scope. This paper aims, primarily, to make the pre-critical Kant more visible to environmental philosophers. For more on nature's systematicity apropos the third *Critique* and beauty, see Zuckert (2007). Perhaps the pre-critical Kant is closer to romantics like Herder, who see humanity as "unproblematically and harmoniously part of the 'whole world'" (Zuckert 2003, 224).

In addition to its ecological holism—integrating all aspects of nature in an interconnected and naturalistic causal web in which all the parts can be understood with reference to the whole—Kant’s framework implies a naturalistic account of morality consistent with Darwinian evolutionary theory: ethical consciousness, even virtue, emerges through nature’s fertility.

Unexpected given the default critical reading of Section 1 but now made visible in Section 2, Kant’s view has much in common with environmental philosophy: nature is immanent, dynamic, interconnected and interrelated—a beautiful harmony in diversity; dualistic individualism is rejected for an ecological metaphysics. Kant’s teleological account of organisms in the *Critique of Judgment* appears on constitutive, cosmic-scale in *Universal Natural History*, with a Gaian-like view of earth.

To support how Kant’s early metaphysics can be seen as ecological, consider his understanding of the development of rational life and its relationship to nature.²⁹ Kant argues that planets farther from the sun are more disposed to develop intelligent life. Though empirically false, its justification is telling. Rationality, for the early Kant, is contingent on matter, and degrees of rationality, on types of matter; for everything in nature has, ontologically, the same naturalistic basis (Schönfeld 2000, 119). Environmental and planetary conditions make rational species possible, and they can only be understood in relation to those naturalistic contexts. Unlike disembodied, non-spatial Cartesian souls, rational species are embedded in and supported by a nature-in-process. Moreover, each part of nature—not only rational life—contributes to the beauty, integrity and diversity of the whole system. This immanent, emergent, anti-dualistic, and

²⁹ We could pick a number of examples from Kant’s early texts, but I select intelligent life because it clearly contrasts with the critical works.

holistic theoretical framework is what we would expect to find in an environmental philosopher like Naess (1973), Taylor (1986), or Callicott (2013), not from the Prussian Enlightenment.

Climate Change and Concluding Remarks

I have argued that Kant should be allowed entry into the environmental pantheon, alongside figures from the canon like Spinoza, Nietzsche, and Heidegger. Kant's ecological view is an outlier next to the tradition's anthropocentrism in Descartes and Bacon. Appreciating Kant's early ontology can be informative for environmental philosophers who wish to survey the philosophical canon for historical allies. In addition, I hope this paper has given pause to environmental philosophers who only consider the critical works. Contra Hoff, the pre-critical Kant sees humanity and animals on an evolutionary continuum; contra Rolston III, Kant sees nature in holistic, ecological terms; and contra Jamieson, he thinks beyond the maxims of individuals, reflecting on nature as a beautiful, diverse, and intricate system. Upon closer inspection, *this* Kant should no longer remain marginalized.³⁰

Climate change is an environmental problem where Kant's view, in three senses, may be of assistance. First, it may assist as a practical framing device; seeing individuals as part of a larger, holistic context is a precondition for addressing collective aspects of climate change. Second, appreciating nature as an interconnected system, as the pre-critical Kant does, has pedagogical value for cultivating ecological humility and offsetting anthropocentric arrogance. Finally, by learning from Kant's philosophical trajectory, we may understand how *not* to proceed

³⁰ Maybe the usefulness of Kant's early ecological view can give Kantian environmental philosophers a clue for greening the *critical* Kant. Though he rejects his previously held, Spinoza-like nature as naïve and dogmatic, critical Kant leaves room for moral and epistemic framing regarding it. We can, for instance, think of the earth-system *as if* it were an interconnected totality, by analogy to our understanding of organized beings. And what are we, then, if not the cancerous cells in an overheating Gaian organism?

in squaring climate change with contemporary ethics. Learning negatively from Kant's lesson, we can develop a conception of moral agency integrated within a holistic ecological framework.

Now, I have avoided Kant's early ethical views. I suspect they will only be of limited value for climate change.³¹ However, the example of Kant's theoretical holism can be illuminating for us, especially as it creates tensions with his later, individualist view of agency. As we well know, one normative problem is the seeming deadlock of climate change, which involves complex systems and impacts smeared across time and space (Garvey 2008), with moral philosophy, which traditionally concerns individual agents (Rolston III 1988).

Climate change requires us to think in terms of systems. Overemphasis on individuals risks missing the forest for the trees. With climate change on the scene, that forest stands to be levelled. Kant's early naturalistic philosophy asks us to consider nature ecologically; humans, Kant teaches, often have the tunnel-vision of lice. We must cultivate humility toward nature's sublime power and complexity to confront climate change in a responsible way.

Systemically blind and lacking humility, we gravitate to geoengineering as an all-in-one solution. With climate change, it is a dangerous game to endorse the Baconian creed of human technological dominion over nature. For Kant this would be the magical thinking of *Schwärmerei*. Instead, we should take Kant's early view seriously and frame earth as an interconnected system. Moreover, we must reflect on our relationship to it before acting rashly, as myopic lice. Kant's early framework can help us shift our focus to natural systems, and these

³¹Early on, Kant had no systematic ethics and saw himself, first and foremost, as a philosopher of nature attempting to reconcile metaphysics with natural science (Schönfeld 2000, 11).

certainly include consideration of planetary boundaries, ecological tipping points, and extreme weather.³² As such, his own views deserve to be made more visible.

Many of us never realize that Kant was, before the famous transcendental idealist, an aspiring scientist who thought deeply about nature. When we fail to acknowledge Kant's early ecological ontology, we see him as a risky player. His relative marginalization makes sense, and environmental philosophers who have done so deserve no blame. Nonetheless, environmental philosophers should put aside their prejudices against the Kant of the *Groundwork*. Instead, they may find an environmental ally by attending to the pre-critical Kant.³³

REFERENCES

- Altman, Matthew C. 2011. *Kant and Applied Ethics: The Uses and Limits of Kant's Practical Philosophy*. Malden, MA: Wiley-Blackwell.
- Benton, Ted. 1996. *The Greening of Marxism*. New York: Guilford Press.
- Biasetti, Pierfrancesco. 2015. "From Beauty to Love: A Kantian Way to Environmental Moral Theory." *Environmental Philosophy* 12 (2): 139-60.
- Brady, Emily. 2013. *The Sublime in Modern Philosophy: Aesthetics, Ethics, and Nature*. New York: Cambridge University Press.
- Callicott, J. Baird. 2013. *Thinking like a Planet: The Land Ethic and the Earth Ethic*. New York: Oxford University Press.

³² Elsewhere, Kant discusses climate and extreme weather. Humanity must humbly adapt, Kant opines, since we are dependent on nature: "[m]an must learn to adapt to nature, but he wants nature to adapt to him" (*Natural Science*, 1:456, 360).

³³ I wish to express gratitude for several individuals who helped me sharpen this paper into what it is now. First, I thank participants at the International Society for Environmental Ethics at the APA Central in 2019, for their helpful comments and support. Second, I would like to thank the careful and insightful feedback given by two anonymous reviewers. Lastly, I would like to thank my teacher and friend, Martin Schönfeld, who inspired me to explore Kant's early works. Rest in peace my friend.

- Garvey, James. 2008. *The Ethics of Climate Change: Right and Wrong in a Warming World*. London; New York: Continuum.
- Guyer, Paul. 1993. *Kant and the Experience of Freedom: Essays on Aesthetics and Morality*. Cambridge England; New York: Cambridge University Press.
- Hoff, Christina. 1983. "Kant's Invidious Humanism." *Environmental Ethics* 5 (1): 63-70.
- Jamieson, Dale. 2007. "When Utilitarians should be Virtue Theorists." *Utilitas* 19 (2): 160-83.
- Jamieson, Dale. 2014. *Reason in a Dark Time: Why the Struggle Against Climate Change Failed--and what it Means for our Future*. Oxford; New York: Oxford University Press.
- Kain, Patrick. 2010. "Duties Regarding Animals." In *Kant's Metaphysics of Morals: A Critical Guide*, ed. Lara Denis, 210-233. Cambridge University Press.
- Kant, Immanuel, Günter Zöllner, and Robert B. Loudon. 2007. *Anthropology, History, and Education*. Cambridge; New York: Cambridge University Press.
- Kant, Immanuel, Mary J. Gregor, and Allen Wood. 1996. *Practical Philosophy*. New York: Cambridge University Press.
- Kant, Immanuel. 1992. *Theoretical Philosophy, 1755-1770*, ed. and trans. David Walforth. Cambridge; New York: Cambridge University Press.
- Kant, Immanuel. 2012. *Natural Science*, ed. Eric Watkins, trans. Martin Schönfeld and Olaf Reinhardt. Cambridge: Cambridge University Press.
- Korsgaard, Christine. 2004. "Fellow Creatures: Kantian Duties and our Duties to Animals." The Tanner Lectures on Human Values 25/26. Salt Lake City: University of Utah Press.
- Naess, Arne. 1973. "The Shallow and the Deep, Long-range Ecology Movement. A Summary." *Inquiry: An Interdisciplinary Journal of Philosophy* 16 (1): 95-100.
- Naess, Arne. 1977. "Spinoza and Ecology." *Philosophia* 1 : 45-54.

- Parkes, Graham. 2013. "Zhuangzi and Nietzsche on the Human and Nature." *Environmental Philosophy* 10 (1): 1-24.
- Phemister, Pauline. 2016. *Leibniz and the Environment*. London; New York: Routledge, Taylor & Francis Group.
- Regan, Tom. 2004. *The Case for Animal Rights*. Berkeley: University of California Press.
- Rentmeester, Casey. 2016. *Heidegger and the Environment*. Lanham: Rowman & Littlefield International.
- Rolston, Holmes. 1988. *Environmental Ethics: Duties to and Values in the Natural World*. Philadelphia: Temple University Press.
- Schönfeld, Martin. 2000. *The Philosophy of the Young Kant: The Precritical Project*. New York: Oxford University Press.
- Schönfeld, Martin. 2008. "The Kantian Blueprint of Climate Control." in *Global Warming and Climate Change: Ten Years after Kyoto and Still Counting*, ed. Velma I. Grover. Vol. 1, 201-215. Enfield: Science Publishers.
- Singer, Peter. 2009. *Animal Liberation*. New York: HarperCollins Publishers.
- Stephano, Oli. 2017. "Spinoza, Ecology, and Immanent Ethics." *Environmental Philosophy* 14 (2): 317-38.
- Strauss, David Friedrich. 1872. *Der Alte Und Der Neue Glaube. Ein Bekenntniss* Leipzig, S. Hirzel.
- Svoboda, Toby. 2015. *Duties Regarding Nature: A Kantian Environmental Ethic*. New York; London: Routledge, Taylor & Francis Group.
- Taylor, Paul W. 1986. *Respect for Nature: A Theory of Environmental Ethics*. Princeton: Princeton University Press.

- Vereb, Zachary. 2019. "Moral Views of Nature: Normative Implications of Kant's Critique of Judgment." *Public Reason* 10 (2) - 11 (1): 127-142.
- Watkins, Eric. 2005. *Kant and the Metaphysics of Causality*. Cambridge; New York: Cambridge University Press.
- White, Lynn Jr. 1967. "The Historical Roots of our Ecologic Crisis." *Science* 155 (3767): 1203-1207.
- Williston, Byron. 2016. "The Sublime Anthropocene." *Environmental Philosophy*, 13(2): 155–174.
- Wilson, Holly L. 1997. "Rethinking Kant from the perspective of ecofeminism." in *Feminist interpretations of Immanuel Kant*, ed. Robin May Schott, 355-372. University Park, Pennsylvania: The Pennsylvania University Press.
- Wilson, Holly L. 2008. "The Green Kant: Kant's Treatment of Animals." In *Environmental Ethics: Readings in Theory and Application*, edited by Paul Pojman and Louis Pojman, 5-13.
- Wood, Allen. 1998. "Kant on Duties Regarding Nonrational Nature." *Proceedings of the Aristotelian Society Supplement* LXXII : 189–210.
- Zimmerman, Michael E. 1983. "Toward a Heideggerean Ethos for Radical Environmentalism." *Environmental Ethics* 5 (2): 99-131.
- Zuckert, Rachel. 2003. "Awe or Envy: Herder contra Kant on the Sublime." *The Journal of Aesthetics and Art Criticism*, 61(3), 217-232.
- Zuckert, Rachel. 2007. *Kant on Beauty and Biology: An Interpretation of the 'Critique of Judgment'*. Cambridge: Cambridge University Press.